PHILIPS

Data handbook

Electronic components and materials

Components and materials

Book C20 1988

Wirewound components for TV and monitors

WIREWOUND COMPONENTS FOR TV AND MONITORS

Glass delay lines and comb filters are no longer included in this handbook. For this information see publication; "Glass delay lines and comb filters".

SELECTION GUIDE

RECOMMENDED COMBINATIONS FOR COLOUR TELEVISION

90°

Picture tube	A37-573X	A37-590X A37-591X
Deflection unit	AT1205	AT1206
Screen diagonal	37 cm	37 cm
Multipole	AT1052	AT1052
Degaussing coil single insulation	3122 138 99840	3122 138 99840
Mains filter choke	AT4043/90	AT4043/90
Switched mode driver transformer		AT4043/29
Synchronous transformer	–	AT4043/76
Switched mode transformer	AT3010/90L or /110LL	–
Driver transformer	AT4043/01	–
Choke	AT4043/11	AT4043/81
Synchronous power pack transformer	–	AT2077/80
Line output transformer	AT2079/10	–
Linearity control unit	AT4042/04A or AT4042/91	AT4042/91

110°

Picture tube	A51-540X	
Deflection unit	AT1850	
Screen diagonal	51 cm	
Degaussing coil single insulation double insulation	3122 138 55220 or 3122 138 56320	
Mains filter choke	AT4043/55 or /90	AT4043/55 or /90
Driver transformer	–	AT4043/29
Switched mode transformer	AT3010/110LL	–
Mains transformer	TS561	TS561
Current sensing transformer	–	AT4043/46
Bridge coil	AT4043/100	AT4043/100
East/west choke	AT4043/60	AT4043/60
Input choke	–	AT4043/16A
Line output transformer	AT2077/81, /83 or /88	AT2077/82
Audio choke	–	AT4043/96
Power pack system line choke	–	AT4043/53A
Linearity control unit or linearity corrector	AT4042/08A or AT4042/90	AT4042/90

A42-570X	A42-592X A42-593X	A51-570X	A51-590X A51-591X
AT1215	AT1216 or AT1470	AT1237	AT1236 or AT1480
42 cm	42 cm	51 cm	51 cm
AT1052	AT1052	AT1052	AT1052
3122 138 99850	3122 138 99850	3122 138 56070	3122 138 56070
AT4043/90	AT4043/90	AT4043/90	AT4043/90
–	AT4043/29	–	AT4043/29
–	AT4043/76	–	AT4043/76
AT3010/90L or /110LL	–	AT3010/90 L or /110LL	–
–	TS561	–	TS561
–	AT4043/81	–	AT4043/81
–	AT2077/80	–	AT2077/80
AT2079/10	–	AT2079/10	–
AT4042/04A or AT4042/91	AT4042/91	AT4042/04A or AT4042/91	AT4042/91

A56-540X AT1860 56 cm		A66-540X AT1870 66 cm	
3122 138 55220 or 3122 138 56320		3122 138 55230 or 3122 138 56310	
AT4043/55 or /90	AT4043/55 or 90	AT4043/55 or /90	AT4043/55 or /90
	AT4043/29	–	AT4043/29
AT3010/110LL	–	AT3010/110LL	–
TS561	TS561	TS561	TS561
–	AT4043/46	–	AT4043/46
AT4043/100	AT4043/100	AT4043/100	AT4043/100
AT4043/60	AT4043/60	AT4043/60	AT4043/60
–	AT4043/16A	–	AT4043/16A
AT2077/81, /83 or /88	AT2077/82	AT2077/81, /83 or /88	AT2077/82
–	AT4043/96	–	AT4043/96
–	AT4043/53A	–	AT4043/53A
AT4042/08A or AT4042/90	AT4042/90	AT4042/08A or AT4042/90	AT4042/90

RECOMMENDED COMBINATIONS FOR COLOUR DATA GRAPHIC DISPLAYS

	line frequency			
	16 kHz			24 kHz
	medium resolution	high resolution		high resolution
	14 inch	10 inch	14 inch	14 inch
Colour monitor tube assembly	M34EAQ00X01 M34EAQ10X01	250ARB22N-TC03 (M25-100X/N/4130)	M37-103X/N/1020 M37-108X/N/1020 M37-118X/N/1020	M37-103X/N/1020 M37-108X/N/1020 M37-118X/N/1020
Inductance of line deflection coils	1,9 mH	1,93 mH	1,2 mH	1,2 mH
Line output transformer	AT2077/81	AT2077/81	AT2077/81	AT2077/32
Linearity control unit	AT4042/34	AT4042/04A or AT4042/08A	AT4042/08A	AT4042/08A
Driver transformer	AT4043/01	AT4043/01	AT4043/01	AT4043/01
Shift transformer	–	AT4043/09 or AT4043/09B	AT4043/09 or AT4043/09B	AT4043/09 or AT4043/09B
Dynamic focusing transformer	–	–	–	–
Bridge coil	AT4043/68	AT4043/68	AT4043/68	AT4043/68

line frequency			
32 kHz		45 kHz	64 kHz
high resolution		high resolution	high resolution
14 inch	20 inch	14 inch	20 inch
M37-103X/N/1030 M37-108X/N/1030 M37-118X/N/1030	M51-107X/N/7171	M37-103X/N/1050 M37-108X/N/1050 M37-118X/N/1050	M48JFJ58X32
0,3 mH	0,71 mH	0,14 to 0,16 mH	0,18 mH
AT2077/32	AT2077/32	AT2077/85 or 85A*	AT2077/60 or 85A*
AT4042/32A	AT4042/32A	AT4042/32A	AT4042/32A
AT4043/01	AT4043/01	AT4043/87	2 x AT4043/87 1 x AT4043/01
AT4043/09	AT4043/09	AT4043/09	AT4043/09
–	AT4043/67	–	–
AT4043/68	AT4043/68	AT4043/13	AT4043/08A

* Separate EHT generation.

RECOMMENDED COMBINATIONS FOR MONOCHROME DATA GRAPHIC DISPLAYS

Design designation		C6E, C6E-FS	C9, C9-FS	C64, C64-FS	C64, C64-FS	C64-LITZE
Deflection angle		90	90	110	110	110
Format		landscape	landscape	landscape	portrait	landscape
Tube	9-inch	M24-306	–	–	–	–
	12-inch	M31-340	M31-340	M31-326	–	–
	12-inch FS	M29EAA	M29EAA	–	–	–
	14-inch	M32EAA	M32EAA	–	–	–
	14-inch F	–	M32EBL	–	–	–
	15-inch	–	–	M38-328	M38-328	–
	15-inch FS	–	–	M36EAB	M36EAB	–
	17-inch	–	–	M41EAA	–	M41EAA
	20-inch	–	–	M47EAA	–	M47EAA
Deflection unit	9-inch	AT1078/09P	–	–	–	–
	12-inch	AT1078/02P	AT1078/01T	AT1039/03	–	–
	12-inch FS	AT1078/02P	AT1078/10	–	–	–
	14-inch	AT1078/34P	AT1078/04	–	–	–
	14-inch F	–	AT1078/11	–	–	–
	15-inch	–	–	AT1039/01	AT1039/00	–
	15-inch FS	–	–	AT1039/21	AT1039/20	–
	17-inch	–	–	AT1039/09	–	AT1037/01
	20-inch	–	–	AT1039/09	–	AT1037/01
Line output transformer	1)	AT2140/16*	–	–	–	–
	2)	AT2140/17*	AT2250/15*	AT2077/84**	AT2077/84**	AT2077/84**
Linearity control		AT4042/08A	AT4042/08A	AT4042/33A	AT4042/33A	AT4042/33A
Line driver transformer		–	–	AT4043/64	AT4043/64	AT4043/64
Dynamic focus transformer		–	AT4043/67▲	–	–	–
Shift transformer		–	–	AT4043/29	AT4043/29	AT4043/29
Width control		AT4044/39D	AT4044/39N	AT4044/35	AT4044/35	AT4044/35
Characters per line		40 - 80	80	100 - 132	100 - 132	100 - 132
Supply (V)		12	12	30 - 120	30 - 120	30 - 120
EHT (kV)		12 - 13	13	17 - 20	17	18
Line frequency (kHz)	1)	15 - 22	22 - 30	15 - 50	15 - 70	15 - 70
	2)	22 - 30	30 - 40			

* EHT cable, catalogue number 3122 137 63920, to be ordered separately.
** EHT cable, catalogue number 3122 137 63370, to be ordered separately.
▲ For flat square or flat application.

Design designation		C52	C53, C54	C55	C71, C72
Deflection angle		70°	90°	90°	70°
Format		portrait	landscape, portrait	landscape, portrait	landscape
Tube	7-inch	–	–	–	M17-140
	7-inch	–	–	–	M17-220
	7-inch	–	–	–	M17-230
	15-inch	M38-200	–	–	–
	20-inch	–	227M51	230M51	–
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
Deflection unit	7-inch	–	–	–	AT1071/07
	7-inch	–	–	–	C12705
	15-inch	AT1991	–	–	–
	20-inch	–	AT1991	–	–
	20-inch	–	–	AT1991	–
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
	–	–	–	–	–
Line output transformer	1)	AT2077/84**	AT2077/84**	AT2077/84**	AT2077/84**
	2)	–	–	–	–
Linearity control		–	AT4042/31L	AT4042/31L	AT4042/08A or/33A
Line driver transformer		AT4043/87	AT4043/64	AT4043/30L	AT4043/64
EHT stabiliser		–	AT4041/52	AT4041/52	–
Shift transformer		–	AT4043/29	–	AT4043/29
Width control		–	–	–	–
Display capability		4 x 10^6 pixels	4 x 10^6 pixels	4 x 10^6 pixels	2 x 10^6 pixels max
Supply (V)		120	100 - 150	100 - 150	20 - 105
EHT (kV)		17	20	20	15
Line frequency (kHz)	1)	125	64 - 125	64 - 125	15 - 70
	2)				

DEGAUSSING COILS

Screen diagonal of picture tube	10 inch 11 inch 12 inch	14 inch	16 inch	20 inch	20 inch	20 inch 22 inch	26 inch
Degaussing system	single coil	single coil	single coil	single coil	double coil	double coil	double coil
Mounting	twisted loop	asym-metrical	asym-metrical	asym-metrical	top + bottom	top + bottom	top + bottom
Ampere-turns	500	600	600	700	2 x 300	2 x 300	2 x 300
Catalogue number of degaussing coil **3122 138 .....**							
single insulation		**99840**	**99850**	**56070**		**55220**	**55230**
double insulation	**56310**	**51860**	**51850**	**56170**	**55920**	**56320**	**56310**
Diameter	435 mm	300 mm	330 mm	435 mm	385 mm	385 mm	435 mm
Mains voltage	220/240 V	220/240 V	220/240 V	220/240 V	110/220 V	110/220 V	110/220 V
Resistance	8,6 Ω*	21,7 Ω	26,3 Ω	19,5 Ω	11,4 Ω	11,5 Ω	8,6 Ω
Number of turns	52	97	107	120	65	49	52

* Resistor 10 Ω to be connected in series.

LINE OUTPUT TRANSFORMERS

Replaced by AT2077/81

DIODE-SPLIT LINE OUTPUT TRANSFORMER

- Three-layer EHT coil, focus tap for hi-bi
- Aluminium foil primary winding
- Piggy-back type
- For Data Graphic Displays

QUICK REFERENCE DATA

For transistor line output stages

deflection angle	110°	90°
I_{eht}	max. 1,5 mA	max. 1 mA
EHT	25 kV	25 kV
$R_{i(eht)}$	1,86 MΩ	2,45 MΩ
I_{p-p} deflection (incl. 6% overscan)	5,3 A	2,85 A
Supply voltage (V_B')	151 V	151,5 V
Supply current ($I_{average}$) at	477 mA (I_{eht} = 1,5 mA)	291 mA (I_{beam} = 1 mA)
Voltages of primary windings *	V_p = + 114, + 520 + 1060, + 1090	+ 112, + 515 + 1050, + 1080
Voltages of auxiliary windings	V_p = −280, −149, + 64, + 227, + 326 picture tube heater voltage	−275, −146, + 62 + 223, + 322

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 110° and 90° colour picture tubes in transistor equipped receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA).
It is intended for use in conjunction with:

deflection angle	110°	90°
– deflection unit	AT1870, AT1860, AT1850	AT1235/00
– bridge coil	AT4043/68	AT4043/68
– linearity control unit	AT4042/08A or /30	AT4042/04A or /90
– line output transistor	BU508A	BU508A

– screened EHT cable with a length of 1 m; catalogue number 3122 137 58254.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube U-cores, screwed together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The EHT winding is moulded in flame retarding polyester, meeting the self-extinguishing requirements of IEC 65, para. 14.4 and UL492, para. 280-SE1. The transformer has 2 M3 screw-studs for mounting.** External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

* DC component on these pulses is V_B' (see Fig. 3).

** For mounting on the printed-wiring board a washer of 20 mm in diameter has to be used. Tightening torque on printed-wiring board: 500 + 100 mNm.

MECHANICAL DATA

Dimensions in mm

Outlines

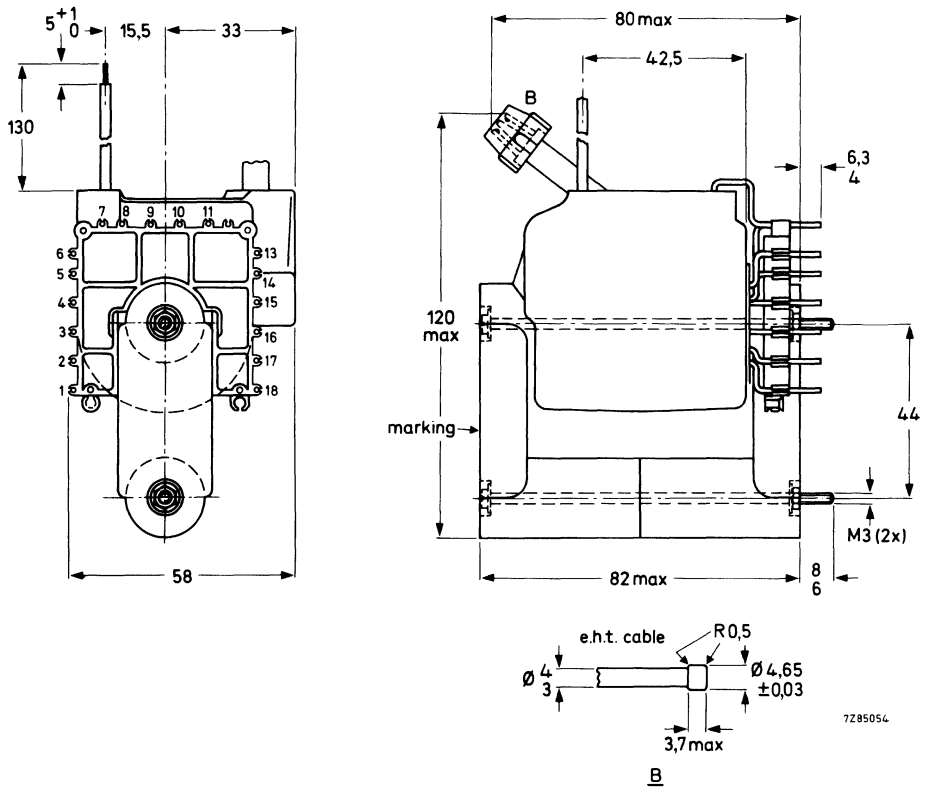


Fig. 1.

Solderability in accordance with IEC 68, Test T

MOUNTING

The transformer may be mounted on either a printed-wiring board or, under certain conditions, on a metal chassis. Two securing studs (M3) are provided. The fit of the connecting and the mounting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 2.

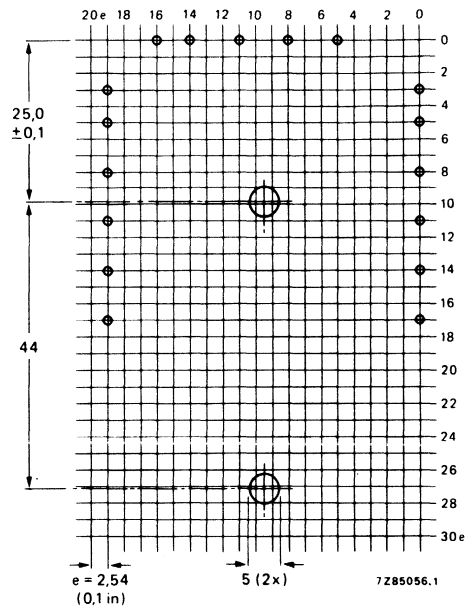


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side). Grid hole diameter 1,3 ± 0,1 mm.

Whether the transformer is board or chassis mounted, **the core must be earthed.**

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and **neighbouring conductive flat surfaces** must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA with 110° COLOUR PICTURE TUBES

EHT supply	I_{eht}	mA	0,03	1	1,5
	EHT	kV	25,0	23,2	22,2
	$R_{i(eht)}$	MΩ		−1,86−	
Power supply	V_B	V	158,5	158,5	158,5
	V_B'	V	151	147,2	145,0
	$I_{average}$	mA	259	397	477
Output transistor	V_{CEM}	V	1240	1210	1190
	+ I_{CEM}	A	3,5	3,6	3,65
Deflection	I_{p-p}	A	5,3	5,2	5,15
	$t_{flyback}$	µs	11,4	–	–
	Overscan	%	6	–	6,5
V_{focus}		kV	8,6	8,1	7,8
Auxiliary windings: picture tube heater voltage V_{3-1} (rms)		V	9,04	8,74	8,54
peak voltages at					
pin 2	V_2	V	−280		
pin 6	V_6	V	−149		
pin 4	V_4	V	+64		
pin 11	V_{11}	V	+227		
pin 8	V_8	V	+326		
pin 9	V_9 *	V	+114		
pin 14	V_{14} *	V	+520		
pin 16	V_{16} *	V	+1060		
pin 17	V_{17} *	V	+1090		

Above measurements using circuits of Figs 3, 4a and 4b.

An alternative 3-diode modulator circuit is shown in Fig. 4c.

* DC component on these pulses is V_B'.

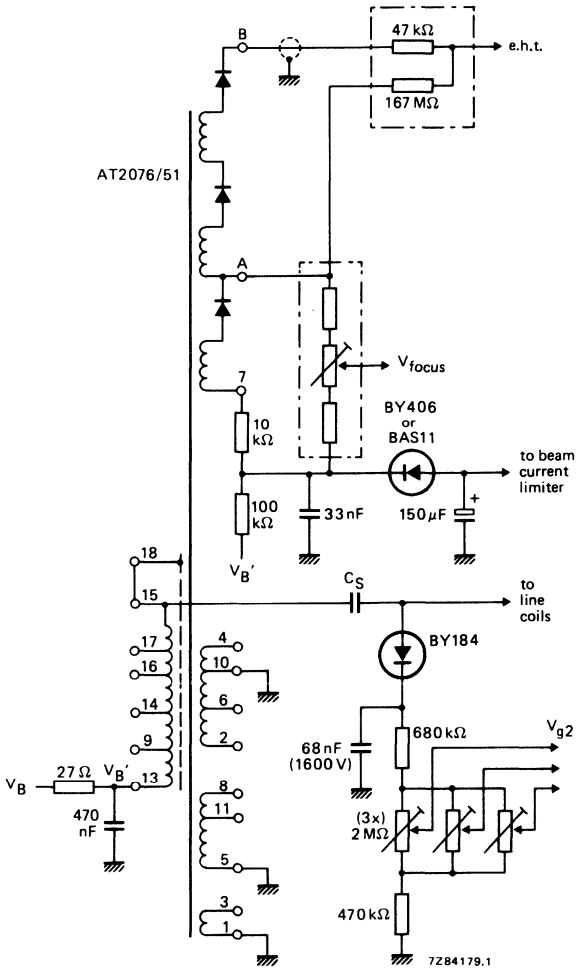


Fig. 3 Circuit diagram of transformer, and EHT, focus voltage and V_{g2} circuits.

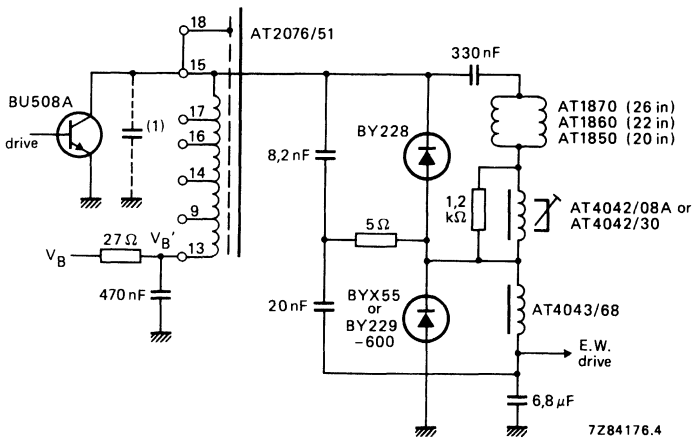


Fig. 4a Diode modulator with split tuning.

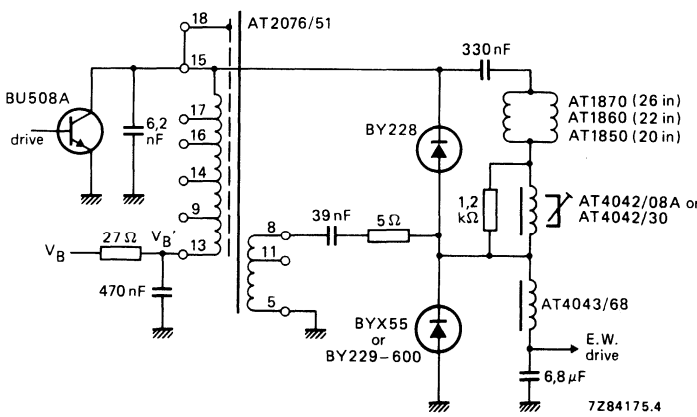


Fig. 4b Diode modulator with tap on transformer.

(1) Transformer stray capacitance.

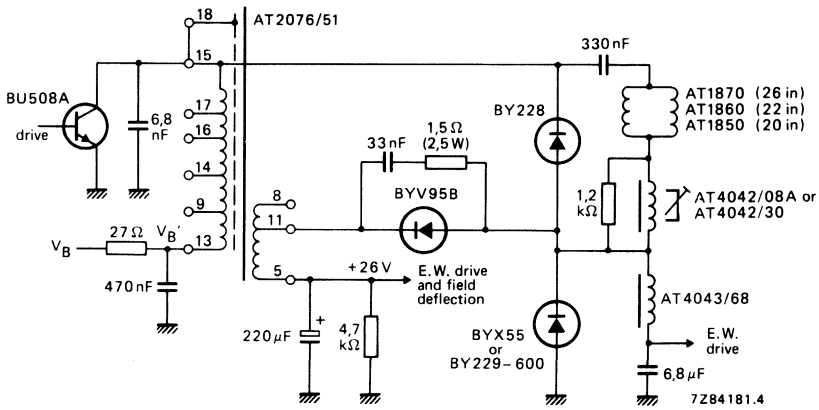


Fig. 4c Three-diode modulator circuit.

ELECTRICAL DATA with 90° COLOUR PICTURE TUBES.

			Figs 3 and 5a V_B = 154,5 V		Figs 3 and 5b V_B = 134,3 V	
EHT supply	I_{eht}	mA	0,03	1	0,03	1
	EHT	kV	24,55	22,1	25,0	22,5
	$R_{i(eht)}$	MΩ	–2,45–		–2,5–	
Power supply	V_B'	V	151,5	148,1	130,0	126,1
	$I_{average}$	mA	168	291	226	375
Output transistor	V_{CEM}	V	1220	1150	1060	995
	+ I_{CEM}	A	2,0	2,1	2,4	2,5
Deflection	I_{p-p}	A	2,85	2,7	2,9	2,75
	$t_{flyback}$	µs	11,45		11,45	
	Overscan	%	6	7,5	6	7,5
V_{focus}		kV	8,45	7,7	8,6	7,8
Auxiliary windings: picture tube heater voltage V_{3-1} (rms)		V	9,13	8,7	9,30	8,79
peak voltages at						
pin 2	V_2	V	–275		–280	
pin 6	V_6	V	–146		–149	
pin 4	V_4	V	+62		+64	
pin 11	V_{11}	V	+223		+227	
pin 8	V_8	V	+322		+326	
pin 9	V_9 *	V	+112		+114	
pin 14	V_{14} *	V	+515		+520	
pin 15	V_{15} *	V			+1240	
pin 16	V_{16} *	V	+1050			
pin 17	V_{17} *	V	+1080		+1090	

Above measurements using circuits of Figs 3, 5a and 5b.

* D.C. component on these pulses is V_B'.

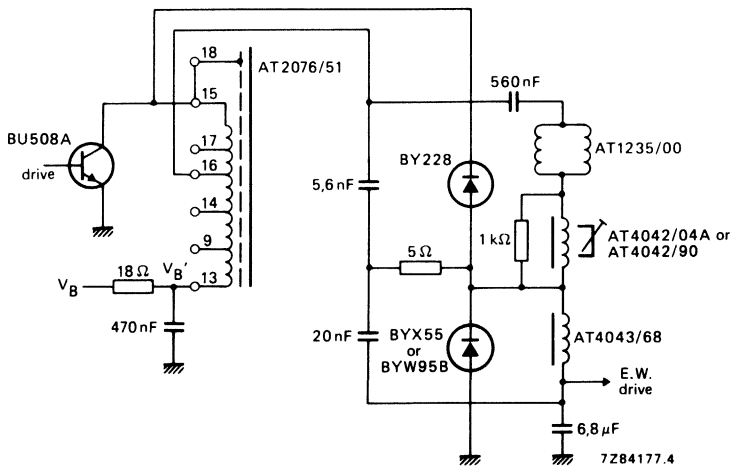


Fig. 5a Diode modulator, V_B = 154,5 V.

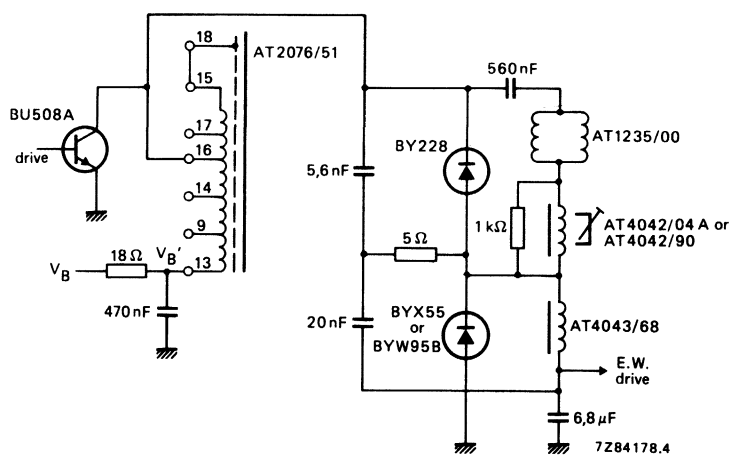


Fig. 5b Diode modulator, V_B = 134,3 V.

Replaced by AT2077/84

DIODE-SPLIT LINE OUTPUT TRANSFORMER

- Three-layer EHT coil
- Aluminium foil primary winding
- Piggy-back type
- For Data Graphic Displays.

QUICK REFERENCE DATA

For transistor line output stages

deflection angle	110°	90°
I_{eht}	max. 1,5 mA	max. 1 mA
EHT	25 kV	25 kV
$R_{i(eht)}$	1,86 MΩ	2,45 MΩ
I_{p-p} deflection (incl. 6% overscan)	5,3 A	2,85 A
Supply voltage (V_B')	151 V	151,5 V
Supply current ($I_{average}$) at	477 mA (I_{eht} = 1,5 mA)	291 mA (I_{beam} = 1 mA)
Voltages of primary windings *	V_p = +114, +520 +1060, +1090	+112, +515 +1050, +1080
Voltages of auxiliary windings	V_p = −280, −149, +64, +227, +326 picture tube heater voltage	−275, −146, +62 +223, +322

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 110° and 90° colour picture tubes in transistor equipped receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA).

It is intended for use in conjunction with:

deflection angle	110°	90°
– deflection unit	AT1270/00, AT1260, AT1250	AT1235/00
– bridge coil	AT4043/68	AT4043/68
– linearity control unit	AT4042/08 or /30	AT4042/02 or /90
– line output transistor	BU508A	BU508A

– screened EHT cable with a length of 1 m; catalogue number 3122 137 58254.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube U cores, screwed together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The EHT winding is moulded in flame retarding polyester, meeting the self-extinguishing requirements of IEC65, para, 14.4 and UL492, para. 280-SE1. The transformer has 2 M3 screw-studs for mounting. ** External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

* DC component on these pulses is V_B' (see Fig. 3).

** For mounting on the printed-wiring board a washer of 20 mm in diameter has to be used. Tightening torque on printed-wiring board: 500 + 100 mNm.

MECHANICAL DATA

Dimensions in mm

Outlines

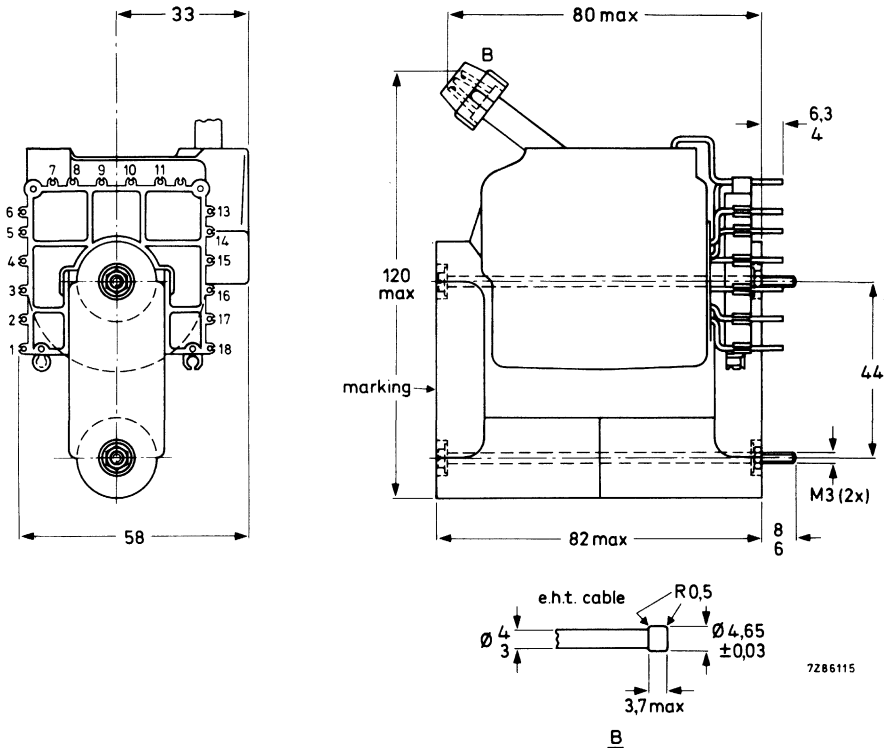


Fig. 1.

Solderability in accordance with IEC68, Test T

MOUNTING

The transformer may be mounted on either a printed-wiring board or, under certain conditions, on a metal chassis. Two securing studs (M3) are provided. The fit of the connecting and the mounting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 2.

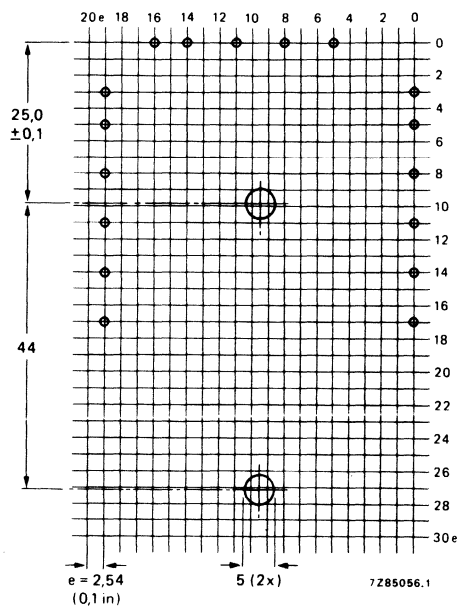


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side). Grid hole diameter 1,3 ± 0,1 mm.

Whether the transformer is board or chassis mounted, **the core must be earthed.**

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA with 110° COLOUR PICTURE TUBES

EHT supply	I_{eht}	mA	0,03	1	1,5
	EHT	kV	25,0	23,2	22,2
	$R_{i(eht)}$	MΩ		−1,86−	
Power supply	V_B	V	158,5	158,5	158,5
	V_B'	V	151	147,2	145,0
	$I_{average}$	mA	259	397	477
Output transistor	V_{CEM}	V	1240	1210	1190
	$+I_{CEM}$	A	3,5	3,6	3,65
Deflection	I_{p-p}	A	5,3	5,2	5,15
	$t_{flyback}$	μs	11,4	–	–
	Overscan	%	6	–	6,5
V_{focus}		kV	8,6	8,1	7,8
Auxiliary windings: picture tube heater voltage V_{3-1} (r.m.s.)		V	9,04	8,74	8,54
peak voltages at					
pin 2	V_2	V	−280		
pin 6	V_6	V	−149		
pin 4	V_4	V	+64		
pin 11	V_{11}	V	+227		
pin 8	V_8	V	+326		
pin 9	V_9*	V	+114		
pin 14	V_{14}*	V	+520		
pin 16	V_{16}*	V	+1060		
pin 17	V_{17}*	V	+1090		

Above measurements using circuits of Figs 3, 4a and 4b.

An alternative 3-diode modulator circuit is shown in Fig. 4c.

* DC component on these pulses is V_B'.

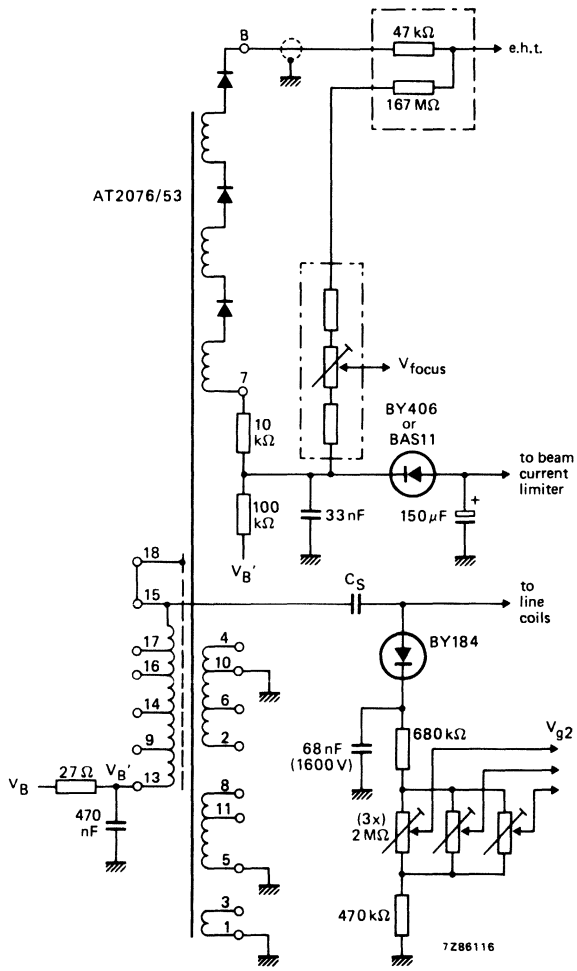


Fig. 3 Circuit diagram of transformer, and EHT focus voltage and V_{g2} circuits.

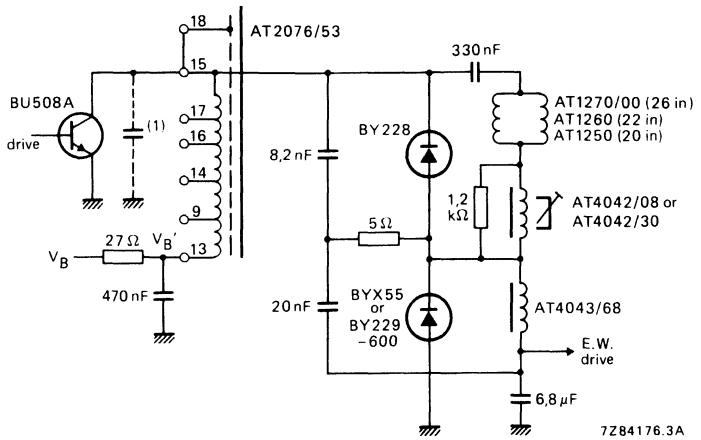


Fig. 4a Diode modulator with split tuning.

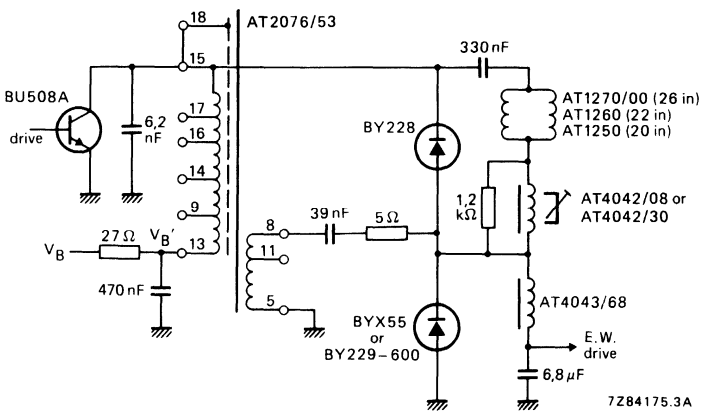


Fig. 4b Diode modulator with tap on transformer.

(1) Transformer stray capacitance.

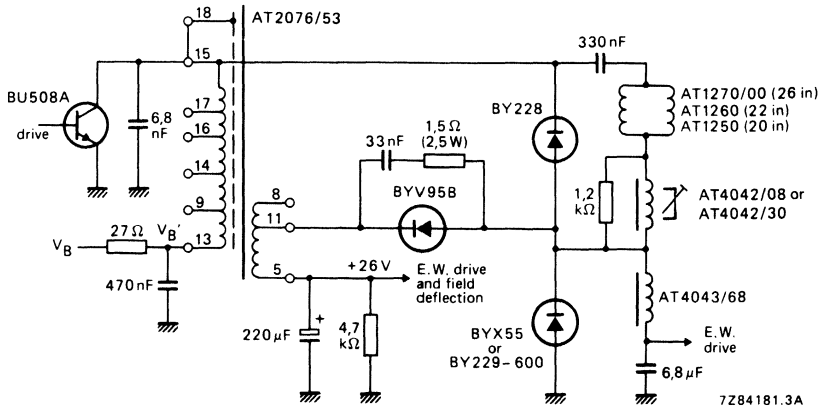


Fig. 4c Three-diode modulator circuit.

ELECTRICAL DATA with 90° COLOUR PICTURE TUBES

			Figs 3 and 5a V_B = 154,5 V		Figs 3 and 5b V_B = 134,3 V	
EHT supply	I_{eht}	mA	0,03	1	0,03	1
	EHT	kV	24,55	22,1	25,0	22,5
	$R_{i(eht)}$	MΩ	–2,45–		–2,5–	
Power supply	V_B'	V	151,5	148,1	130,0	126,1
	$I_{average}$	mA	168	291	226	375
Output transistor	V_{CEM}	V	1220	1150	1060	995
	$+I_{CEM}$	A	2,0	2,1	2,4	2,5
Deflection	I_{p-p}	A	2,85	2,7	2,9	2,75
	$t_{flyback}$	μs	11,45		11,45	
	Overscan	%	6	7,5	6	7,5
V_{focus}		kV	8,45	7,7	8,6	7,8
Auxiliary windings: picture tube heater voltage V_{3-1} (rms)		V	9,13	8,7	9,30	8,79
peak voltages at						
pin 2	V_2	V	–275		–280	
pin 6	V_6	V	–146		–149	
pin 4	V_4	V	+62		+64	
pin 11	V_{11}	V	+223		+227	
pin 8	V_8	V	+322		+326	
pin 9	V_9*	V	+112		+114	
pin 14	V_{14}*	V	+515		+520	
pin 15	V_{15}*	V			+1240	
pin 16	V_{16}*	V	+1050			
pin 17	V_{17}*	V	+1080		+1090	

Above measurements using circuits of Figs 3, 5a and 5b.

* DC component on these pulses is V_B'.

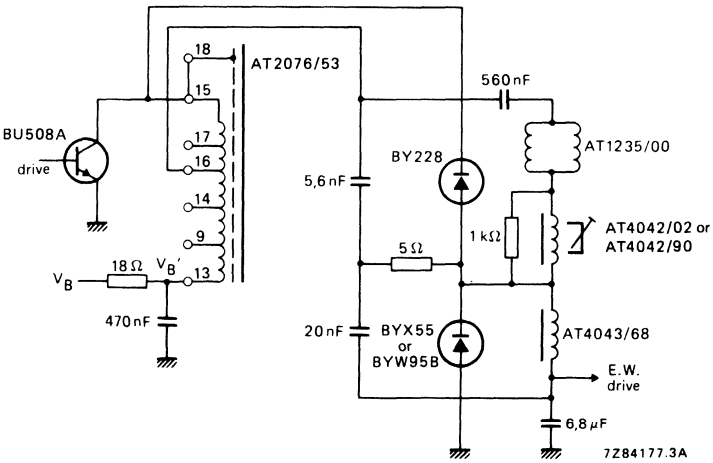


Fig. 5a Diode modulator, V_B = 154,5 V.

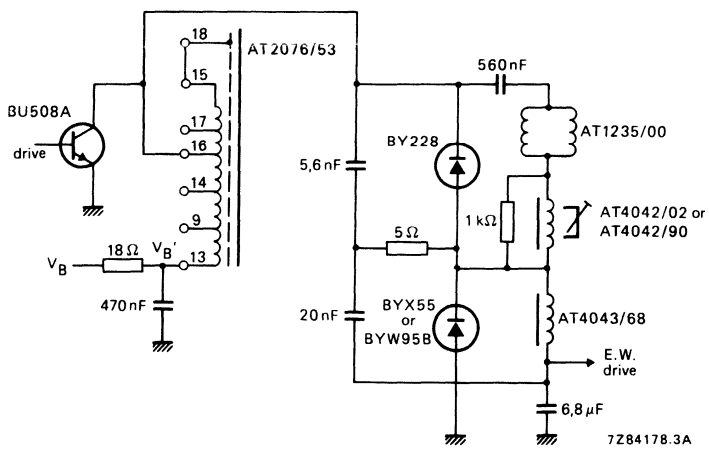


Fig. 5b Diode modulator, V_B = 134,3 V.

Replaced by AT2077/84

UNIVERSAL DIODE-SPLIT LINE OUTPUT TRANSFORMER

- For monochrome Data Graphic Displays
- Three-layer EHT coil
- Aluminium foil primary winding
- Piggy-back type

QUICK REFERENCE DATA

For transistor line output stages, deflection angle 110°, scan frequency 32 kHz.

I_{eht}	max. 0,5	mA
EHT	17	kV
$R_{i(eht)}$	1,3	MΩ
I_{p-p} deflection	3,8	A
Supply voltage (V_B)	129	V
Supply current ($I_{average}$)	210	mA
Flyback time	5,4	μs
Auxiliary voltages	+6 V, −6 V, +11 V, +26 V, +41 V, +52 V, −150 V, heater voltage 9,8 V (rms)	

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 38 cm (15 in)/110° monochrome data graphic display tubes, at line scan frequencies of 15,625 kHz, 32 kHz or 64 kHz. It is intended for use in conjunction with:

- deflection unit AT1039/00 (for 'portrait' scan mode, scan frequency 64 kHz) or AT1039/01 (for 'landscape' scan mode, scan frequency 15,625 kHz or 32 kHz);
- line output transistor BU508A;
- screened EHT cable, length 1 m, catalogue number 3122 137 58254.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube U-cores, screwed together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The EHT winding is moulded in flame retarding polyester, meeting the self-extinguishing requirements of IEC 65, para. 14.4 and UL492, para. 280-SE1. The transformer has 2 M3 screw-studs for mounting.* External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

* For mounting on the printed-wiring board a washer of 20 mm in diameter has to be used. Tightening torque on printed-wiring board: 500 + 100 mNm.

MECHANICAL DATA

Dimensions in mm

Outlines

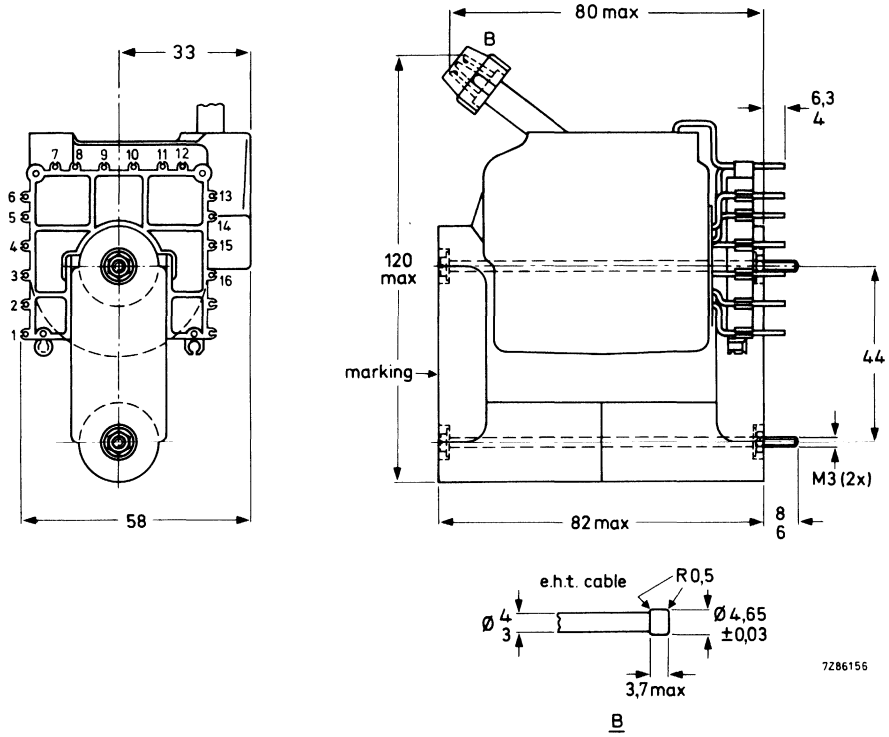


Fig. 1.

Mass approx. 500 g

Solderability in accordance with IEC 68, Test T

MOUNTING

The transformer may be mounted on either a printed-wiring board or, under certain conditions, on a metal chassis. Two securing studs (M3) are provided. The fit of the connecting and the mounting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 2.

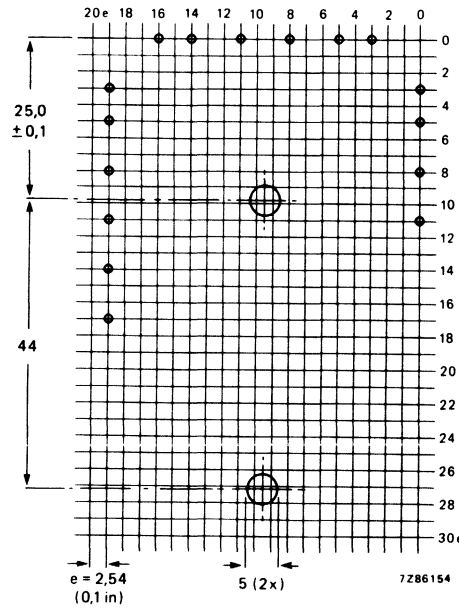


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side). Grid hole diameter 1,3 ± 0,1 mm.

Whether the transformer is board or chassis mounted, **the core must be earthed.**

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained:

From the e.h.t. coil radially, 10 mm.
From the e.h.t. coil axially, 10 mm.

Sharp edges of conductive parts must have greater distances than given above.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA

Scan frequency		Hz	15625 (Fig. 3)		31250 (Fig. 4)		62500 (Fig. 5)	
EHT supply	I_{eht}	mA	0,035	0,55	0,035	0,55	0,035	0,55
	EHT	kV	17,3	16,8	17,85	17,25	17,6	16,6
	$R_{i(eht)}$	MΩ	1,1		1,3		2,0	
Power supply	V_B	V	68,5	68,5	129	129	100	100
	$I_{average}$	mA	385	530	210	285	310	410
Output transistor	V_{CEM}	V	560		1120		780	
Deflection	I_{p-p}	A	3,95	3,95	3,75	3,75	5,80	5,80
	$t_{flyback}$	μs	11,2	11,2	5,4	5,4	3,0	3,0
Tuning capacitor	C1	nF	20		2,2		1,6	
Auxiliary windings:								
heater voltage (rms)	V_{4-6}	V	9,53		9,83		9,92	
voltages (d.c.)* at								
pin 15 (V_{g2}, load 1MΩ)	V_{15}	V	+757		+842		+773	
pin 1 **	V_1	V	+49,7		+49,7		+55,4	
pin 3 **	V_3	V	+38,5		+38,5		+42,9	
pin 5 **	V_5	V	+24,5		+24,5		+27,3	
pin 2 (V_{g1}, load 10 kΩ)	V_2	V	−156		−166		−155	
pin 8 **	V_8	V	+10,5		+10,5		+11,8	
pin 11**	V_{11}	V	+6,4		+6,4		+7,15	
pin 12**	V_{12}	V	−6,4		−6,4		−7,15	

* Pins 9 and 10 connected to earth.
** Load 1 kΩ.

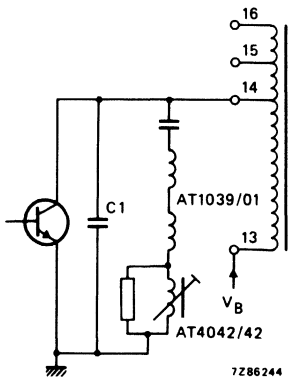


Fig. 3.

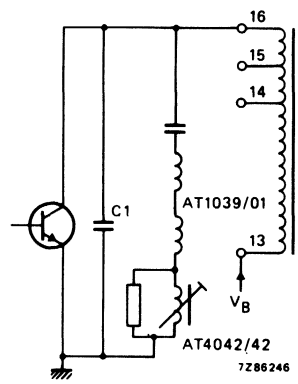


Fig. 4.

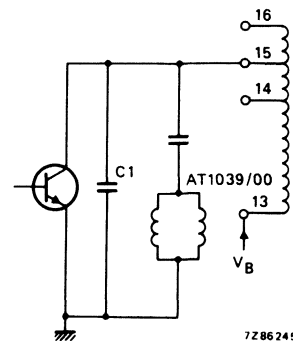


Fig. 5.

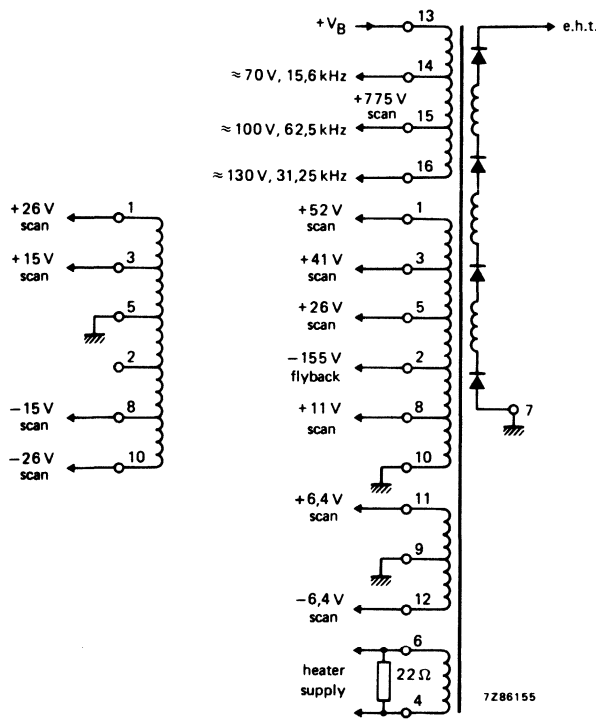


Fig. 6 Application circuit.

Replaced by AT2077/60

ASYNCHRONOUS POWER PACK TRANSFORMER

- For colour Data Graphic Displays
- Mains isolation
- Aluminium foil primary winding and screens

QUICK REFERENCE DATA

EHT	25 kV
I_{eht}	max. 1,6 mA
$R_{i(eht)}$	1 MΩ
Supply	
voltage (DC)	+300 V
current (I_{eht} = 1,5 mA)	400 mA
Voltages of auxiliary windings	−9 V, +20 V, +31 V, +42 V, +150 V, +200 V, +225 V

APPLICATION

This transformer has been designed for use as a mains isolated supply transformer in colour monitors. It provides the required stabilized auxiliary voltages including an EHT supply with low internal resistance. The transformer is suitable for 90° and 110° deflection systems using 25 kV EHT. It is intended for use in conjunction with:

- mains filter choke AT4043/55;
- mains transformer TS561/2;
- line driver transformer AT4043/87;

and for 110° tubes:

- deflection unit AT1870; AT1860 and AT1850;
- line choke AT4043/53;
- linearity control unit AT4042/08A;
- line driver transformer AT4043/87 (if separate drive of line output stage is required);

and for 90° tubes:

- deflection unit AT1235/00;
- line choke AT4043/53;
- linearity control unit AT4042/04A;

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U-cores screwed together. The primary winding of aluminium foil with screens and the EHT winding with incorporated diodes are moulded in flame retarding polyester.

The device is provided with two securing M3 studs. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 3).

MECHANICAL DATA

Dimensions in mm

Outlines

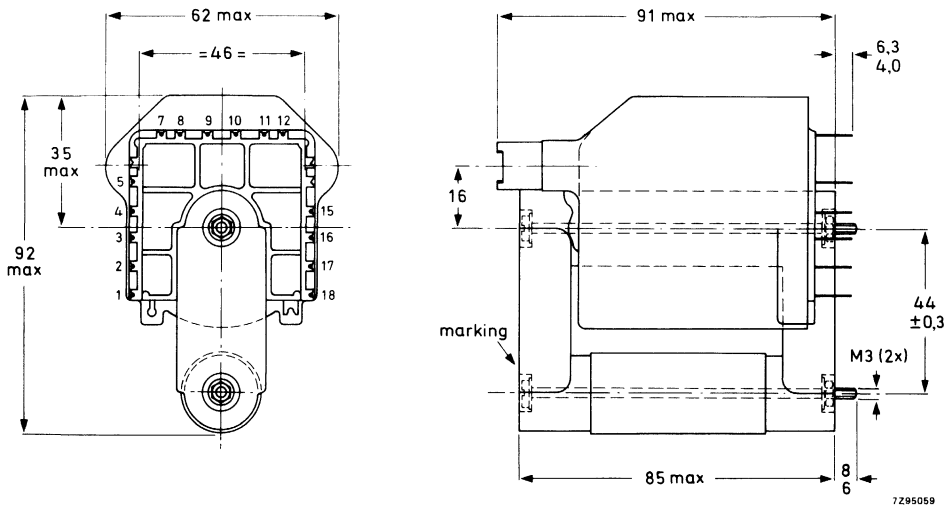


Fig. 1 Transformer AT2076/60.

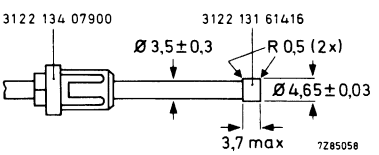


Fig. 2 Plug for connection to EHT.

Mass 530 g

Solderability max. 240 °C, max. 2,5 s

Mounting

The transformer may be mounted on either a printed-wiring board or on a metal chassis. Two securing studs (M3) are provided. For mounting on a printed-wiring board, a washer of 20 mm outer diameter has to be used; the tightening torque on the printed-wiring board is 500 + 100 mNm. The fit of the connecting pins and the studs in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 3.

Whether the transformer is board or chassis mounted, *the core must be earthed.*

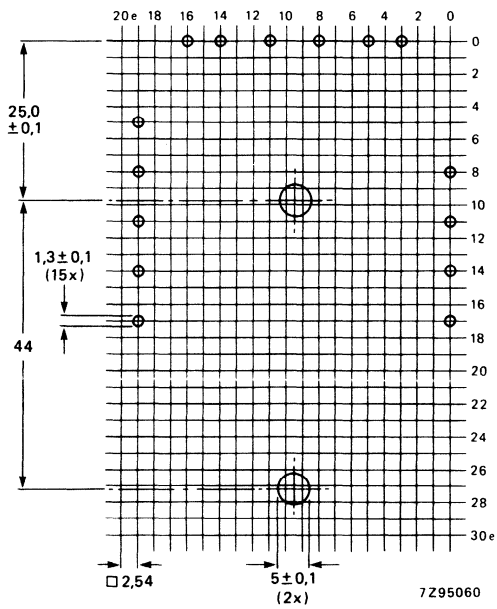


Fig. 3 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The ambient temperature in the set should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- maximum output power;
- maximum supply voltage;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it may be necessary to provide an ample cool air flow around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained (it should be noted that edges of conductive parts must have a greater distance):

from the EHT coil, radially 10 mm, axially 10 mm.

The transformer, and the leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA (measured in circuit of Fig. 4, mains voltage 220 V)

EHT supply	I_{eht}	mA	0,1	1,6
	e.h.t.	kV	25	23,7
	$R_{i(eht)}$	MΩ	0,9	
Power supply	V_B *	V	300	297
	$I_{average}$	mA	270	390
Supply transistor (BU208A)	V_{CEM}	V	1000	1000
	+ I_{CM}	A	1,9	2,5
Flyback time		µs	9,5	10,5
Auxiliary windings (typical values **):				
picture tube heater voltage	V_1	V	−9 (6,5 W)	
drive winding	$V_{15\text{-}16}$	V	+100	
field time base	V_9	V	+42 (13 W)	
line time base	V_{10}	V	+150 (20 W)	
	V_4	V	+200 (22 W)	
video output	V_8	V	+225 (9 W)	
audio output	V_2	V	+31 (5 W)	
small signal output	V	V	+20 (10 W)	

* Stabilization range V_B from 215 V d.c. (165 V mains) to 350 V d.c. (265 V mains).

** Values apply to voltages after rectification, and pins 3, 11 and 12 connected to earth.

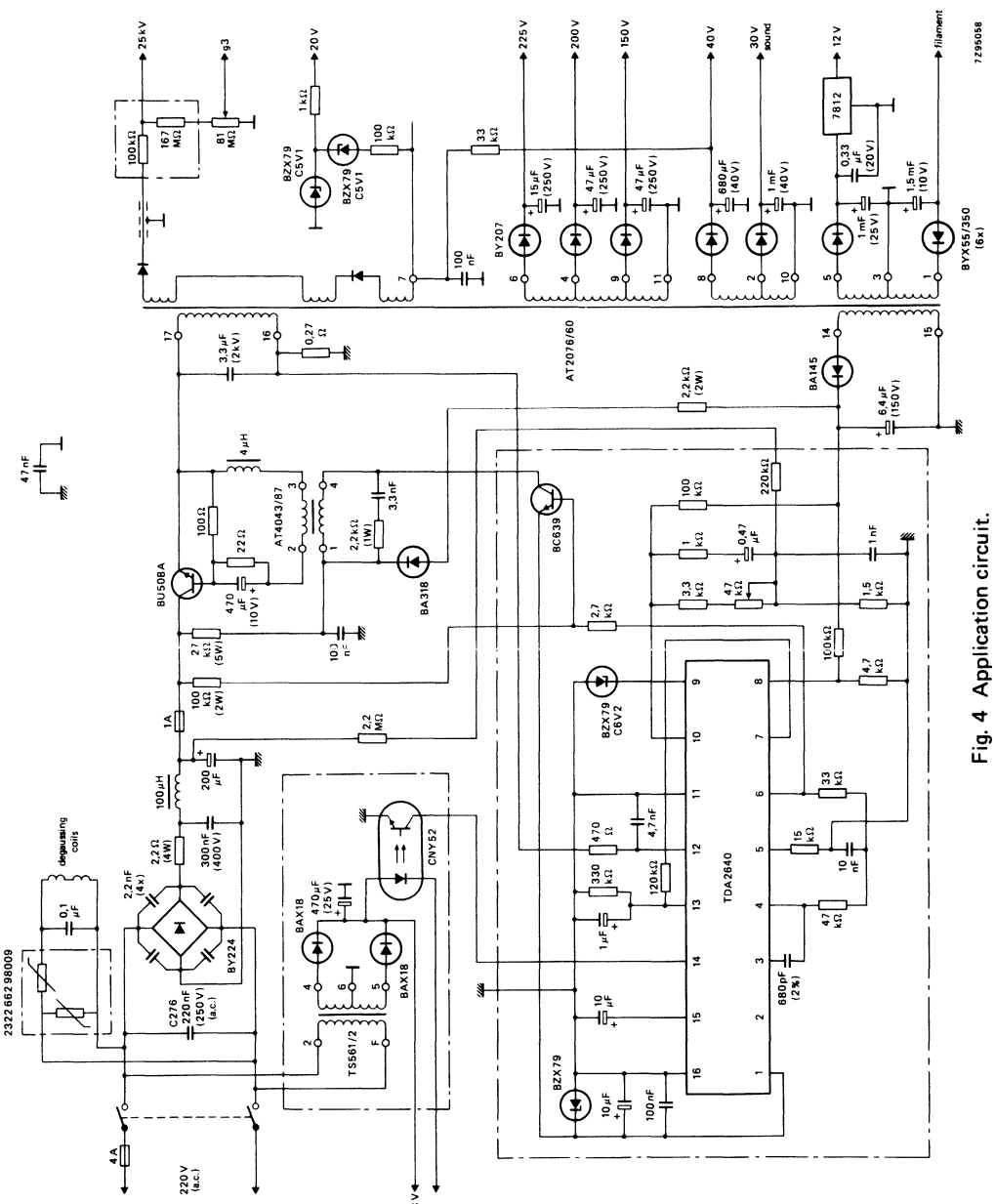


Fig. 4 Application circuit.

SYNCHRONOUS POWER PACK TRANSFORMER

for colour television

- Piggy-back type
- Mains isolation
- Aluminium foil primary winding and screens

QUICK REFERENCE DATA

EHT	25 kV ± 3%
I_{eht}	max. 1,6 mA
$R_{i(eht)}$	1 MΩ
V_X (see Fig. 3)	6,25 kV ± 3%
Supply	
voltage DC	+295 V
current (I_{eht} = 1,6 mA)	450 mA
Voltages of auxiliary windings	
rms	4,3 V, 8 V
DC	7,5 V, 18 V, 25 V, 33 V, 150 V, 205 V

APPLICATION

This transformer has been designed for use as a mains isolated supply transformer in colour television sets. It provides the required stabilized auxiliary voltages including an EHT supply with low internal resistance. The transformer is suitable for 90° and 110° deflection systems using 25 kV EHT. It is intended for use in conjunction with:

- mains filter choke AT4043/55;
- mains transformer TS561/2;
- current sensing transformer AT4043/46;
- driver transformer AT4043/45;
- supply choke AT4043/52;

and for 110° 20, 22 and 26 inch tubes:

- deflection unit AT1870, AT1860, and AT1850;
- line choke AT4043/53;
- linearity control unit AT4042/08A or AT4042/30;
- line driver transformer AT4043/87 (if separate drive of line output stage is required);

and for 90° 20 inch tubes:

- deflection unit AT1235/00;
- line choke AT4043/53;
- linearity control unit AT4042/04A or AT4042/90.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U-cores screwed together. The primary winding of aluminium foil with screens and the e.h.t. winding with incorporated diodes are moulded in flame retarding polyester.

The device is provided with two securing M3 studs. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

MECHANICAL DATA

Dimensions in mm

Outlines

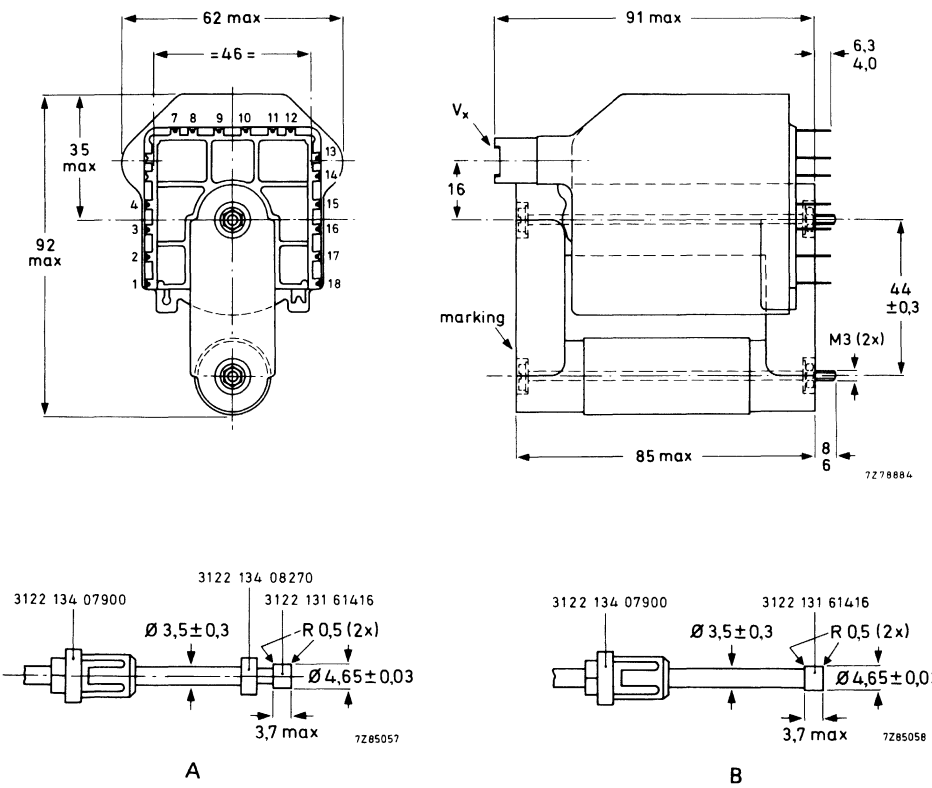


Fig. 1 A is plug for connection to V_x, B is plug for connection to EHT.

Mass 540 g

Solderability max. 240 °C, max. 2,5 s

Mounting

The transformer may be mounted on either a printed-wiring board or, on a metal chassis. Two securing studs (M3) are provided. For mounting on a printed-wiring board, a washer of 20 mm outer diameter has to be used. Tightening torque on printed-wiring board 500 + 100 mNm. The fit of the connecting pins and the studs in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 2.

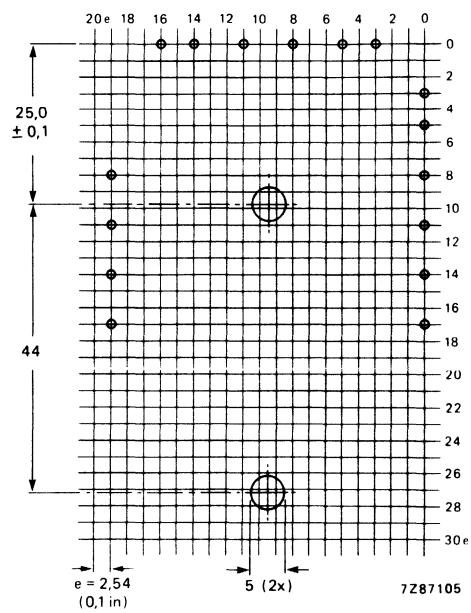


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side). Grid hole diameter 1,3 ± 0,1 mm.

Whether the transformer is board or chassis mounted, the core must be earthed.

Temperature

The ambient temperature in the set should not exceed +90 °C under worst conditions, i.e. taking into account: ←

- maximum output power;
- maximum supply voltage;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it may be necessary to provide an ample cool air flow around the transformer.

Distances

The following minimum distances between the transformer and neighbouring **conductive flat surfaces** must be maintained (it should be noted that edges of conductive parts must have a greater distance):

from the EHT coil, radially 10 mm, axially 10 mm.

The transformer, and the leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA (measured in circuit of Fig. 3, mains voltage 220 V)

EHT supply	I_{eht}	mA	0,15	1,6
	EHT	kV	25,2	23,7
	$R_{i(eht)}$	MΩ	1,0	
Power supply	V_B *	V	297	292
	$I_{average}$	mA	230	450
V_o prim		V	150	150,5
Supply transistor (BU208A)	V_{CEM}	V	1250	1260
	$+I_{CM}$	A	2,8	3,1
Flyback time		µs	14,8	15,0
V_x		kV	6,25	–
Auxiliary windings (typical value):				
picture tube heater voltage	V_{18} (rms)	V	8,0 (730 mA)	
drive winding	$V_{15\text{-}17}$ (rms)	V	4,3 (1 A)	
Voltages after rectification, pins 10 and 11 to earth:				
field time base	V_8	V	33 (325 mA)	
line time base	V_9	V	150 (125 mA)	
	V_{12}	V	7,5 (1000 mA)	
video output	V_{13}	V	205 (10 mA)	
audio output	V_{14}	V	24,6 (500 mA)	
audio output	V_{16}	V	17,8 (530 mA)	

Note: The power pack is capable of supplying 45 W extra output power if required, e.g. higher audio output power from pin 14.

* Stabilization range V_B from 215 V DC (165 V mains) to 350 V d.c. (265 V mains).

APPLICATION CIRCUIT

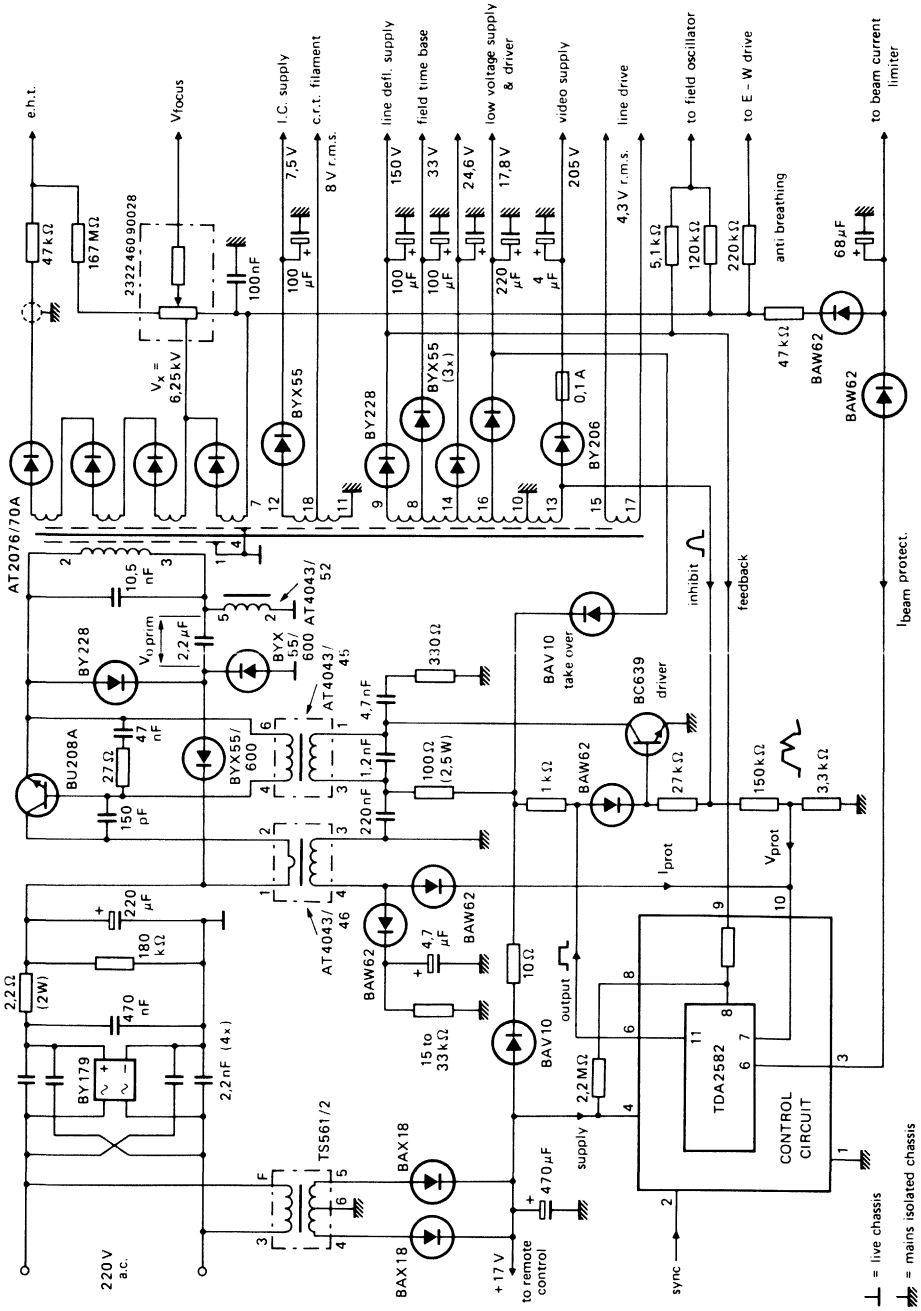


Fig. 3.

Replaced by AT2077/81

MINIATURE DIODE-SPLIT LINE OUTPUT TRANSFORMER

- For 90° and 110° colour TV and colour monitors
- Three-layer EHT coil, focus tap for hi-bi
- Aluminium foil primary winding
- Reduced dimensions, reduced mass

QUICK REFERENCE DATA

For transistor line output stages

	110° deflection angle	90° deflection angle
I_{eht}	max. 1,5 mA	max. 1 mA
EHT	25 kV	25 kV
$R_{i(eht)}$	1,6 MΩ	2,9 MΩ
$I_{p\text{-}p}$ deflection (incl. 6% overscan)	5,3 A	2,85 A
Supply voltage (V_B')	150 V	148,1 V
Supply current ($I_{average}$)	466 mA	299 mA
Voltages of primary windings*	+ 98 V_p, + 530 V_p, + 960 V_p, + 1060 V_p	+ 100 V_p, + 514 V_p, + 930 V_p, + 1030 V_p, + 1190 V_p
Voltages of auxiliary windings	−290 V_p, −230 V_p, −148 V_p, + 62 V_p, + 105 V_p	−270 V_p, −222 V_p, −141 V_p, + 60 V_p, + 105 V_p
	picture tube heater voltage	

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 110° and 90° colour picture tubes in transistor or gate turn-off thyristor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors and monochrome monitors at 17 kV EHT.

It is intended for use in conjunction with:

	110° deflection angle	90° deflection angle
– deflection unit	AT1870, AT1860, AT1850	AT1235/00, AT1235/40
– bridge coil	AT4043/68	AT4043/68
– linearity control unit	AT4042/08A, AT4042/30	AT4042/04A, AT4042/90
– line output transistor	BU508A	BU508A

– screened EHT cable, length 1 m; catalogue number 3122 137 63370.
– focus cable, length 31 cm; catalogue number 3122 131 00732.

Note: Types AT2076/81 and AT2076/81A differ only in manufacturing technique; apart from this the transformers are identical.

DESCRIPTION

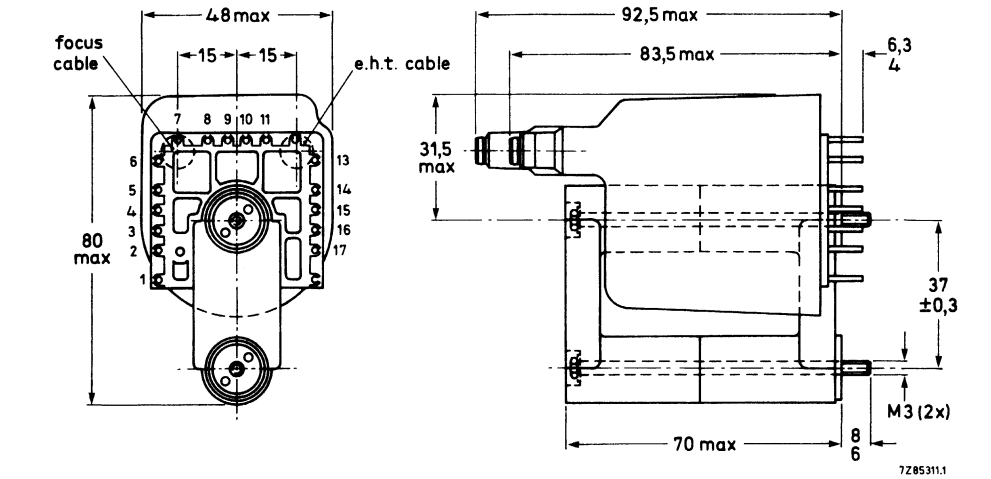
The magnetic circuit of the transformer comprises 2 Ferroxcube U-cores, screwed together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding are moulded in flame retarding polyester, meeting the self-extinguishing requirements of IEC65, para. 14.4 and UL492, para. 280-SE1. The transformer has 2 M3 screw-studs for mounting. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

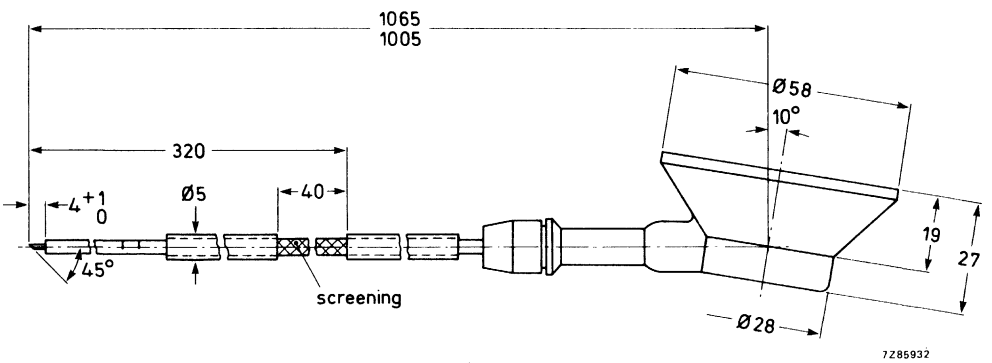
* DC component on these pulses is V_B' (see Fig. 3).

MECHANICAL DATA

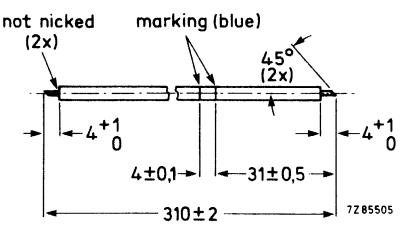
Dimensions in mm

Outlines





e.h.t. cable



focus cable

Fig. 1.

Mass 325 g

Solderability in accordance with IEC68, test T

Mounting

The transformer may be mounted on either a printed-wiring board or, under certain conditions, on a metal chassis. Two securing studs (M3) are provided. For mounting on a printed-wiring board a washer of 20 mm outer diameter has to be used; the tightening torque on the printed-wiring board is 500 + 100 mNm. The fit of the connecting pins and the studs in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 2.

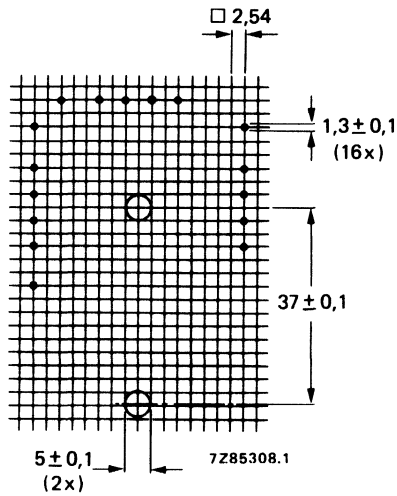


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

Whether the transformer is board or chassis mounted, **the core must be earthed.**

Temperature

The operating temperature of the e.h.t. coil should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and **neighbouring conductive flat surfaces** must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops, etc.

ELECTRICAL DATA with 110° COLOUR PICTURE TUBES

EHT supply	I_{eht}	mA	0,03	1	1,5
	EHT	kV	25,0	23,4	22,6
	$R_{i(eht)}$	MΩ	1,6	1,6	1,6
Power supply	V_B	V	157,8	157,8	157,8
	V_B'	V	150,2	145,7	143,3
	$I_{average}$	mA	242	393	466
Output transistor	V_{CEM}	V	1240	1220	1200
	$+ I_{CEM}$	A	3,6	3,7	3,7
Deflection	I_{p-p}	A	5,3	5,1	5,0
	$t_{flyback}$	μs	11,4	–	–
	Overscan	%	6	–	–
V_{focus}		kV	8,1	7,9	7,8
Auxiliary windings: picture tube heater voltage V_{3-1} (rms)		V	8,3	8,0	7,8
peak voltages at					
pin 2	V_2	V	−290		
pin 6	V_6	V	−148		
pin 4	V_4	V	+62		
pin 5	V_5	V	−230		
pin 8	V_8	V	+105		
pin 9	V_9*	V	+98		
pin 14	V_{14}*	V	+530		
pin 17	V_{17}*	V	+960		
pin 16	V_{16}*	V	+1060		

Above measurements using circuits of Figs 3, 4a and 4b.

An alternative 3-diode modulator circuit is shown in Fig. 4c.

* DC components on these pulses is V_B'.

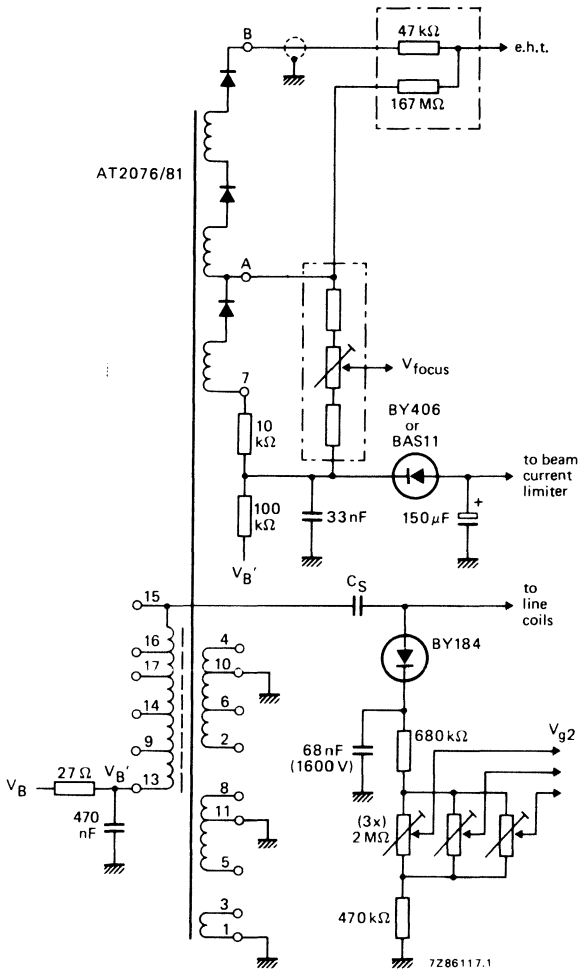


Fig. 3 Circuit diagram of transformer, and EHT, focus voltage and V_{g2} circuits.

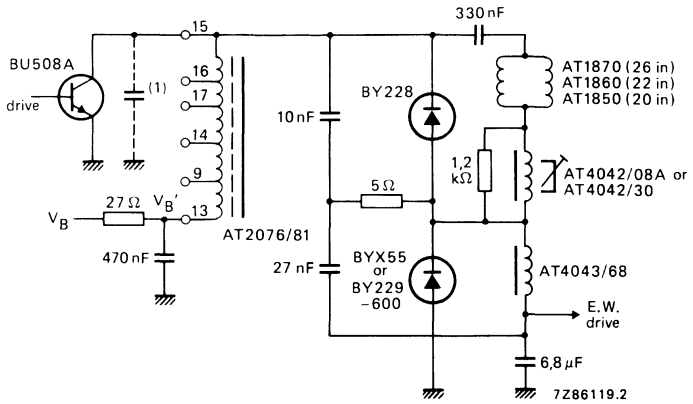


Fig. 4a Diode modulator with split tuning.

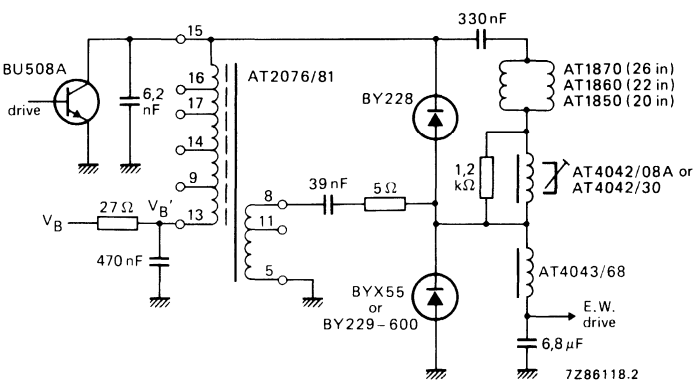


Fig. 4b Diode modulator with tap on transformer.

(1) Transformer stray capacitance.

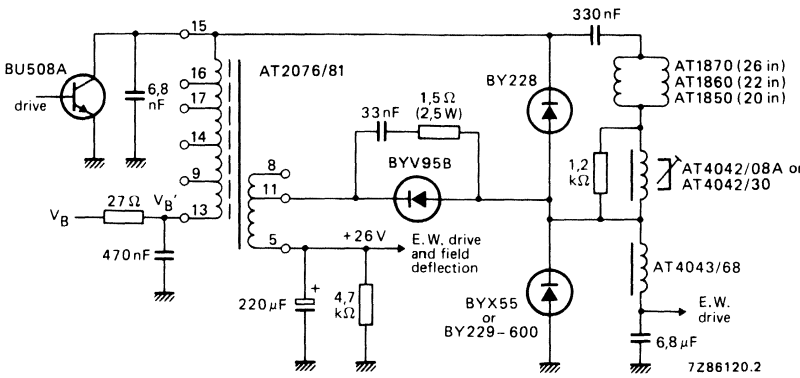


Fig. 4c Three-diode modulator circuit.

ELECTRICAL DATA with 90° COLOUR PICTURE TUBES

			Figs 3 and 5a V_B = 154,5 V		Figs 3 and 5b V_B = 134,3 V	
EHT supply	I_{eht}	mA	0,03	1	0,03	1
	EHT	kV	25,0	22,1	25,0	22,0
	$R_{i(eht)}$	MΩ	2,9		3	
Power supply	V_B'	V	151,5	148,1	130,0	126,1
	$I_{average}$	mA	173	299	245	389
Output transistor	V_{CEM}	V	1220	1150	1060	995
	+ I_{CEM}	A	2,0	2,2	2,4	2,6
Deflection	I_{p-p}	A	2,90	2,78	2,92	2,89
	$t_{flyback}$	μs	11,45		11,45	
	Overscan	%	6	7,0	6	7,0
V_{focus}		kV	8,45	7,40	8,6	7,65
Auxiliary windings: picture tube heater voltage V_{3-1} (rms)		V	8,11		8,15	
peak voltages at						
pin 2	V_2	V	−270		−274	
pin 6	V_6	V	−141		−144	
pin 4	V_4	V	+ 60		+61	
pin 5	V_5	V	−222		−225	
pin 8	V_8	V	+ 105		+ 105	
pin 9	V_9*	V	+ 100		+ 102	
pin 14	V_{14}*	V	+ 514		+ 520	
pin 15	V_{15}*	V	+ 1190		+ 1200	
pin 16	V_{16}*	V	+ 1030		+ 1040	
pin 17	V_{17}*	V	+ 930		+ 940	

Above measurements using circuits of Figs 3, 5a and 5b.

* DC component on these pulses is V_B'.

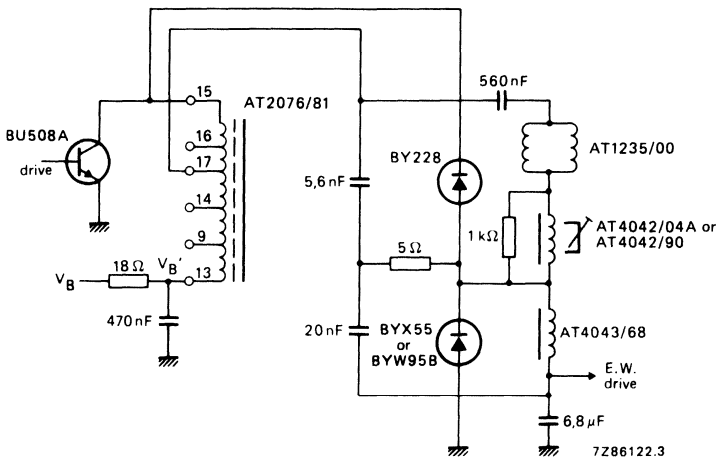


Fig. 5a Diode modulator, V_B' = 150 V.

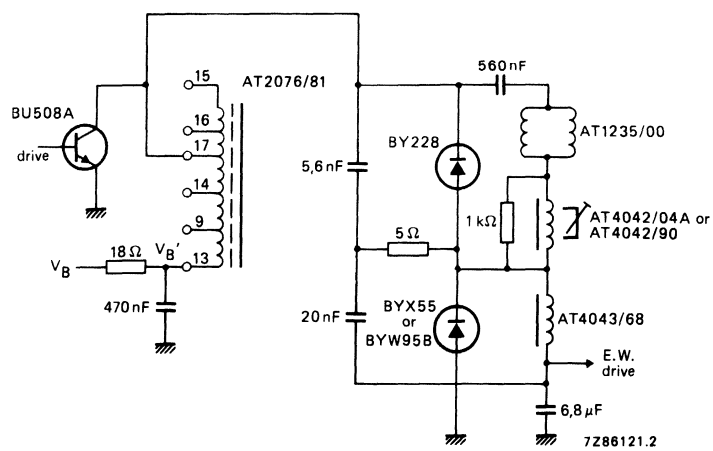


Fig. 5b Diode modulator, V_B' = 130 V.

Replaced by AT2077/84

UNIVERSAL DIODE-SPLIT LINE OUTPUT TRANSFORMER

- For monochrome Data Graphic Displays
- Three-layer EHT coil
- Aluminium foil primary winding
- Piggy-back type

QUICK REFERENCE DATA

For transistor line output stages, deflection angle 110°

	landscape	portrait
I_{eht}	max. 0,5 mA	
EHT at I_B = 0 mA	17 kV	
$R_{i(eht)}$	1,2 MΩ	
Flyback time	4 to 9 μs	3 to 8 μs
Line scan frequency range	15 to 50 kHz	15 to 70 kHz
Primary voltages	+ 94 $V_{(p-p)}$, + 188 $V_{(p-p)}$, + 540 $V_{(p-p)}$, + 730 $V_{(p-p)}$, + 990 $V_{(p-p)}$	
Auxiliary voltages	+ 85 V_p, −85 V_p, + 24 V_p, + 55 V_p, −150 V_p, heater voltage	

APPLICATION

This transformer has been designed to provide the required scanning amplitude and EHT for 110° monochrome data graphic display tubes, at line scan frequencies of 15 to 70 kHz in both landscape and portrait scan mode. A choice can be made from different flyback times.
The transformer is intended for use in conjunction with:
- deflection unit AT1039 series at line scan frequencies of 15 to 70 kHz (portrait scan mode) or of 15 to 50 kHz (landscape scan mode);
- line output transistor BUW12A;
- linearity control unit AT4042/08A or AT4042/33A
- screened EHT cable, length 1 m; catalogue number 3122 137 63370.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube U-cores, screwed together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The transformer is moulded in flame retarding polyester, meeting the self-extinguishing requirements of IEC 65, para. 14.4 and UL492, para. 280-SE1. The transformer has 2 M3 screw-studs for mounting. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 3).

MECHANICAL DATA

Dimensions in mm

Outlines

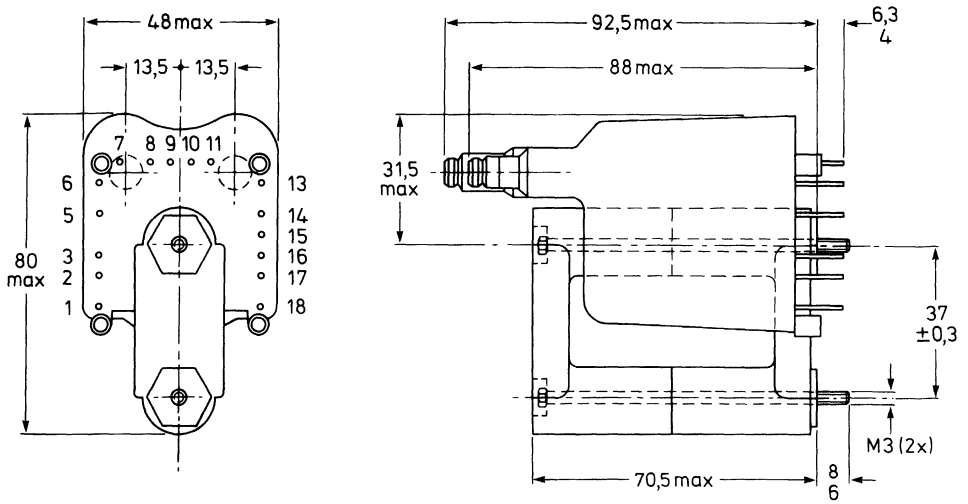


Fig. 1 Line output transformer AT2076/84.

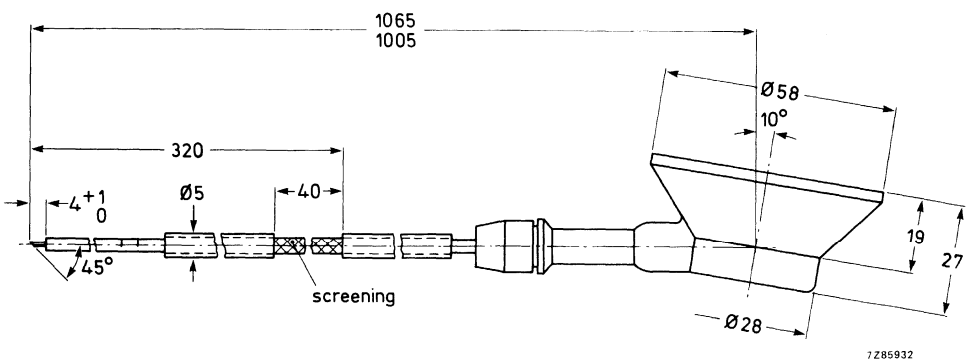


Fig. 2 EHT cable 3122 137 63370.

Mass approx. 325 g

Solderability in accordance with IEC 68-2-20, test Ta.

Mounting

The transformer may be mounted on either a printed-wiring board or, under certain conditions, on a metal chassis. Two securing studs (M3) are provided. For mounting on a printed-wiring board a washer of 20 mm outer diameter has to be used; the tightening torque on the printed-wiring board is 500 + 100 mNm. The fit of the connecting pins and the studs in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 3.

Whether the transformer is board or chassis mounted, **the core must be earthed.**

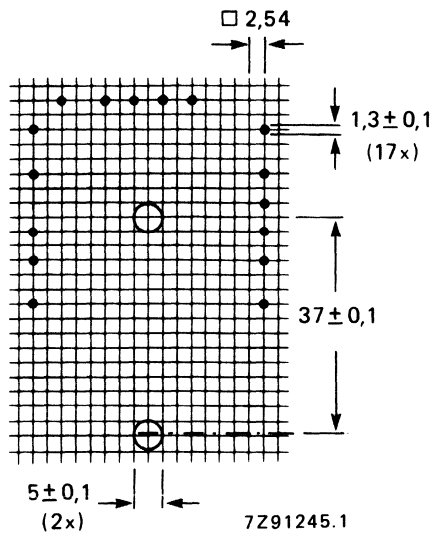


Fig. 3 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA (see also Figs 4 and 5)

Landscape scan mode

Line scan frequency range 15 to 50 kHz

	line deflection coils parallel connected			line deflection coils series connected		
Taps of primary winding to be used	13/17	14/17	15/17	15/18	13/17	14/17
Flyback time	4,0 μs	4,8 μs	5,9 μs	7,0 μs	8,0 μs	9,0 μs
Flyback capacitor (C1)	7,5 nF	10 nF	18 nF	7,5 nF	10 nF	15 nF
Deflection current	8,4 $A_{(p-p)}$	8,4 $A_{(p-p)}$	8,4 $A_{(p-p)}$	4,2 $A_{(p-p)}$	4,2 $A_{(p-p)}$	4,2 $A_{(p-p)}$
Deflection voltage	730 $V_{(p-p)}$	630 $V_{(p-p)}$	540 $V_{(p-p)}$	800 $V_{(p-p)}$	730 $V_{(p-p)}$	630 $V_{(p-p)}$

Portrait scan mode

Line scan frequency range 15 to 70 kHz

	line deflection coils parallel connected			line deflection coils series connected		
Taps of primary winding to be used	13/17	14/17	15/17	15/18	13/17	14/17
Flyback time	3,1 μs	4,2 μs	4,9 μs	5,9 μs	6,6 μs	7,9 μs
Flyback capacitor (C1)	3,3 nF	6,8 nF	10 nF	4,7 nF	5,6 nF	10 nF
Deflection current	6,2 $A_{(p-p)}$	6,2 $A_{(p-p)}$	6,2 $A_{(p-p)}$	3,1 $A_{(p-p)}$	3,1 $A_{(p-p)}$	3,1 $A_{(p-p)}$
Deflection voltage	730 $V_{(p-p)}$	630 $V_{(p-p)}$	540 $V_{(p-p)}$	800 $V_{(p-p)}$	730 $V_{(p-p)}$	630 $V_{(p-p)}$

Primary voltages (peak-to-peak values)

Pins 13/14	+ 94 V
Pins 13/15	+ 188 V
Pins 13/16	+ 540 V
Pins 13/17	+ 730 V
Pins 13/18	+ 990 V

Auxiliary voltages (peak values)

Pins 5/8	heater voltage
Pin 1	+ 55 V (video supply)
Pin 2	− 150 V (V_{g1})
Pin 3	+ 24 V (field time base)
Pin 10	− 85 V
Pin 11	+ 85 V

V_{g2}-circuit supply should be taken from pin 17 or 18 by means of peak rectification.

Note: For detailed information see Technical Publication 115.

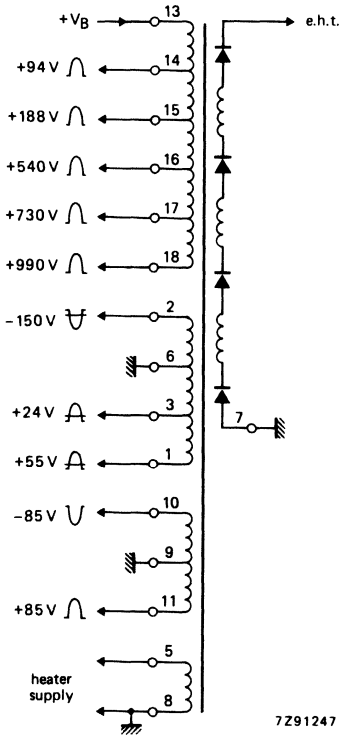

+V_B
13
e.h.t.
+94 V
14
+188 V
15
+540 V
16
+730 V
17
+990 V
18
-150 V
2
6
+24 V
3
7
+55 V
1
-85 V
10
9
+85 V
11
heater supply
5
8
7Z91247

Fig. 4.

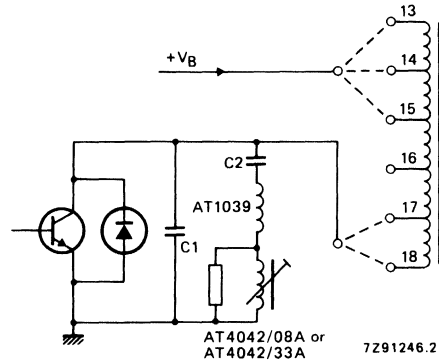

+V_B
13
14
15
16
17
18
C2
AT1039
C1
AT4042/08A or AT4042/33A
7Z91246.2

Fig. 5.

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 90° and 110° colour monitors and HDTV with separate power supply
- Three-layer EHT coil
- Aluminium foil primary winding
- Incorporated potentiometers for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90° and 110° deflection angle

I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 1,8 MΩ
I_{p-p} deflection (6% overscan)	6,2 A
Supply voltage V_B	148 V
Voltages of primary windings (peak-to-peak values)	+ 60 V, + 120 V, + 735 V, + 900 V, + 1065 V, + 1230 V
Voltages of auxiliary windings	+ 8 V, + 17 V, + 30 V
DC scan	V_b + 20 V
DC flyback	V_b + 30 V
heater voltage (rms value)	10,4 V

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 90° and 110° colour picture tubes in transistor equipped monitors and HDTV with horizontal scanning frequencies from 16 - 35 kHz.

It is intended for use in conjunction with:
- linearity corrector AT4042/33A
- screened EHT cable, length 1 m, catalogue number 3122 137 64640
- focus cable, length 31 cm, catalogue number 3122 131 00732
- V_{g2} cable, length 30 cm, catalogue number 3122 137 64570

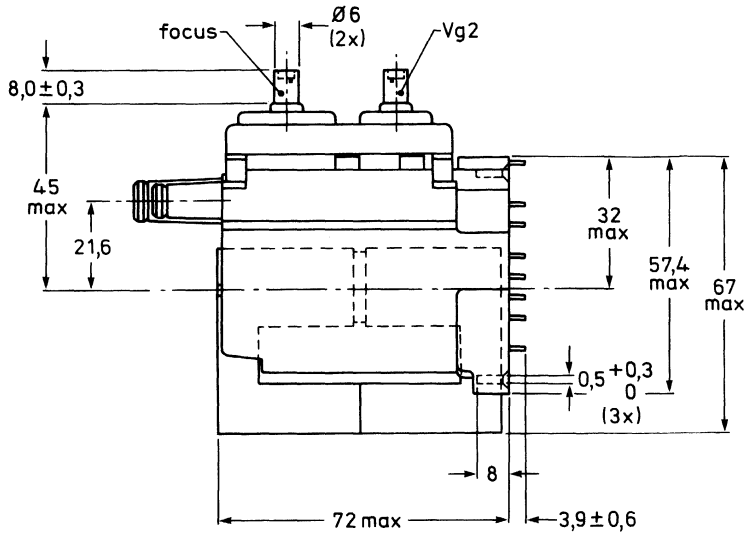
DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 4).

MECHANICAL DATA

Dimensions in mm

Outlines



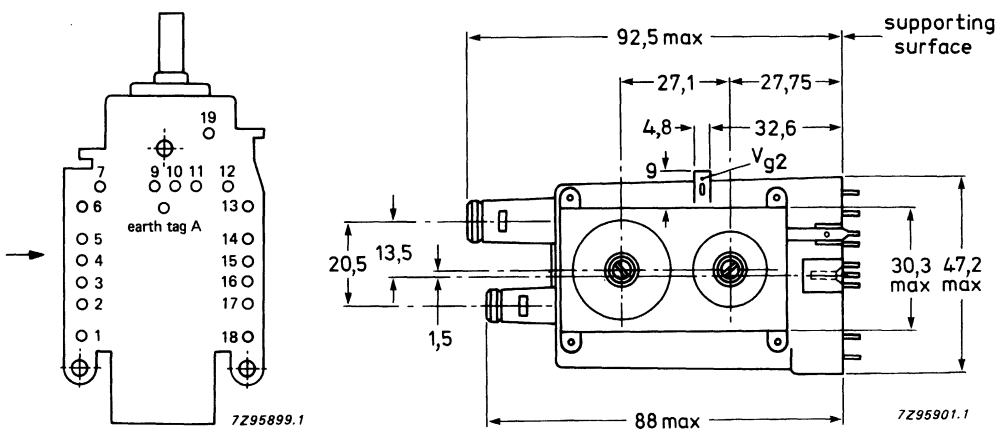


Fig. 1 Line output transformer AT2077/32.

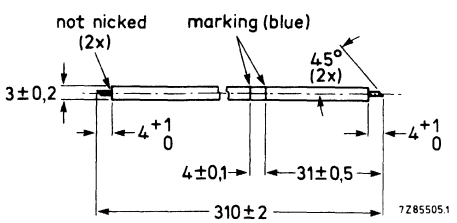


Fig. 2 Focus cable 3122 131 00732.

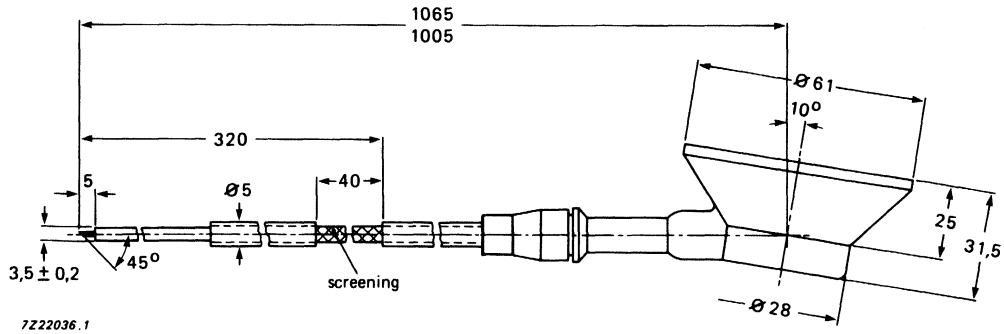


Fig. 3 EHT cable 3122 137 64640.

Mass approx. 375 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 4. The transformer core must be earthed via the earth pin (see Fig. 1).

DEVELOPMENT DATA

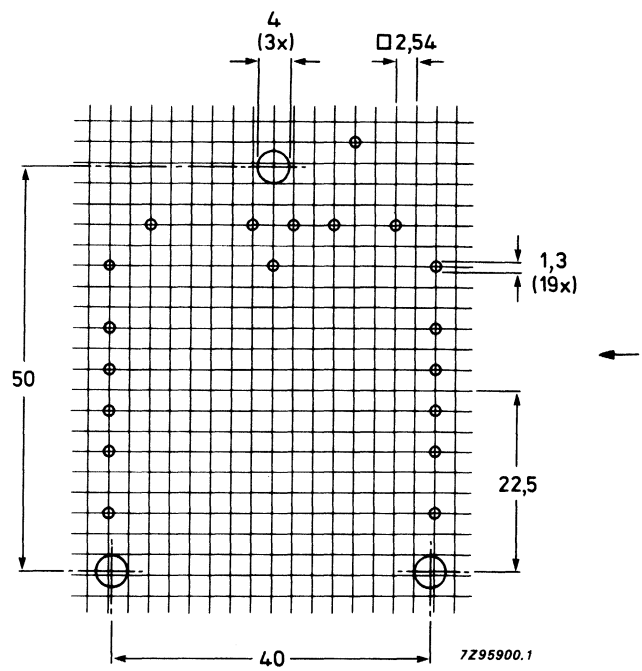


Fig. 4 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 5 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

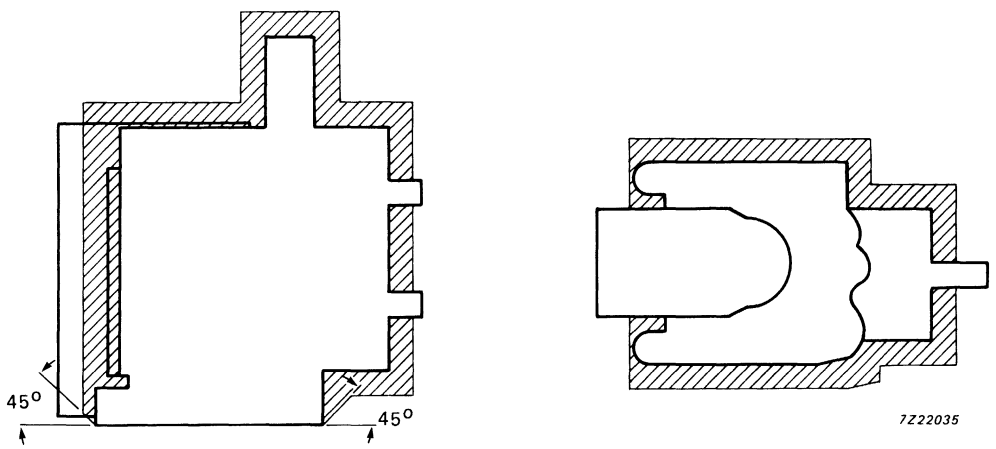
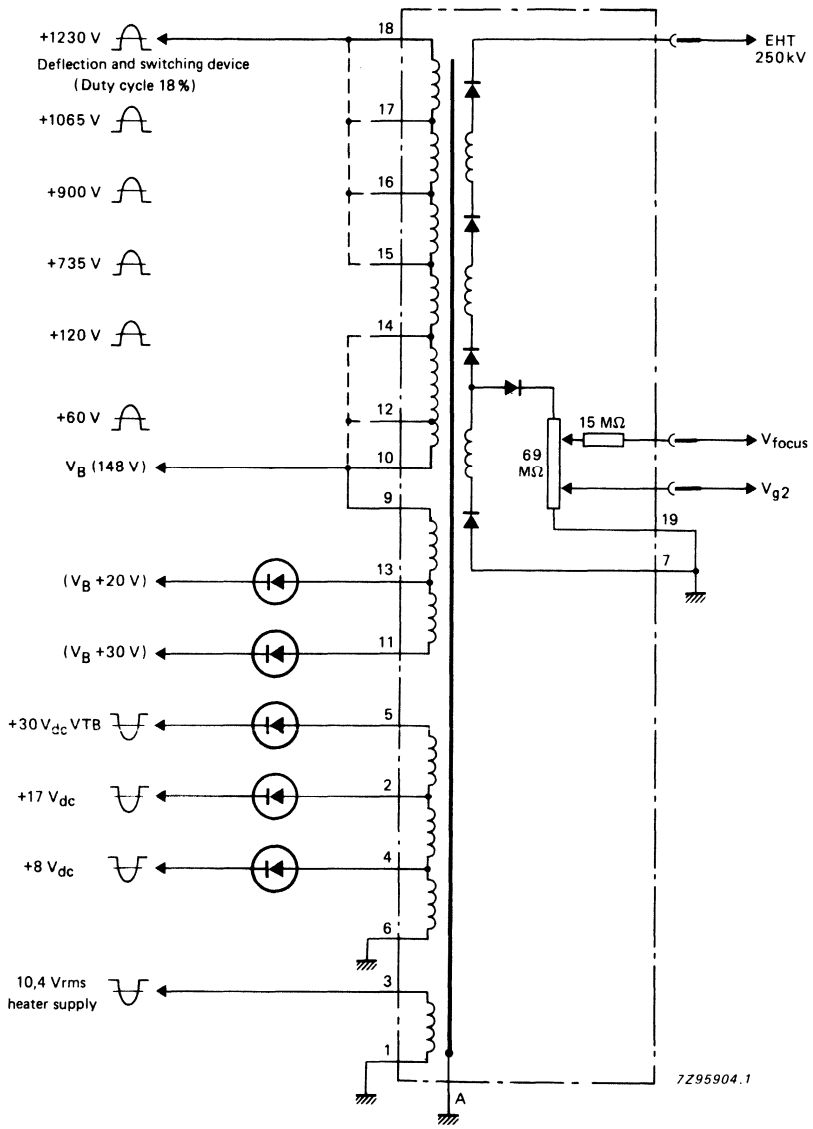


Fig. 5 Distances between EHT coil and conductive parts.

DEVELOPMENT DATA



– – – alternative connections for supply and switching device.

Range of supply voltage 70 - 150 V in steps of 7 to 20 volts.

Frequency range 16 - 35 kHz (extendable if tuning influence of LOPT on diode-modulator circuit is neglected).

Fig. 6 Primary and auxilliary voltages.

ELECTRICAL DATA; for use with 110° colour picture tubes, see Fig. 7

EHT supply	I_{eht} EHT $R_{i(eht)}$	mA kV MΩ	1,6 25 1
Power supply	V_B I_B	V mA	148 850
Output transistor	V_{CEM} $+ I_{CEM}$	V A	1250 4,5
Deflection	deflection current flyback time overscan	$A_{(p-p)}$ μs %	6,2 5,1 6
Focusing voltage	min. max.	kV kV	0,22 x EHT 0,33 x EHT
Grid 2 voltage (V_{g2})	min. max.	V V	0,011 x EHT 0,033 x EHT
Primary voltages	pin 12 pin 14 pin 15 pin 16 pin 17 pin 18	$V_{(p-p)}$ $V_{(p-p)}$ $V_{(p-p)}$ $V_{(p-p)}$ $V_{(p-p)}$ $V_{(p-p)}$	+ 60 + 120 + 735 + 900 + 1065 + 1230
Auxiliary voltages (after rectification)	heater voltage (V_{1-3}) pin 2 pin 4 pin 5 pin 9	$V_{(r.m.s.)}$ $V_{(DC)}$ $V_{(DC)}$ $V_{(DC)}$ $V_{(DC)}$	10,4 + 17 + 8 + 30 + 185

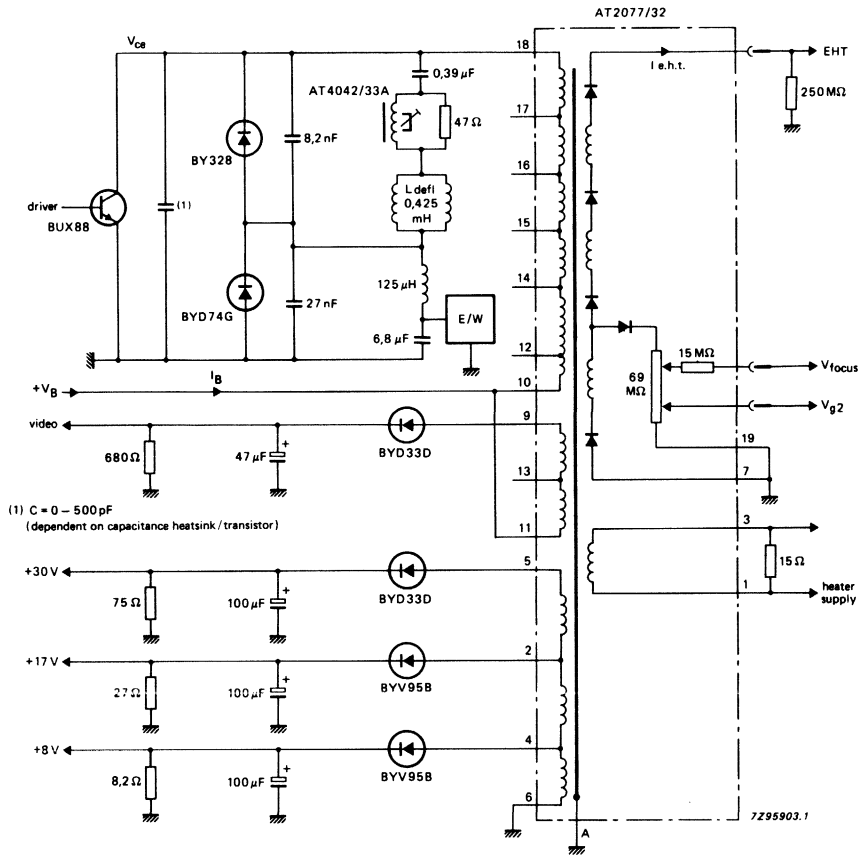
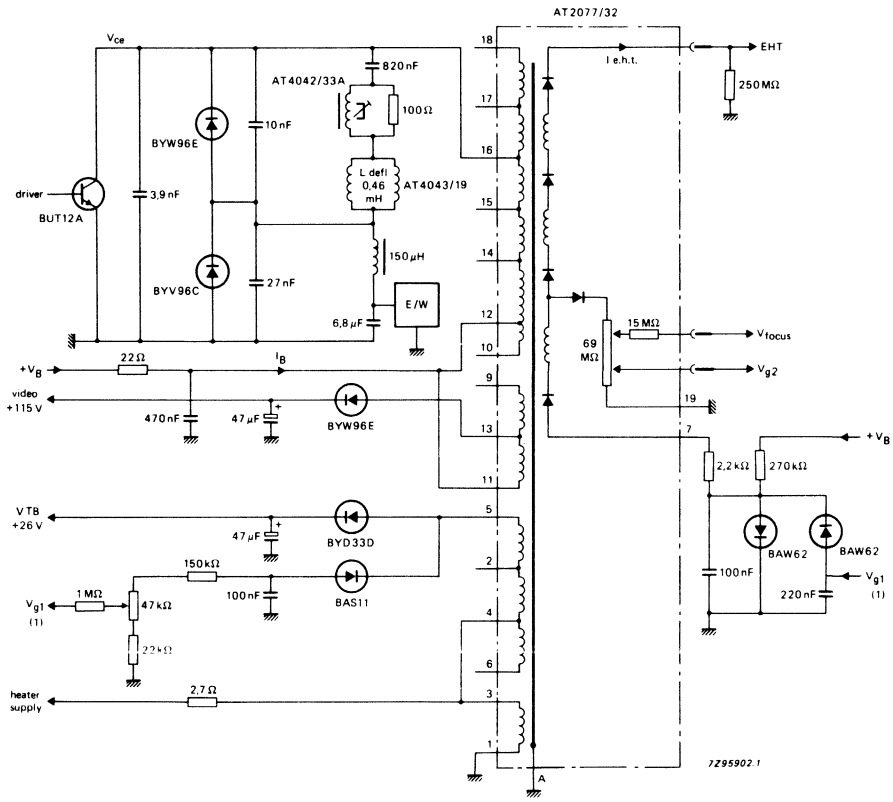


Fig. 7 Application circuit, 32 kHz.

ELECTRICAL DATA; for use with M34EAQ00X03 Monitor Tube, see Fig. 8

EHT supply	I_{eht} EHT $R_{i(eht)}$	mA kV MΩ	1 25 4
Power supply	V_B I_B	V mA	100 500
Output transistor	V_{CEM} $+ I_{CEM}$	V A	800 4,8
Deflection	deflection current flyback time overscan	A (p-p) μs %	6,2 7 6
Focusing voltage	min. max.	kV kV	0,22 x EHT 0,33 x EHT
Grid 2 voltage (V_{g2})	min. max.	V V	0,011 x EHT 0,033 x EHT
Auxiliary voltages (after rectification)	pin 5 pin 9 heater voltage	V V $V_{(r.m.s.)}$	26 115 6,3

DEVELOPMENT DATA



(1) These points are common.

Fig. 8 Meres application at 24 kHz.

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 90° colour TV with single switch power pack system (S^2P^2)
- Three-layer EHT coil
- Aluminium foil primary winding
- Incorporated potentiometers for focusing and V_{g2} adjustment
- Mains insulation

QUICK REFERENCE DATA

For transistor line output stages; 90° deflection angle	
I_{eht}	0 mA
EHT	23 kV
$R_{i(eht)}$	$\leqslant$ 2,4 MΩ
I_{p-p} deflection	3,0 A
Supply voltage (V_B)	112 V
Supply current at I_{eht} = 0,6 mA	460 mA
Focusing voltage control	5,1 to 7,6 kV
Grid 2 voltage adjustment	230 to 830 V
Auxiliary voltages	6,3 V (heater supply) 200 V (video supply) 26 V (frame) 16 V (small signal)

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 90° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

It is intended for use in conjunction with:
- input choke AT4043/81;
- driver transformer AT4043/82;
- sensing transformer AT4043/46;
- mains transformer TS561/2 or TS521B;
- mains filter choke AT4043/90;
- linearity corrector AT4042/90 (for narrow neck tubes), or AT4042/91 (for mini neck tubes);
- screened EHT cable, length 1 m; catalogue number 3122 137 63370; or UL cable catalogue number 3122 137 64640. ←
- focus cable, length 31 cm; catalogue number 3122 131 00732.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and e.h.t. diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 4).

MECHANICAL DATA

Outlines

Dimensions in mm

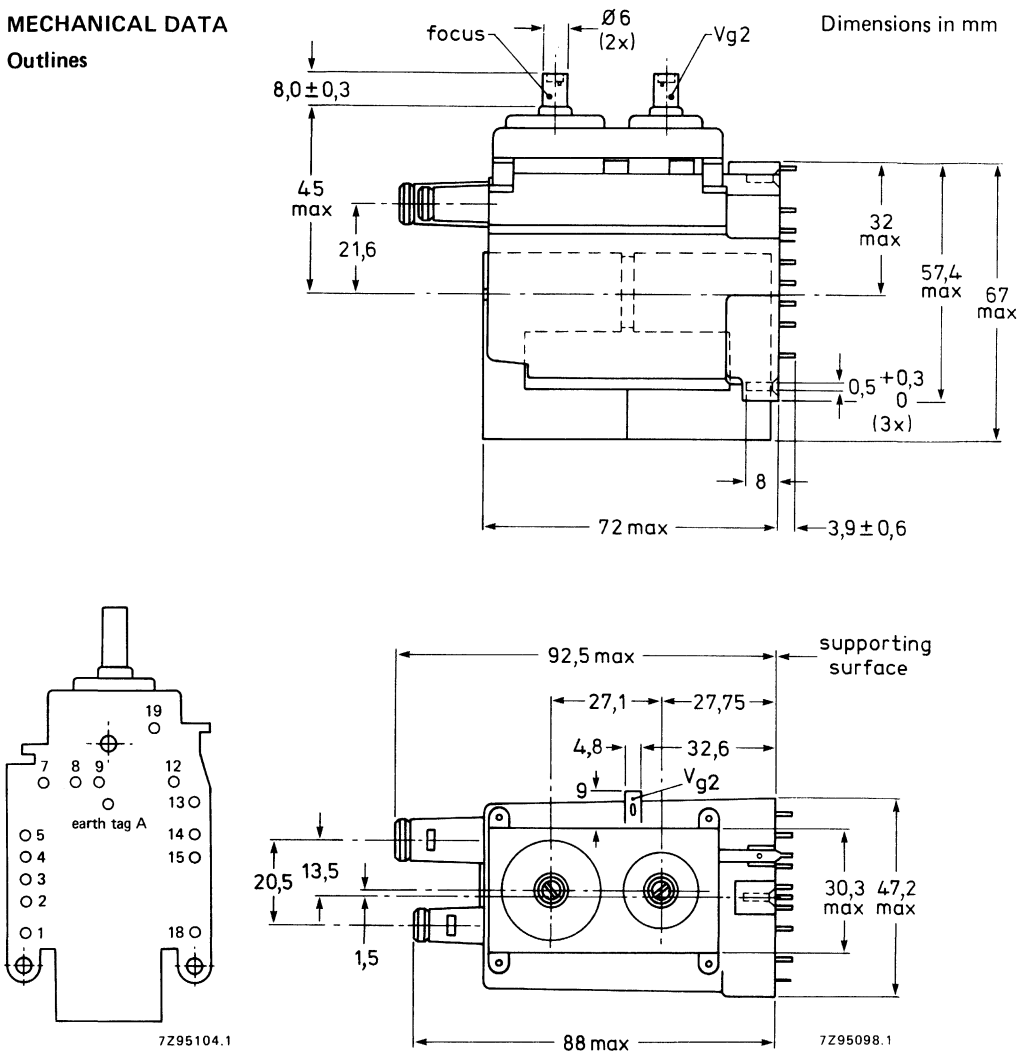


Fig. 1 Line output transformer AT2077/80.

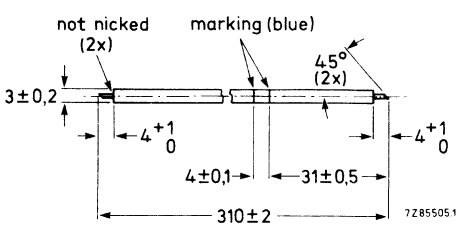


Fig. 2 Focus cable 3122 131 00732.

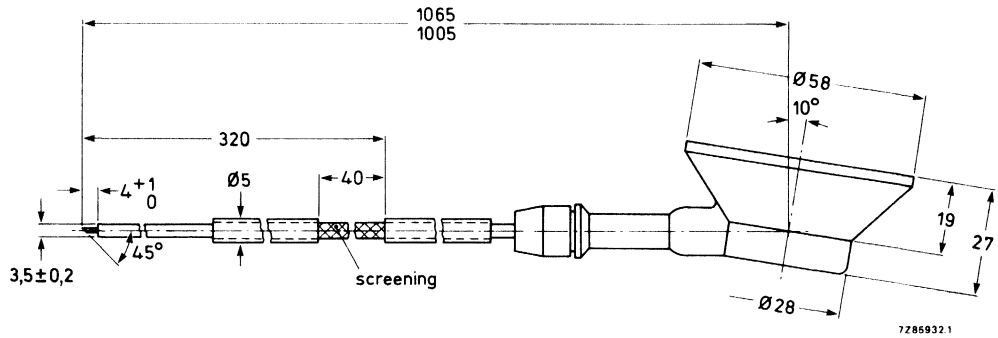


Fig. 3 EHT cable 3122 137 63370.

Mass approx. 375 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 4. The transformer core must be earthed via the earth tag (see Fig. 1).

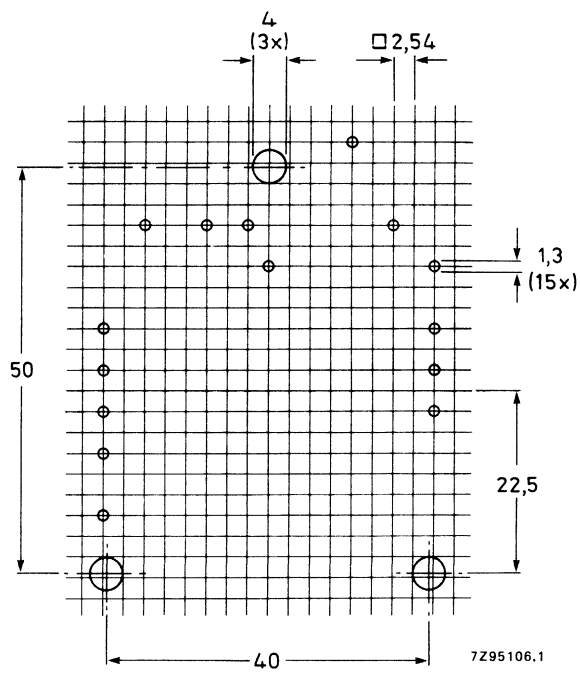


Fig. 4 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed +90 °C under worst conditions, i.e. taking into account: ←

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and **neighbouring conductive flat surfaces** must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer leads and components carrying high-voltage pulses, should be kept free from metal particles, solder drops, etc.

ELECTRICAL DATA with 90° colour picture tubes

EHT supply	I_{eht}	mA	0	0,1	0,6
	EHT	kV	23,0	22,4	21,2
	$R_{i(eht)}$	MΩ		2,4	
Power supply	V_B	V	112		108,5
	$I_{average}$	mA	350		460
Output transistor	V_{CEM}	V	1285		1270
	+ I_{CEM}	A	2,55		2,60
Deflection	deflection current	$A_{(p-p)}$	3,0		2,88
	flyback time	μs	11,95		11,95
	overscan	%	6		
Focusing voltage	min.	kV	5,1		
	max.	kV	7,6		
Grid 2 voltage (V_{g2})	min.	V	230		
	max.	V	830		
Auxiliary voltages*	heater voltage	$V_{(r.m.s.)}$	8,0		7,7
	pin 2	$V_{(p-p)}$	+ 190		
	pin 3	$V_{(p-p)}$	−208		
	pin 4	$V_{(p-p)}$	+ 27,5		
	pin 5	$V_{(p-p)}$	−138		
	pin 8	$V_{(p-p)}$	+ 845		
	pin 9	$V_{(p-p)}$	+ 920		
	pin 12	$V_{(p-p)}$	+ 70		

* Pins 1 and 18 connected to earth.

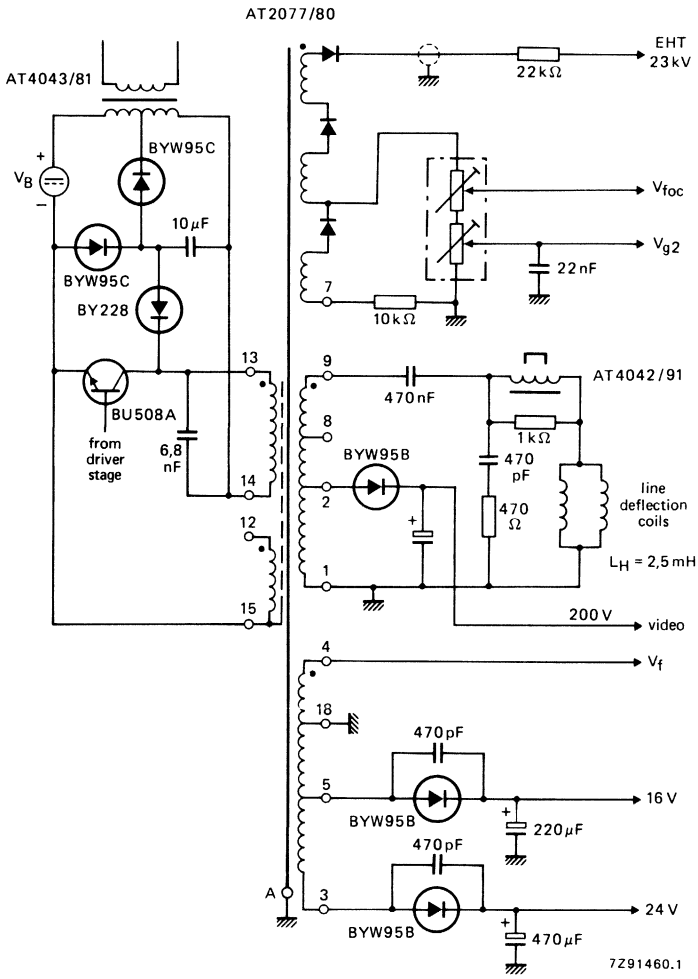


Fig. 5 Application circuit.

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 90° and 110° colour TV and colour monitors with separate power supply
- Three-layer EHT coil
- Aluminium foil primary winding
- Incorporated potentiometers for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90° and 110° deflection angle

I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 1,8 MΩ
I_{p-p} deflection (6% overscan)	4,4 A
Supply voltage (V_B')	152 V
Voltages of primary windings (peak-to-peak values)*	+ 110 V, + 524 V, + 960 V, + 1064 V
Voltages of auxiliary windings (peak-to-peak values)	−283 V, −226 V, −149 V, + 59 V, + 104 V
heater voltage (r.m.s. value)	8,2 V

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 90° and 110° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

It is intended for use in conjunction with:
- linearity corrector AT4042/90 or /08A;
- bridge coil AT4043/100;
- screened EHT cable, length 1 m, catalogue number 3122 137 63370, UL approved cable, catalogue number 3122 137 6464, or unscreened EHT cable, length 59 cm, catalogue number 3122 137 63620;
- focus cable, length 31 cm, catalogue number 3122 131 00732;
- V_{g2} cable, length 30 cm, catalogue number 3122 137 64570.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 5).

* D.C. component on these pulses is V_B' (see Figs 7 and 8).

MECHANICAL DATA

Outlines

Dimensions in mm

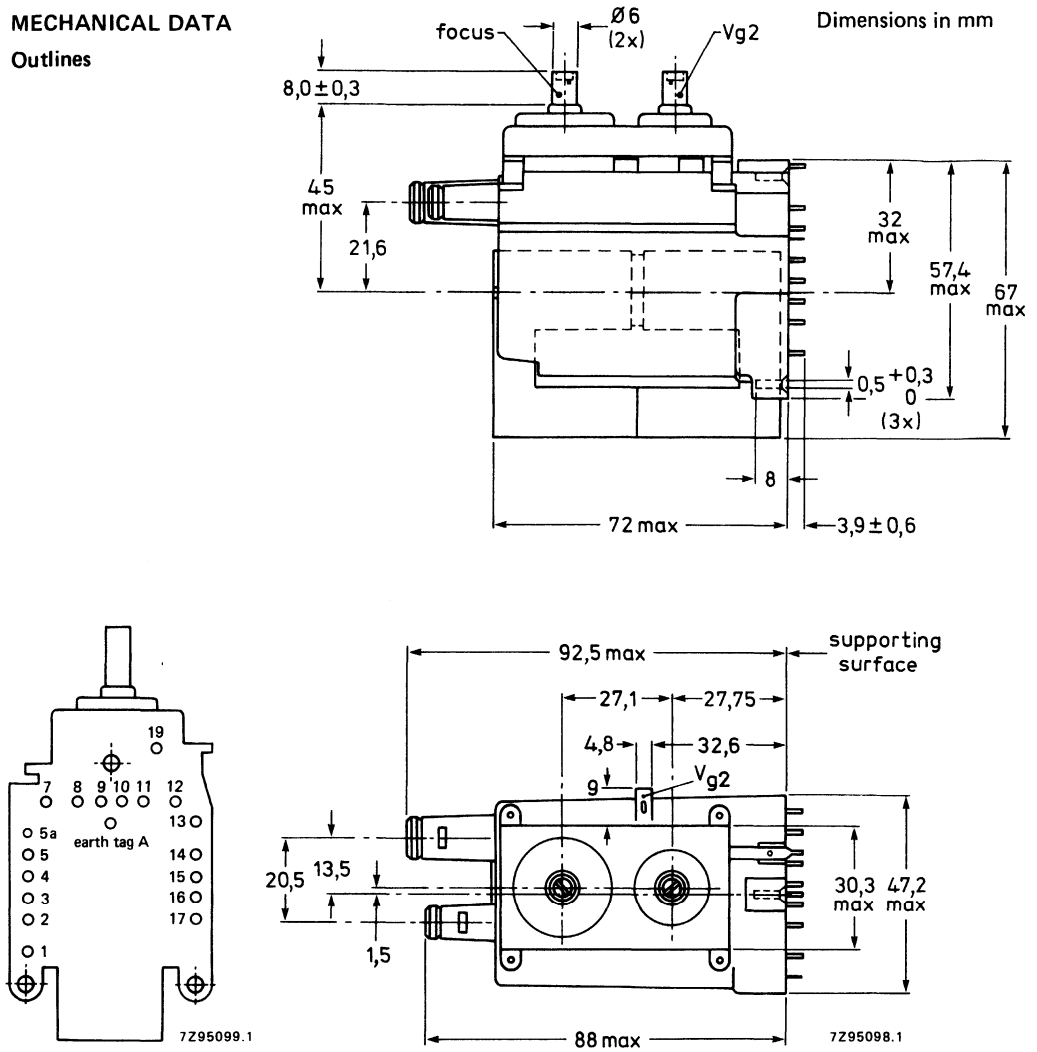


Fig. 1 Line output transformer AT2077/81.

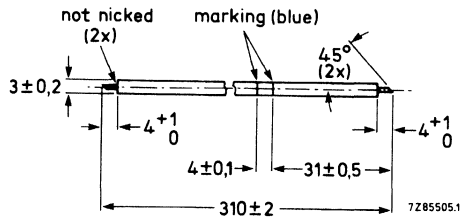


Fig. 2 Focus cable 3122 131 00732.

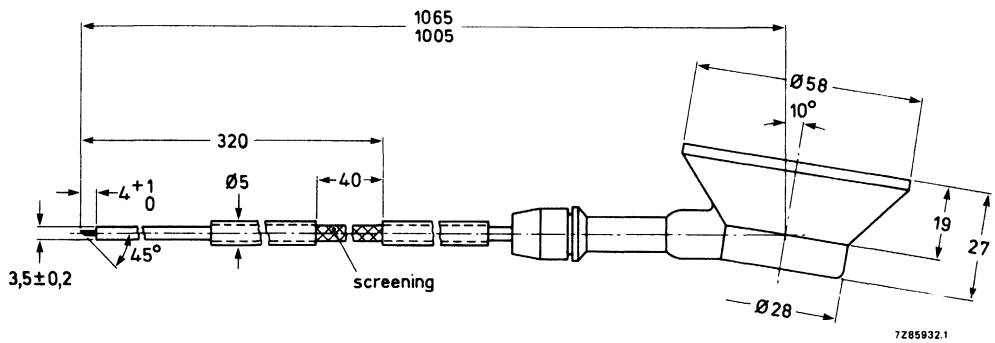


Fig. 3 EHT cable 3122 137 63370.

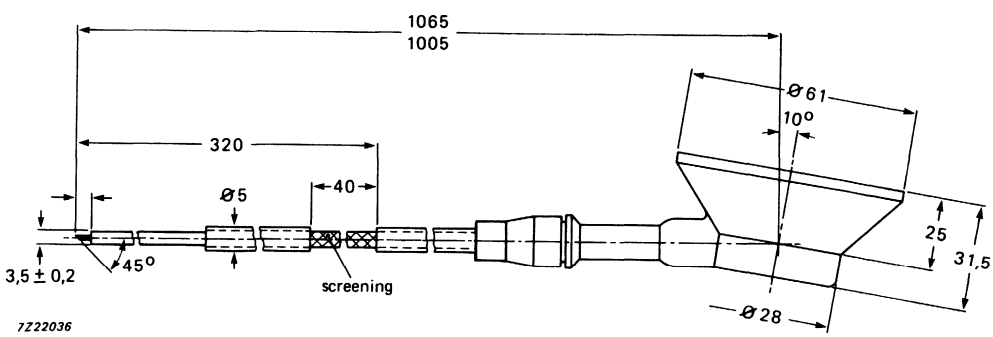


Fig. 4 UL approved cable 3122 137 6464.

Mass approx. 375 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 5. The transformer core must be earthed via the earth pin (see Fig. 1).

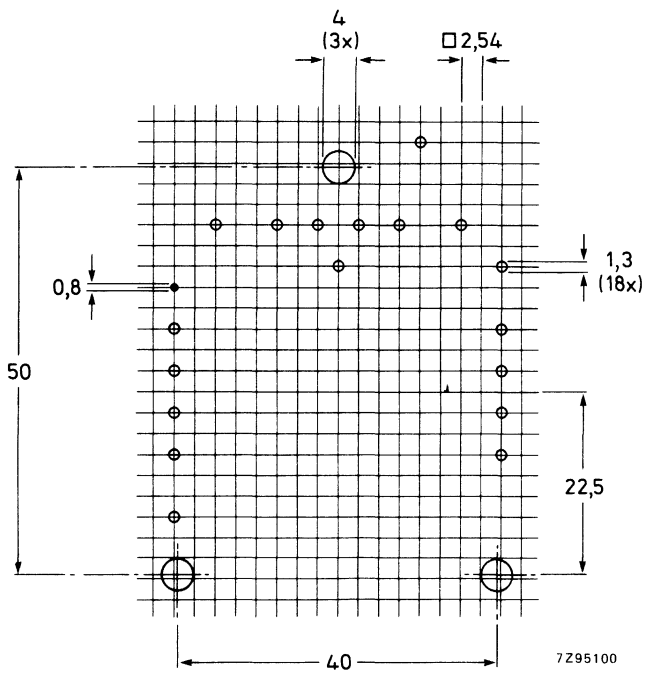


Fig. 5 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed +90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 6 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

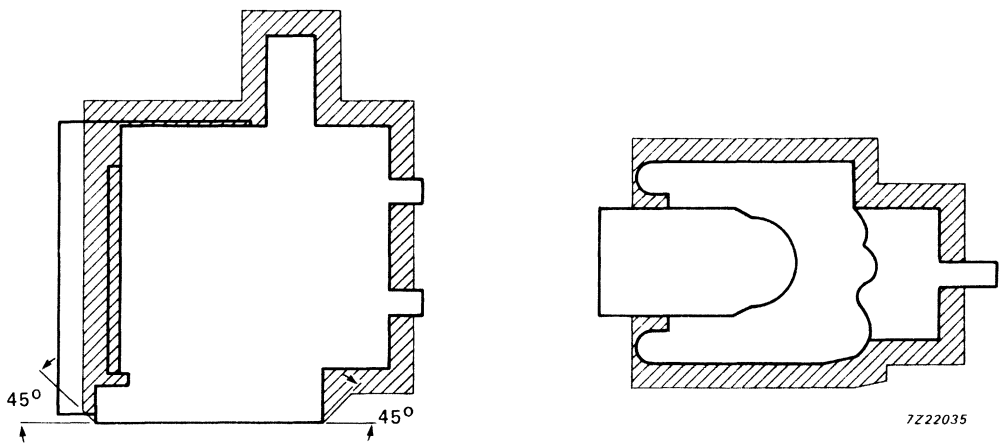


Fig. 6 Distances between EHT coil and conductive parts.

ELECTRICAL DATA; for use with 110° colour picture tubes, see Fig. 7.

EHT supply	I_{eht}	mA	0	0,5	1	1,5
	EHT	kV	25,6	24,7	23,8	23,7
	$R_{i(eht)}$	MΩ		1,8		
Power supply	V_B	V	152	152	152	152
	V_B'	V	148	146,9	144,6	142,6
	I_B	mA	250	330	435	458
Output transistor	V_{CEM}	V	1200	1185	1180	1175
	$+ I_{CEM}$	A	3,2	3,3	3,4	3,5
Deflection	deflection current	$A_{(p-p)}$	4,4	4,35	4,3	4,25
	flyback time	μs	11,55	11,55	11,55	11,75
	overscan	%	6			
Focusing voltage	min.	kV	0,24 x EHT			
	max.	kV	0,36 x EHT			
Grid 2 voltage (V_{g2})	min.	V	0,014 x EHT			
	max.	V	0,04 x EHT			
Primary voltages*	pin 9	$V_{(p-p)}$	+ 110			
	pin 14	$V_{(p-p)}$	+ 524			
	pin 16	$V_{(p-p)}$	+ 1064			
	pin 17	$V_{(p-p)}$	+ 960			
Auxiliary voltages	heater voltage (V_{1-3})	$V_{(r.m.s.)}$	8,2	8,0	7,9	7,8
	pin 1	$V_{(p-p)}$	+ 30			
	pin 2	$V_{(p-p)}$	−283			
	pin 4	$V_{(p-p)}$	+ 59			
	pin 5	$V_{(p-p)}$	−226			
	pin 7	$V_{(d.c.)}$	1265	1240	1215	1200
	pin 8	$V_{(p-p)}$	+ 104			
	pin 12	$V_{(p-p)}$	−149			

* D.C. component on these pulses is V_B'.

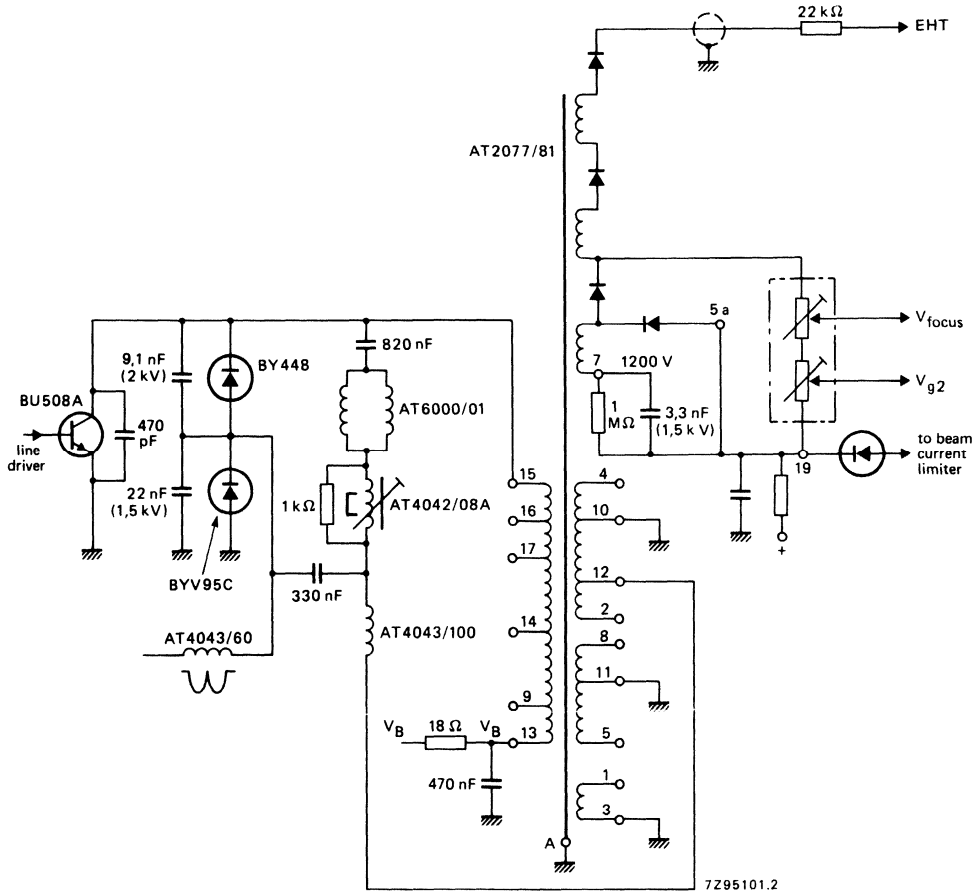


Fig. 7 Application circuit (110°).

ELECTRICAL DATA; for use with 51 cm, 90° Flat Square colour picture tube, see Fig. 8.

EHT supply	I_{eht}	mA	0	0,5	1
	EHT	kV	25,4	24,3	23,8
	$R_{i(eht)}$	MΩ		1,8	
Power supply	V_B	V	148,5	148,2	148,0
	$V_{B'}$	V	145	142,9	140,9
	I_B	mA	230	315	400
Output transistor	V_{CEM}	V	1200	1180	1190
	$+ I_{CEM}$	A	2,38	2,43	2,5
Deflection	deflection current	$A_{(p\text{-}p)}$	3,05	3,0	2,95
	flyback time	μs	10,6	10,7	10,8
	overscan	%	6		
Focusing voltage	min.	kV	0,24 x EHT		
	max.	kV	0,36 x EHT		
Grid 2 voltage (V_{g2})	min.	V	0,014 x EHT		
	max.	V	0,04 x EHT		
Auxiliary voltages	pin 9* (video)	V	230	226	223
	pin 5**	V(DC)	55	54	53
	heater voltage	V(r.m.s.)	8,2	8,0	7,9
	pin 4	V(p-p)	+ 59		
	pin 12	V(p-p)	−149		
	pin 2	V(p-p)	−283		
	pin 14	V(p-p)	−253		

* Values apply to voltages after rectification.
** Field time base; approx. 9 W.

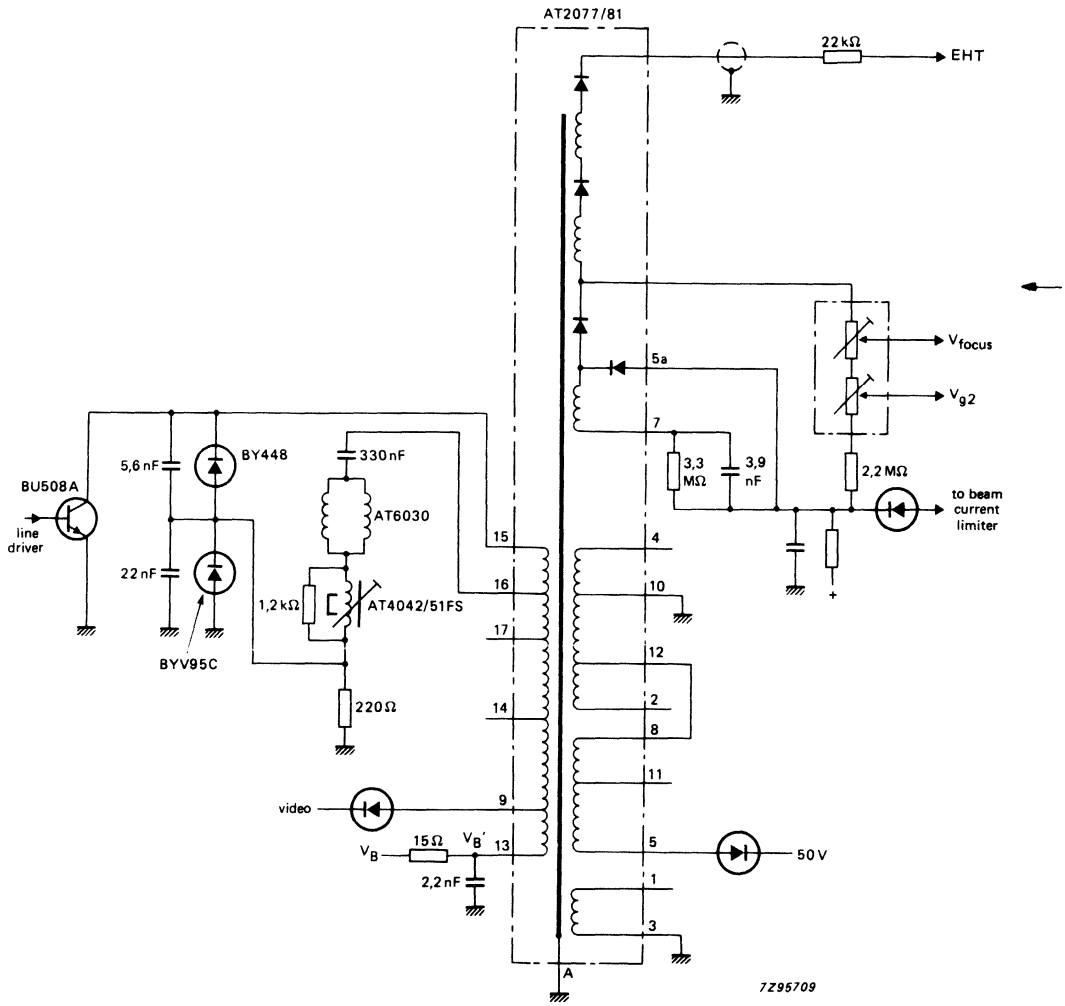


Fig. 8 Application circuit (90°).

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 110° deflection colour TV with twin switch power pack system (TSP²)
- Three-layer EHT coil, with tap for focusing voltage of 26 to 34% of EHT voltage
- Aluminium foil primary winding
- Incorporated focusing potentiometer
- Main insulation

QUICK REFERENCE DATA

For transistor line output stages; 110° deflection angle	
I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 1 MΩ
$I_{p\text{-}p}$ deflection	4,3 A
Supply current at I_{eht} = 1,1 mA	850 mA ± 10%
Auxiliary voltages	8,2 V (heater supply) 210 V (video supply) 26 V (frame) 12 V (small signal) 5 V (teletext) 150 V (scan voltage)

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 110° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

It is intended for use in conjunction with:
- input choke AT4043/16A;
- driver transformer AT4043/29;
- pulse transformer AT4043/76;
- mains filter choke AT4043/90;
- audio choke AT4043/96;
- screened e.h.t. cable, length 1 m; catalogue number 3122 137 63370;
- focus cable, length 31 cm; catalogue number 3122 131 00732.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer is provided with a focusing control potentiometer. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 2).

MECHANICAL DATA

Outlines

Dimensions in mm

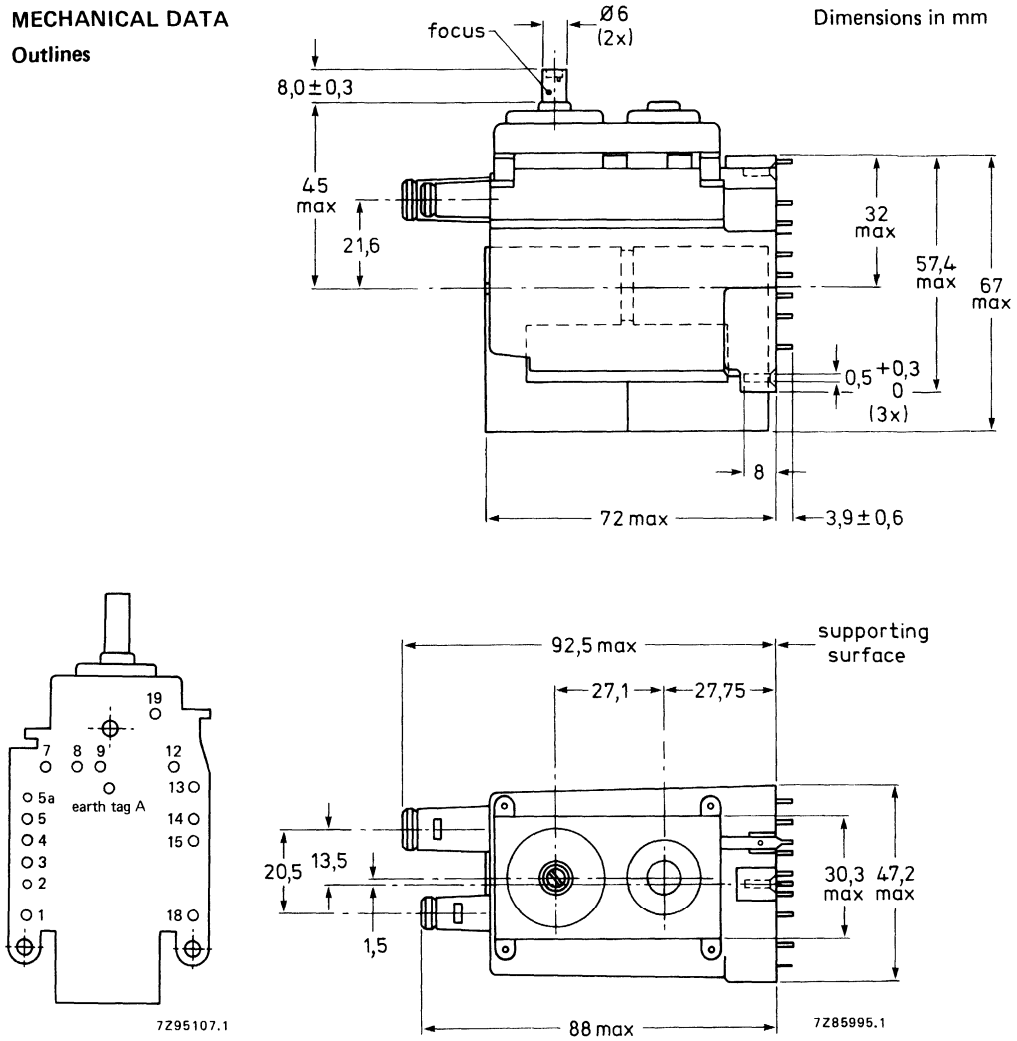


Fig. 1 Line output transformer AT2077/82.

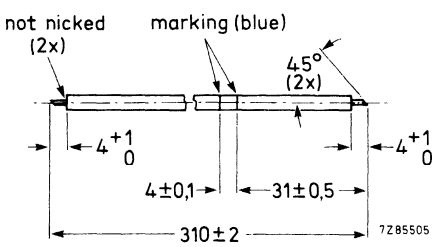


Fig. 2 Focus cable 3122 131 00732.

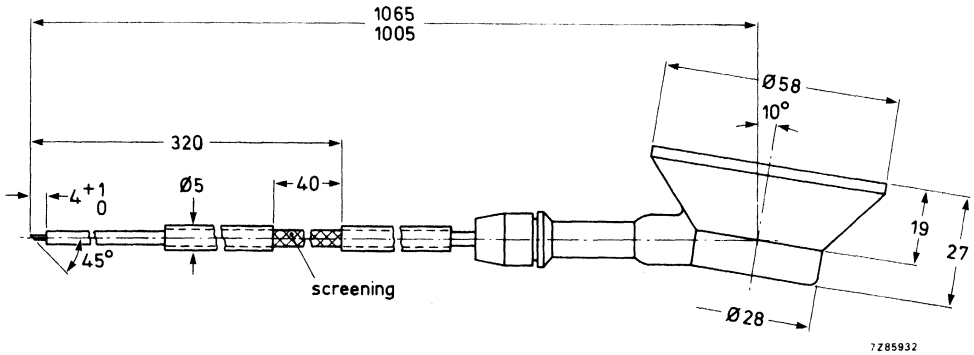


Fig. 3 E.H.T. cable 3122 137 63370.

Mass	approx. 325 g
Solderability	in accordance with IEC 68, test T
Packing	27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 4. The transformer core must be earthed via the earth pin (see Fig. 1).

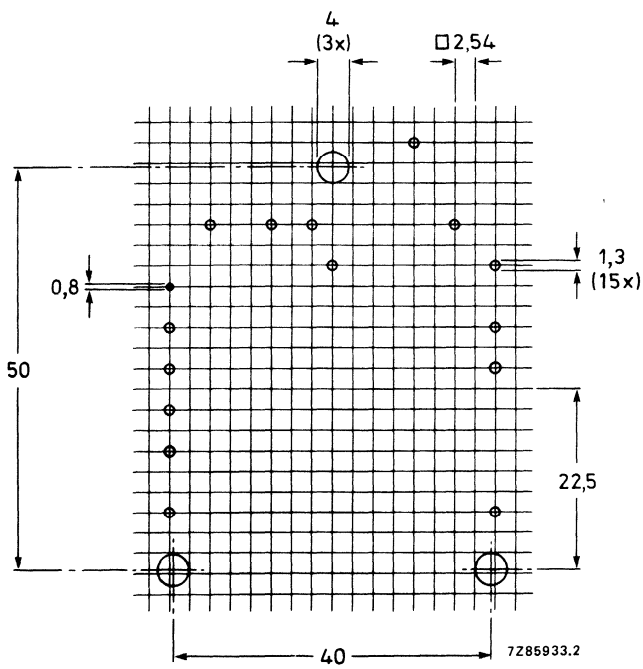


Fig. 4 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

→ The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The following minimum distances between the transformer and **neighbouring conductive flat surfaces** must be maintained:

From the EHT coil radially, 10 mm
From the EHT coil axially, 10 mm

Sharp edges of conductive parts must have greater distances than given above.

The transformer leads and components carrying high-voltage pulses, should be kept free from metal particles, solder drops, etc.

ELECTRICAL DATA with 110° colour picture tubes

EHT supply	I_{eht}	mA	0,1	1,1	1,6
	EHT	kV	25,0	24,1	23,65
	$R_{i(eht)}$	MΩ		0,9	
Power supply	V_B	V	100	101	101,5
	V_{CEM}*	V	1260	1270	1290
	I_{CEM}	A	1,7	2,1	2,15
Deflection	Overscan	%	6		6
	V_9	V	150	150	150
	Flyback time	μs	11,5	11,5	11,5
	V_{CEM}	V	1220	1230	1235
	I_{CEM}	A	3,45	3,65	3,8
	Deflection current	A (p-p)	4,3	4,3	4,3
Focusing voltage	min.	kV	5,6		
	max.		9,1		
Auxiliary windings: picture tube heater voltage, V_4		$V_{(rms)}$	8,2	8,2	8,2
Voltages (peak-to-peak values)** at					
pin 1	V1	V (DC)	+ 1220		
pin 2	V2	V	+ 87 to + 139		
pin 3	V3	V	−218		
pin 4	V4	V	+ 29		
pin 5	V5	V	−129		
pin 7	V7	V	+ 1145		
pin 8	V8	V	−74		
pin 9	V9	V (DC)	+ 150		
pin 15	V15	$V_{(p-p)}$	−80		

* At mains voltage 220 V. ** Pin 18 connected to earth.

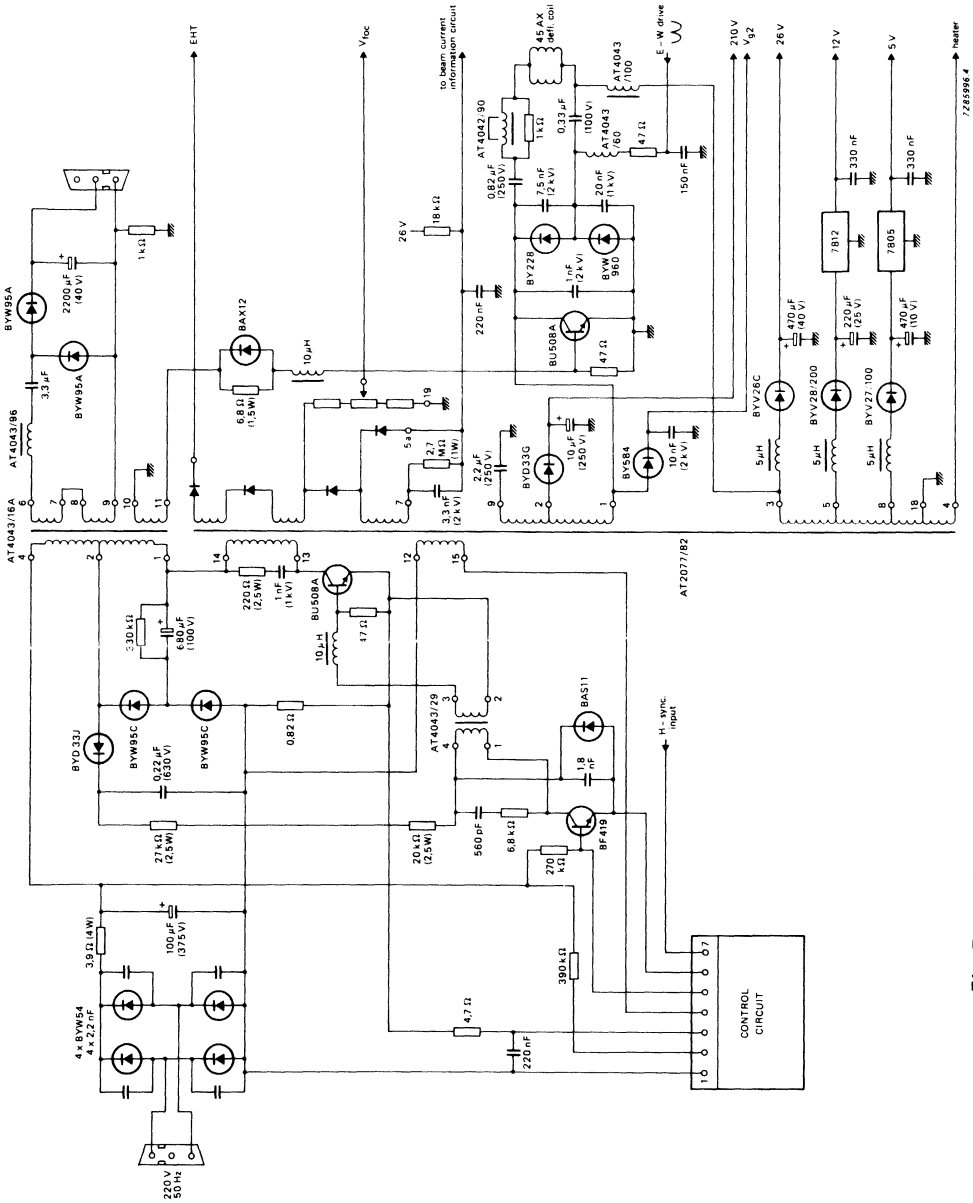


Fig. 5 Application circuit.

Replaces AT2076/53, AT2076/54, AT2076/84, AT2076/86

UNIVERSAL DIODE-SPLIT LINE OUTPUT TRANSFORMER

- For monochrome Data Graphic Displays
- Three-layer EHT coil
- Aluminium foil primary winding
- Piggy-back type

QUICK REFERENCE DATA

For transistor line output stages, deflection angle 110°

	landscape	portrait
I_{eht}	max. 0,5 mA	
EHT at I_B = 0 mA	17 kV	
$R_{i(eht)}$	1,2 MΩ	
Flyback time	4 to 9 μs	3 to 8 μs
Line scan frequency range	15 to 50 kHz	15 to 70 kHz
Primary voltages	+ 330 V, + 550 V, + 660 V, + 715 V, + 825 V, + 880 V, + 1100 V, + 1210 V, + 1300 V	
Auxiliary voltages	+ 56 V, + 31 V, + 28 V, + 16 V, −145 V, −270 V, heater voltage	

APPLICATION

This transformer has been designed to provide the required scanning amplitude and EHT for 110° monochrome data graphic display tubes, at line scan frequencies of 15 to 70 kHz in both landscape and portrait scan mode. A choice can be made from different flyback times.
The transformer is intended for use in conjunction with:
- deflection unit AT1039 series or the AT1037 series, at line scan frequencies of 15 to 100 kHz (portrait scan mode) or 15 to 70 kHz (landscape scan mode);
- line output transistor BUW12A;
- linearity control unit AT4042/08A or AT4042/33A or AT4042/31L
- screened EHT cable, length 1 m; catalogue number 3122 137 64640.

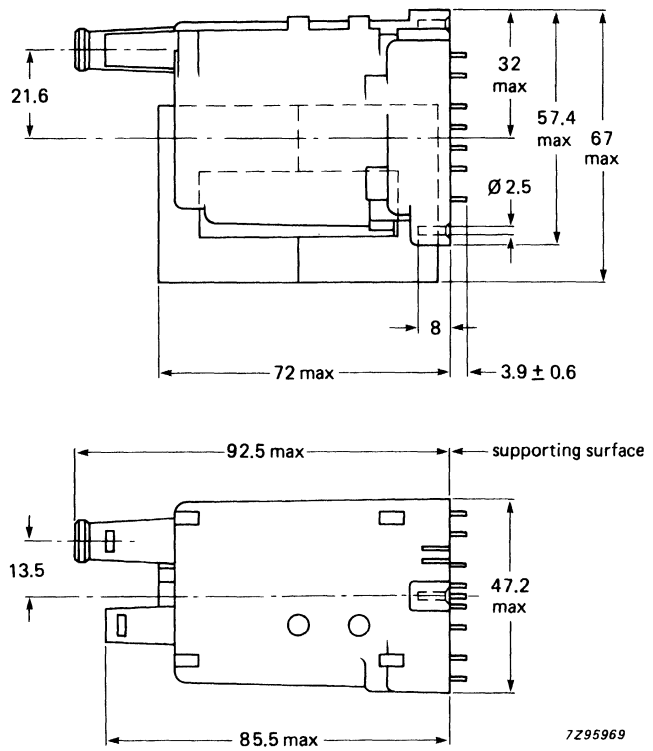
DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube U-cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The transformer is moulded in flame retarding epoxy, meeting the self-extinguishing requirements of IEC 65, para. 14.4 and UL492, para. 280-SE1. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 3).

MECHANICAL DATA

Dimensions in mm

Outlines



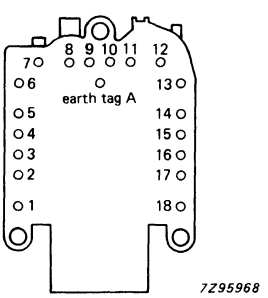


Fig. 1 Line output transformer AT2077/84.

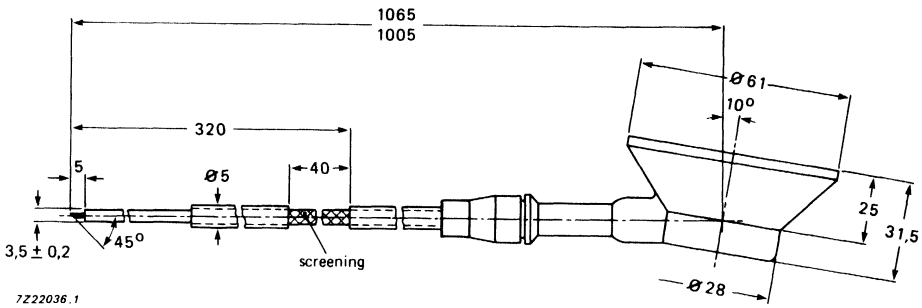


Fig. 2 EHT cable 3122 137 64640.

Mass approx. 355 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 3. The transformer core must be earthed via the earth pin (see Fig. 1).

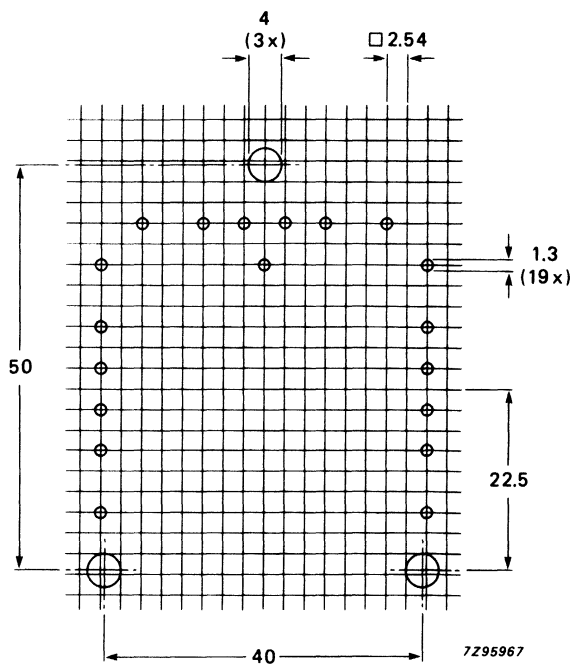


Fig. 3 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

– over-voltage on the coils;
– low atmospheric pressure (at high altitudes) implying bad cooling by convection;
– high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 4 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

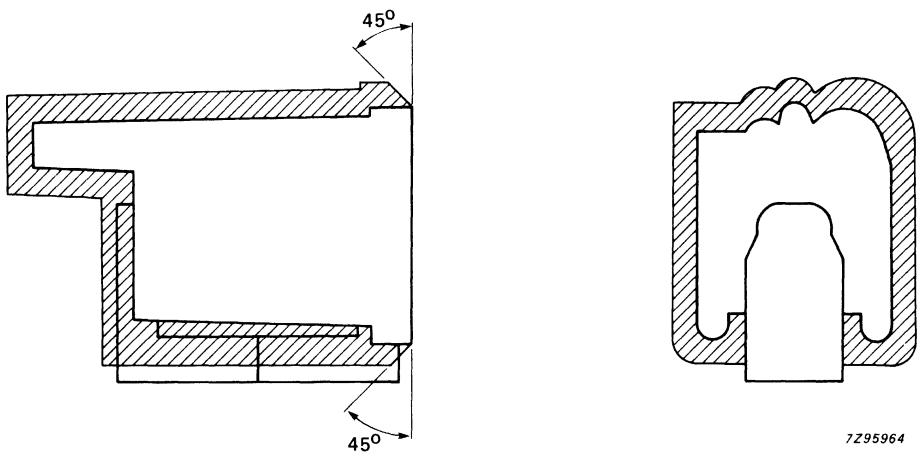
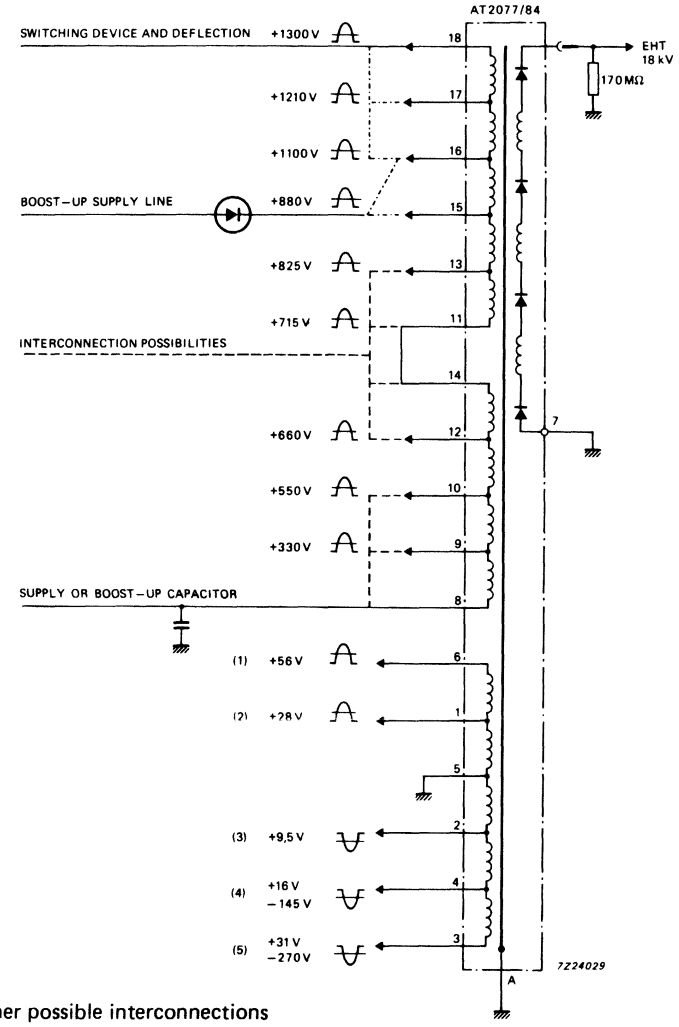


Fig. 4 Distances between EHT coil and conductive parts.



— · — · — other possible interconnections

Auxiliaries

(1) Video supply (flyback), 12,6 V_{rms}, CRT heater.
(2) Field time base supply (flyback), 6,3 V_{rms}, CRT heater.
(3) 6,3 V DC CRT heater (flyback rectified).
(4) Low voltage supply, V_{g1} supply.
(5) Field time base supply (scan).

Fig. 5 Primary and auxiliary voltages.

ELECTRICAL DATA (landscape format at 32 kHz; see Fig. 6)

EHT supply	I_{eht} (typical)	μA	60
	EHT	kV	17
	$R_{i(eht)}$	MΩ	1,5
Power supply	V_B	V	79
	V_B'	V	72,8
	I_B	mA	625
Output transistor	V_{CEM}	$V_{(p\text{-}p)}$	720
	$+ I_{CEM}$	A	5,5
Deflection	deflection current	$A_{(p\text{-}p)}$	8,35
	flyback time	μs	4,0
	overscan	%	0
Auxiliary voltages	pin 1	$V_{(rms)}$	7,5
	pin 2	$V_{(p\text{-}p)}$	−9
	pin 3a*	$V_{(DC)}$	26,5
	pin 4a*	$V_{(DC)}$	−147
	pin 6a*	$V_{(DC)}$	55,7
	pin 13a*	$V_{(DC)}$	720

* After rectification.

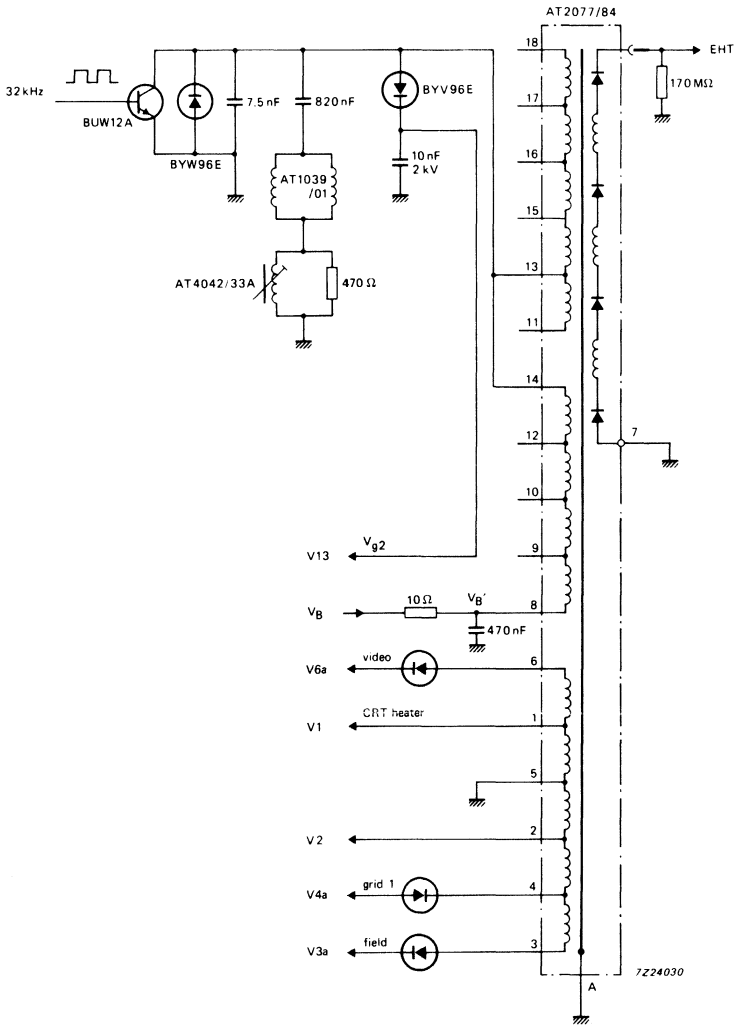


Fig. 6 Application circuit, landscape format, 32 kHz.

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 90° colour monitors with separate power supply
- Three-layer EHT coil
- Aluminium foil primary winding
- Incorporated potentiometers for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90°	
I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 3,0 MΩ
I_{p-p} deflection (6% overscan)	8,1 A
Supply voltage (V_B')	100 V
Voltages of primary windings (peak-to-peak values)	+ 51 V, + 102 V, + 630 V, + 770 V, + 910 V, + 1050 V
Voltages of auxiliary windings (peak-to-peak values)	+ 58 V, + 218 V, −70 V, −180 V, −610 V
heater voltage (r.m.s. value)	10,4 V

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 90° colour picture tubes in transistor equipped monitors operating at horizontal scanning frequencies from 30 to 50 kHz.

It is intended for use in conjunction with:
- linearity corrector AT4042/33A;
- bridge coil AT4043/13;
- screened EHT cable, length 1 m; catalogue number 3122 137 64640;
- focus cable, length 31 cm; catalogue number 3122 131 00732;
- V_{g2} cable, length 30 cm; catalogue number 3122 137 64570.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 4).

MECHANICAL DATA

Outlines

Dimensions in mm

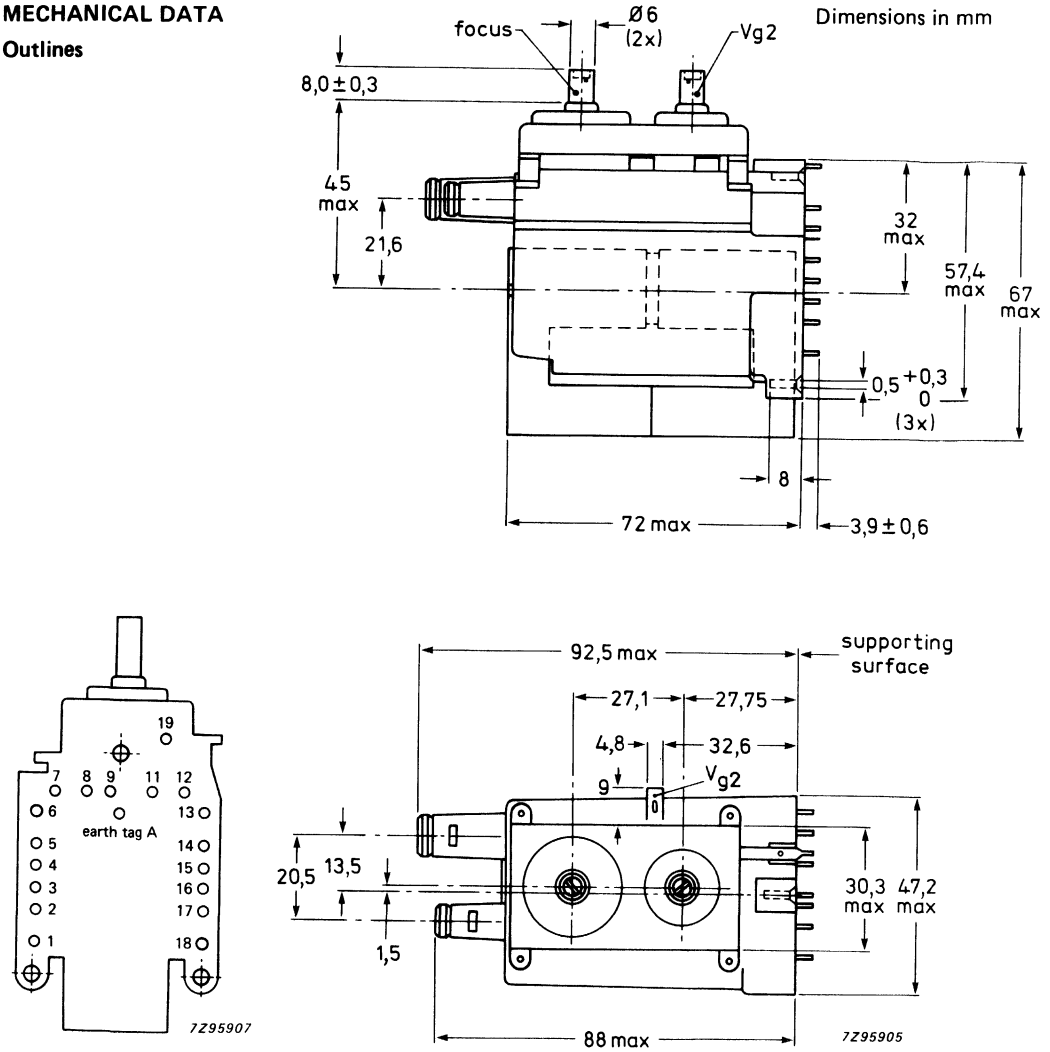


Fig. 1 Line output transformer AT2077/85.

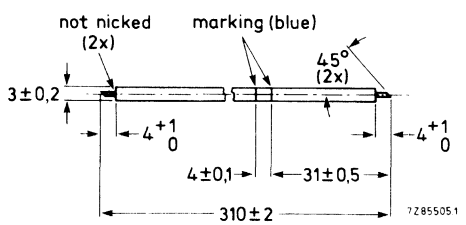


Fig. 2 Focus cable 3122 131 00732.

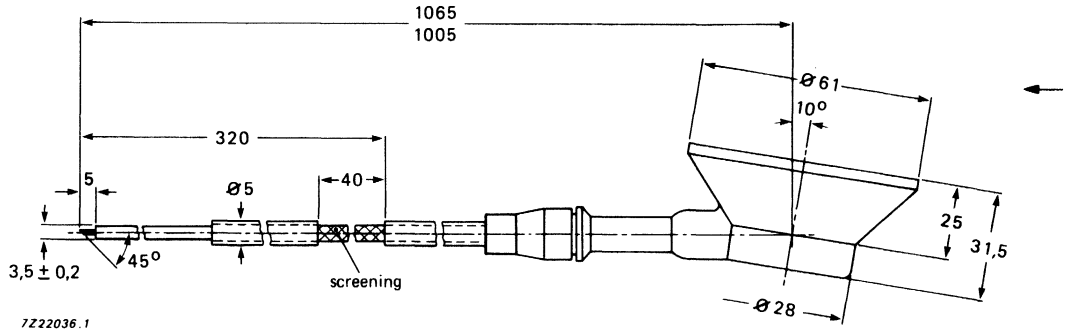


Fig. 3 EHT cable 3122 137 64640.

Mass approx. 375 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

DEVELOPMENT DATA

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 4. The transformer core must be earthed via the earth pin (see Fig. 1).

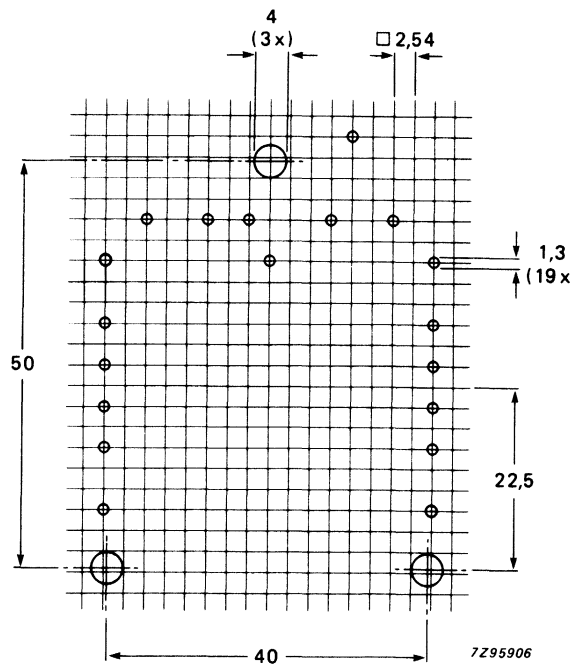


Fig. 4 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 5 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

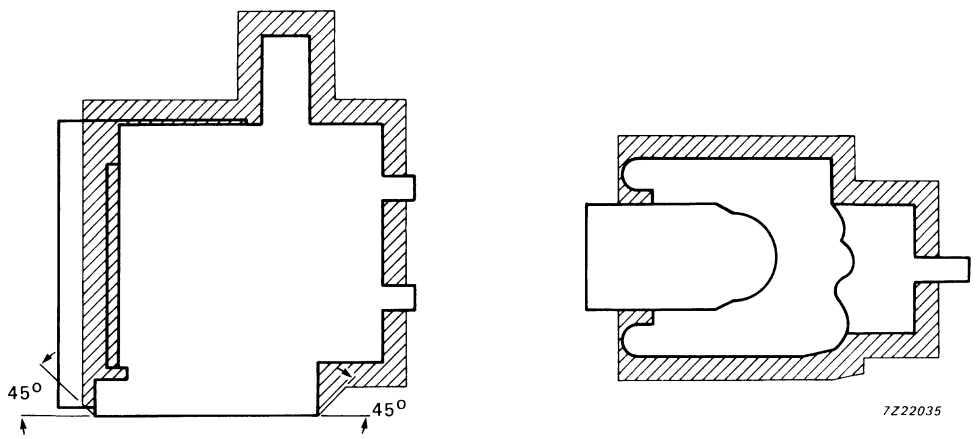
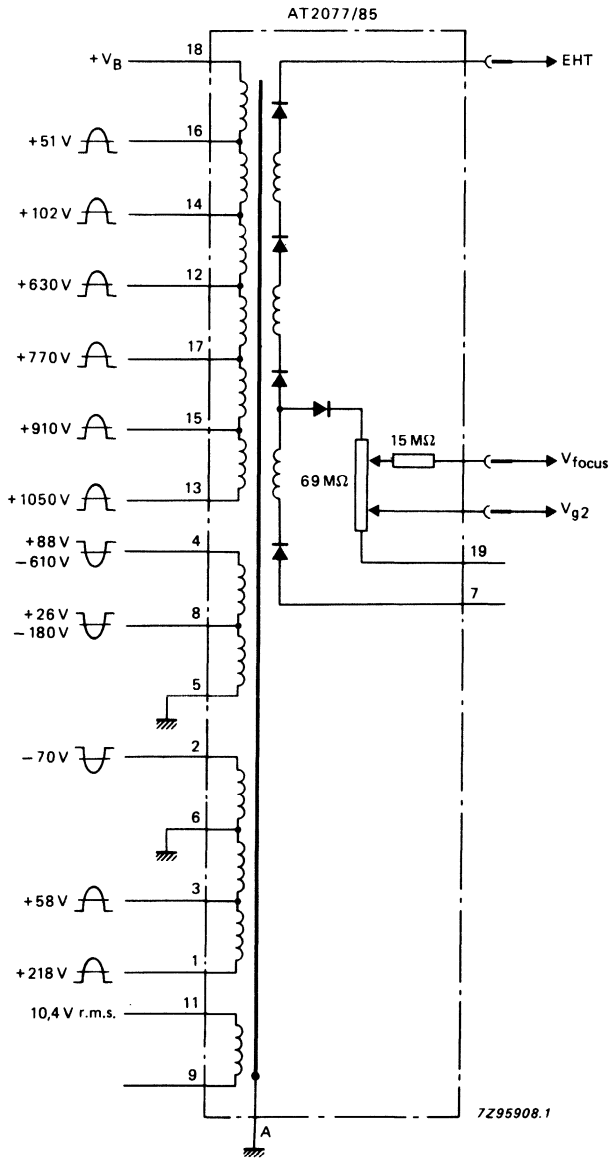


Fig. 5 Distances between EHT coil and conductive parts.

DEVELOPMENT DATA



1. Duty cycle 18%.
2. Frequency range 30 - 50 kHz (upper frequency limit due to EW modulator tuning).

Fig. 6 Primary and auxiliary voltages.

ELECTRICAL DATA (see Fig. 7)

EHT supply	I_{eht}	mA	$\leqslant 0,5$
	EHT	kV	25
	$R_{i(eht)}$	MΩ	$\leqslant 3$
Power supply	V_B	V	100
	I_B	mA	700
Output transistor	V_{CEM}	V	750
	$+ I_{CEM}$	A	5,5
Deflection	deflection current	$A_{(p\text{-}p)}$	8,1
	flyback time	μs	4,5
	overscan	%	6
Focusing voltage	min.	kV	0,22 x EHT
	max.	kV	0,33 x EHT
Grid 2 voltage (V_{g2})	min.	V	0,011 x EHT
	max.	V	0,033 x EHT
Auxiliary voltages	heater voltage	$V_{(rms)}$	10,4
	pin 3	$V_{(pk)}$	60,0
(after rectification)	pin 4	$V_{(DC)}$	90,0
	pin 8	$V_{(DC)}$	26,0

DEVELOPMENT DATA

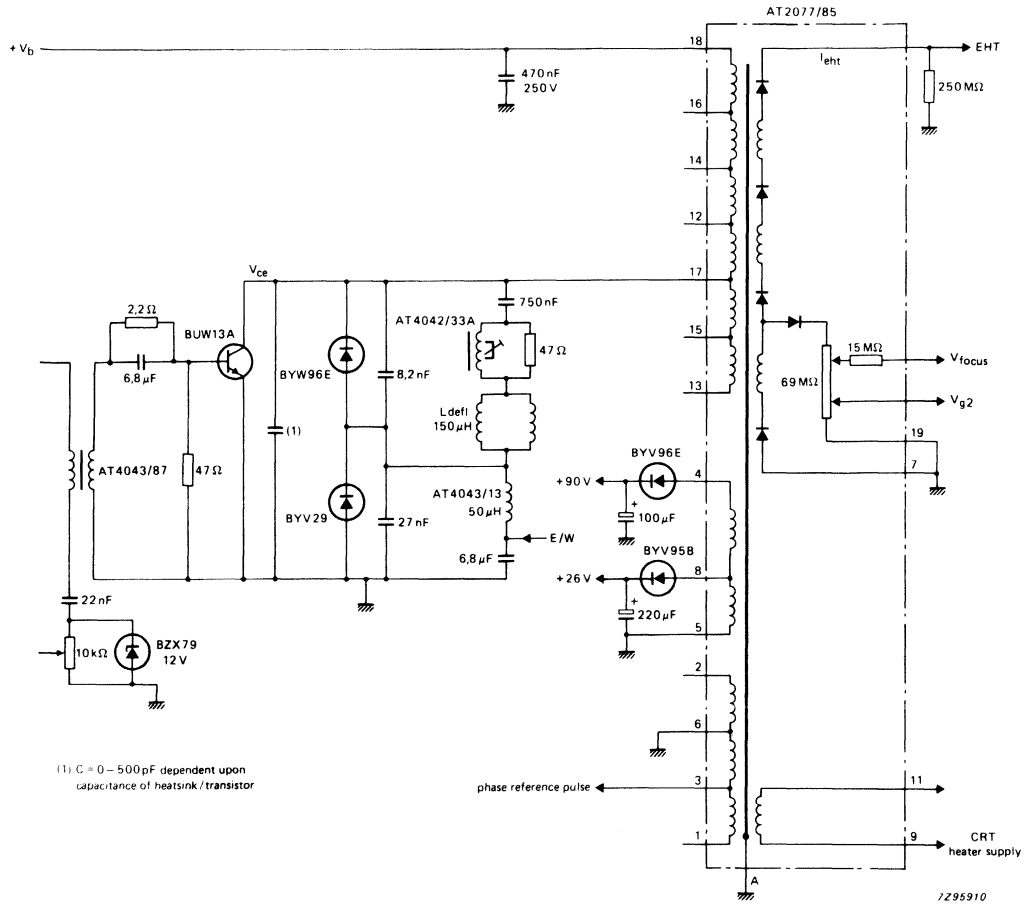


Fig. 7 Application circuit for colour DGD monitors (frequency range 30 - 50 kHz).

ELECTRICAL DATA (see Fig. 8)

EHT supply	I_{eht}	mA	⩽0,6	←
	EHT	kV	25	
	$R_{i(eht)}$	MΩ	⩽3	←
Power supply	V_B	V	100	
	I_B	mA	800	
Output transistor	V_{CEM}	V	850	
	$+ I_{CEM}$	A	5,5	
Deflection	deflection current	$A_{(p-p)}$	7,2	
	flyback time	μs	4,5	
	overscan	%	6	
Focusing voltage	min.	kV	0,22 x EHT	
	max.	kV	0,33 x EHT	
Grid 2 voltage (V_{g2})	min.	V	0,011 x EHT	
	max.	V	0,033 x EHT	
Auxiliary voltages	heater voltage	$V_{(rms)}$	10,4	
	pin 3	$V_{(pk)}$	60,0	
(after rectification)	pin 4	$V_{(DC)}$	90,0	
	pin 8	$V_{(DC)}$	26,0	

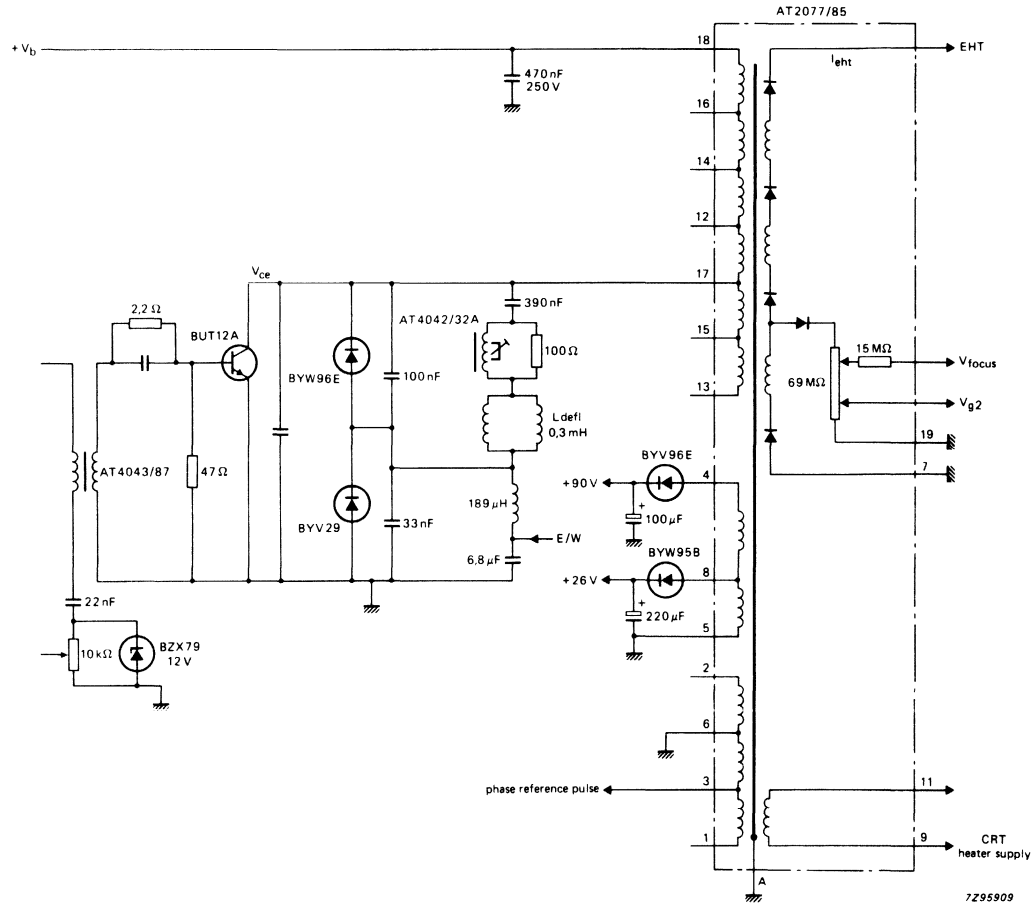


Fig. 8 Application circuit for colour DGD monitors (32 kHz).

DEVELOPMENT DATA

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For colour monitors with separate power supply
- Three-layer EHT coil
- Aluminium foil primary winding

QUICK REFERENCE DATA

For transistor line output stages	
I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 1,0 MΩ
$I_{p\text{-}p}$ deflection (6% overscan)	8,1 A
Supply voltage (V_B')	100 V (or more dependent on circuitry)
Voltages of primary windings (peak-to-peak values)	+ 51 V, + 102 V, + 630 V, + 770 V, + 910 V, + 1050 V
Voltages of auxiliary windings (peak-to-peak values)	+ 58 V, + 218 V, −70 V, −180 V, −610 V
heater voltage (rms value)	10,4 V

APPLICATION

This transformer has been designed to provide the required EHT for colour picture tubes in transistor equipped monitors operating at horizontal scanning frequencies from 30 to 50 kHz.

It is intended for use in conjunction with:
- linearity corrector AT4042/33A, (only for combined EHT/deflection systems);
- bridge coil AT4043/13, (only for combined EHT/deflection systems);
- screened EHT cable, length 1 m, for unstabilized EHT generators, catalogue number 3122 137 64640;
- RCF block (see Fig. 6), for stabilized EHT generators, catalogue number 3122 137 21181 ←

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 3).

MECHANICAL DATA

Dimensions in mm

Outlines

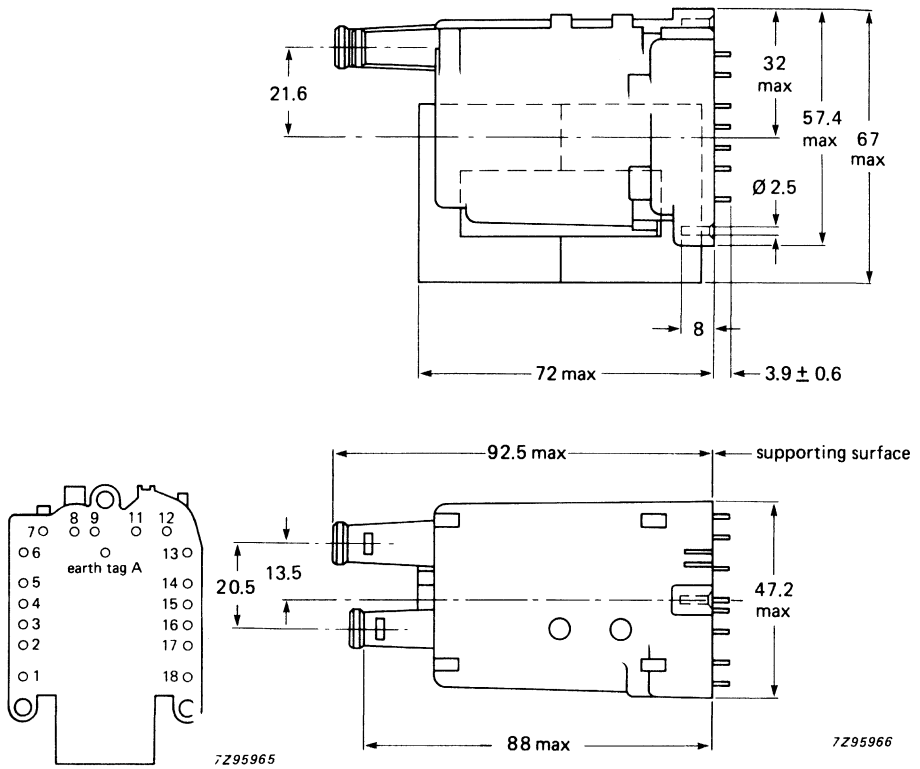


Fig. 1 Line output transformer AT2077/85A.

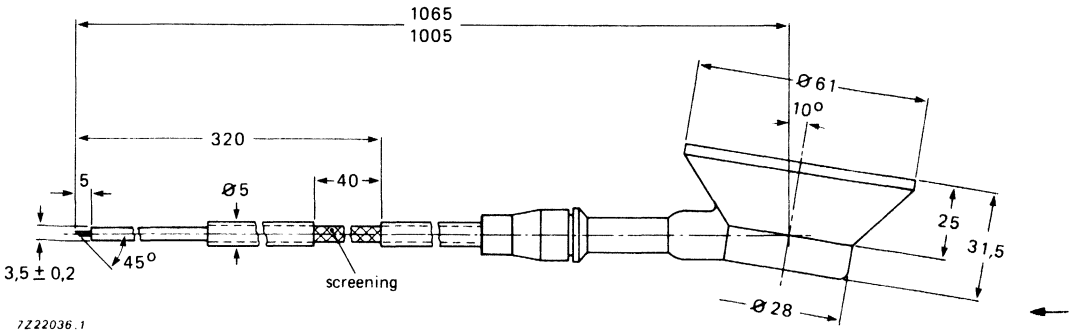


Fig. 2 EHT cable 3122 137 64640.

Mass approx. 355 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 3. The transformer core must be earthed via the earth pin (see Fig. 1).

DEVELOPMENT DATA

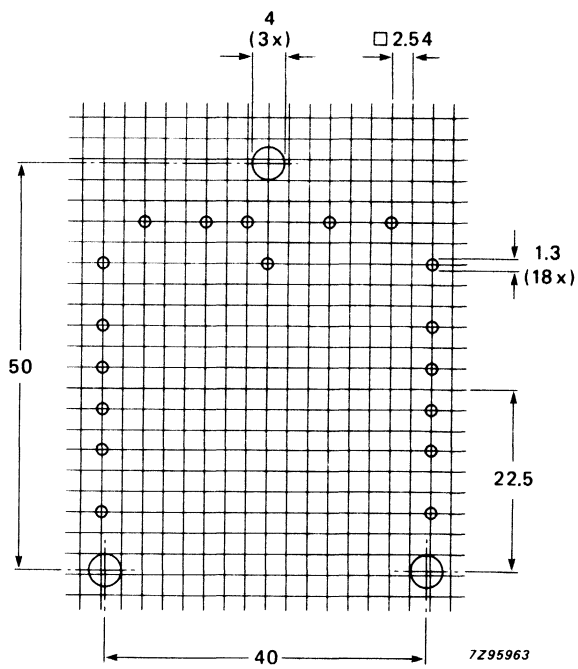


Fig. 3 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 4 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

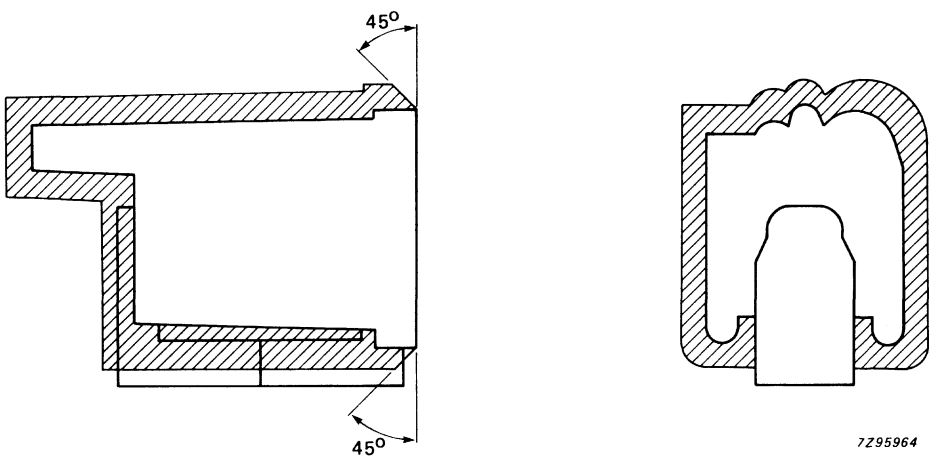
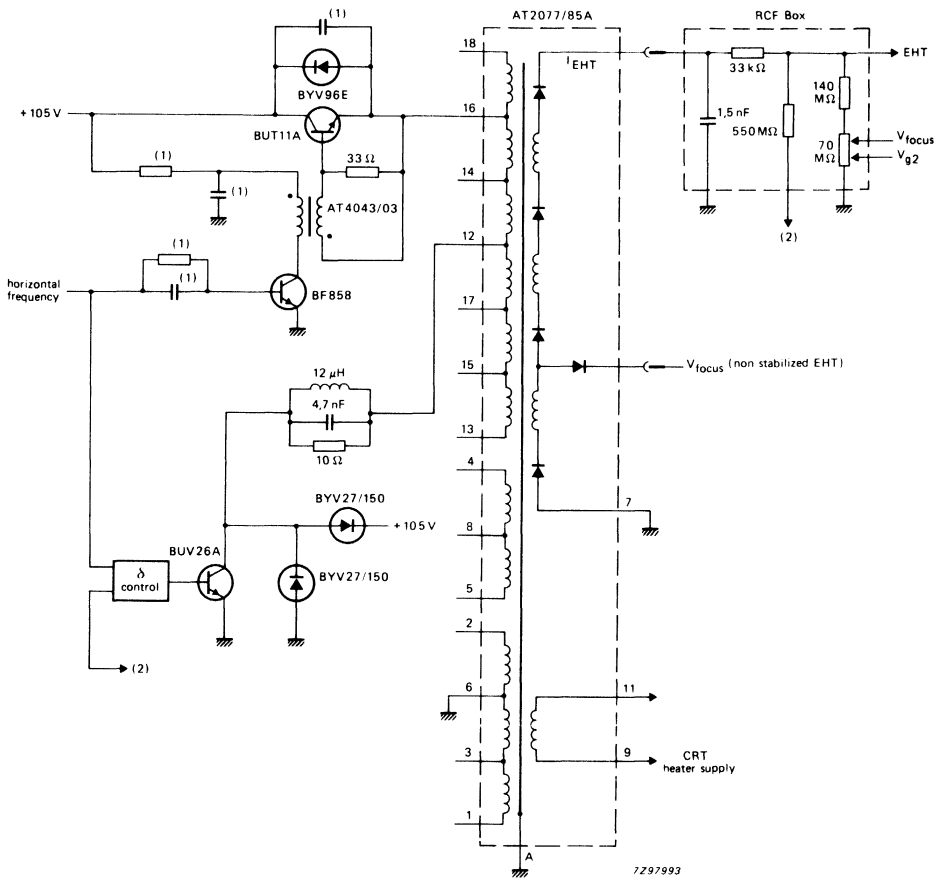


Fig. 4 Distances between EHT coil and conductive parts.

DEVELOPMENT DATA



(1) These components are dependent on desired flyback time and operating frequency.

Fig. 5 Application circuit for stabilized EHT generation.

DIODE-SPLIT-BOX LINE OUTPUT TRANSFORMER

- For 90° and 110° colour TV and colour monitors with separate power supply
- Three-layer EHT coil
- Aluminium foil primary winding
- Incorporated potentiometers for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90° and 110° deflection angle	
I_{eht}	0 mA
EHT	25 kV
$R_{i(eht)}$	$\leqslant$ 2,5 MΩ
I_{p-p} deflection (6% overscan)	4,4 A
Supply voltage (V_B)	143 V
Voltages of auxiliary windings (peak-to-peak values)	+ 207 V
heater voltage (r.m.s. value)	8,1 V

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 90° and 110° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

It is intended for use in conjunction with:
- linearity corrector AT4042/30;
- screened EHT cable, length 1 m, catalogue number 3122 137 6337, UL approved cable, catalogue number 3122 137 6464 or unscreened EHT cable, length 59 cm, catalogue number 3122 137 63260;
- focus cable, length 31 cm, catalogue number 3122 131 00732;
- V_{g2} cable, length 30 cm, catalogue number 3122 137 64570.

DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding of aluminium foil and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. The transformer case has 3 holes that enables fixing to a printed-wiring board with self-tapping screws. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board (Fig. 5).

MECHANICAL DATA

Dimensions in mm

Outlines

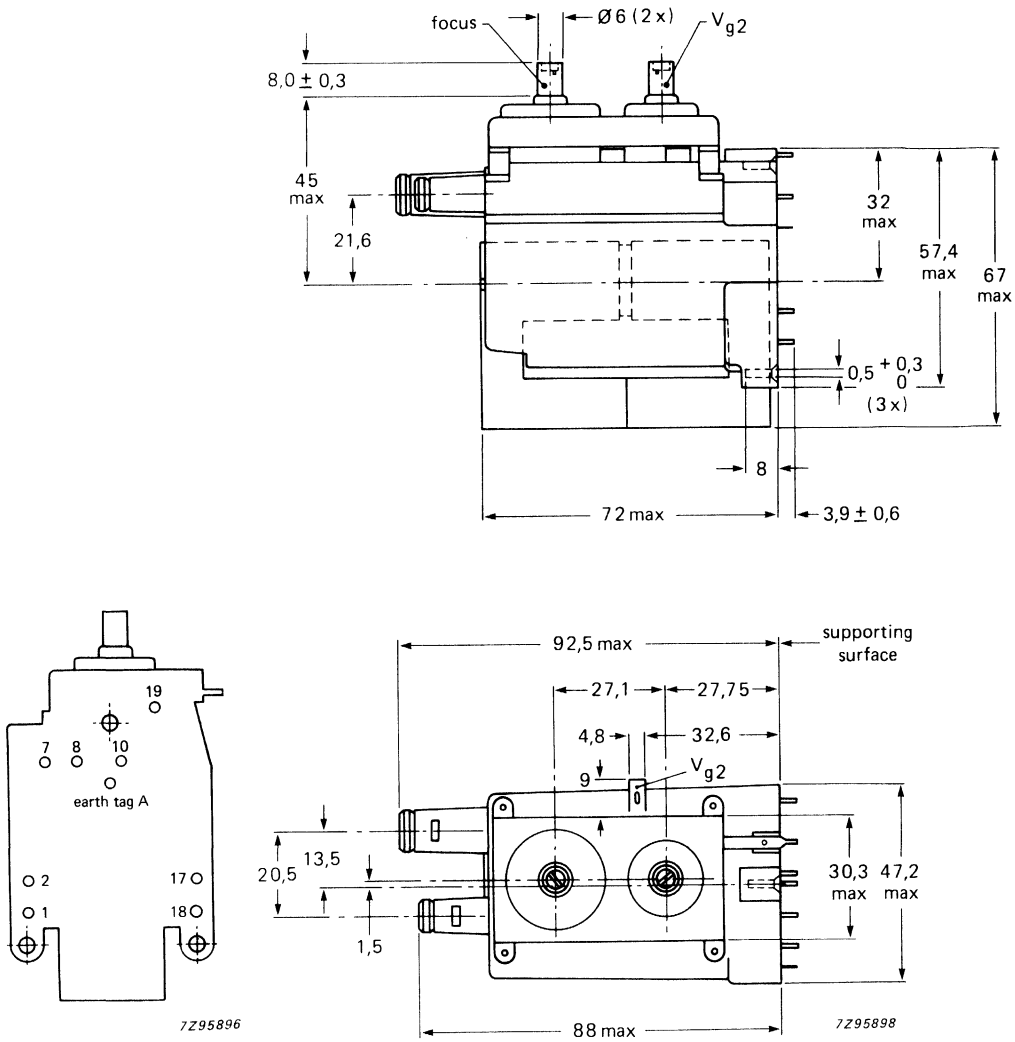


Fig. 1 Line output transformer AT2077/88.

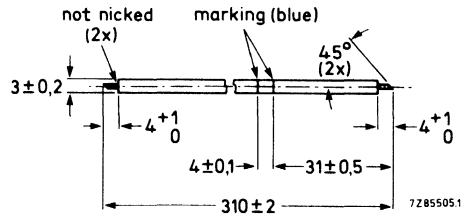


Fig. 2 Focus cable 3122 131 00732.

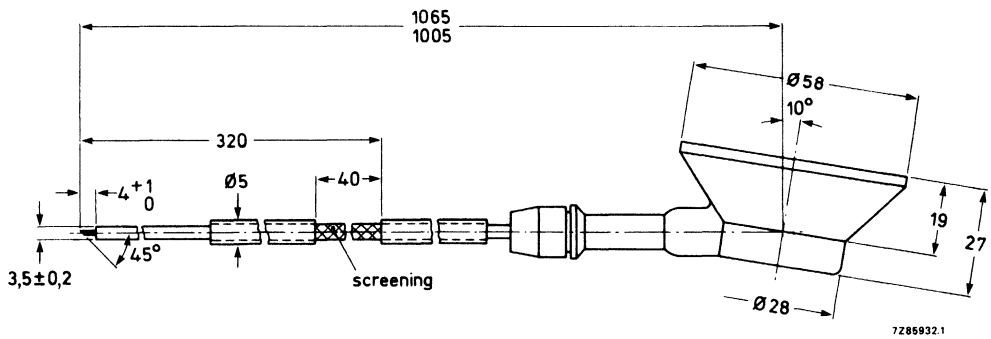


Fig. 3 EHT cable 3122 137 63370.

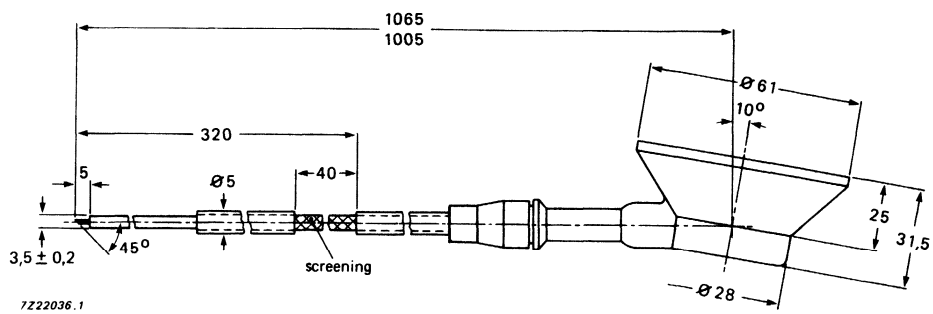


Fig. 4 UL approved cable 3122 137 64640.

Mass approx. 375 g

Solderability in accordance with IEC 68, test T

Packing 27 transformers per box

Mounting

The transformer may be mounted on a printed-wiring board. It can be secured with 3 self-tapping screws; the tightening torque on the board is 500 + 300 mNm. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm is illustrated in Fig. 5. The transformer core must be earthed via the earth pin (see Fig. 1).

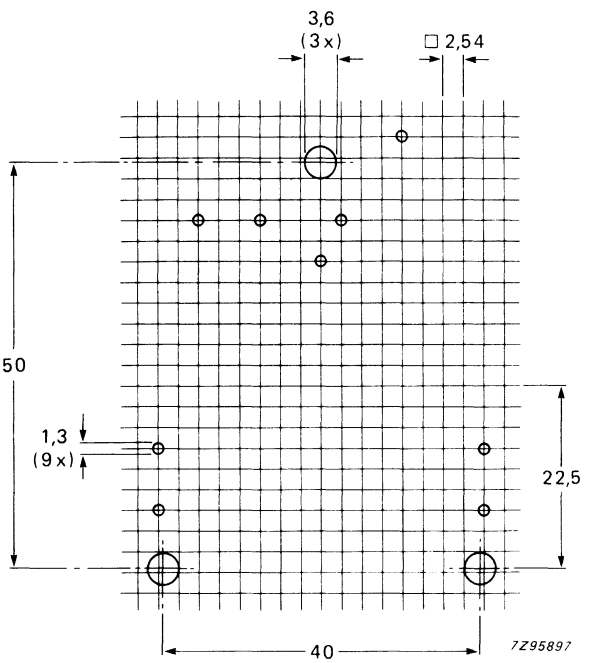


Fig. 5 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The hatched area shown in Fig. 6 must be free from all conductive parts. The width of the hatched area should be 10 mm. Special care should be taken with respect to sharp edges; these may require greater distances. The transformer leads and components carrying high-voltage pulses, should be free from metal particles, solder drops, etc.

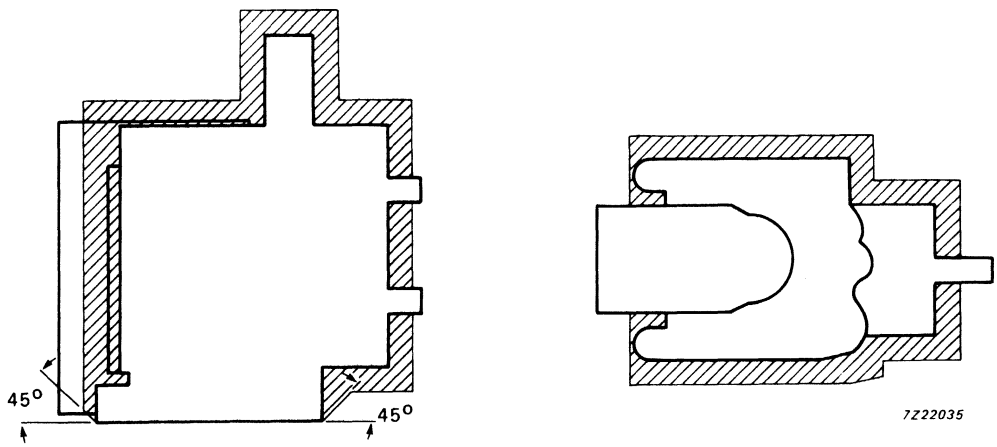


Fig. 6 Distances between EHT coil and conductive parts.

ELECTRICAL DATA (see Fig. 7)

EHT supply	I_{eht} EHT $R_{i(eht)}$	mA kV MΩ	1,2 25 2,5
Power supply	V_B I_B	$V_{(p-p)}$ mA	143 450
Output transistor	V_{CEM} + I_{CEM}	V A	1140 3,8
Deflection	deflection current flyback time overscan	$A_{(p-p)}$ μs %	5,2 11,2 6
Focusing voltage	min. max.	kV kV	0,22 x EHT 0,33 x EHT
Grid 2 voltage (V_{g2})	min. max.	V V	0,011 x EHT 0,033 x EHT
Auxiliary voltages (after rectification)	pin 2 pin 8 heater voltage	V (DC) V (rms)	207 8,1

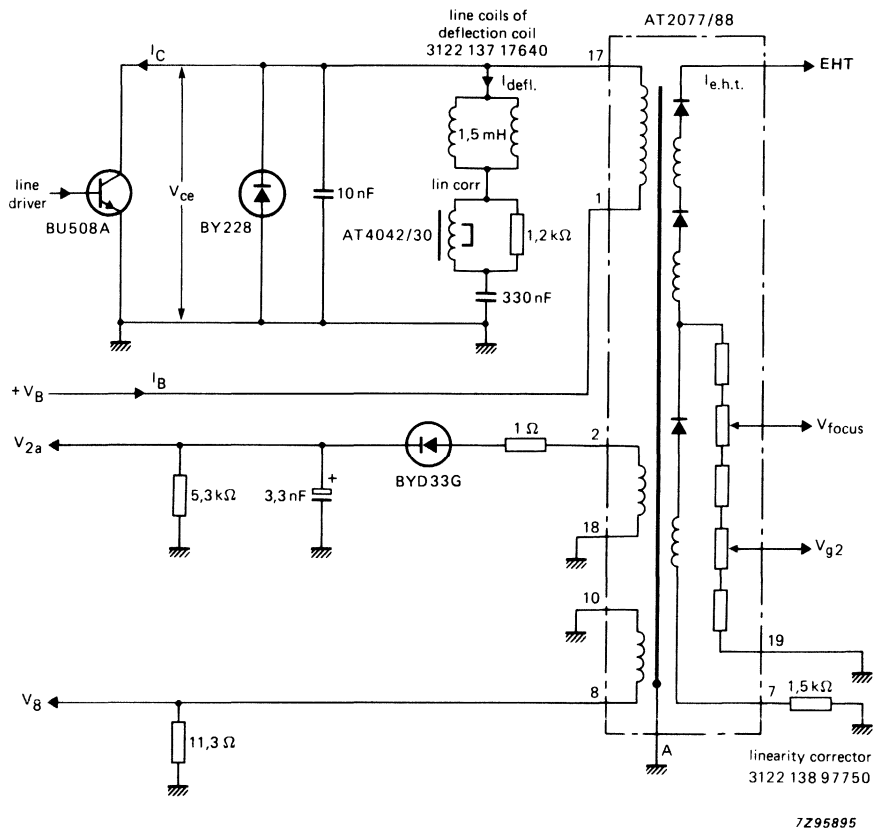


Fig. 7 Application circuit, 15,6 kHz.

LINE OUTPUT TRANSFORMER

"Micro slot"

- For 90° colour TV and colour monitors
- Incorporated potentiometers and cables for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90° deflection angle	
I_{eht}	$\leqslant$ 1 mA
EHT	23 kV
$R_{i(eht)}$	$\leqslant$ 2 MΩ
I_{p-p} deflection	2,2 A
Supply voltage (V_B)	112 V
Supply current at I_{eht} = 0,9 mA	480 mA
Focusing voltage control	25 to 34,5% of EHT
Grid 2 voltage control	110 to 1000 V
Auxiliary voltages	7,2 V (r.m.s.) (heater supply) + 178 V (video supply) + 27,2 V (frame) + 13,4 V (small signal) 140 $V_{(p-p)}$ (reference pulse)

APPLICATION

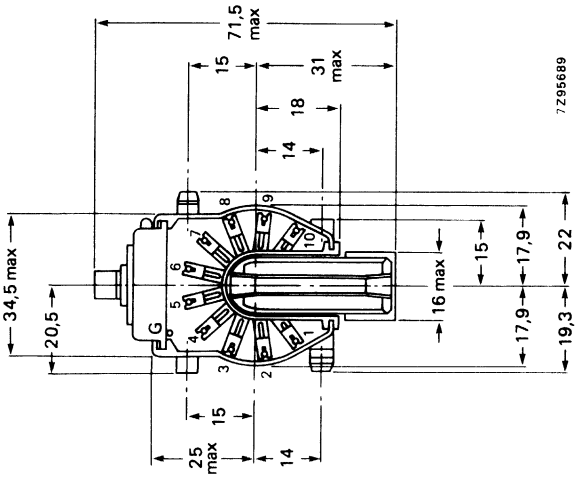
This transformer has been designed to provide the required scanning amplitude for 90° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

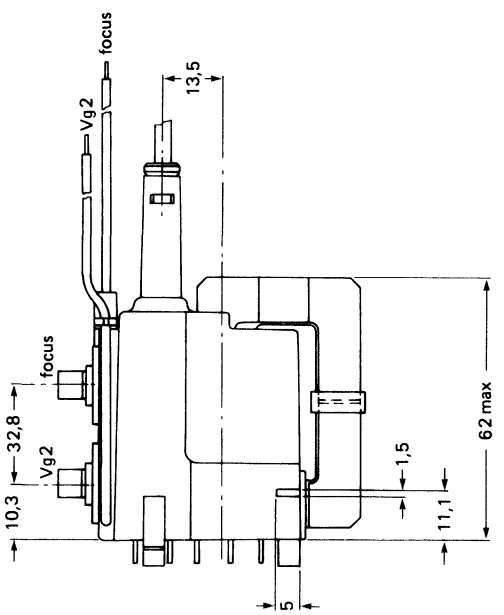
DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. External circuit connection is made to connecting pins, positioned as indicated in Fig.1, enabling the unit to be soldered directly into a printed-wiring board.

For mechanized mounting this line output transformer can also be supplied without cables.

Dimensions in mm





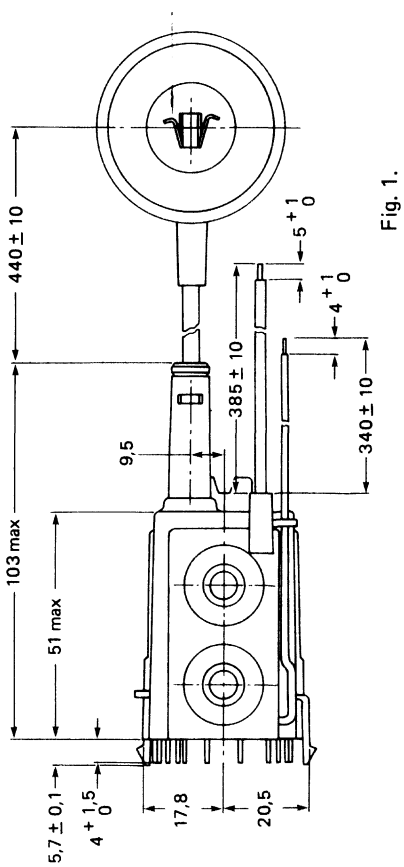


Fig. 1.

MECHANICAL DATA

Outlines

Mass approx. 190 g

Solderability in accordance with IEC 68, test Ta

Packing 24 transformers per box

Mounting

For mounting hole pattern see Fig. 2. The transformer core must be earthed via the earth tag (G, Fig. 1).

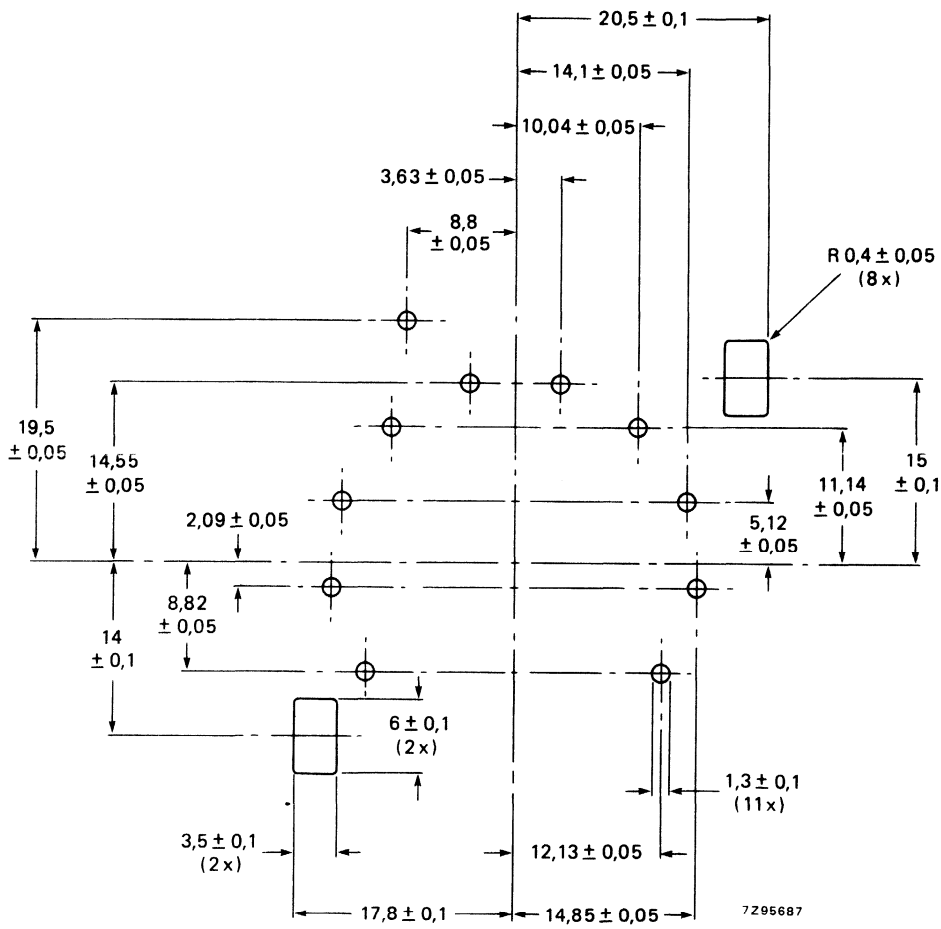


Fig. 2 Mounting hole pattern (solder side).

MECHANICAL DATA (continued)

Temperature

→ The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The minimum distance between the EHT coil and neighbouring conductive flat surfaces is 10 mm.

Sharp edges of conductive parts must have greater distances.

The transformer leads and components carrying high-voltage pulses, should be kept free from metal particles, solder drops, etc.

ELECTRICAL DATA

EHT supply	I_{eht} EHT $R_{i(eht)}$	$\leqslant$ 0,9 mA 23 kV $\leqslant$ 2 MΩ
Power supply	V_B $I_{average}$	112 V 480 mA
Output transistor	V_{CEM} + I_{CEM}	970 V 1,9 A
Deflection	deflection current (p-p) flyback time line frequency deflection coil inductance	2,2 A 10,9 μs 15625 Hz 2,7 mH
Focusing voltage Focusing current	min. max.	25% of EHT 34,5% of EHT 120 μA
Grid 2 voltage (V_{g2})	min. (DC) max. (DC)	110 V 1000 V
Auxiliary voltages	pin 3, V_3 (rms) pin 2, V_2 (DC) pin 4, V_4 (DC) pin 6, V_6 (DC) pin 8, V_8 (p-p)	7,2 V (heater voltage) + 178 V (video supply) + 27,2 V (frame supply) + 13,4 V (small signal supply) 140 V (reference pulse)

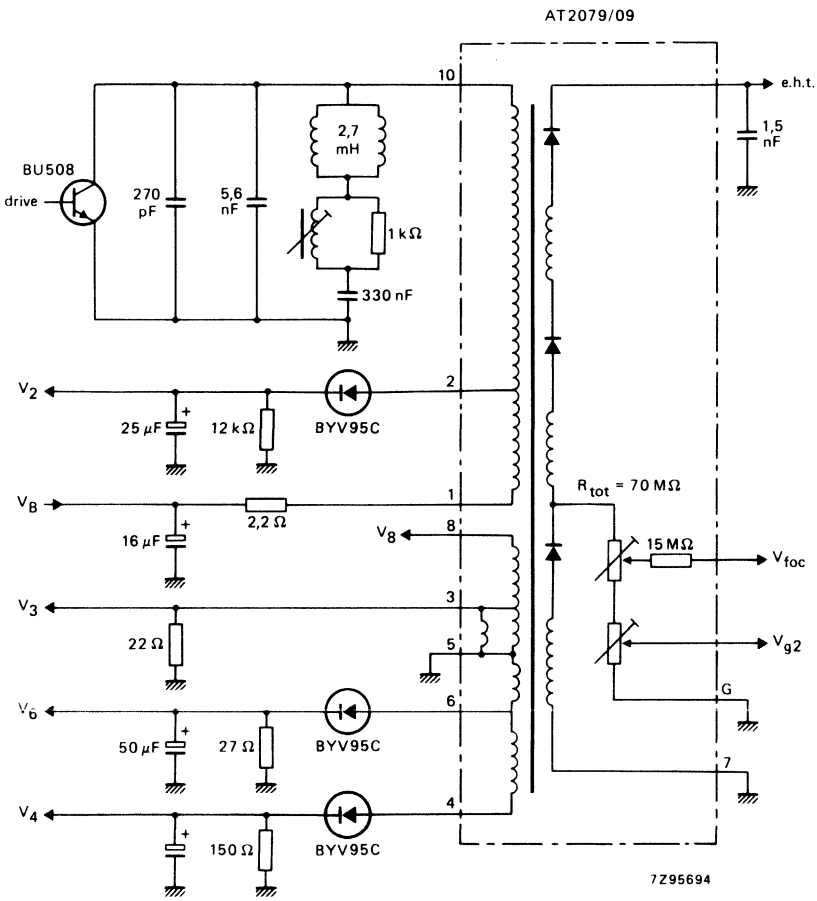


Fig. 3 Application circuit.

LINE OUTPUT TRANSFORMER

"Micro slot"

- For 90° colour TV and colour monitors
- Incorporated potentiometers and cables for focusing and V_{g2} adjustment

QUICK REFERENCE DATA

For transistor line output stages; 90° deflection angle	
I_{eht}	$\leqslant$ 1 mA
EHT	25,5 kV
$R_{i(eht)}$	$\leqslant$ 2 MΩ
$I_{p\text{-}p}$ deflection	2,6 A
Supply voltage (V_B)	95 V
Supply current at I_{eht} = 0,9 mA	580 mA
Focusing voltage control	26 to 34,5% of EHT
Grid 2 voltage control	220 to 830 V
Auxiliary voltages	6,8 V (heater supply) + 163,2 V (video supply) + 12,7 V + 7,3 V

APPLICATION

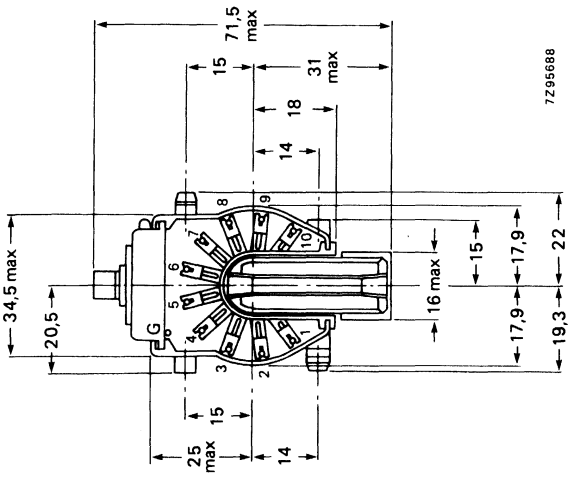
This transformer has been designed to provide the required scanning amplitude for 90° colour picture tubes in transistor equipped television receivers presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA). The transformer may also be used in colour monitors.

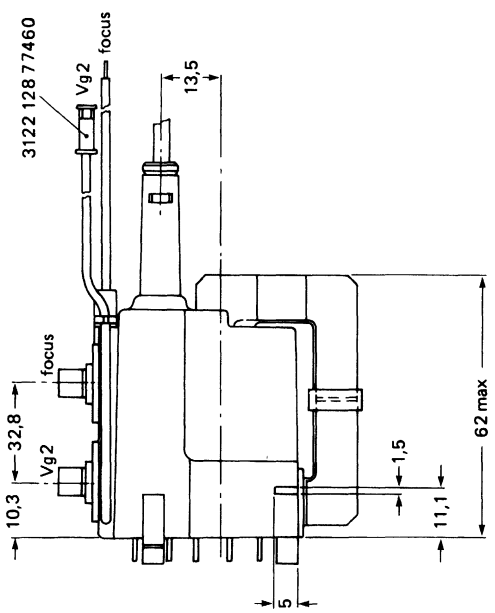
DESCRIPTION

The magnetic circuit of the transformer comprises 2 Ferroxcube cores, glued together. The primary winding and the secondary windings are situated on one leg of the core. The primary winding together with its EHT winding and EHT diodes are encapsulated with epoxy resin in a pre-moulded case. The transformer has potentiometers for focusing control and V_{g2} adjustment. External circuit connection is made to connecting pins, positioned as indicated in Fig. 1, enabling the unit to be soldered directly into a printed-wiring board.

For mechanized mounting this line output transformer can also be supplied without cables.

Dimensions in mm





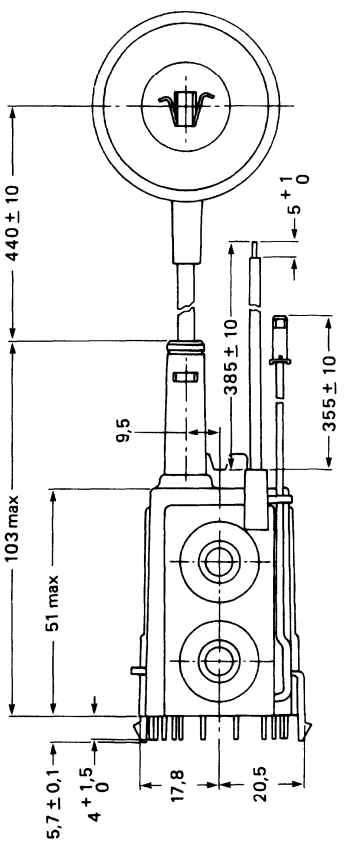


Fig. 1.

MECHANICAL DATA

Outlines

Mass approx. 210 g

Solderability in accordance with IEC 68, test Ta

Packing 24 transformers per box

Mounting

For mounting hole pattern see Fig. 2. The transformer core must be earthed via the earth tag (G, Fig. 1).

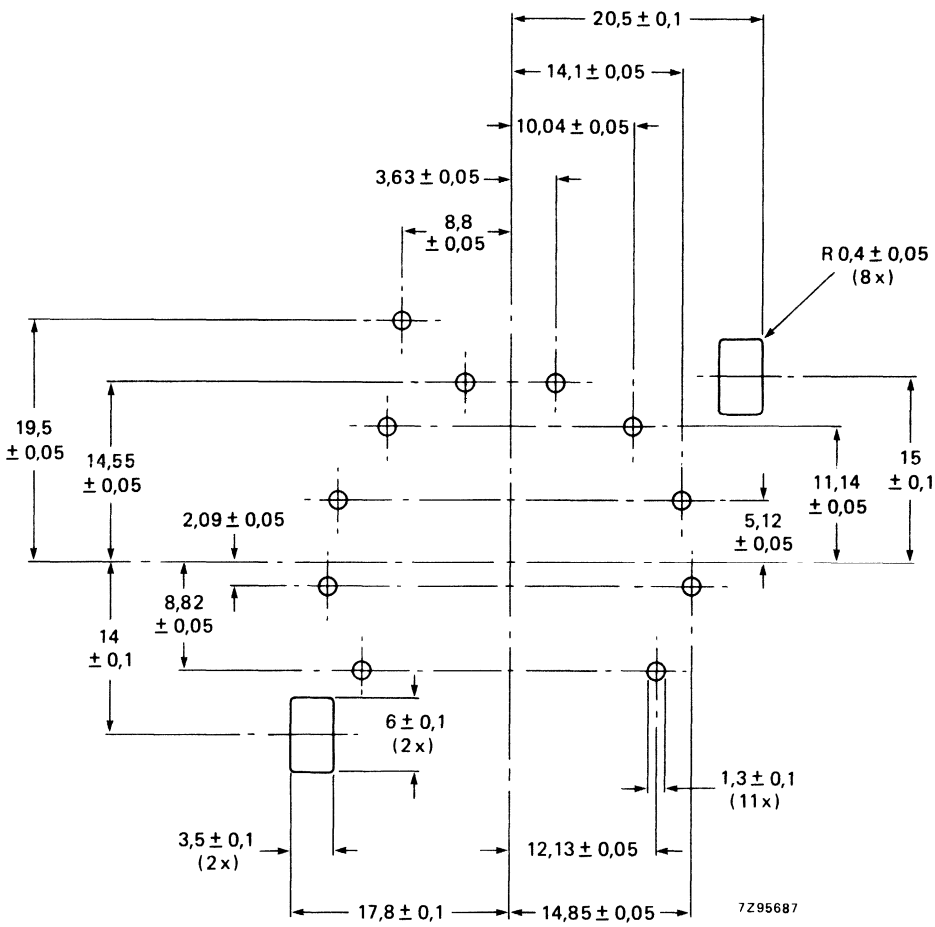


Fig. 2 Mounting hole pattern (solder side).

MECHANICAL DATA (continued)

Temperature

→ The operating temperature of the EHT coil should not exceed + 90 °C under worst conditions, i.e. taking into account:

- over-voltage on the coils;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high ambient temperature (up to 45 °C).

To satisfy this requirement it is recommended to provide sufficient flow of cool air around the transformer.

Distances

The minimum distance between the EHT coil and neighbouring conductive flat surfaces is 10 mm.

Sharp edges of conductive parts must have greater distances.

The transformer leads and components carrying high-voltage pulses, should be kept free from metal particles, solder drops, etc.

ELECTRICAL DATA; see application circuit with diode modulator, Fig. 3.

EHT supply	I_{eht} EHT $R_{i(eht)}$	$\leqslant$ 1 mA 25,5 kV $\leqslant$ 2 MΩ
Power supply	V_B $I_{average}$	95 V 580 mA
Output transistor	V_{CEM} + I_{CEM}	820 V 2,4 A
Deflection	deflection current (p-p) flyback time line frequency deflection coil inductance	2,6 A 11,2 μs 15625 Hz 2,5 mH
Focusing voltage Focusing current	min. max.	26% of E.H.T 34,5% of E.H.T. 120 μA
Grid 2 voltage (V_{g2})	min. (DC) max. (DC)	220 V 830 V
Auxiliary voltages	pin 8, V_8 (rms) pin 1, V_{1a} (DC) pin 2, V_{2a} (DC) pin 3, V_{3a} (DC)	6,8 V (heater voltage) + 163,2 V (video supply) + 12,7 V + 7,3 V

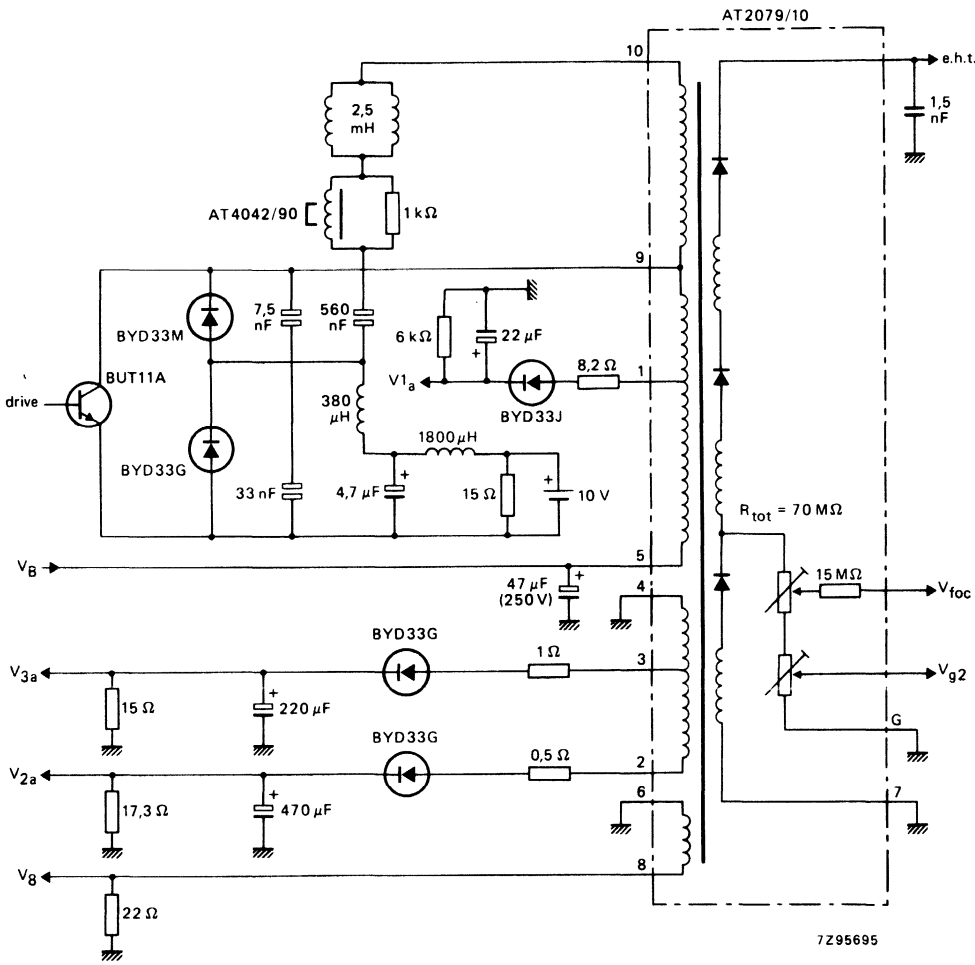


Fig. 3 Application circuit with diode modulator.

ELECTRICAL DATA; see application circuit for 90° flat square picture tube A51EAL00X, Fig. 4.

EHT supply	I_{eht} EHT $R_{i(eht)}$	$\leqslant$ 1 mA 25,5 kV $\leqslant$ 2,5 MΩ
Power supply	V_B	116 V
Output transistor	V_{CEM} + I_{CEM}	950 V 2,4 A
Deflection	deflection current (p-p) flyback time line frequency deflection coil inductance	2,85 A 11,8 μs 15625 Hz 2,0 mH
Focusing voltage Focusing current	min. max.	26% of EHT 34,5% of EHT 130 μA
Grid 2 voltage (V_{g2})	min. (DC) max. (DC)	220 V 830 V
Auxiliary voltages	pin 8, V_8 (rms) pin 5, V_{5a} (DC)	6,8 V (heater voltage) + 190 V (video supply)

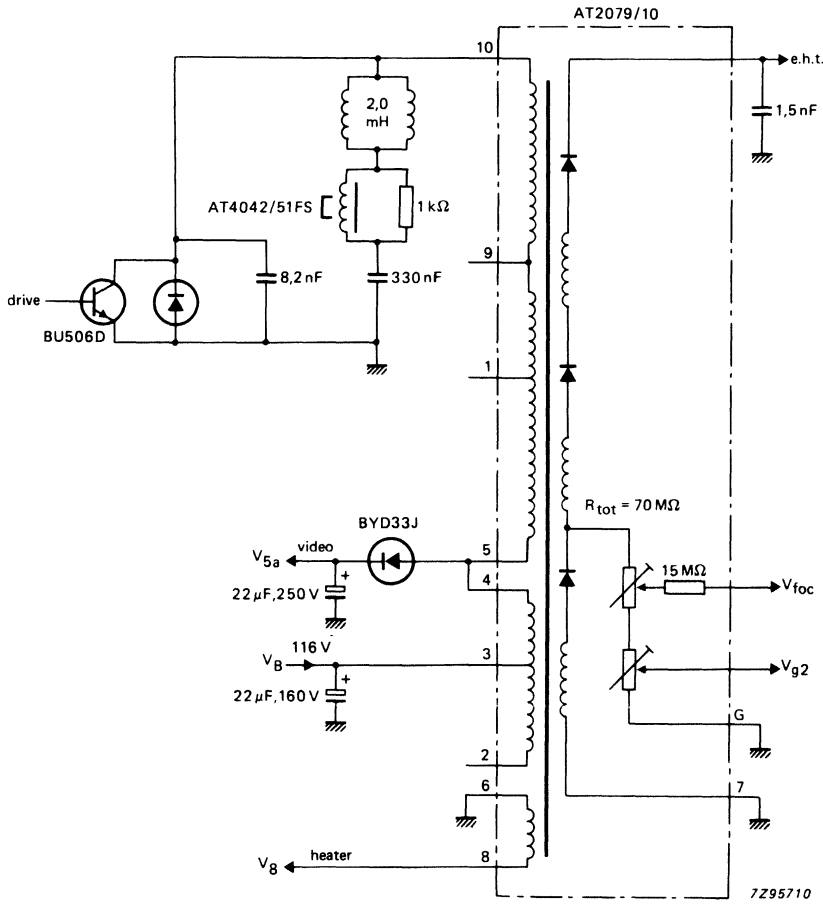


Fig. 4 Application circuit for 90° flat square picture tube A51EAL00X.

Replaced by AT2077/84

LINE OUTPUT TRANSFORMER

- For Monochrome Data Graphic Displays

QUICK REFERENCE DATA

	used in conjunction with AT1071/03		used in conjunction with AT1074/01	
I_{eht}	0 μA	100 μA	0 μA	100 μA
EHT	14,9 kV	13,9 kV	14,7 kV	13,6 kV
$R_{i(eht)}$	10 MΩ		11 MΩ	
Supply voltage (V_B)	12 V	12 V	12 V	12 V
Supply current (I_B)	1725 mA	1825 mA	1700 mA	1800 mA
Deflection current	8,5 A	8,4 A	5,0 A (p-p)	4,95 A (p-p)
Auxiliary voltages	6,3 V (rms), 11 V (rms), 66 V (DC), 790 V (DC)			

APPLICATION

This transformer has been designed to provide the required scanning amplitude for 24 cm (9 in) to 31 cm (12 in) 90° monochrome monitor tubes in video display monitors presenting 625 lines at 50 frames per second (CCIR) or 525 lines at 60 frames per second (USA).

It is intended for use in conjunction with the following packages of components:

deflection unit AT1071/03 or AT1071/07;
adjustable linearity control unit AT4036/00A;
line driver transformer AT4043/64;

deflection unit AT1074/01;
adjustable linearity control unit AT4042/26A;
line driver transformer AT4043/56.

DESCRIPTION

The magnetic circuit of the transformer comprises Ferroxcube U and I-cores clamped together with two screws. The primary windings and the auxiliary windings are situated on one leg of the core, the EHT winding and the coupling winding are situated on the other leg. The EHT winding is encapsulated in flame retardent polyester. An e.h.t. rectifier diode is incorporated in the transformer. The whole transformer meets the self-extinguishing and non-dripping properties of the American Underwriters' Laboratories rating mentioned in UL94SE-1.

The transformer is provided with four mounting pins; it can also be screwed to the printed-wiring board. External circuit connection is made to connecting pins, enabling the unit to be soldered directly into a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

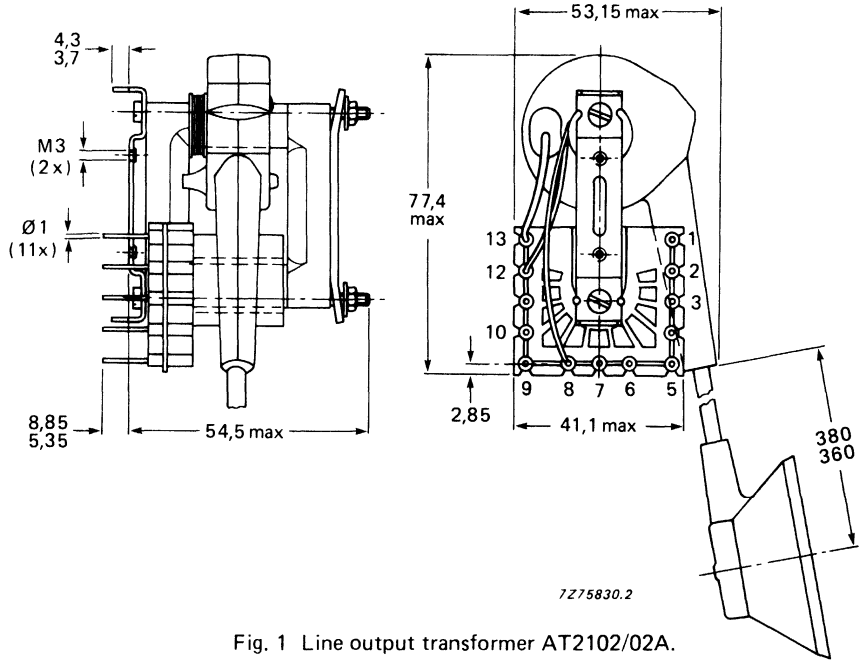


Fig. 1 Line output transformer AT2102/02A.

MOUNTING

The transformer may be mounted on a printed-wiring board. The fit of the connecting and mounting pins in a printed-wiring grid with a pitch of 2,54 mm (0,1 in) is illustrated in Fig. 2. The core of the transformer must be earthed.

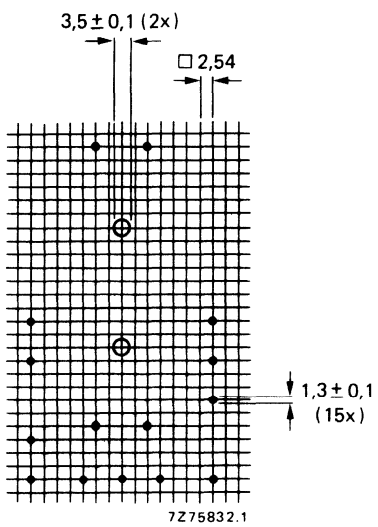


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the core and the coils should not exceed 90 °C, under worst conditions, i.e. taking into account:

over-voltage on the windings;
low atmospheric pressure (at high altitudes) implying bad cooling by convection;
high room temperature (up to 45 °C).

To satisfy this requirement it may be desired to provide ample cool air circulation around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained (in proportion to their sharpness protruding parts must have a greater distance):

a. From the EHT winding, radially 15 mm, axially 10 mm.
b. From the EHT lead 25 mm.

The transformer, and the leads and components carrying high-voltage pulses should be kept free from metal particles, solder drops etc.

ELECTRICAL DATA (see also Figs 3 and 4)

		AT2102/02A used in conjunction with AT1071/03		AT2102/02A used in conjunction with AT1074/01	
E.H.T. supply	I_{eht}	0 μA	100 μA	0 μA	100 μA
	EHT	14,9 kV	13,9 kV	14,7 kV	13,6 kV
	$R_{i(eht)}$	10 MΩ		11 MΩ	
Power supply	V_B	12 V	12 V	12 V	12 V
	I_{av}	1725 mA	1825 mA	1700 mA	1800 mA
Output transistor	V_{CEM}	144 V	144 V	142 V	142 V
	I_{CM}	6,4 A	6,4 A	6,2 A	6,2 A
Deflection	Current	8,5 A (p-p)	8,4 A (p-p)	5,0 A (p-p)	4,95 A (p-p)
	Flyback time	9,9 μs	9,9 μs	10 μs	10 μs
	Scan variation	1,5 %		2 %	

Auxiliary windings

connection pins 1 and 2	6,3 V (rms)
connecting pins 1 and 3	11 V (rms)
connecting pin 5 (pin 6 connected to earth)	790 V (DC)
connecting pin 7 (pin 6 connected to earth)	66 V (DC)

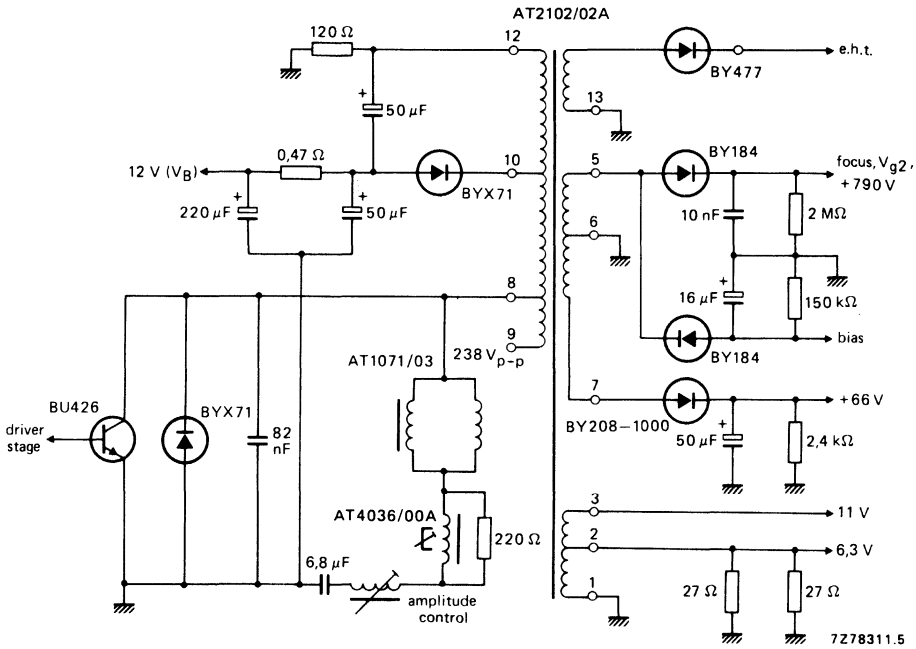


Fig. 3 Application circuit for use with deflection units AT1071/03 and AT1071/07.

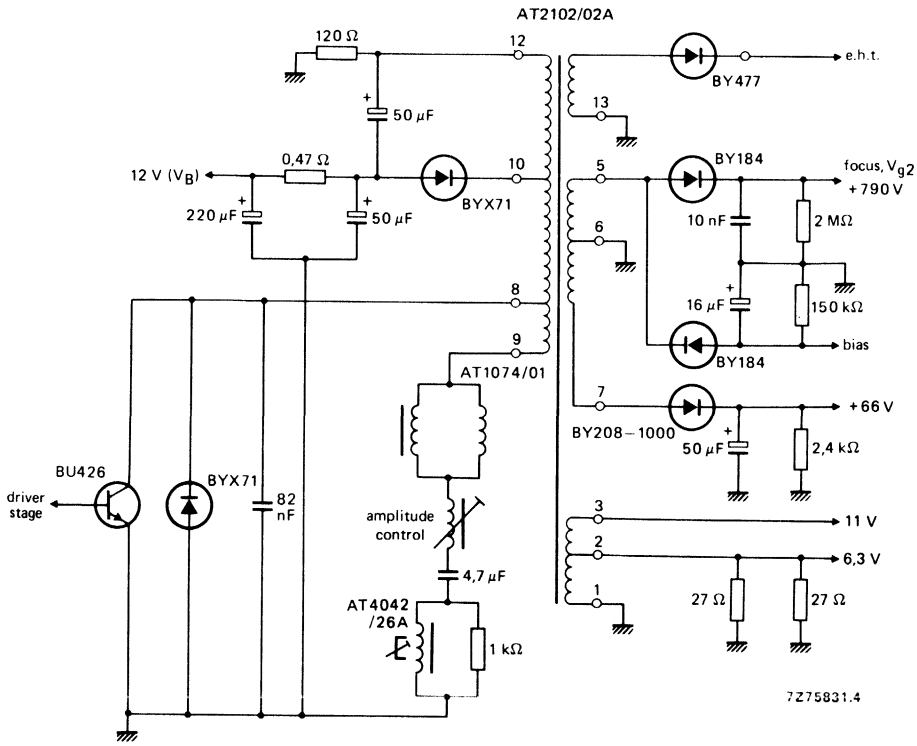


Fig. 4 Application circuit for use with deflection unit AT1074/01.

LINE OUTPUT TRANSFORMER

- For monochrome TV and inexpensive monitors

QUICK REFERENCE DATA

For transistor line output stages; 90° deflection angle	
I_{eht}	$\leqslant$ 0,2 mA
E.H.T. at I_B = 0 μA	11,7 kV
$R_{i(eht)}$	$\leqslant$ 7 MΩ
Flyback time	11,1 μs
Line scan frequency	15 625 Hz
Deflection coil inductance	0,45 mH
Auxiliary voltages	+ 25 V, + 110 V, + 84,5 V

APPLICATION

This transformer has been designed to provide the required line scanning amplitude and e.h.t. for 90° monochrome picture tubes, presenting 625 lines at 50 fields per second (CCIR) or 525 lines at 60 fields per second (USA).

It is intended to be used in conjunction with e.h.t. cable, length 300 mm, catalogue number 3111 108 87080, or the UL approved type, catalogue number 3122 137 63920.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U-cores. The primary windings, the auxiliary windings and e.h.t. winding are situated on one leg of the core, and are encapsulated in flame retardant polyester. An e.h.t. rectifier diode is incorporated in the transformer. The whole transformer meets the self-extinguishing requirements of IEC 65, para. 14.4.

External circuit connection is made to connecting pins, enabling the unit to be soldered directly into a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

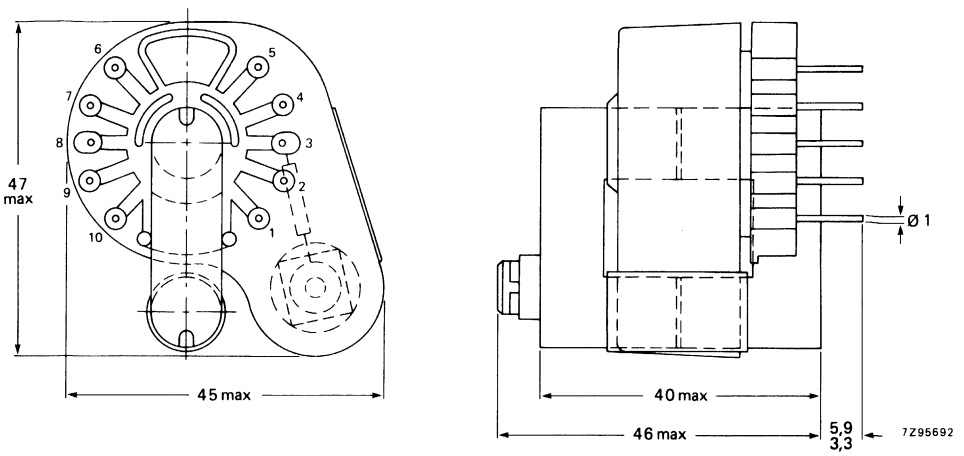


Fig. 1.

MOUNTING

The transformer may be mounted on a printed-wiring board. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm (0,1 in) is illustrated in Fig. 2.
The core of the transformer must be earthed.

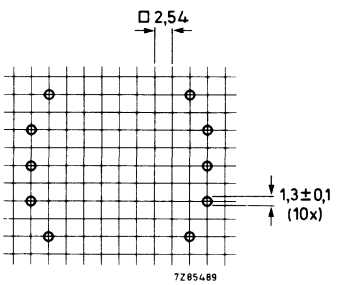


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the core and the coils should not exceed 90 °C, under worst conditions, i.e. taking into account:

- over-voltage on the windings;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high room temperature (up to 60 °C).

To satisfy this requirement it may be desired to provide ample cool air circulation around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained (in proportion to their sharpness protruding parts must have a greater distance):

from the e.h.t. winding, radially 15 mm, axially 10 mm.

The transformer, and the leads and components carrying high-voltage pulses should be kept free from metal particles, solder drops etc.
The bending radius of the e.h.t. cable must be $\geqslant$ 12,5 mm.

ELECTRICAL DATA (see also Fig. 3)

E.H.T. at I_B = 0 μA	11,7 kV
$R_{i(eht)}$	max. 7 MΩ
I_{eht}	max. 0,2 mA
Supply voltage (V_B)	11 V
Supply current	640 mA
Output transistor voltage, V_{CEM}	200 $V_{(p-p)}$
Deflection current	2,95 $A_{(p-p)}$
Flyback time	11,1 μs
Deflection coil inductance	0,45 mH
Line scan frequency	15625 Hz
Auxiliary voltages	
connecting pin 2, V_2	+ 25 V
connecting pin 6, V_6	+ 84,5 V
connecting pin 9, V_9	+ 110 V

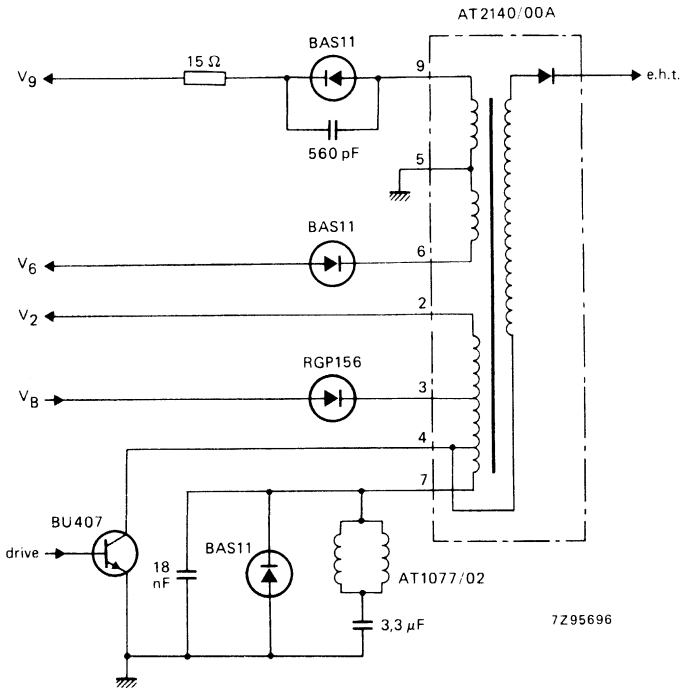


Fig. 3 Application circuit.

Replaces AT2240/16

LINE OUTPUT TRANSFORMERS

- For Monochrome Data Graphic Displays

QUICK REFERENCE DATA

For transistor line output stages; 90° deflection angle

	AT2140/16	AT2140/17
I_{eht}	max. 100 μA	
EHT at I_B = 0 μA	12,5 kV	12,5 kV
$R_{i(eht)}$	10 MΩ	
Flyback time	8 μs	6 μs
Line scan frequency range	15 to 23 kHz	22 to 30 kHz
Deflection coil inductance	475 μH	
Auxiliary voltages	+ 60 V (DC), − 60 V (DC), + 500 V (DC)	

APPLICATION

These transformers have been designed to provide the required line scanning amplitude and EHT for 90° monochrome data graphic display tubes, 20 mm neck diameter.
The transformers are intended for use in conjunction with:
- deflection unit AT1077 series,
- linearity control unit AT4042/08A,
- amplitude control unit AT4044/39D,
- eht cable, length 260 mm, catalogue number 3111 108 34490, or the UL approved type, catalogue number 3122 137 63920,
- dynamic focusing transformer AT4043/67.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U-cores. The primary windings, the auxiliary windings and EHT winding are situated on one leg of the core, and are encapsulated in flame retardant polyester. An EHT rectifier diode is incorporated in the transformer. The whole transformer meets the self-extinguishing and non-dripping properties of the American Underwriters' Laboratories rating mentioned in UL94SE-1.

External circuit connection is made to connecting pins, enabling the unit to be soldered directly into a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

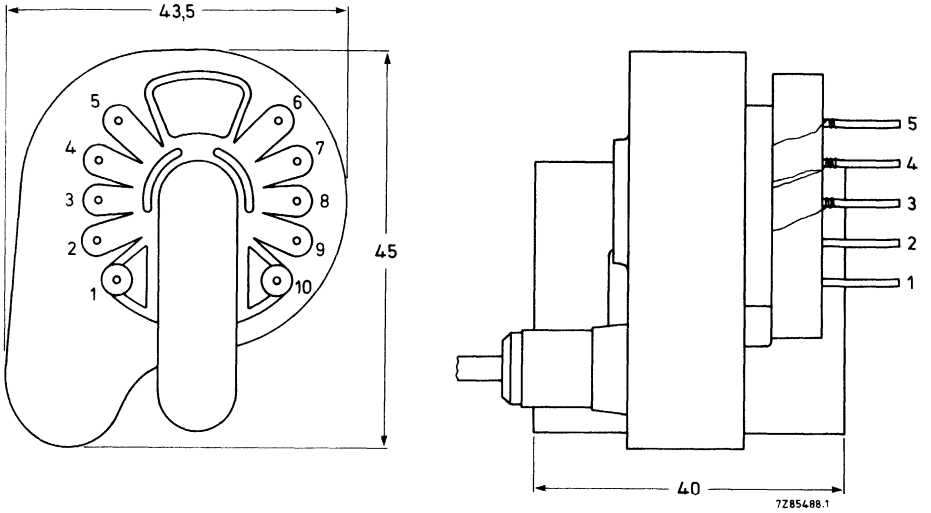


Fig. 1.

MOUNTING

The transformer may be mounted on a printed-wiring board. The fit of the connecting pins in a printed-wiring grid with a pitch of 2,54 mm (0,1 in) is illustrated in Fig. 2.
The core of the transformer must be earthed.

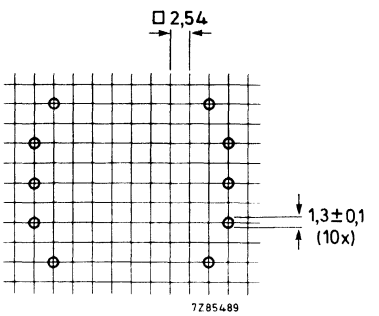


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

Temperature

The operating temperature of the core and the coils should not exceed 90 °C, under worst conditions, i.e. taking into account:

over-voltage on the windings;
low atmospheric pressure (at high altitudes) implying bad cooling by convection;
high room temperature (up to 45 °C).

To satisfy this requirement it may be desired to provide ample cool air circulation around the transformer.

Distances

The following minimum distances between the transformer and neighbouring conductive flat surfaces must be maintained (in proportion to their sharpness protruding parts must have a greater distance):

from the e.h.t. winding, radially 15 mm, axially 10 mm.

The transformer, and the leads and components carrying high-voltage pulses should be kept free from metal particles, solder drops etc.
The bending radius of the e.h.t. cable must be $\geqslant$ 7,5 mm.

ELECTRICAL DATA (see also Fig. 3)

AT2140/16 and AT2140/17 used in conjunction with AT1079/––, AT4042/08A and AT4044/39D.

	AT2140/16	AT2140/17
Line scan frequency range*		
connecting pin 3	15 to 20 kHz	22 to 26 kHz
connecting pin 5	20 to 23 kHz	26 to 30 kHz
EHT at I_B = 0 μA	12,5 kV	12,5 kV
$R_{i(eht)}$	10 MΩ	10 MΩ
I_{eht}	max. 100 μA	max. 100 μA
Supply voltage (V_B)	11 to 14,5 V	11 to 14,5 V
Input power	7 W	10 W
Deflection current	2,9 A	2,9 A
Deflection voltage	300 $V_{(p-p)}$	450 $V_{(p-p)}$
Flyback time	8 μs	6 μs
Flyback capacitor	8,2 nF	5,6 nF
Auxiliary voltages		
connecting pin 1	+ 500 V	+ 500 V
connecting pin 7	+ 60 V	+ 60 V
connecting pin 10	–60 V	–60 V

For further information see Technical Publication "A low-cost monochrome data and graphics display unit (C6E)".

* The transformers are provided with two booster diode connections: pin 3 and pin 5, enabling selection of frequency ranges.

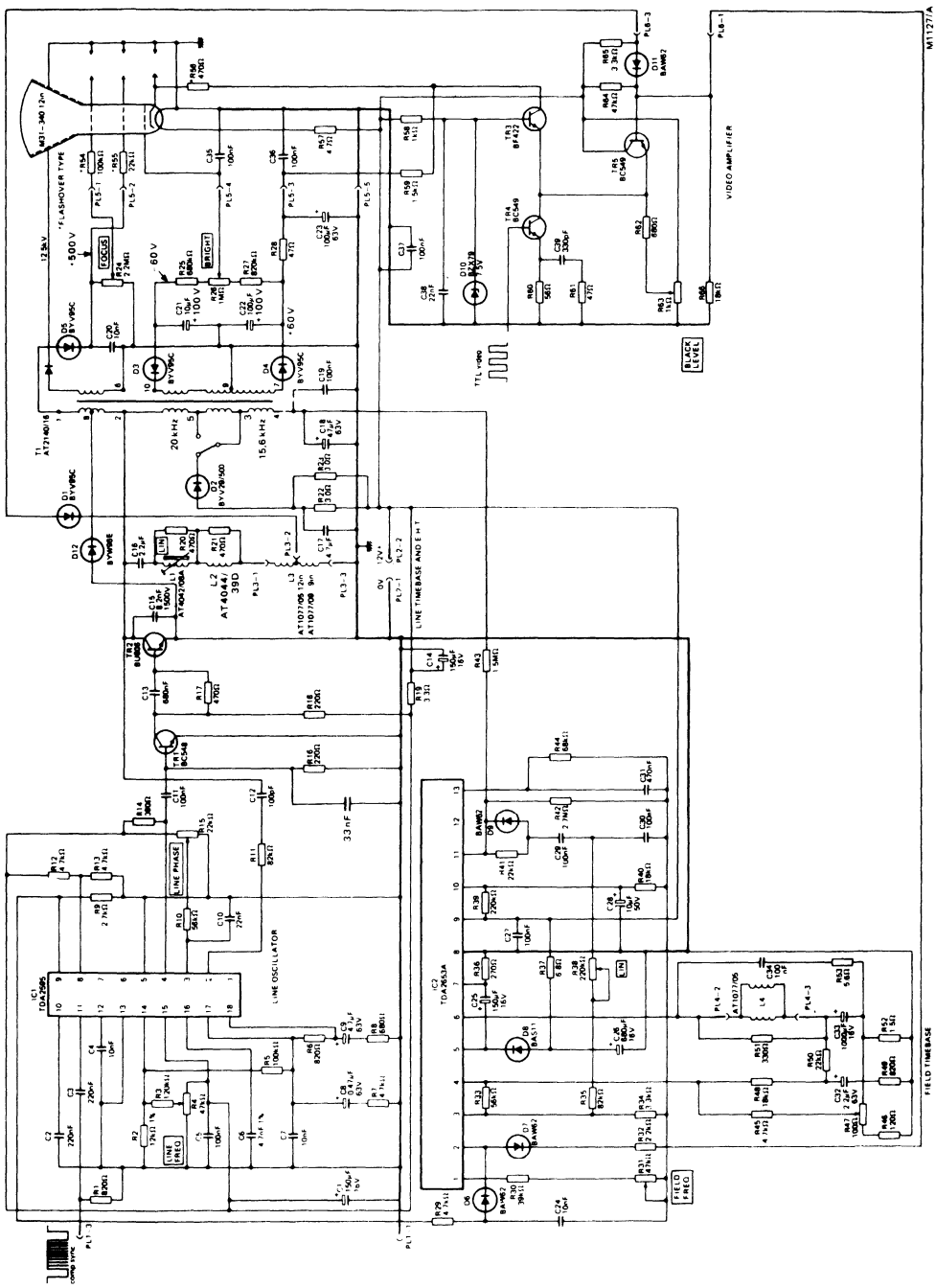


Fig. 3 Circuit diagram of data graphic display unit (C6E).

LINE OUTPUT TRANSFORMER

"Alpha box"

- For Monochrome Data Graphic Displays with 90° monitor tubes
- With or without built-in bleeder resistor

QUICK REFERENCE DATA

I_{eht}	max. 100 μA
EHT at I_B = 0 μA	13 kV
$R_{i(eht)}$	max. 5 MΩ
Flyback time	4,2 μs
Line frequency range	30 to 40 kHz
Deflection coil inductance	310 μH
Auxiliary voltages	+ 60 V (DC), −60 V (DC), + 500 V (DC)

APPLICATION

This transformer has been designed to provide the required scanning amplitude and EHT for 90° monochrome data graphic display tubes, 20 mm neck diameter, at line frequencies between 30 and 40 kHz.
It is intended for use in conjunction with:
– deflection unit AT1079 series;
– linearity control unit AT4042/08A;
– amplitude control unit AT4044/39D;
– dynamic focusing transformer AT4043/67;
– EHT cable, catalogue number 3122 137 64830.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U-cores. The primary windings, the auxiliary windings and EHT windings are situated on one leg of the core, and are encapsulated in flame retardent epoxy resin. An EHT rectifier diode is incorporated in the transformer. The whole transformer meets the self-extinguishing and non-dripping properties of the American Underwriter's Laboratories rating mentioned in UL94SE-1.

External circuit connection is made to connecting pins, enabling the unit to be soldered directly into a printed-wiring board; the EHT has a plug connection.

The transformer is available with or without EHT bleeder resistor.

MECHANICAL DATA

Dimensions in mm

Outlines

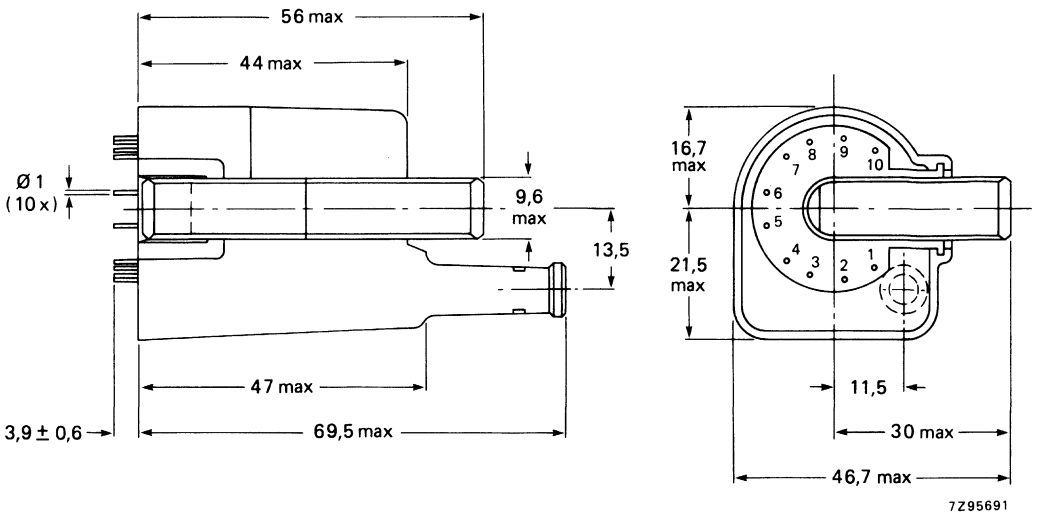


Fig. 1.

Mass approx. 130 g

Mounting

For mounting hole pattern see Fig. 2. The transformer core must be earthed.

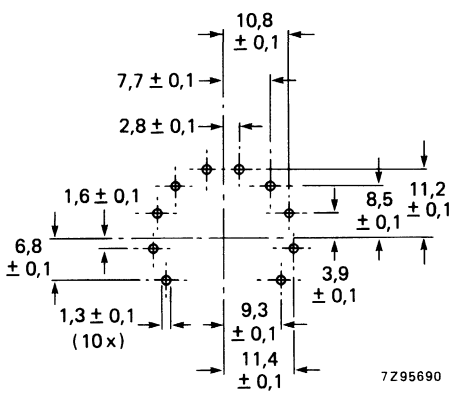


Fig. 2 Mounting hole pattern.

Temperature

The operating temperature of the core and the coils should not exceed 90 °C, under worst conditions, i.e. taking into account:

- over-voltage on the windings;
- low atmospheric pressure (at high altitudes) implying bad cooling by convection;
- high room temperature (up to 45 °C).

To satisfy this requirement it may be desired to provide ample cool air circulation around the transformer.

Distances

The minimum distance between the EHT coil and neighbouring conductive flat surfaces is 5 mm.

Sharp edges of conductive parts must have a minimum distance of 10 mm.

The transformer, leads and components carrying high voltage pulses, should be kept free from metal particles, solder drops etc.

The bending radius of the EHT cable must be $\geqslant$ 12,5 mm.

ELECTRICAL DATA (see also Fig. 3)

AT2250/14 used in conjunction with AT1078/10, AT4042/08A and AT4044/39D.

Line scan frequency range	30 to 40 kHz
EHT at $I_B = 0\ \mu A$	13 kV
$R_{i(eht)}$	$\leqslant 5\ M\Omega$
I_{eht}	$\leqslant 100\ \mu A$
Supply voltage (V_B)	38–55 V*
Input power	11 W
Deflection current	3,45 A
Deflection voltage	550 $V_{(p-p)}$
Flyback time	4,2 μs
Flyback capacitor	3,3 nF
Auxiliary voltages (DC)	
connecting pin 1	+ 500 V
connecting pin 7	+ 60 V
connecting pin 10	–80 V

* Dependent on operating frequency.

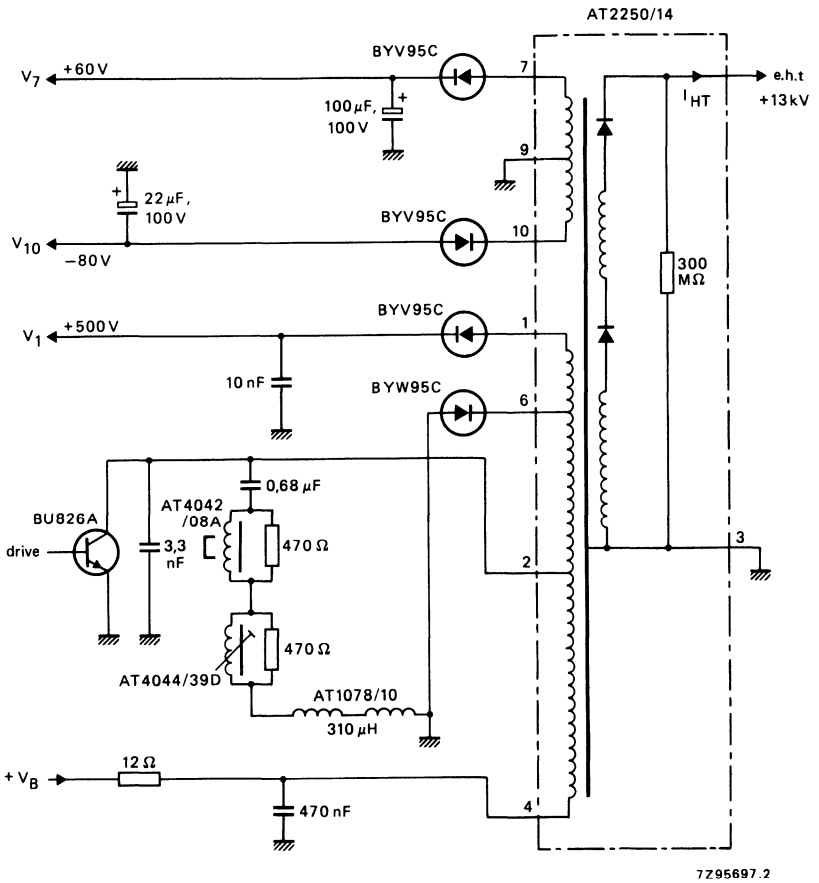


Fig. 3 Application circuit.

LINEARITY CORRECTORS

LINEARITY CORRECTOR

- For colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of the 30AX system. It is compatible with linearity control unit AT4042/42 (connections 1 and 2 of the AT4042/42 on the printed-wiring board to be connected to 3 and 4 respectively).

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

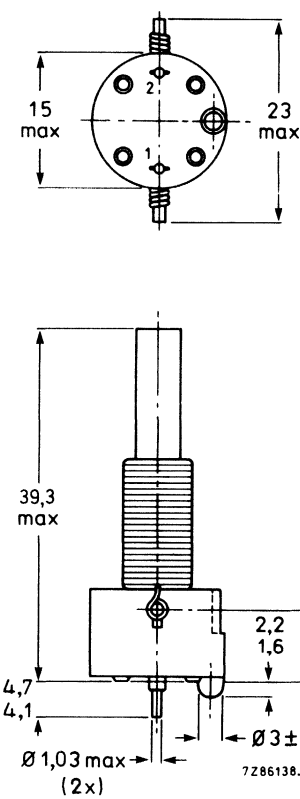


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/30 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

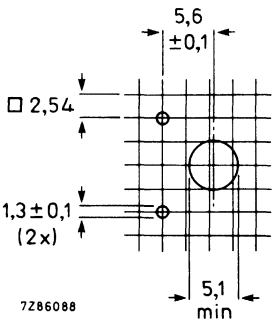


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 5,1 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 11,8 V ± 5,5%.

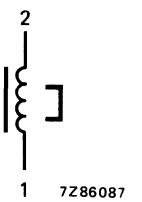


Fig. 3 Circuit diagram.

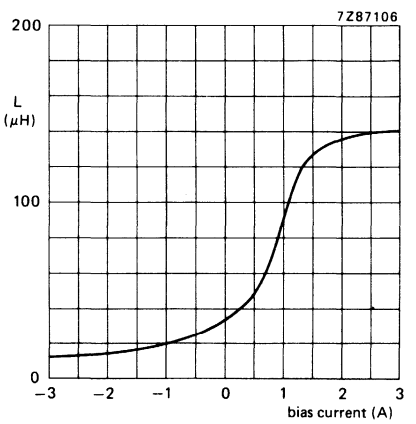


Fig. 4 Inductance as a function of bias current.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For Colour Data Graphic Displays and Colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of 90° colour monitors and TV receivers.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

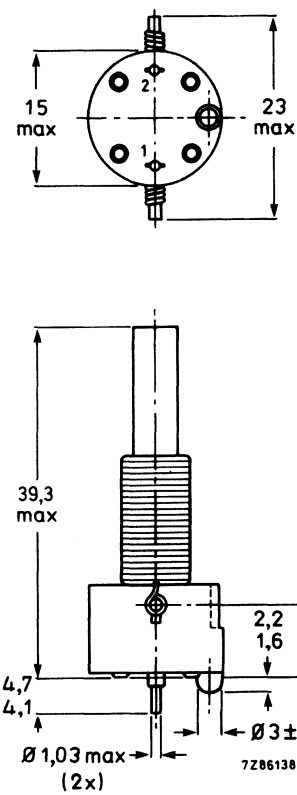


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting.

The AT4042/34 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

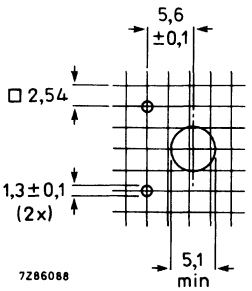


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 3,0 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 15,2 V ± 5,5%.

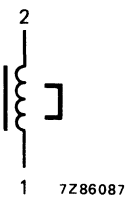


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 3000 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz; amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40 g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For Colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of colour TV receivers and 90° monitors.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

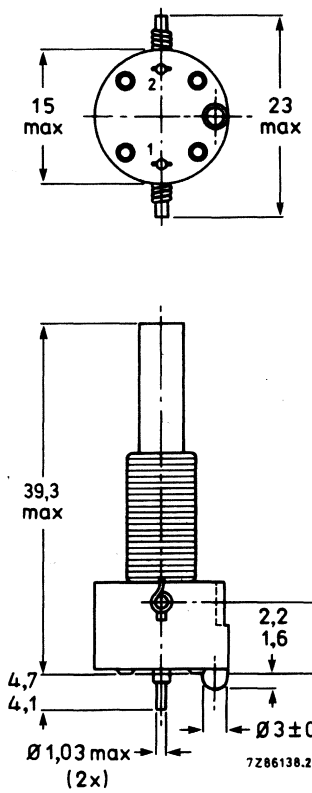


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/36FS can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

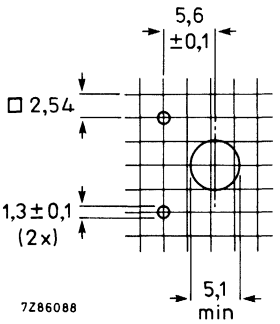


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 1,9 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 17,4 V ± 5,5%.

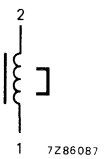


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of 90° colour TV receivers and monitors.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

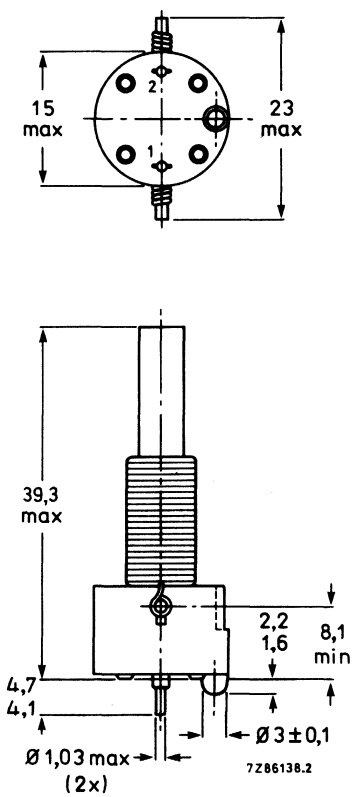


Fig. 1

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/41FS can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

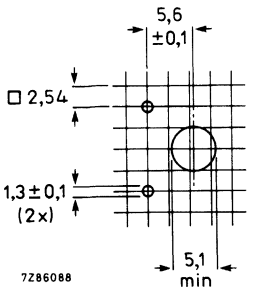


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 2,1 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 12,7 V ± 5,5%.

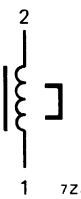


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For Monochrome Data Graphic Displays.

APPLICATION

This linearity corrector is for the line deflection output stage of 90° monitors for data graphic display in conjunction with line output transformer AT2140/16 and deflection unit AT1079/--.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.

The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

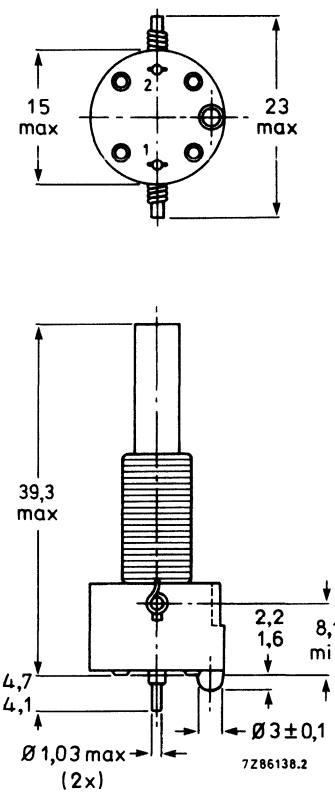


Fig. 1.

Mounting

The AT4042/46 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

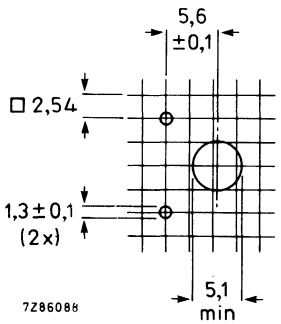


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 3 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 6 V ± 5,5%.

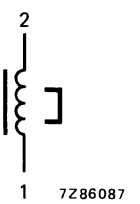


Fig. 3 Circuit diagram.

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.
Flammability of assembly	IEC 65, clause 14.4.
Flammability of materials	UL94, category V1.

LINEARITY CORRECTOR

- For colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of the 45AX system.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

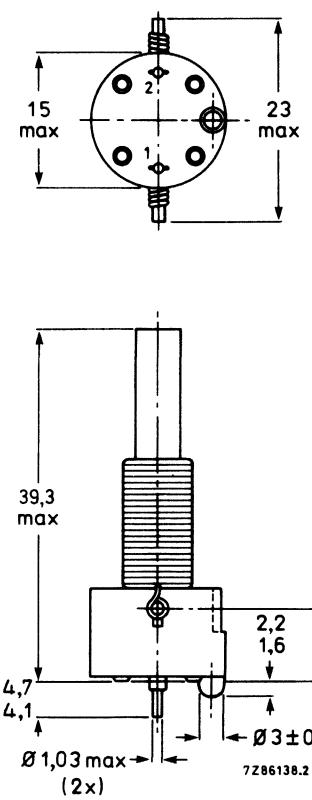


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/51 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

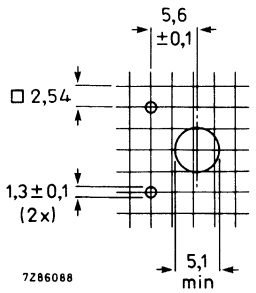


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 3,15 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 12,9 V ± 5,5%.

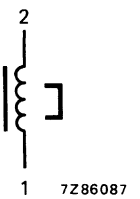


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For colour Data Graphic Displays and Colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of 90° monitors and TV receivers.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

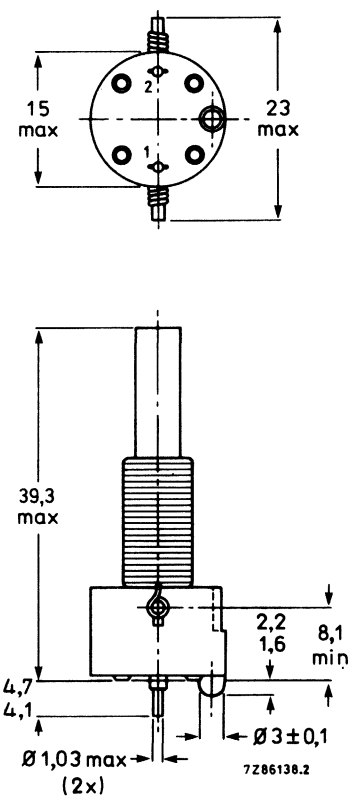


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/90 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

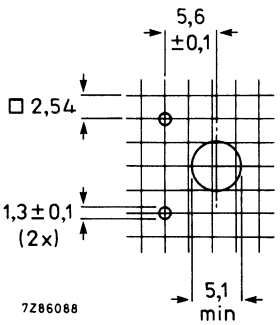


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 2,9 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 9,8 V ± 5,5%.

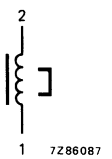


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For colour TV

APPLICATION

This linearity corrector is for 90° minineck applications.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

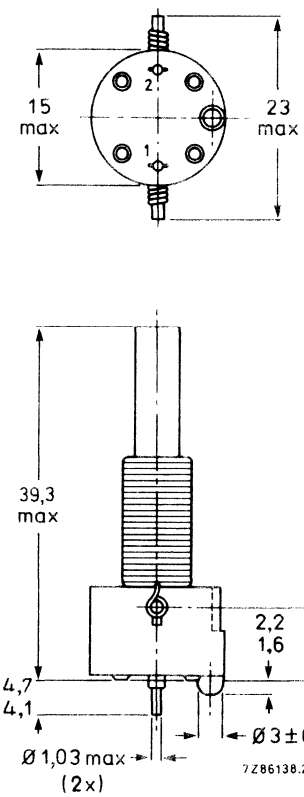


Fig. 1.

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/91 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

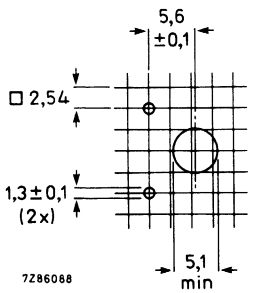


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 2,3 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 17,6 V ± 5%.

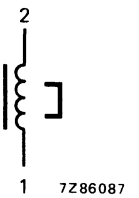


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test BA; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CORRECTOR

- For colour TV

APPLICATION

This linearity corrector is for the line deflection output stage of colour TV receivers.

DESCRIPTION

The linearity corrector consists of a coil, mounted on a Ferroxcube rod and a ring-shaped magnet of plastic-bonded Ferroxdure, which is placed around the rod at the bottom.
The corrector has pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

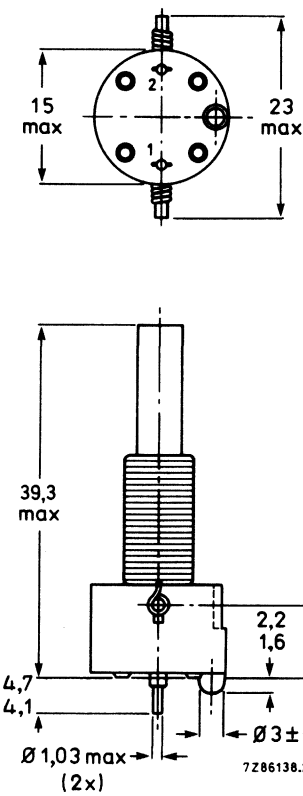


Fig. 1

The linearity correctors are packed in boxes of 108 pieces.

Mounting

The AT4042/92 can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coil should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

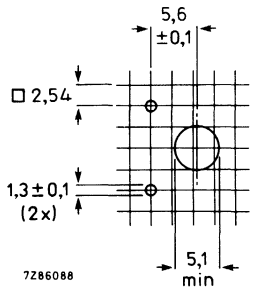


Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 5,5 A (p-p), frequency 15 625 Hz, flyback ratio 18%, flows through the linearity corrector, the correction voltage is 14,7 V ± 5%.

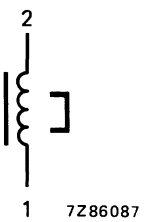


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity corrector withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

LINEARITY CONTROL UNITS

Replaces AT4036

ADJUSTABLE LINEARITY CONTROL UNIT

- For monochrome Data Graphic Displays

APPLICATION

This linearity control unit is for use in monochrome monitors.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and two Ferroxdure magnets. One ring-shaped magnet is placed around the Ferroxcube rod, at the bottom. The other magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore,the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

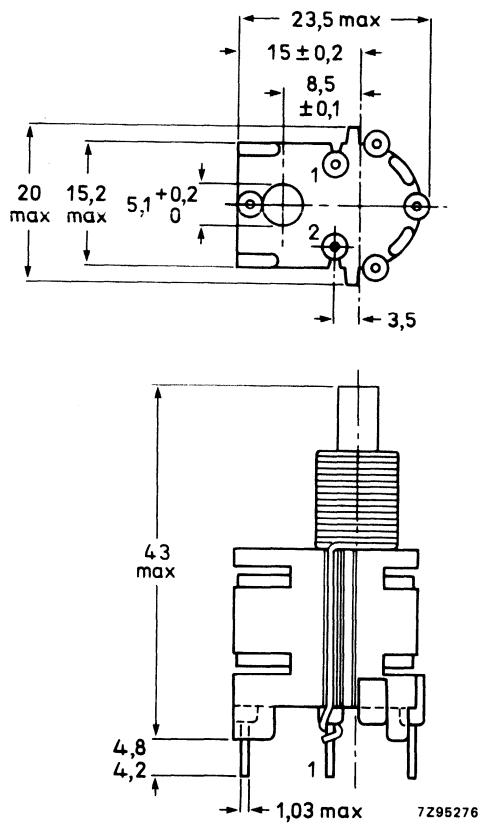


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

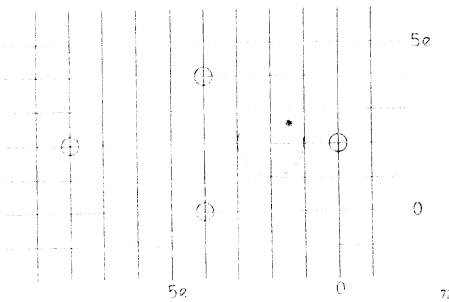


Fig. 2 Hole pattern for mounting on a printed-wiring board. Grid hole diameter = 1,3 ± 0,1 mm; e = 2,54 mm.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 6,0 A (p-p), frequency 16 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 0,95 and 2,15 V ± 10%.

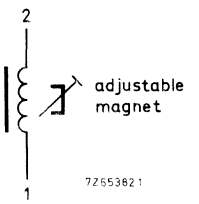


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL 94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40 g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na, 5 cycles, T_A = −25 °C, T_B = + 100 °C.

Replaces AT4042/02
and AT4042/04P

ADJUSTABLE LINEARITY CONTROL UNIT

- For Colour Data Graphic Displays

APPLICATION

This linearity control unit is for use in colour monitors. It can also be used in 90° colour and monochrome television sets.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

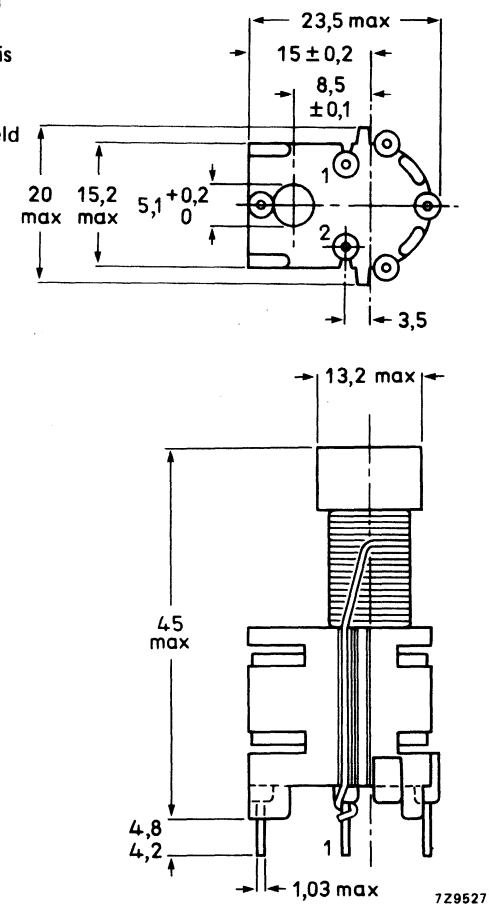


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

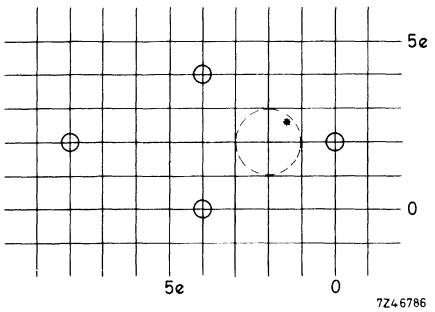


Fig. 2 Hole pattern for mounting on a printed-wiring board. Grid hole diameter = 1,3 ± 0,1 mm; e = 2,54 mm.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 2,8 A (p-p), frequency 16 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 12,5 and 29 V ± 10%.

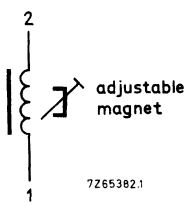


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

Replaces AT4042/42
and AT4042/08

ADJUSTABLE LINEARITY CONTROL UNIT

- For monochrome Data Graphic Displays

APPLICATION

This linearity control unit is for use in monochrome monitors. It is used in conjunction with a deflection unit of the AT1039 series, with series connected line coils.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

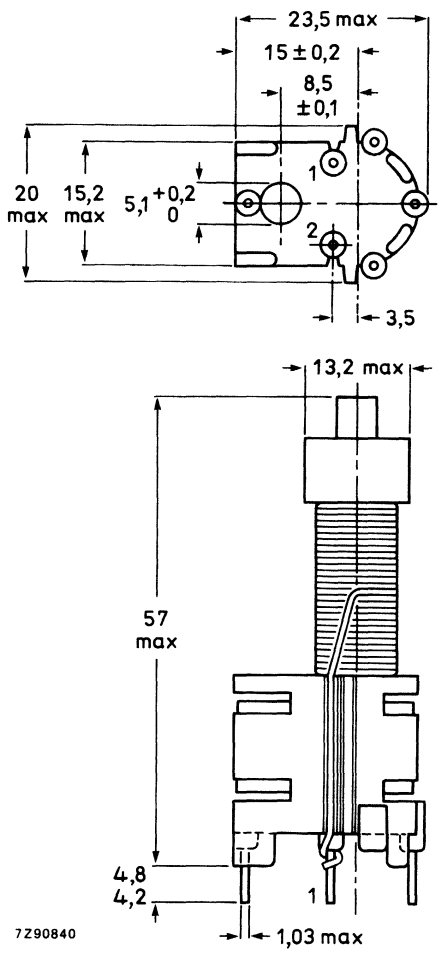


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

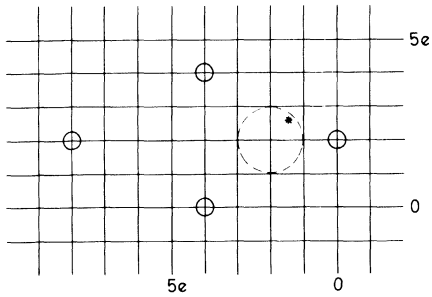


Fig. 2 Hole pattern for mounting on a printed-wiring board. Grid hole diameter = 1,3 ± 0,1 mm; e = 2,54 mm (0,1 in).

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 6,0 A (p-p), frequency 16 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 15 and 25 V ± 10%.

Note: With a sawtooth current of 4,65 A (p-p) the correction voltage is adjustable between 8 and 15 V.

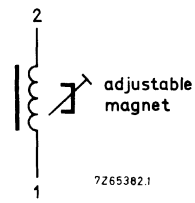


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = 25 °C, T_B = + 100 °C.

ADJUSTABLE LINEARITY CONTROL UNIT

- For Colour Data Graphic Displays
- With litze wire

APPLICATION

This linearity control unit is for use in the line deflection output stage of colour and monochrome monitors.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

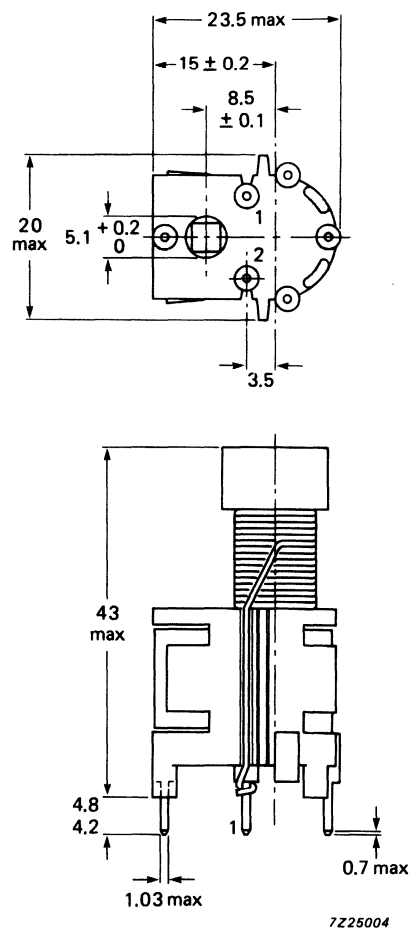
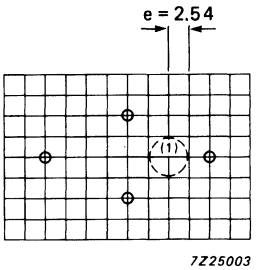


Fig. 1 Control unit assembly.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).



(1) Hole for bottom adjustment.

Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 8.8 A(p-p), frequency 32 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 0.6 and 3.8 volts.

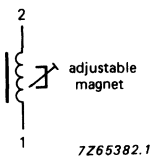


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C

TESTS

The assembly meets the requirements for climatic and mechanical testing as specified in test procedures published by the Commission Electrotechnique Internationale (CEI). These tests and the test conditions are listed below. The relevant CEI publication for each test is shown in brackets.

1. Cold. (CEI 68.2.1, Aa test)	temperature: duration:	−25 °C 96 hours
2. Dry heat. (CEI 68.2.2, Ba test)	temperature: duration:	+ 100 °C 96 hours
3. Steady damp heat. (CEI 68.2.3, Ca test)	temperature: relative humidity: duration:	40 °C 93% 21 days
4. Cyclic damp heat. (CEI 68.2.30, Db test)	temperature: duration:	+ 40 °C 21 days
5. Change of temperature. (CEI 68.2.14, Na test)	temperature range: number of cycles:	−25 °C - + 125 °C 5
6. Vibration. (CEI 68.2.6, Fc test)	frequency range: amplitude: duration:	10 - 50 - 10 Hz 0,35 mm 30 minutes per axis
7. Bumps. (CEI 68.2.19, Eb test)	peak acceleration: number: directions:	390 m/s^2 1000 3
8. Solderability. (CEI 68.2.20, Ta test, method 1)	temperature: duration:	230 °C ± 10 °C 2 s ± 0,50 s
9. Safety. flammability of assembly flammability of materials	 (CEI 65, clause 14.4) (according to UL94, category V-1)	

ADJUSTABLE LINEARITY CONTROL UNIT

- For Colour Data Graphic Displays

APPLICATION

This linearity control unit is for use in colour monitors.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA

Outlines; Dimensions in mm

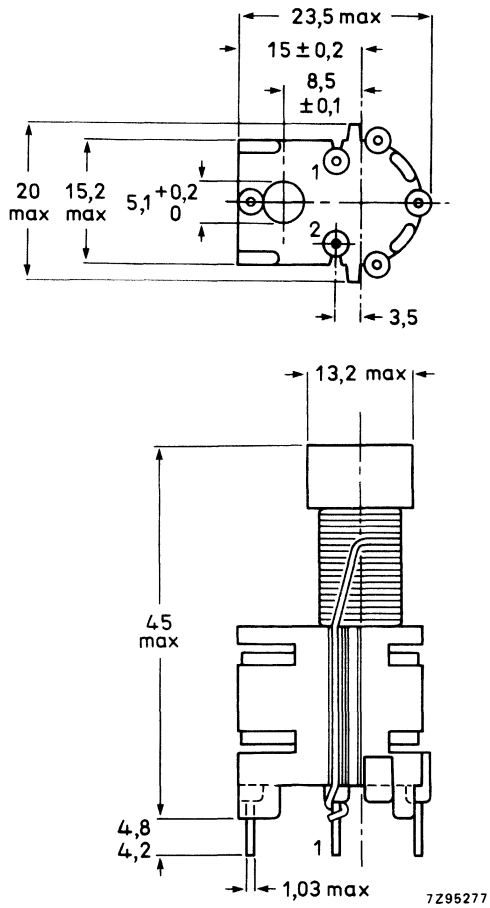


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

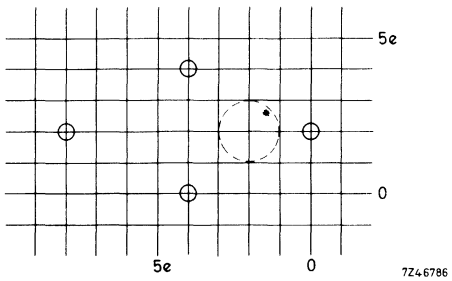


Fig. 2 Hole pattern for mounting on a printed-wiring board (e = 2,54 mm (0,1 in); grid hole diameter 1,3 ± 0,1 mm.

* Hole for bottom adjustment.

ELECTRICAL DATA

When a sawtooth current (with S-correction) of 4,4 A (p-p), frequency 32 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 0,65 and 3,2 V ± 10%.

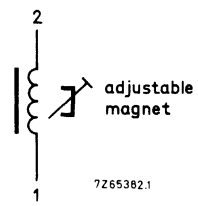


Fig. 3 Circuit diagram.

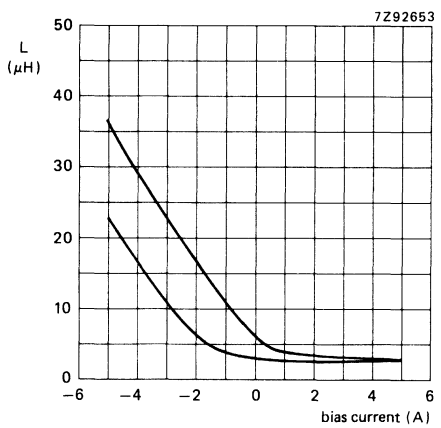


Fig. 4 Inductance as a function of bias current.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb, 40g. 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

ADJUSTABLE LINEARITY CONTROL UNIT

- For monochrome Data Graphic Displays

APPLICATION

This linearity control unit is for use in monochrome monitors. It is used in conjunction with a deflection unit of the AT1039 series, and line output transformer AT2076/84 or AT2077/84.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

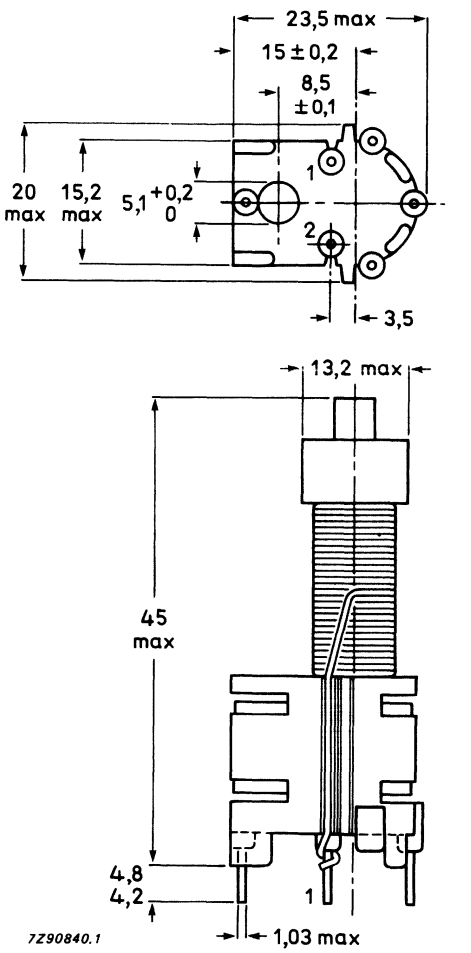


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

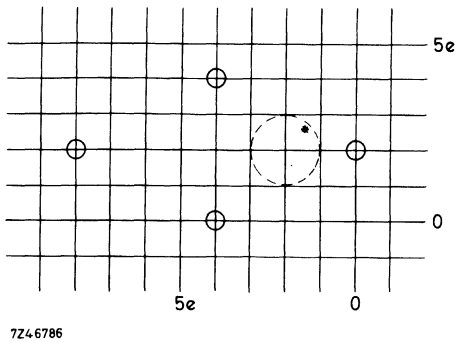


Fig. 2 Hole pattern for mounting on a printed-wiring board; e = 2,54 mm.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 8,8 A (p-p), frequency 32 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 6 and 10 V.

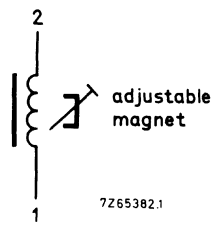


Fig. 3 Circuit diagram.

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

ADJUSTABLE LINEARITY CONTROL UNIT

- For Colour Data Graphic Displays and Colour TV

APPLICATION

This linearity control unit is for use in colour monitors and television sets.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

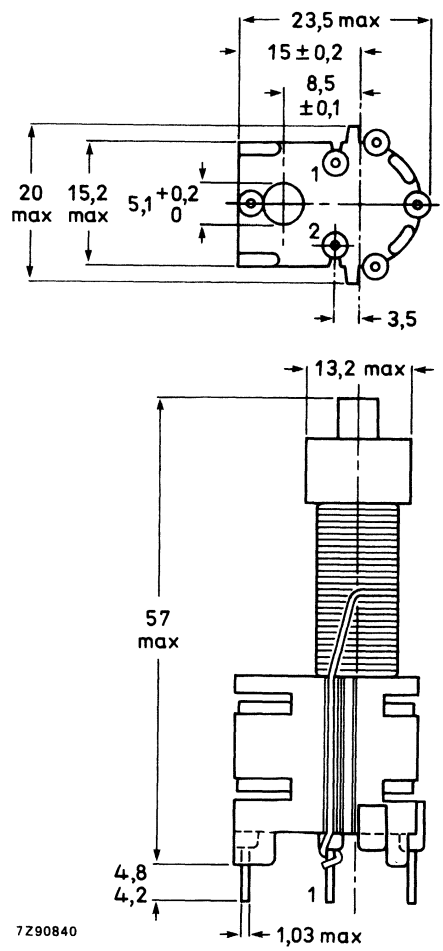


Fig. 1. 7Z90840

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

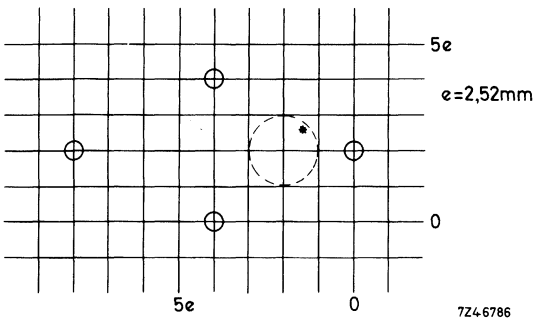


Fig. 2 Hole pattern for mounting on a printed-wiring board; e = 2,54 mm.

* Hole for bottom adjustment.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 6,0 A (p-p), frequency 16 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 8,5 and 12,4 V.

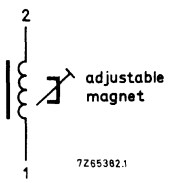


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

ADJUSTABLE LINEARITY CONTROL UNIT

- For Colour Data Graphic Displays and Colour TV

APPLICATION

This linearity control unit is for use in colour monitors and television sets.

DESCRIPTION

The unit consists of a coil, mounted on a Ferroxcube rod, and three Ferroxdure magnets. Two ring-shaped magnets are placed around the Ferroxcube rod, one at the top and one at the bottom. The third magnet is positioned against the Ferroxcube rod opposite the bottom magnet and clamped. It is provided with a square hole to facilitate adjustment of the biasing field and, therefore, the linearity of the line deflection.

MECHANICAL DATA; Dimensions in mm

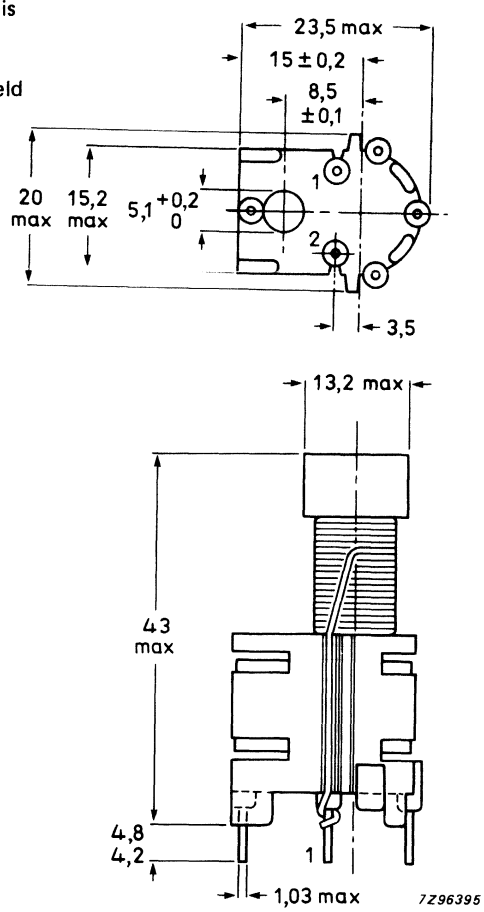


Fig. 1.

The linearity control units are packed in boxes of 300 pieces.

Mounting

The unit can be mounted on printed-wiring boards by means of its two connection pins, see Fig. 2. To prevent distortion of the magnetic field, no magnetic-conductive materials should approach the magnetic parts nearer than 3 mm. The coils should be shunted with a carbon resistor to damp ringing phenomena; the value of the resistor depends on the line output transformer used (typical value 560 Ω).

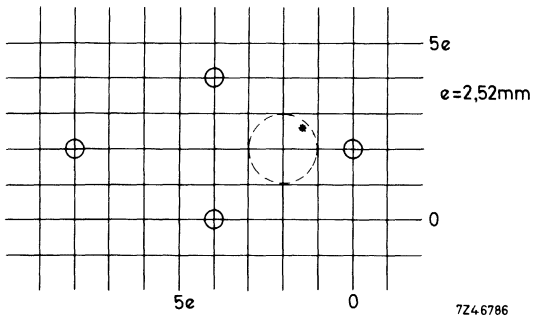


Fig. 2 Hole pattern for mounting on a printed-wiring board; e = 2,54 mm.

* Hole for bottom adjustment.

ELECTRICAL DATA

When a sawtooth current (without S-correction) of 8,5 A (p-p), frequency 32 kHz, flyback ratio 18%, flows through the linearity control unit, the correction voltage is adjustable between 2,4 and 6,5 V.

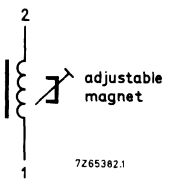


Fig. 3 Circuit diagram.

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,05%
after 10 000 h	⩽ 0,2%
after 30 000 h	⩽ 5%

ENVIRONMENTAL DATA

Maximum ambient temperature	70 °C
Flammability of assembly	according to IEC 65, clause 14.4
Flammability of materials	according to UL94, category V-1

TESTS

The linearity control unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc, procedure B4; 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 1000 bumps, 3 directions.
Soldering	IEC 68-2-20, test Ta, first part, method 1; 230 ± 10 °C, 2 ± 0,5 s.
Cold	IEC 68-2-1, test Aa; 96 h, −25 °C.
Dry heat	IEC 68-2-2, test Ba; 96 h, + 100 °C.
Damp heat, cyclic	IEC 68-2-30, test Db; 21 days, + 40 °C
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 100 °C.

AMPLITUDE CONTROL UNITS

AMPLITUDE CONTROL UNIT

- For Monochrome Data Graphic Displays (C64 concept)

MECHANICAL DATA

Dimensions in mm

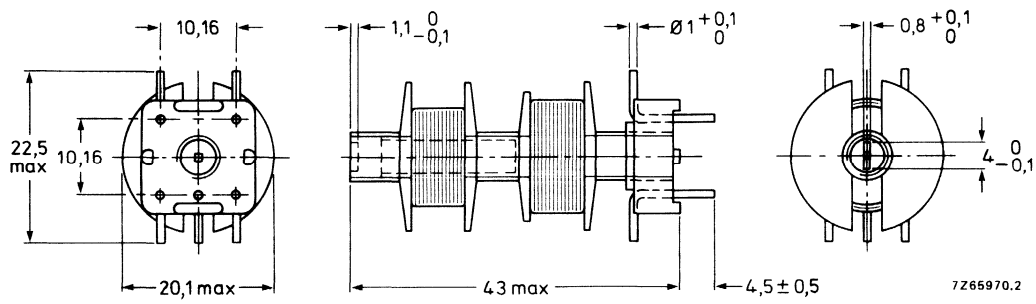


Fig. 1.

The coil has five pins for mounting on a printed-wiring board. It can be adjusted at the top by means of a trimming key.

Torque for adjustment	3 to 40 mNm
Press-through force	⩾ 30 N
ΔL/L per degree of angular rotation of core	typ. $2,5 \times 10^{-4}$

Mounting

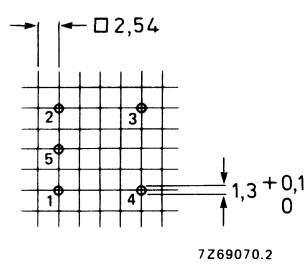


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

ELECTRICAL DATA

Inductance	
L_{1-4}	125 to 290 μH *
L_{2-3}	65 to 20 μH **
L_{2-5}	16,3 μH ± 10% *
Resistance (d.c.)	
R_{4-1}	$\leqslant$ 0,58 Ω
R_{2-3}	$\leqslant$ 0,215 Ω
Current	
I_{1-4}	$\leqslant$ 2,5 $A_{(p-p)}$ at 15 kHz
	$\leqslant$ 1,3 $A_{(p-p)}$ at 64 kHz
I_{2-5}	$\leqslant$ 9 $A_{(p-p)}$ at $\leqslant$ 50 kHz
	$\leqslant$ 7 $A_{(p-p)}$ at 50 to 70 kHz
I_{2-3}	$\leqslant$ 4,5 $A_{(p-p)}$ at $\leqslant$ 50 kHz
	$\leqslant$ 3,5 $A_{(p-p)}$ at 50 to 70 kHz
Operating voltage	
V_{1-4} (flyback)	$\leqslant$ 120 $V_{(p-p)}$
V_{2-5} and V_{2-3} (sawtooth)	$\leqslant$ 150 $V_{(p-p)}$
Maximum voltage between windings 1-4 and 2-3	800 V_P
Operating frequency	15 to 64 kHz
Temperature coefficient at 20 to 100 °C	approx. 300×10^{-6}/K
Operating temperature range	−25 to +100 °C
Inflammability	according to UL94 V−1

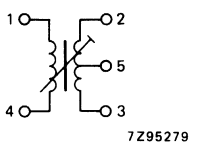


Fig. 3 Electrical diagram.

Reliability

Maximum cumulative percentage catastrophic failures, at maximum current, T_{amb} = 55 + 5°C:

after 300 h	$\leqslant$ 0,01%
after 1000 h	$\leqslant$ 0,013%
after 10 000 h	$\leqslant$ 0,02%
after 30 000 h	$\leqslant$ 1%

* At 250 mV, 1 kHz; minimum value, measured with core in position L_{2-3} max.
** At 250 mV, 1 kHz; minimum value, measured with core in position L_{1-4} max.

The coil withstands the following tests:

test	IEC 68 test method	procedure
Bump	Eb	1000 bumps, acceleration 245 m/s^2, 6 directions
Vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/directions
Shock	Ea	half sine pulse shape, duration 11 ms, acceleration 490 m/s^2, 6 directions, 3 shocks per direction
Resistance to soldering heat	Tb	method 1A
Solderability	Ta	230 ± 10 °C, 2 ± 0,5 s
Robustness of terminations	U_a and U_b	
Cold	Ab	−25 °C, 96 h
Dry heat	Bb	+ 100 °C, 96 h
Damp heat, steady state	Ca	21 days, + 40 °C, 93% R.H.
Damp heat, cyclic	Db	21 days, + 40 °C
Change of temperature	Na	−25 °C, + 100 °C; 5 cycles

AMPLITUDE CONTROL UNIT

- For Monochrome Data Graphic Displays

MECHANICAL DATA

Dimensions in mm

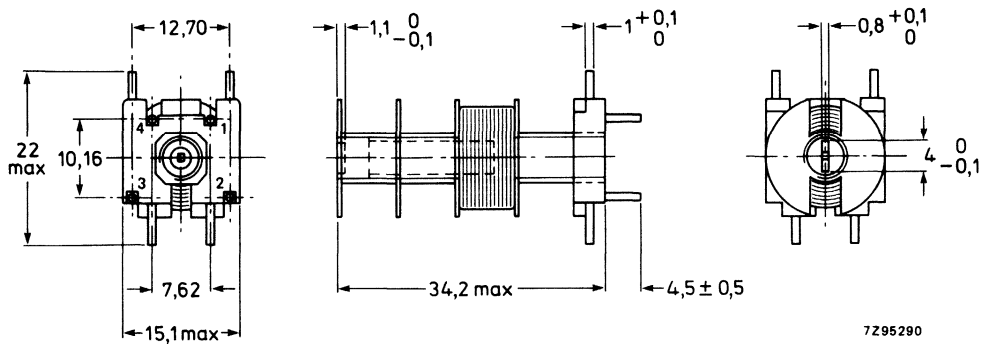


Fig. 1.

The coil has four pins for mounting on a printed-wiring board. It can be adjusted at the top by means of a trimming key.

Torque for adjustment	3 to 40 mNm
Press-through force	⩾ 30 N
ΔL/L per degree of angular rotation of core	typ. 2,5 x 10^{-4}

Mounting

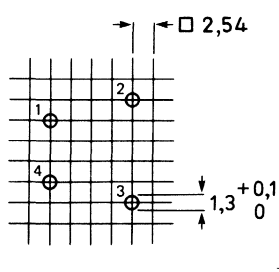
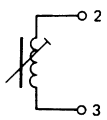


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side)

ELECTRICAL DATA

Inductance	36 to 50 μH*, typ. 43 μH*
Resistance (d.c.)	$< 0{,}135\ \Omega$
Current	$\leqslant 3{,}5$ A(p-p) (sawtooth)
Maximum voltage	30 V(p-p) (flyback)
Operating frequency	16 to 25 kHz
Temperature coefficient at 20 to 100 °C	approx. 300 x 10^{-6}/K
Operating temperature range	−25 to + 100 °C
Inflammability	according to UL94 V-1



7Z95292

Fig. 4 Electrical diagram.

Reliability

Maximum cumulative percentage catastrophic failures, at maximum current, T_{amb} = 55 + 5 °C:

after 300 h	$\leqslant 0{,}01\%$
after 1000 h	$\leqslant 0{,}013\%$
after 10 000 h	$\leqslant 0{,}02\%$
after 30 000 h	$\leqslant 1\%$

* At 250 mV, 1 kHz.

The amplitude control withstands the following tests:

test	IEC 68 test method	procedure
Bump	Eb	1000 bumps, acceleration 245 m/s^2, 6 directions
Vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/directions
Shock	Ea	half sine pulse shape, duration 11 ms, acceleration 490 m/s^2, 6 directions, 3 shocks per direction
Resistance to soldering heat	Tb	method 1A
Solderability	Ta	230 ± 10 °C, 2 ± 0,5 s
Robustness of terminations	U_a and U_b	
Cold	Ab	−25 °C, 96 h
Dry heat	Bb	+ 100 °C, 96 h
Damp heat, steady state	Ca	21 days, + 40 °C, 93% R.H.
Damp heat, cyclic	Db	21 days, + 40 °C
Change of temperature	Na	−25 °C, 100 °C, 5 cycles

LUMINANCE DELAY LINES

3122 138 99420

LUMINANCE DELAY LINE

QUICK REFERENCE DATA

Delay	270 ns
Dimensions	30 x 19 x 14 mm
Self-extinguishing	

APPLICATION

The DL270 is for use in the luminance circuit of colour television receivers.

DESCRIPTION

The delay line consists of two parallel connected coils which are astatically wound to decrease the influence of magnetic fields from other parts of the receiver. The delay line is in a plastic housing. Three pins enable the unit to be soldered directly onto a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

e = 2,54 mm

Outlines

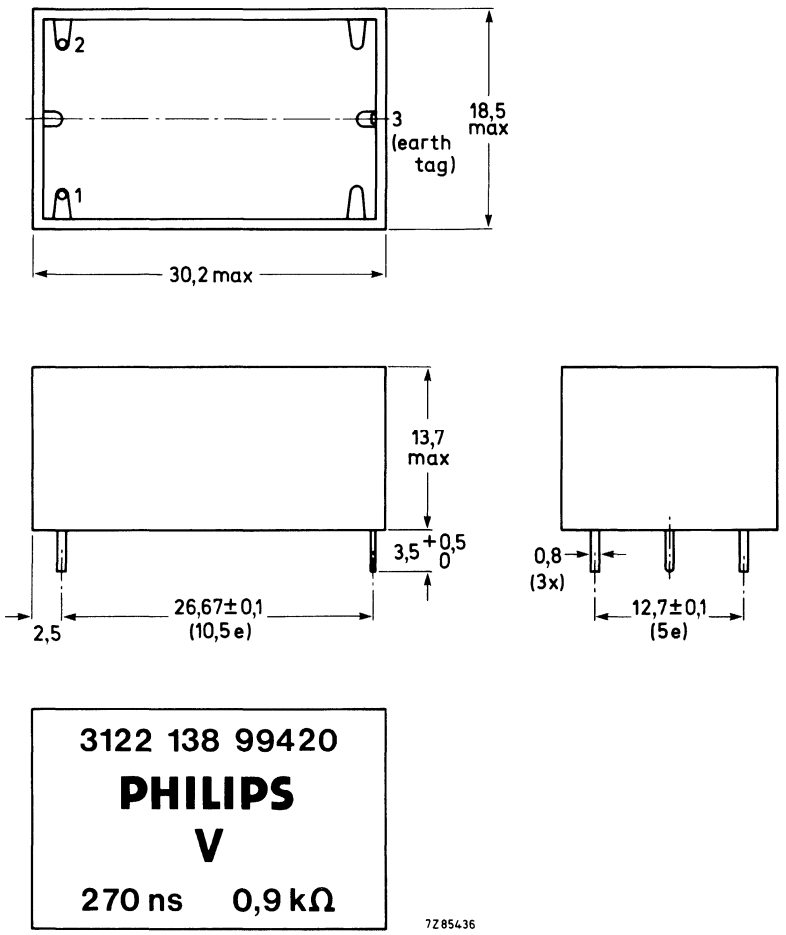


Fig. 1.

Mass 6,5 g

Mounting

The unit can be soldered onto a printed-wiring board pierced with three 1,0 + 0,1 mm diameter holes.

Packaging 108 delay lines per box.

ELECTRICAL DATA (Measured at 25 °C)

Delay	270 ns ± 10%
Characteristic impedance	0,9 kΩ ± 10%
Group delay (with respect to 0,5 MHz)	
at 3,5 MHz	max. 30 ns
at 5,0 MHz	max. 60 ns
Bandwidth at −3 dB	5 MHz
Ripple with 2τ-pulse on pin 2	max. 2,5%
Breakdown voltage between pins 2 and 3	min. 50 V (d.c.)
Permissible temperature range	−25 to + 70 °C

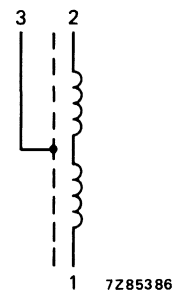


Fig. 2.

The luminance delay line withstands the following tests:

test	according to IEC 68-2 par.		procedure
Climatic			
cold	1	Ab	−25 °C, 96 h
dry heat	2	Bb	+ 70 °C, 96 h
damp heat cyclic	30	Db	+ 40 °C, 21 cycles
damp heat steady state	3	Ca	+ 40 °C, 21 days
change of temperature	14	Na	−25 °C/+ 70 °C, 5 cycles
Mechanical			
vibration sinusoidal	6	Fc	10-55-10 Hz, amplitude 0,35 mm 3 perpendicular directions, 0,5 h each
bump	29	Eb	1000 bumps in 6 directions peak acceleration 245 m/s²
shock	27	Ea	half-sinewave, 11 ms peak acceleration 490 m/s² 3 shocks per direction, 6 directions
resistance to soldering heat	20	Tb	method 1A
solderability	20	Ta	first part of method 1 230 ± 10 °C, 2 ± 0,5 s
robustness of terminations	21	Ua Ub	tensile 10 N, thrust 2 N 2 bends, 5 N

3122 138 96042

LUMINANCE DELAY LINE

QUICK REFERENCE DATA

Delay	330 ns
Dimensions	30 x 19 x 14 mm
Self-extinguishing properties	

APPLICATION

The DL330 is for use in the luminance circuit of colour television receivers.

DESCRIPTION

The delay line consists of two parallel connected coils which are astatically wound to decrease the influence of magnetic fields from other parts of the receiver. The delay line is enclosed in a plastic housing. Three pins enable the unit to be soldered directly onto a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

Outlines

e = 2,54 mm

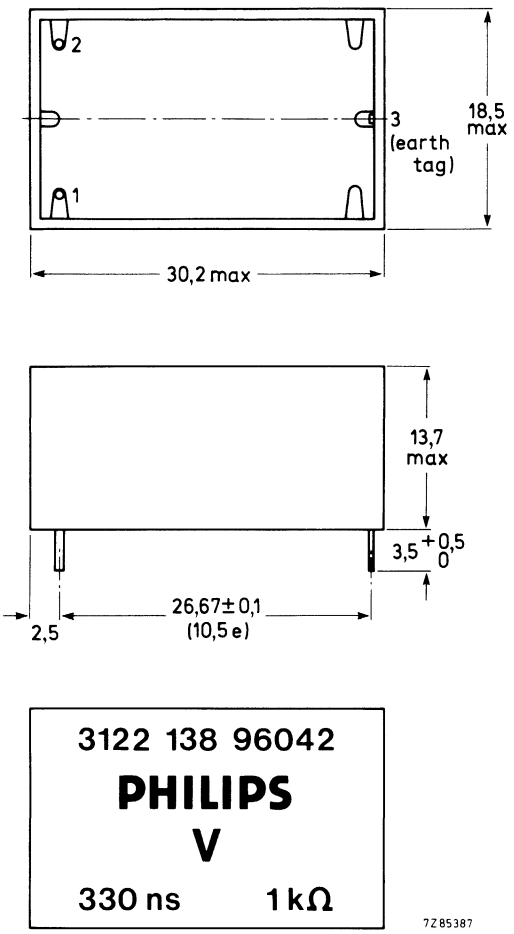


Fig. 1.

Mass 6,5 g

Mounting

The unit can be soldered directly onto a printed-wiring board pierced with three 1,0 + 0,1 mm diameter holes.

Packaging 108 delay lines per box.

ELECTRICAL DATA

Measured at 25 °C

Delay	330 ns ± 10%
Characteristic impedance	1 kΩ ± 10%
Group delay (with respect to 0,5 MHz)	
at 3,5 MHz	max. 30 ns
at 5,0 MHz	max. 60 ns
Bandwidth at −3 dB	5 MHz
Ripple with 2τ-pulse on pin 2	max. 2,5%
Breakdown voltage between pins 2 and 3	min. 50 V (d.c.)
Permissible temperature range	−25 to + 70 °C

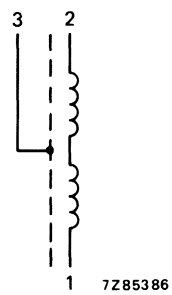


Fig. 2.

The luminance delay line withstands the following tests:

test	according to IEC 68-2 par.		procedure
Climatic			
cold	1	Ab	−25 °C, 96 h
dry heat	2	Bb	+ 70 °C, 96 h
damp heat cyclic	30	Db	+ 40 °C, 21 cycles
damp heat steady state	3	Ca	+ 40 °C, 21 days
change of temperature	14	Na	−25 °C/+ 70 °C, 5 cycles
Mechanical			
vibration sinusoidal	6	Fc	10-55-10 Hz, amplitude 0,35 mm 3 perpendicular directions, 0,5 h each
bump	29	Eb	1000 bumps in 6 directions peak acceleration 245 m/s^2
shock	27	Ea	half-sinewave, 11 ms peak acceleration 490 m/s^2 3 shocks per direction, 6 directions
resistance to soldering heat	20	Tb	method 1A
solderability	20	Ta	first part of method 1 230 ± 10 °C, 2 ± 0,5 s
robustness of terminations	21	Ua Ub	tensile 10 N, thrust 2 N 2 bends, 5 N

3122 138 50450

LUMINANCE DELAY LINE

QUICK REFERENCE DATA

Delay	390 ns
Dimensions	30 x 19 x 14 mm
Self-extinguishing properties	

APPLICATION

The DL390 is for use in the luminance circuit of colour television receivers.

DESCRIPTION

The delay line consists of two parallel connected coils which are astatically wound to decrease the influence of magnetic fields from other parts of the receiver. The delay line is enclosed in a plastic housing. Three pins enable the unit to be soldered directly onto a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

Outlines

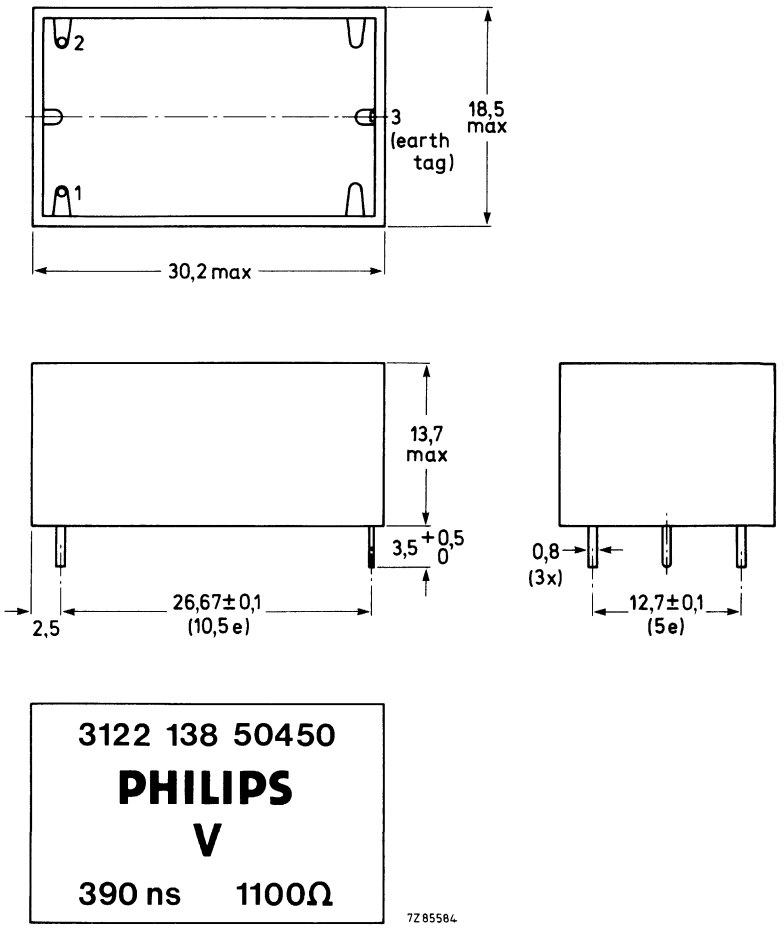


Fig. 1.

Mass 6,5 g

Mounting

The unit can be soldered directly onto a printed-wiring board pierced with three 1,0 + 0,1 mm diameter holes.

Packaging 108 delay lines per box.

ELECTRICAL DATA

Measured at 25 °C

Delay	390 ns ± 10%
Characteristic impedance	1,1 kΩ ± 10%
Group delay (with respect to 0,5 MHz)	
at 3,5 MHz	max. 45 ns
at 5,0 MHz	max. 60 ns
Bandwidth at −3 dB	5 MHz
Ripple with 2τ-pulse on pin 2	max. 3%
Breakdown voltage between pins 2 and 3	min. 50 V (d.c.)
Permissible temperature range	−25 to + 70 °C

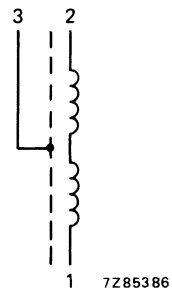


Fig. 2.

The luminance delay line withstands the following tests:

test	according to IEC68-2 par.		procedure
Climatic			
cold	1	Ab	−25 °C, 96 h
dry heat	2	Bb	+70 °C, 96 h
damp heat cyclic	30	Db	+40 °C, 21 cycles
damp heat steady state	3	Ca	+40 °C, 21 days
change of temperature	14	Na	−25 °C/+ 70 °C, 5 cycles
Mechanical			
vibration sinusoidal	6	Fc	10-55-10 Hz, amplitude 0,35 mm 3 perpendicular directions, 0,5 h each
bump	29	Eb	1000 bumps in 6 directions peak acceleration 245 m/s^2
shock	27	Ea	half-sinewave, 11 ms peak acceleration 490 m/s^2 3 shocks per direction, 6 directions
resistance to soldering heat	20	Tb	method 1A
solderability	20	Ta	first part of method 1 230 ± 10 °C, 2 ± 0,5 s
robustness of terminations	21	Ua Ub	tensile 10 N, thrust 2 N 2 bends, 5 N

3122 138 99471

LUMINANCE DELAY LINE

QUICK REFERENCE DATA

Delay	470 ns
Dimensions	30 x 19 x 14 mm
Self-extinguishing	

APPLICATION

The DL470 is for use in the luminance circuit or transposer circuit of colour television receivers.

DESCRIPTION

The delay line consists of two parallel connected coils which are astatically wound to decrease the influence of magnetic fields from other parts of the receiver. The delay line is in a plastic housing. Three pins enable the unit to be soldered directly onto a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

Outlines

e = 2,54 mm

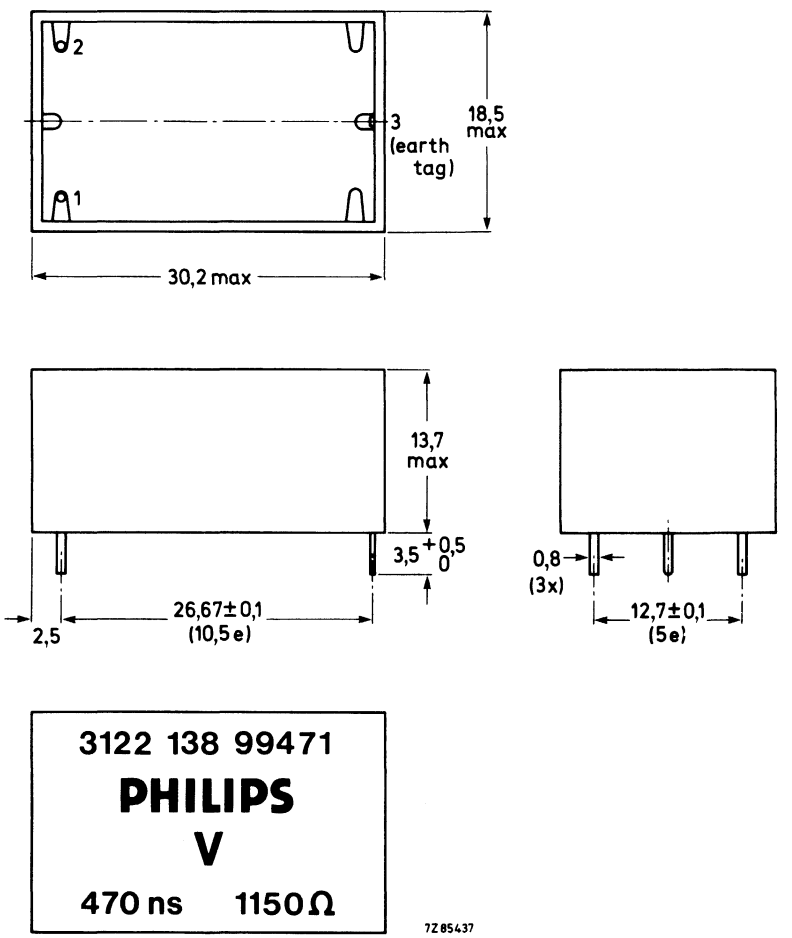


Fig. 1.

Mass 6,5 g

Mounting

The unit can be soldered onto a printed-wiring board pierced with three 1,0 + 0,1 mm diameter holes.

Packaging 108 delay lines per box.

ELECTRICAL DATA (Measured at 25 °C)

Delay	470 ns ± 10%
Characteristic impedance	1150 Ω ± 10%
Group delay (with respect to 1,0 MHz)	
at 3,5 MHz	max. 45 ns
at 5,0 MHz	max. 60 ns
Bandwidth at −3 dB	5 MHz
Ripple with 2τ-pulse on pin 2	max. 3%
Breakdown voltage between pins 2 and 3	min. 50 V (d.c.)
Permissible temperature range	−25 to + 70 °C

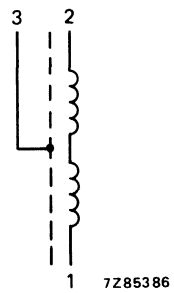


Fig. 2.

The luminance delay line withstands the following tests:

test	according to IEC 68-2 par.		procedure
Climatic			
cold	1	Ab	−25 °C, 96 h
dry heat	2	Bb	+ 70 °C, 96 h
damp heat cyclic	30	Db	+ 40 °C, 21 cycles
damp heat steady state	3	Ca	+ 40 °C, 21 days
change of temperature	14	Na	−25 °C/+ 70 °C, 5 cycles
Mechanical			
vibration sinusoidal	6	Fc	10-55-10 Hz, amplitude 0,35 mm 3 perpendicular directions, 0,5 h each
bump	29	Eb	1000 bumps in 6 directions peak acceleration 245 m/s²
shock	27	Ea	half-sinewave, 11 ms peak acceleration 490 m/s² 3 shocks per direction, 6 directions
resistance to soldering heat	20	Tb	method 1A
solderability	20	Ta	first part of method 1 230 ± 10 °C, 2 ± 0,5 s
robustness of terminations	21	Ua Ub	tensile 10 N, thrust 2 N 2 bends, 5 N

DEGAUSSING COILS

DEGAUSSING COILS

- For 220/240 V mains voltage
- Double insulation

APPLICATION

For 14 in and 16 in, 90° colour picture tubes and high resolution data graphic display tubes. One coil asymmetrically mounted on the top and bottom of the cone of the tube, in conjunction with PTC thermistor 2322 662 98009, produces a decaying alternating field.

Degaussing coil 3122 138 51860 to be used with 14 in tubes, degaussing coil 3122 138 51850 to be used with 16 in tubes.

MECHANICAL DATA

Dimensions in mm

The coils of aluminium wire are completely sleeved with a flame-retardent foil; the coil ends are connected to pins in a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971 is available to special order.

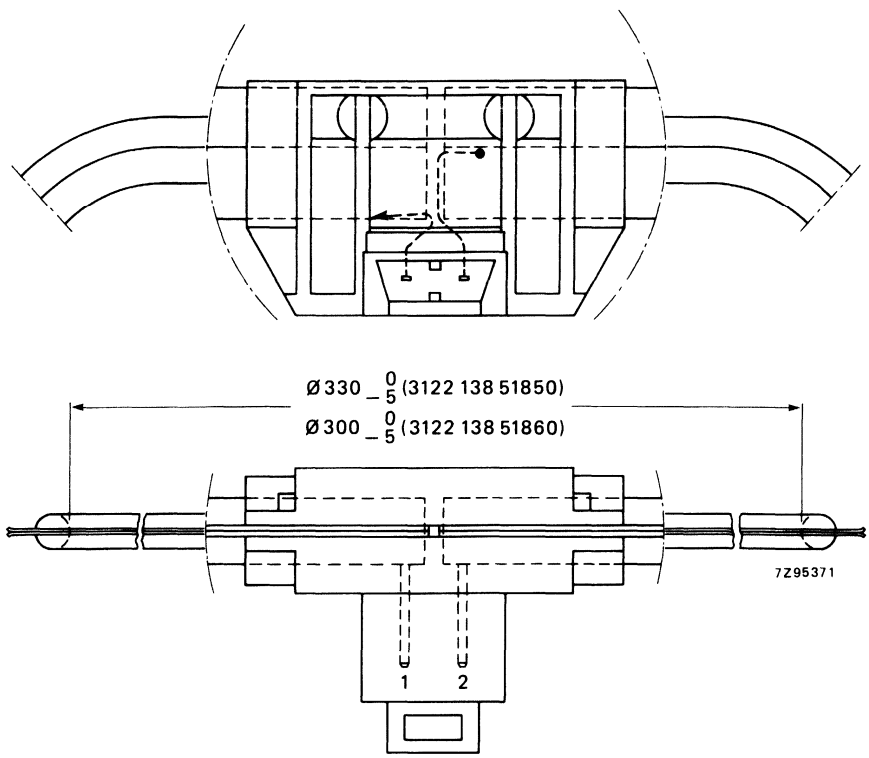


Fig. 1.

ELECTRICAL DATA

Coil resistance	
coil 3122 138 51850 (16 in)	26,3 Ω ± 10%
coil 3122 138 51860 (14 in)	21,7 Ω ± 10%
Number of turns	
coil 3122 138 51850 (16 in)	107
coil 3122 138 51860 (14 in)	97
Test voltage (d.c.)	
between interconnected pins and insulation foil	6000 V
between interconnected pins and holder	6000 V
Maximum working temperature	70 °C

DEGAUSSING COILS

- Single insulation

APPLICATION

For 26 in, 22 in and 20 in, 110° colour picture tubes. Two coils mounted on the top and bottom of the cone of the picture tube produce in conjunction with PTC thermistor 2322 662 98009 a decaying alternating field. The coils have to be connected in such a way that they operate magnetically in series, producing flux lines which flow from the top coil through the picture tube into the bottom coil or vice versa.

MECHANICAL DATA

Dimensions in mm

The coils are completely double sleeved with a flame-retardent foil; to guarantee mains isolation the coil ends are connected to a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971, is available to special order.

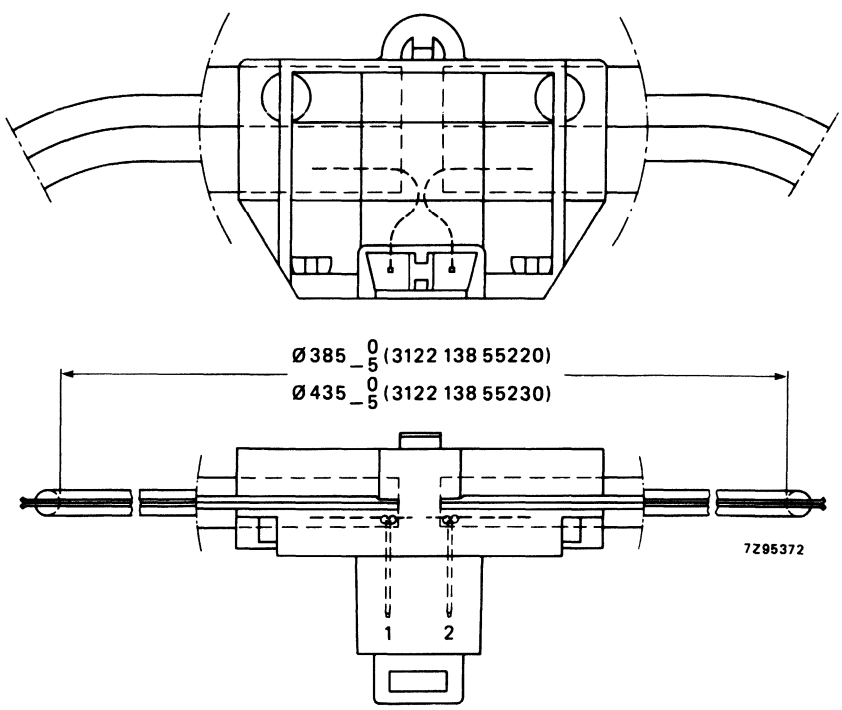


Fig. 1.

ELECTRICAL DATA

Coil resistance	
coil 3122 138 55220 (20, 22 in)	11,5 Ω ± 10%
coil 3122 138 55230 (26 in)	8,6 Ω ± 10%
Number of turns	
coil 3122 138 55220 (20, 22 in)	49
coil 3122 138 55230 (26 in)	52
Safety	according to IEC 65.10 and UL1410
Maximum working temperature	70 °C

DEGAUSSING COIL

- For 117 V and 220/240 V mains voltage
- Single coil
- Single insulation

APPLICATION

For 14 in, 90° colour picture tubes and high resolution data graphic display tubes. One coil asymmetrically mounted on the top and bottom of the cone of the tube, in conjunction with PTC thermistor 2322 662 98009, produces a decaying alternating field.

MECHANICAL DATA

Dimensions in mm

The coil of aluminium wire is completely sleeved with a flame-retardent foil; the coil ends are connected to pins in a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971 is available to special order.

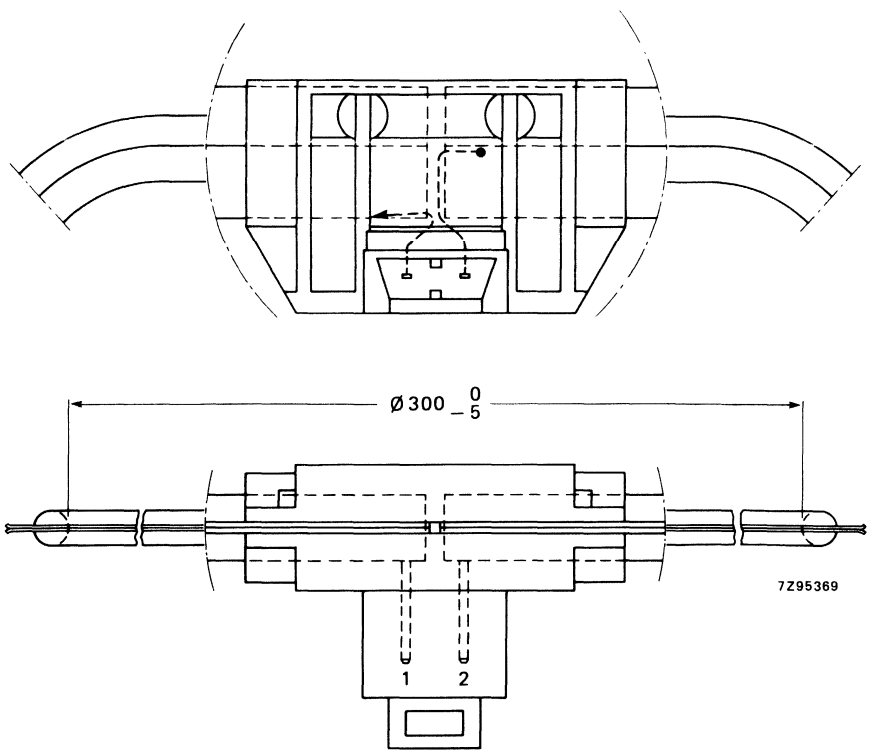


Fig. 1.

ELECTRICAL DATA

Coil resistance	14 Ω ± 10%
Number of turns	134
Test voltage (d.c.)	
between interconnected pins and insulation foil	6000 V
between interconnected pins and holder	6000 V
Maximum working temperature	70 °C

DEGAUSSING COIL

- For 110 V and 220/240 V mains voltage
- Double insulation

APPLICATION

For 20 in, 90° colour picture tubes and high resolution data graphic display tubes. Two coils mounted on the top and bottom of the cone of the tube, in conjunction with PTC thermistor 2322 662 98009, produce a decaying alternating field.

MECHANICAL DATA

Dimensions in mm

The coil of aluminium wire is completely sleeved with a flame-retardent foil; the coil ends are connected to pins in a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971 is available to special order.

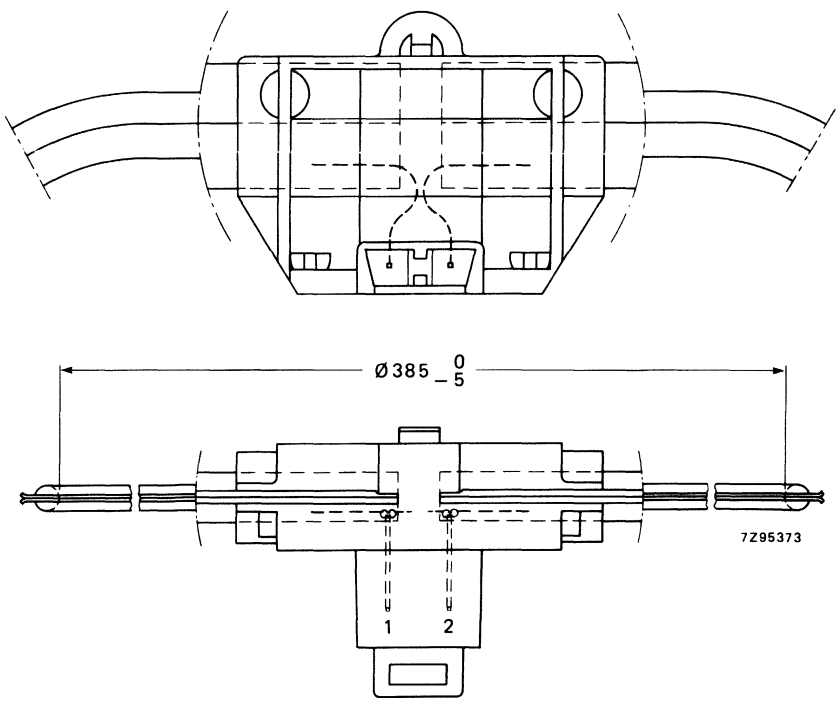


Fig. 1.

ELECTRICAL DATA

Coil resistance	11,4 Ω ± 10%
Number of turns	65
Test voltage (d.c.)	
between interconnected pins and insulation foil	6000 V
between interconnected pins and holder	6000 V
Safety	according to IEC 65.10 and UL 1410
Maximum working temperature	70 °C

DEGAUSSING COILS

- For 220/240 V mains voltage
- Coil 3122 138 56070 with single insulation, coil 3122 138 56170 with double insulation

APPLICATION

For 20 in, 90° colour picture tubes and high resolution data graphic display tubes. One coil asymmetrically mounted on the top and bottom of the cone of the tube, in conjunction with PTC thermistor 2322 662 98009, produces a decaying alternating field.

MECHANICAL DATA

Dimensions in mm

The coils of aluminium wire are completely sleeved with a flame-retardent foil; the coil ends are connected to pins in a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971 is available to special order.

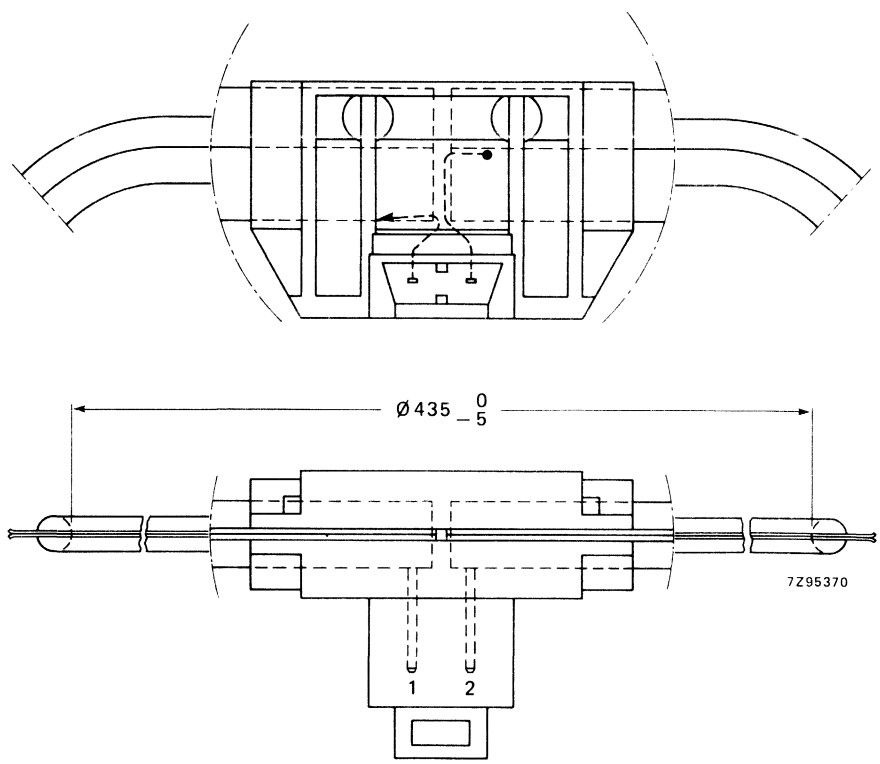


Fig. 1.

ELECTRICAL DATA

Coil resistance	19,5 Ω ± 10%
Number of turns	120
Test voltage (d.c.)	
between interconnected pins and insulation foil	6000 V
between interconnected pins and holder	6000 V
Maximum working temperature	70 °C

DEGAUSSING COILS

- Double insulation

APPLICATION

For 26 in, 22 in and 20 in, 110° colour picture tubes. Two coils mounted on the top and bottom of the cone of the picture tube produce in conjunction with PTC thermistor 2322 662 98009 a decaying alternating field. The coils have to be connected in such a way that they operate magnetically in series, producing flux lines which flow from the top coil through the picture tube into the bottom coil or vice versa.

MECHANICAL DATA

Dimensions in mm

The coils are completely double sleeved with a flame-retardent foil; to guarantee mains isolation the coil ends are connected to a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971, is available to special order.

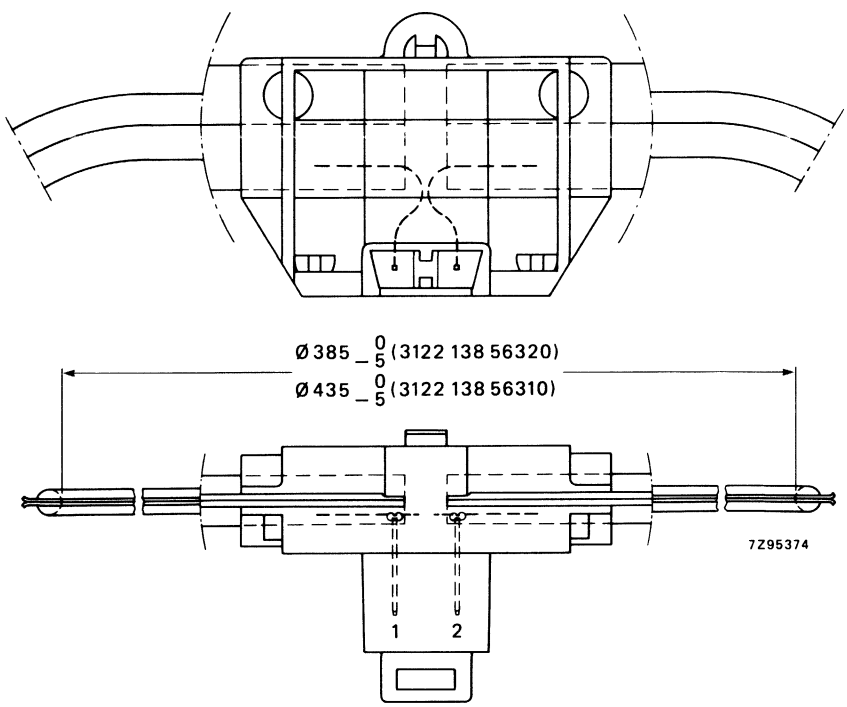


Fig. 1.

ELECTRICAL DATA

Coil resistance	
coil 3122 138 56310 (26 in)	8,6 Ω ± 10%
coil 3122 138 56320 (20, 22 in)	11,5 Ω ± 10%
Number of turns	
coil 3122 138 56310 (26 in)	52
coil 3122 138 56320 (20, 22 in)	49
Safety	according to IEC 65.10 and UL1410
Maximum working temperature	70 °C

DEGAUSSING COILS

- For 220/240 V mains voltage
- Single insulation

APPLICATION

For 14 in and 16 in, 90° colour picture tubes and high resolution data graphic display tubes. One coil asymmetrically mounted on the top and bottom of the cone of the tube, in conjunction with PTC thermistor 2322 662 98009, produces a decaying alternating field.

Degaussing coil 3122 138 99840 to be used with 14 in tubes, degaussing coil 3122 138 99850, to be used with 16 in tubes.

MECHANICAL DATA

Dimensions in mm

The coils of aluminium wire are completely sleeved with a flame-retardent foil; the coil ends are connected to pins in a holder. For connecting the coils to the circuit, a cable, length 40 cm, catalogue number 8222 289 36971, is available to special order.

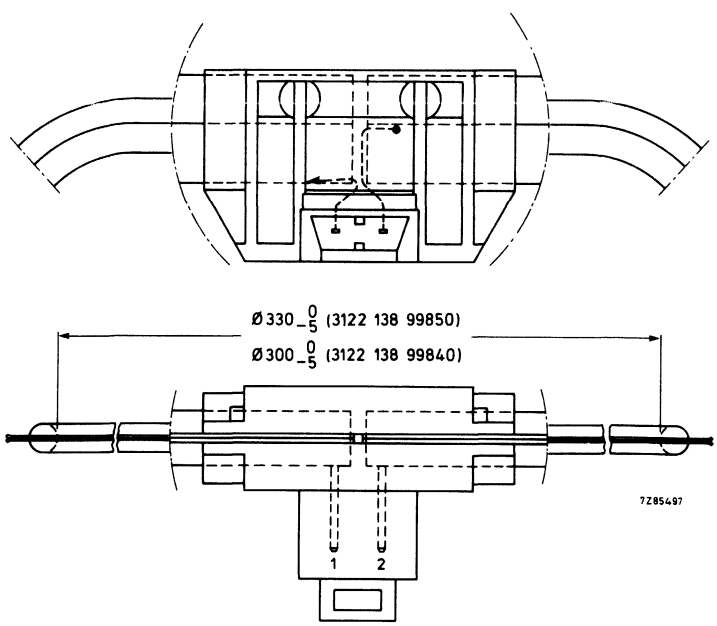


Fig. 1.

ELECTRICAL DATA

Coil resistance	
coil 3122 138 99840 (14 in)	21,7 Ω ± 10%
coil 3122 138 99850 (16 in)	26,3 Ω ± 10%
Number of turns	
coil 3122 138 99840 (14 in)	97
coil 3122 138 99850 (16 in)	107
Test voltage (d.c.)	
between interconnected pins and insulation foil	6000 V
between interconnected pins and holder	6000 V
Maximum working temperature	70 °C

TRANSFORMERS, CHOKES AND COILS

SWITCHED-MODE TRANSFORMER

- Aluminium foil winding
- Mains insulation
- 60 W output power
- 12 V/2 A, 5 V/3,5 A outputs

APPLICATION

This transformer is for use as a flyback switched-mode transformer for monochrome monitors with mains insulation.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U-cores with a rectangular leg, and a cylindrical leg on which the windings are situated.

The transformer has 11 pins for mounting on a printed-wiring board.

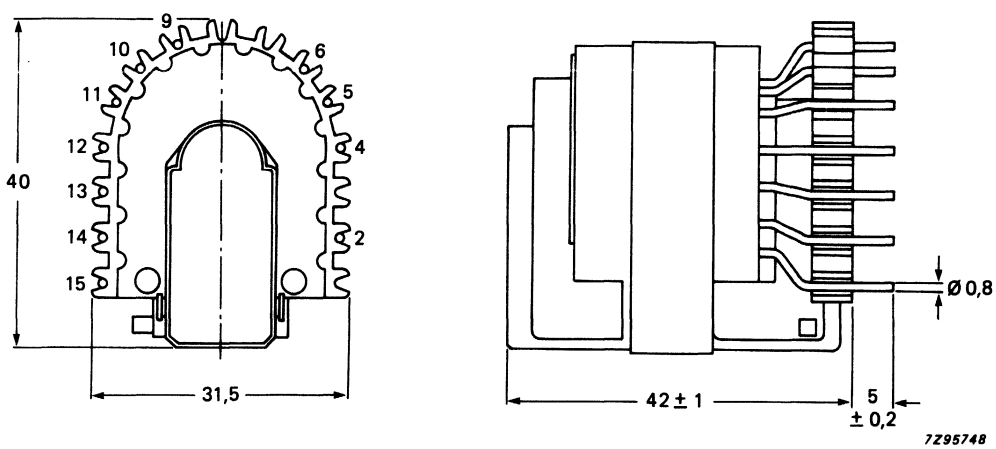


Fig. 1.

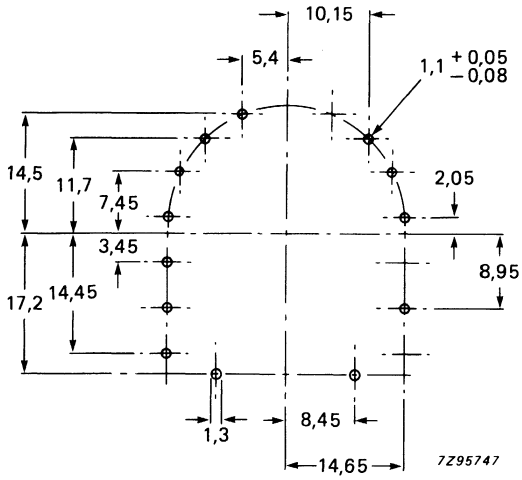


Fig. 2 Hole pattern for mounting on a printed wiring board (solder side).

ELECTRICAL DATA

Inductance, primary (4 - 6)*	1,2 mH ± 10%
Leakage inductance, primary (4 - 6)**	< 45 μH
Resistance, primary (4 - 6), at 25 °C	< 0,9 Ω
Resistance, secondary, at 25 °C	
(15 - 11)	< 0,05 Ω
(14 - 10)	< 0,05 Ω
(13 - 9)	< 0,13 Ω
(2 - 5)	< 0,085 Ω
Transformation ratio▲	
(4 - 6)/(15 - 11)	17,5 ± 5%
(4 - 6)/(14 - 10)	17,5 ± 5%
(4 - 6)/(13 - 9)	6,3 ± 5%
(4 - 6)/(2 - 5)	13,45 ± 5%
Test voltage (d.c.) for 1 min	
between primary and secondary	5600 V
between windings and core	500 V
Mains insulation	according to IEC 65, 14-3-1a, and UL 1410-1411
Maximum operating temperature	115 °C

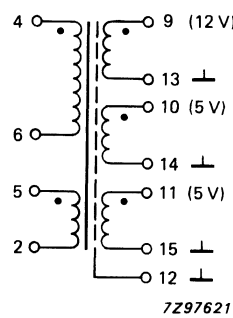


Fig. 3 Circuit diagram.

(The screen must be connected to the secondary ground.)

* At f = 1 kHz, I ⩾ 100 mA.
** At f ⩾ 100 kHz, (13 - 9) short-circuited.
▲ At V_{4-6} = 1 V, f = 1 kHz.

DEVELOPMENT DATA

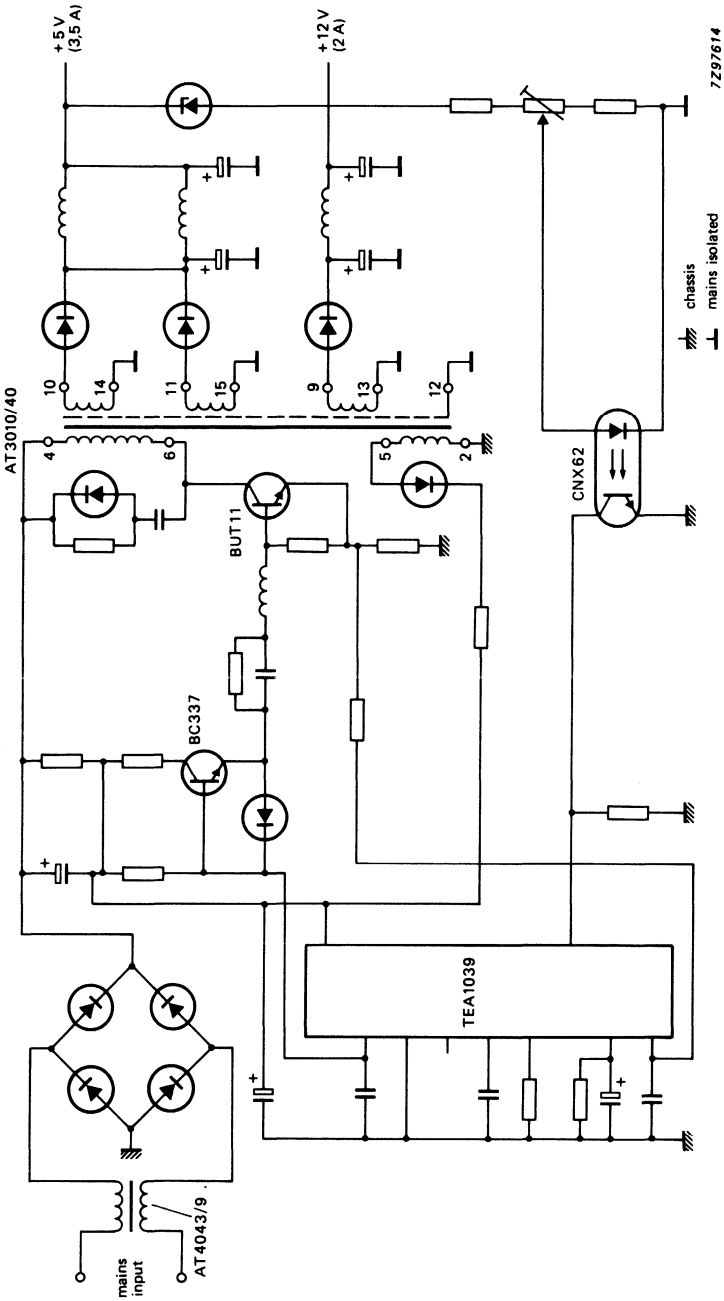


Fig. 4 Application circuit.

SWITCHED-MODE TRANSFORMER

- Aluminium foil winding
- Mains insulation
- 55 W output power
- 105 V/0,4 A, 25 V/1 A, 15 V/0,6 A, 6 V/1 A outputs

APPLICATION

This transformer is for use as a flyback switched-mode transformer for 90° colour TV receivers and colour monitors with mains insulation.

It can be used in conjunction with line output transformer AT2079 (Micro slot).

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U-cores with a rectangular leg, and a cylindrical leg on which the windings are situated.

The transformer has 13 pins for mounting on a printed-wiring board.

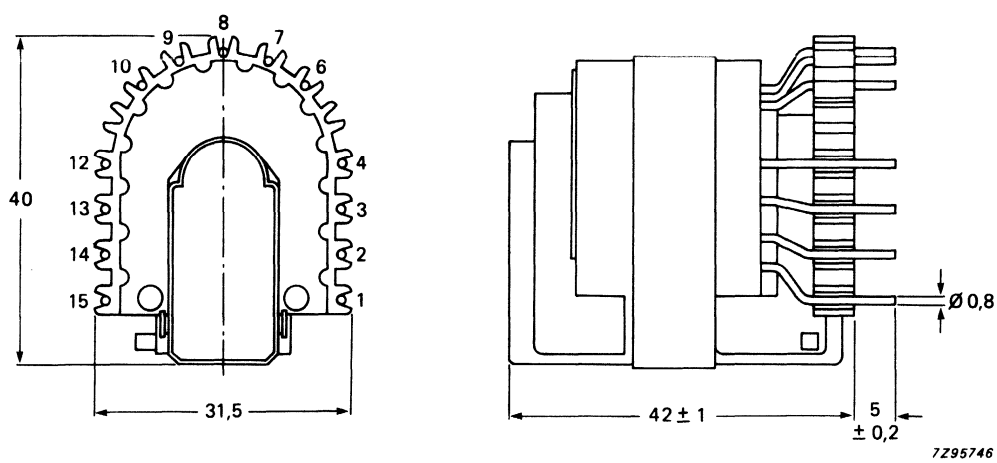


Fig. 1.

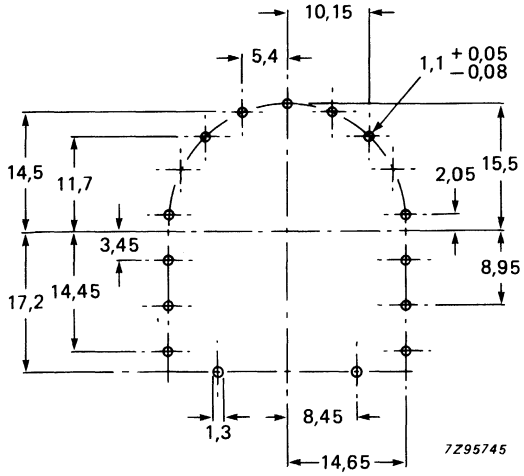


Fig. 2 Hole pattern for mounting on a printed wiring board (solder side).

ELECTRICAL DATA

Inductance, primary (10 - 9)*	1,15 mH ± 10%
Leakage inductance, primary (10 - 9)**	⩽ 55 μH
Resistance, primary (10 - 9), at 25 °C	< 1 Ω
Resistance, secondary, at 25 °C	
(12 - 3)	< 0,18 Ω
(15 - 2)	< 0,06 Ω
(13 - 14)	< 1 Ω
Transformation ratio▲	
(10 - 9)/(12 - 3)	4,55 ± 5%
(10 - 9)/(15 - 2)	12,1 ± 5%
(10 - 9)/(13 - 1)	7,2 ± 5%
(10 - 9)/(13 - 14)	1,1 ± 5%
(10 - 9)/(8 - 6)	17 ± 5%
(10 - 9)/(6 - 7)	6,2 ± 5%
Test voltage (d.c.) for 1 min	
between primary and secondary	5600 V
between windings and core	500 V
Mains insulation	according to IEC 65, 14-3-1a, and UL 1410-1411
Maximum operating temperature	115 °C

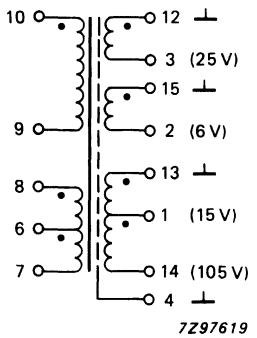


Fig. 3 Circuit diagram.

(The screen must be connected to the secondary ground.)

* At f = 1 kHz, I ⩾ 100 mA.

** At f ⩾ 100 kHz, (13 - 14) short-circuited.

▲ $V_{10\text{-}9}$ = 1 V, f = 1 kHz.

Replaces AT3010/110 and AT3010/110L

SWITCHED-MODE TRANSFORMER

- Aluminium foil winding
- Mains insulation
- 120 W or 80 W output power
- 145 V/0,4 A, 105 V/0,4 A, 25 V/0,25 A, 25 V/1 A, 15 V/0,6 A, 8 V/1 A outputs

APPLICATION

This transformer is for use as a flyback switched-mode transformer for 90° and 110° colour TV receivers and colour monitors with mains insulation.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube ETD-cores with a rectangular leg, and a cylindrical leg on which the windings are situated.

The transformer has 15 pins for mounting on a printed-wiring board.

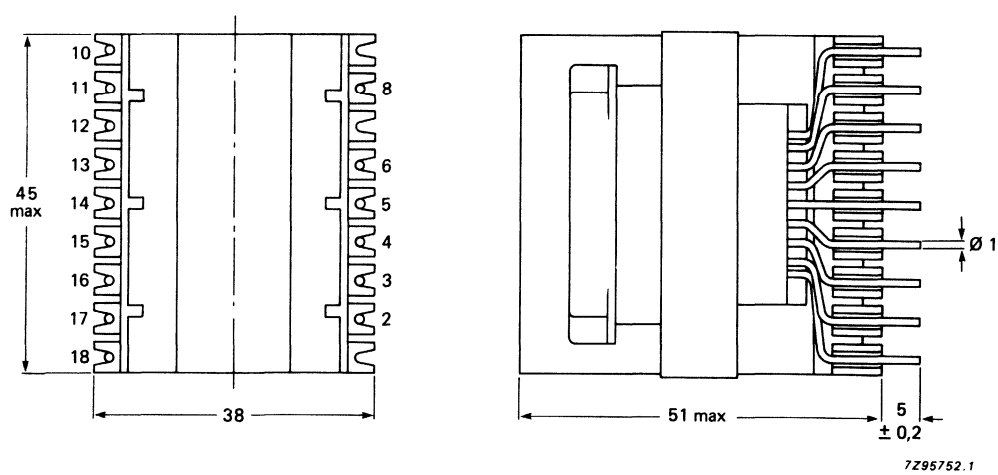


Fig. 1 The AT3010/110 LL transformer.

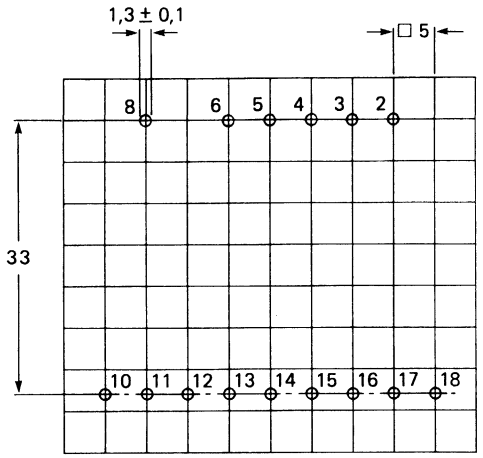
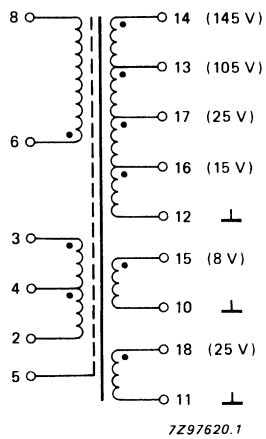


Fig. 2 Hole pattern for mounting on a printed wiring board (solder side).



→ 1. Pin 5 must be connected to the primary ground.

Fig. 3 Circuit diagram.

DEVELOPMENT DATA

ELECTRICAL DATA (See Fig. 3)

Inductance, primary (6 - 8)*	1,24 mH ± 10%
Maximum current, primary (6 - 8)	3 A
Leakage inductance, primary (6 - 8)**	$\leqslant$ 50 μH
Resistance, primary (6 - 8), at 25 °C	$<$ 0,6 Ω
Resistance, secondary, at 25 °C	
(11 - 18)	$>$ 0,060 Ω
(10 - 15)	$>$ 0,025 Ω
(12 - 14)	$>$ 0,300 Ω
(8 - 6)	$>$ 0,600 Ω
(3 - 2)	$>$ 0,100 Ω
Transformation ratio▲	
(8 - 6)/(18 - 11)	9,00 ± 2,5%
(8 - 6)/(15 - 10)	24,30 ± 2,5%
(8 - 6)/(16 - 12)	14,10 ± 2,5%
(8 - 6)/(17 - 16)	23,40 ± 2,5%
(8 - 6)/(13 - 17)	2,95 ± 2,5%
(8 - 6)/(14 - 13)	6,50 ± 2,5%
(8 - 6)/(4 - 2)	17,00 ± 2,5%
(8 - 6)/(3 - 4)	11,25 ± 2,5%
Test voltage (DC) for 1 min	
between primary and secondary	5600 V
between windings and core	500 V
Mains insulation	according to IEC 65, 14.3.1a, and UL 1410-1411
Maximum operating temperature (foil)	115 °C
Maximum output power	120 W

* At f = 1 kHz, I $\geqslant$ 100 mA.
** At f $\geqslant$ 100 kHz, (12 - 14) short-circuited.
▲ At $V_{6\text{-}8}$ = 1 V, f = 1 kHz.

ENVIRONMENTAL TESTING

The assembly meets the requirements for climatic testing as specified in test procedures published by the Commission Electrotechnique Internationale (CEI). These tests are listed below, the relevant CEI publication for each test being shown in brackets.

1. Cold. (CEI 68.2.1, Ab test)
   temperature −25 °C
   duration 96 hours
2. Dry heat. (CEI 68.2.2, Bb test)
   temperature + 100 °C
   duration 96 hours
3. Cyclic damp heat. (CEI 68.2.30, Db test)
   temperature + 40 °C
   number of cycles 21
4. Change of temperature. (CEI 68.2.14, Na test)
   temperature range −25 °C - + 125 °C
   number of cycles 5
5. Steady damp heat. (CEI 68.2.3, Ca test)
   temperature 40 °C
   relative humidity 93%
   duration 21 days

MECHANICAL TESTING

The assembly meets the requirements for mechanical testing as specified in test procedures published by the Commission Electrotechnique Internationale (CEI). These tests are listed below, the relevant CEI publication for each test being shown in brackets.

1. Vibration. (CEI 68.2.6, Fc test)

frequency range	10 - 50 - 10 Hz
amplitude	0,35 mm
duration	30 minutes per axis

2. Bumps. (CEI 68.2.29, Eb test)

peak acceleration	245 m/s^2
number	1000 per direction
number of directions	6

3. Shocks. (CEI 68.2.27, Ea test)

function	pulse ½ sinusoidal
duration of pulse	11 ms
peak acceleration	490 m/s^2
number of shocks	3 per direction
number of directions	6

4. Resistance to soldering heat. (CEI 68.2.20, Tb test, method 1A)
5. Solderability. (CEI 68.2.20, Ta test, method 1)

temperature	230 °C ± 10 °C
duration	11 s ± 0,55 s

6. Robustness of printed circuit pins. (CEI 68.2.21, Ua and UB tests)
7. Safety. Class b in accordance to UAN-L1082

DEVELOPMENT DATA

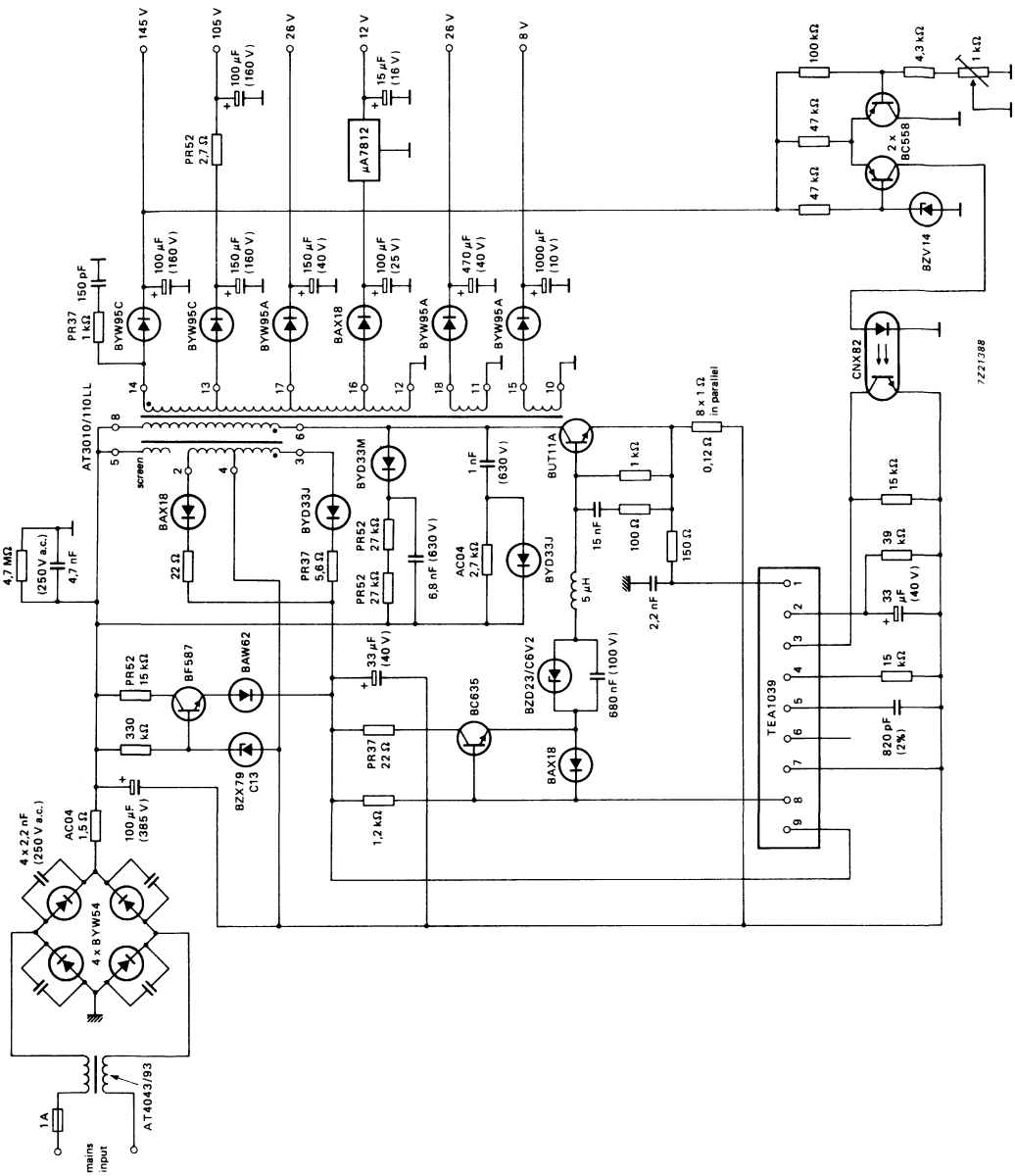


Fig. 4 Application circuit for colour monitors and TV; 120 W output power.

DEVELOPMENT DATA

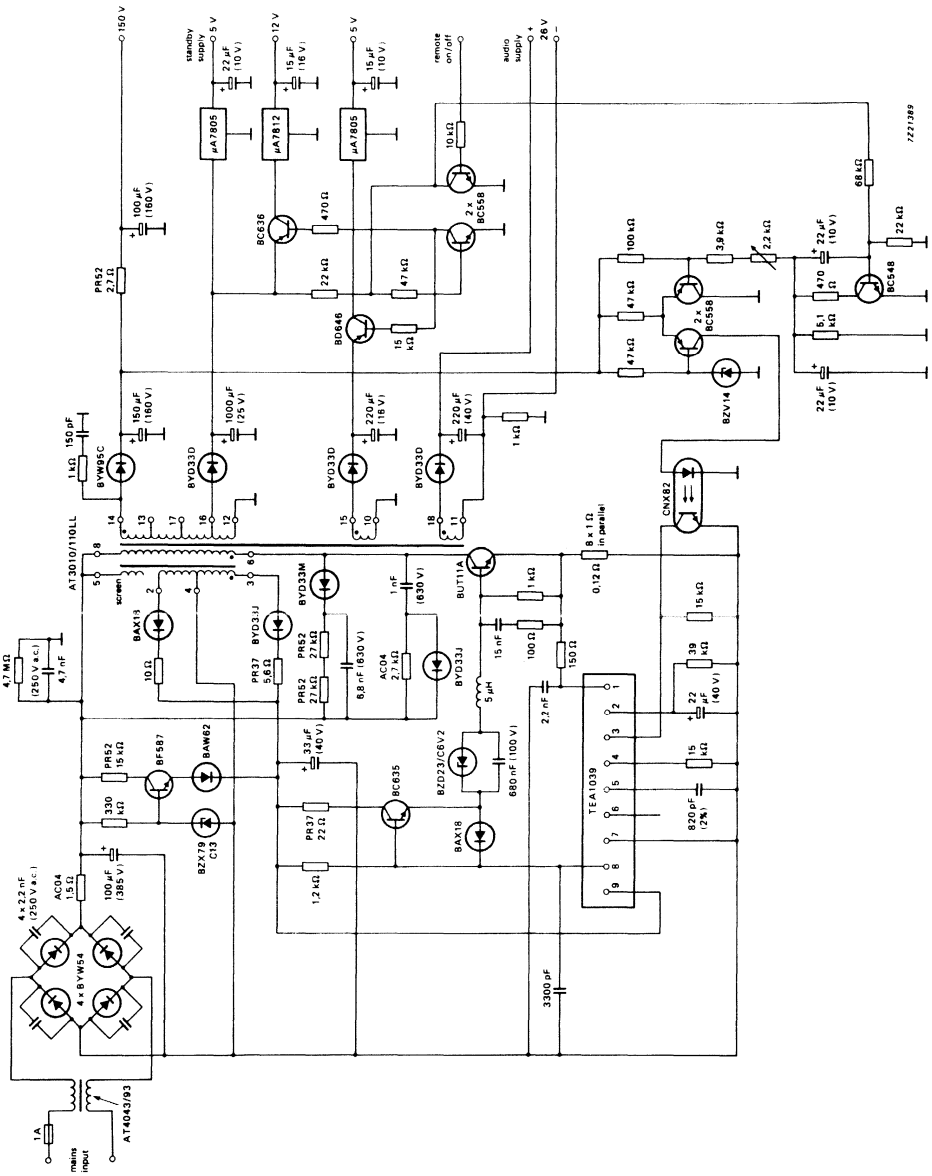


Fig. 5 Application circuit for TV with standby and remote on/off 220/240 V mains input, 120 W output power.

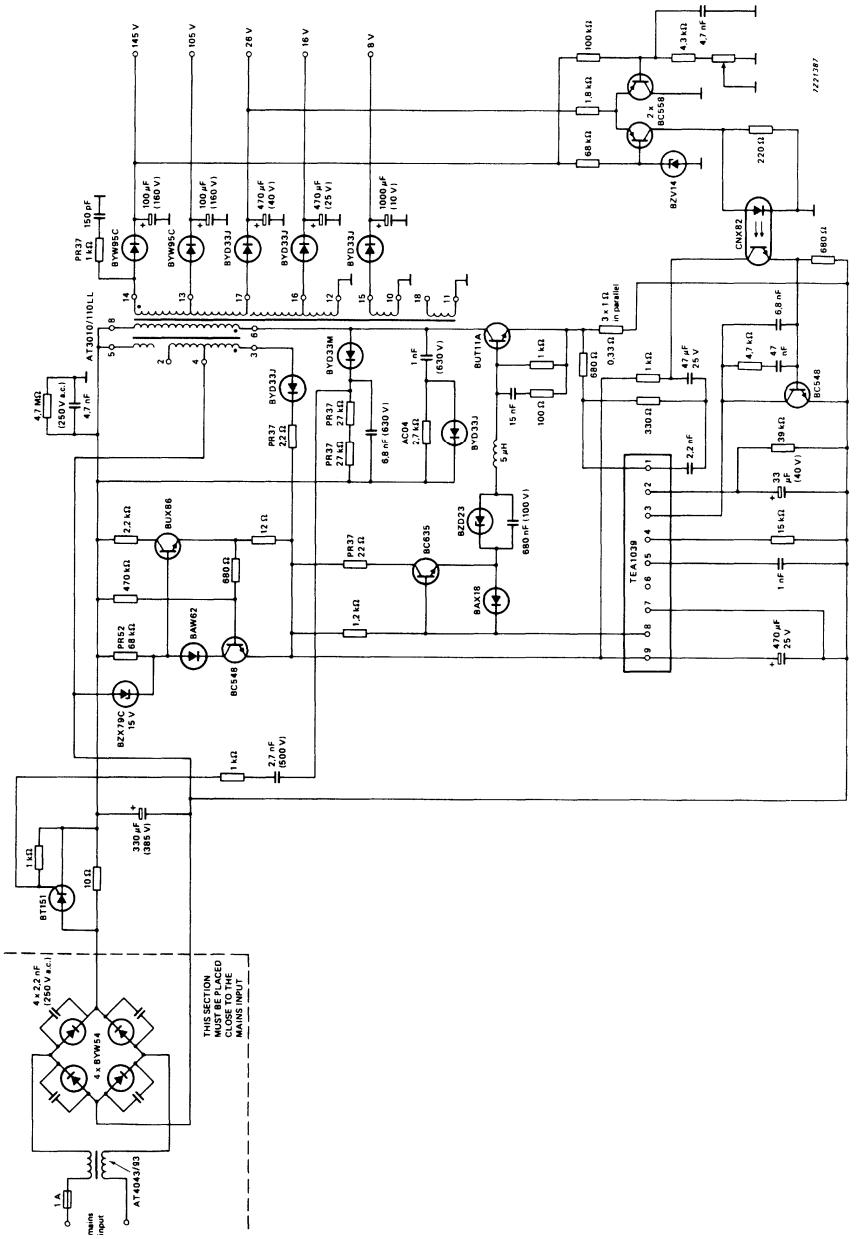


Fig. 6 Application circuit for TV or monitor. 90 - 270 V mains input, 80 W output power.

SWITCHED-MODE TRANSFORMER

- Aluminium foil winding
- Mains insulation
- 120 W output power
- 145 V/0,4 A, 105 V/0,4 A, 25 V/0,11 A, 18 V/0,7 A, 8 V/0,2 A outputs

APPLICATION

This transformer is for use as a flyback switched-mode transformer for 90° and 110° colour TV receivers and colour monitors with mains insulation.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube ETD-cores with a rectangular leg and a cylindrical leg on which the windings are situated.

The transformer has 15 pins for mounting on a printed-wiring board.

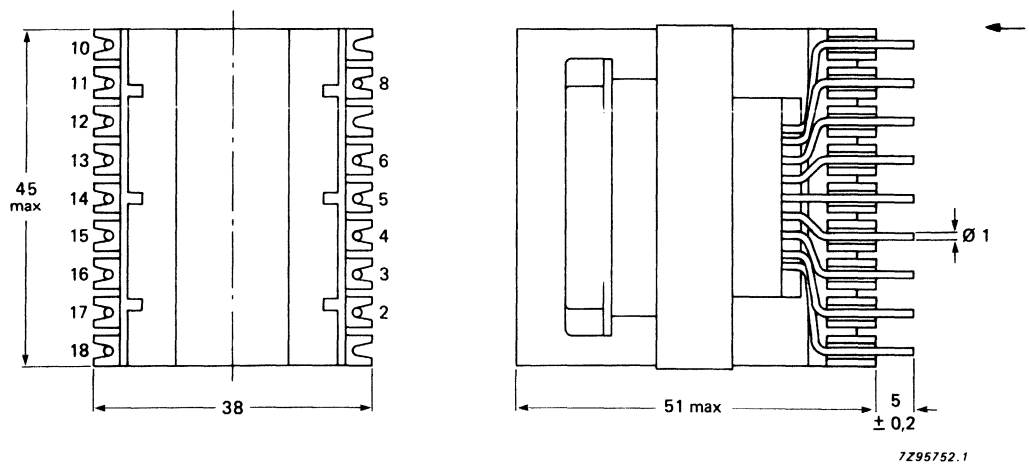


Fig. 1.

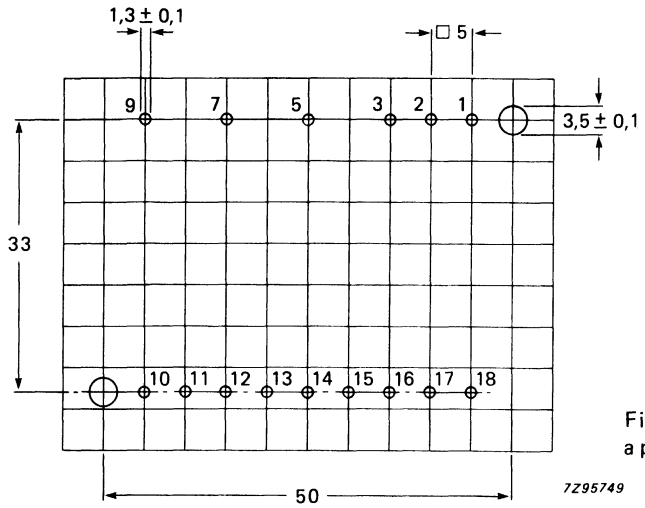


Fig. 2 Hole pattern for mounting on a printed wiring board (solder side).

ELECTRICAL DATA

Inductance, primary (7 - 5)*	1,7 mH ± 10%
Leakage inductance, primary (7 - 5)**	< 65 μH
Resistance, primary (7 - 5), at 25 °C	< 0,7 Ω
Resistance, secondary, at 25 °C	
(10 - 12)	< 0,3 Ω
(11 - 12)	< 0,4 Ω
(13 - 18)	< 0,08 Ω
(14 - 17)	< 0,05 Ω
Transformation ratio▲	
(7 - 5)/(3 - 2)	14,5 ± 5%
(7 - 5)/(2 - 1)	24,1 ± 5%
(7 - 5)/(12 - 16)	11,9 ± 5%
(7 - 5)/(12 - 11)	2,2 ± 5%
(7 - 5)/(12 - 10)	1,6 ± 5%
(7 - 5)/(14 - 17)	23,5 ± 5%
(7 - 5)/(13 - 18)	8,7 ± 5%
Test voltage (D.C.) for 1 min	
between primary and secondary	5600 V
between windings and core	500 V
Mains insulation	according to IEC 65, 14-3-1a, and UL 1410-1411
Maximum operating temperature	115 °C

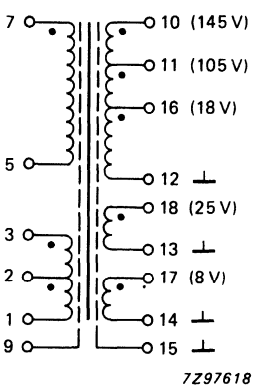


Fig. 3 Circuit diagram.

(The screen must be connected to the secondary ground.)

* At f = 1 kHz, I ⩾ 100 mA.

** At f ⩾ 100 kHz, (10 - 12) short-circuited.

▲ At V_{7-5} = 1 V, f = 1 kHz.

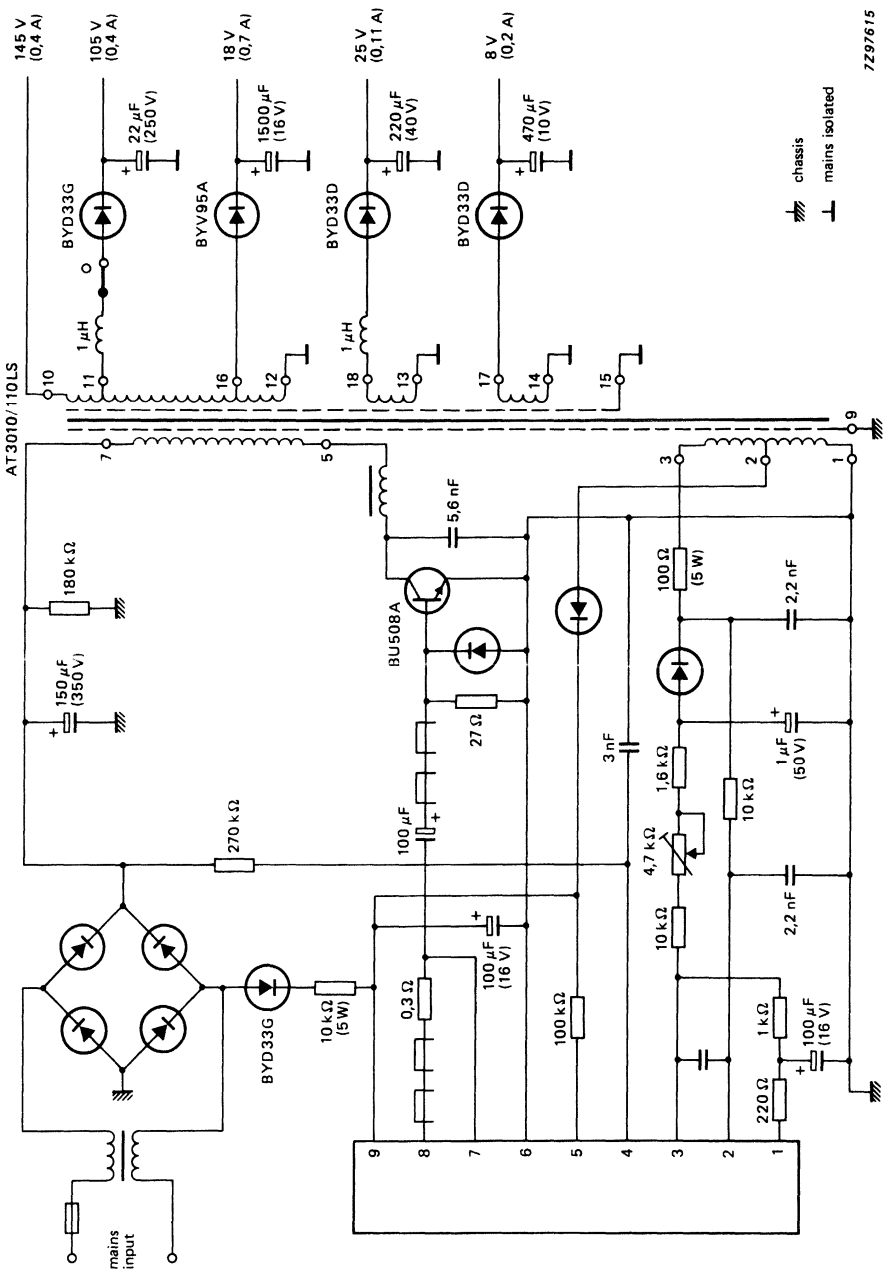


Fig. 4 Application circuit, with IC TDA4600.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. 45AX and 33" colour television receivers.

APPLICATION

This transformer is for use as a 200 W output power switched-mode transformer for 32 kHz television sets.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/20 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils. The transformer has 22 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

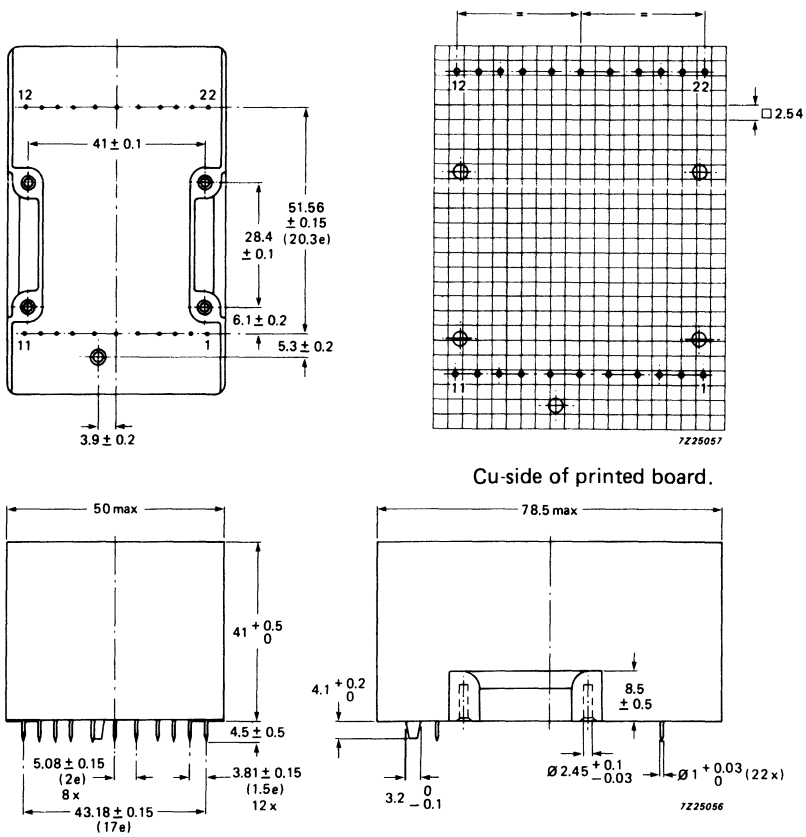


Fig. 1 Transformer assembly.

ELECTRICAL DATA

Inductance, primary*	(5-7)	0.5 mH ± 10%
Leakage inductance, primary	(5-7)	1.7%
Maximum peak current, primary	(5-7)	5.5 A
Number of turns		
primary	(5-7)	= 39
secondary	(1-2)	= 2
	(10-11)	= 5
	(13-12)	= 8
	(19-17)	= 39
	(22-21)	= 5

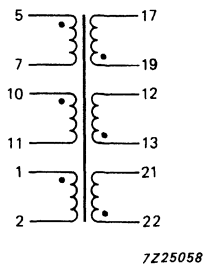


Fig. 2 Circuit diagram.

Test voltage (DC)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860
Maximum operating temperature of the coil	115 °C
Maximum operating temperature (ambient)	65 °C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 35 °C

* Measured at 10 kHz, B_{max} = 0.3 T.

DEVELOPMENT DATA

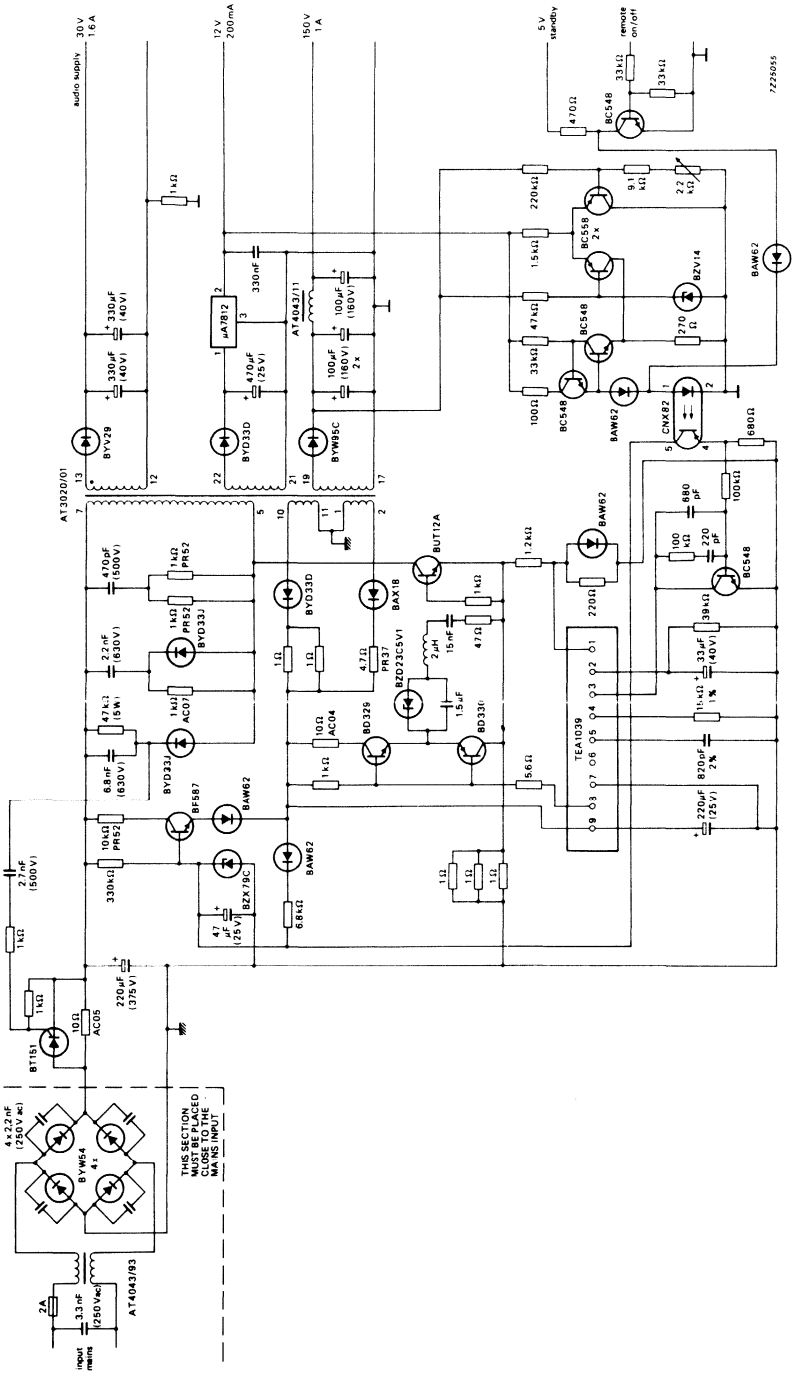


Fig. 3 Application circuit, 32 kHz.

LINE DRIVER TRANSFORMER

- For Colour Data Graphic Displays

APPLICATION

For drive of 1500 V transistors in line deflection and power supply circuits.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U15 cores, grade 3C8. The transformer has four pins for mounting on a printed-wiring board, and a reference pin.

Outlines

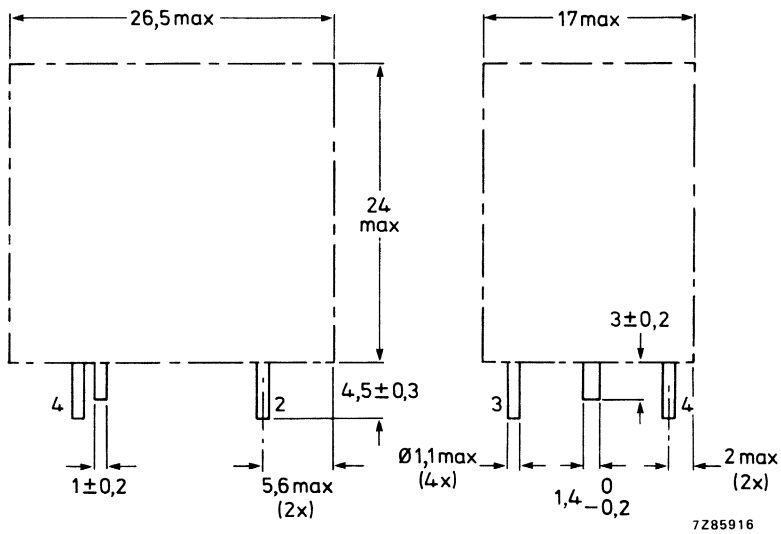


Fig. 1.

Mounting

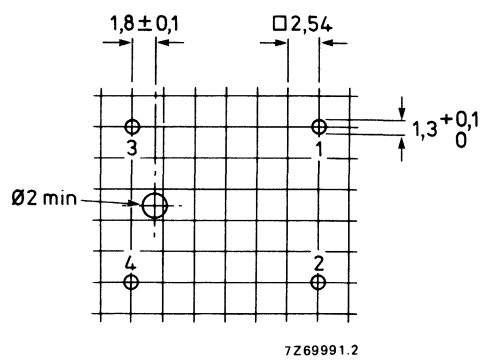


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance, L_{2-1}	140 mH ± 15%*
Resistance, R_{2-1}, at 25 °C	26,5 Ω ± 12%
Leakage inductance, L_{3-4}	7,8 μH**
Maximum permissible current, I_{2-1} (peak value)	40 mA
Resistance, R_{4-3}, at 25 °C	0,29 Ω ± 12%
Voltage ratio, V_{2-1}/V_{4-3}, at V_{2-1} = 1 V, 1 kHz	15 ± 5%
Test voltage (d.c.) between the windings, and between windings and core	2000 V
Ambient temperature range	
operating	−25 to + 100 °C
storage	−40 to + 115 °C
Inflammability	according to UL94 V-1

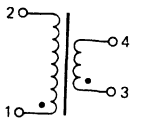


Fig. 3.

The transformer withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C, 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures	
after 300 h	⩽ 0,01%
after 10 000 h	⩽ 0,02%
after 30 000 h	⩽ 1%

* Measured at 9 V, 1 kHz.
** Primary 2-1 short-circuited.

EAST/WEST CHOKE

- For Colour Data Graphic Displays

APPLICATION

The AT4043/08A is for use as an east/west choke in colour monitors.

MECHANICAL DATA

The magnetic circuit of the choke comprises two Ferroxcube U20 cores. The choke has four pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

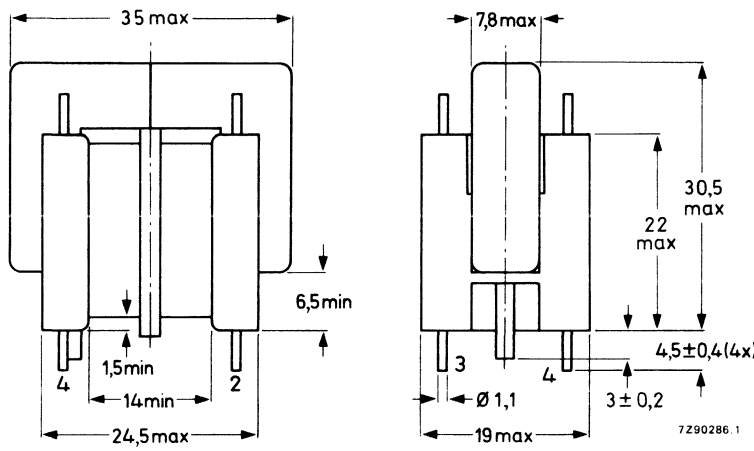


Fig. 1.

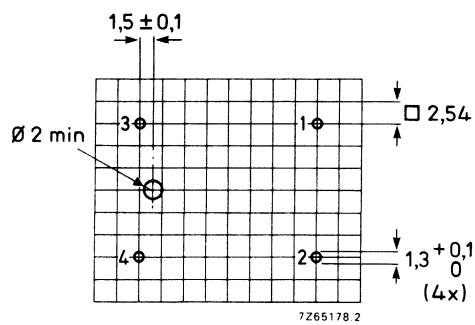


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance, L_{2-3}*	⩾ 2 mH; typ. 2,6 mH
Resistance, R_{2-3}*, at 25 °C	0,5 Ω
Maximum current (peak value)	0,7 A
Maximum working temperature	115 °C

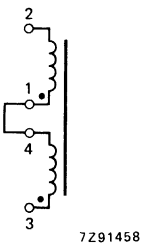


Fig. 3.

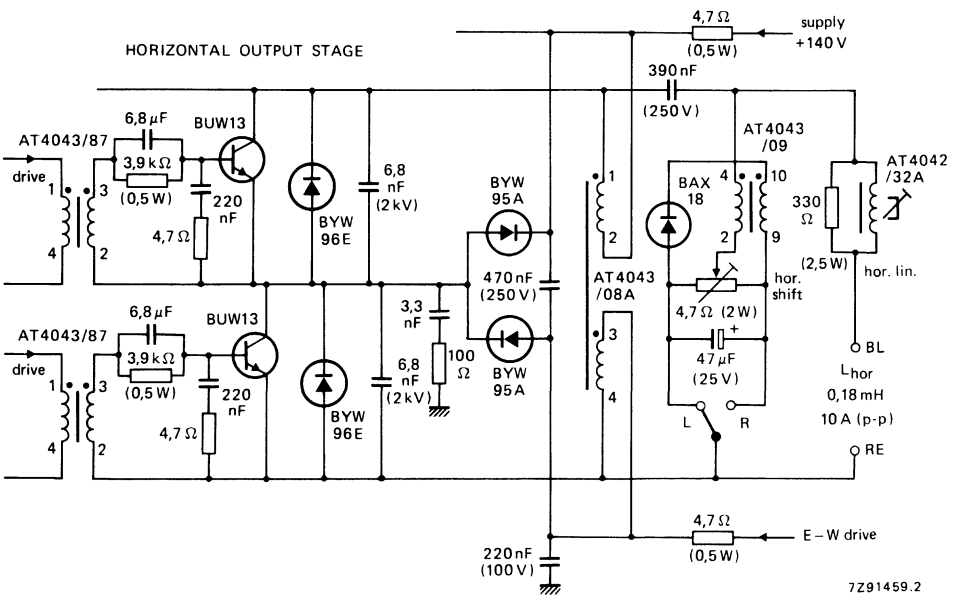


Fig. 4 Application circuit.

* Terminals 1 and 4 interconnected.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s^2, 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30/min/direction
damp heat, steady state	Ca	21 days, 40 °C; 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,01%
after 10 000 h	⩽ 0,02%
after 30 000 h	⩽ 1%

UNIVERSAL HORIZONTAL SHIFT TRANSFORMER

- For Colour Data Graphic Displays

APPLICATION

This shift transformer is for use in colour data graphic display monitors.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U25 cores, grade 3C8. The transformer has 10 pins for mounting on a printed-wiring board.

Outlines

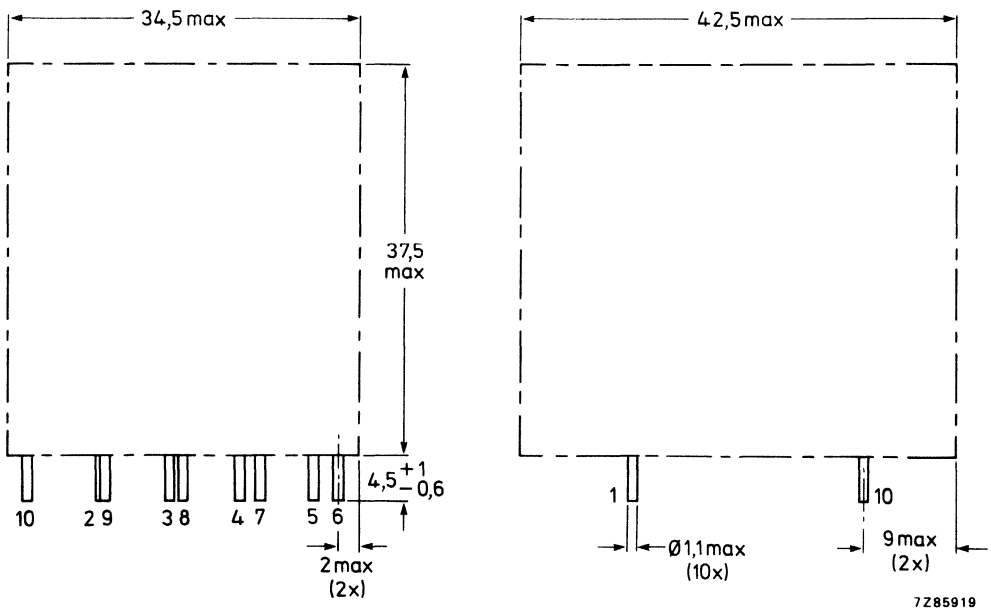
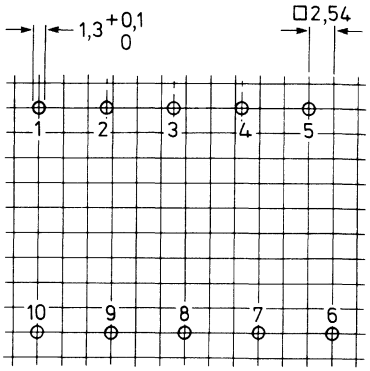


Fig. 1.

Mounting

Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).



ELECTRICAL DATA

Inductance, L_{5-1}*	150 mH ± 15%
Resistance, R_{5-1}, at 25 °C	7,8 Ω ± 10%
Resistance, R_{10-6}, at 25 °C	0,23 Ω ± 10%
Voltage ratio*	
V_{5-1}/V_{2-1}	3,2 ± 5%
V_{5-1}/V_{3-1}	2,1 ± 5%
V_{5-1}/V_{4-1}	1,5 ± 5%
V_{5-1}/V_{7-6}	515 ± 5%
V_{5-1}/V_{8-6}	128,8 ± 5%
V_{5-1}/V_{9-6}	73,6 ± 5%
V_{5-1}/V_{10-6}	57,2 ± 5%
Test voltage (d.c.) of winding 1-5 to winding 6-10 and core, for 1 min	2000 V
Test voltage (d.c.) between winding 6-10 and core, for 1 min	2000 V
Ambient temperature range	
operating	−25 to + 100 °C
storage	−40 to + 115 °C
Inflammability	according to UL94 V-1

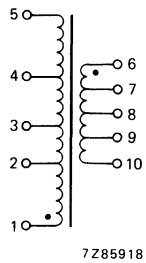


Fig. 3.

The transformer withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C, 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,01%
after 10 000 h	⩽ 0,02%
after 30 000 h	⩽ 1%

* Measured at V_{5-1} = 5 V, 1 kHz.

HORIZONTAL SHIFT TRANSFORMER

- For consumer applications, e.g. colour data graphic displays

DESCRIPTION

The magnetic circuit of the choke comprises two Ferroxcube U25 cores. The choke has 10 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

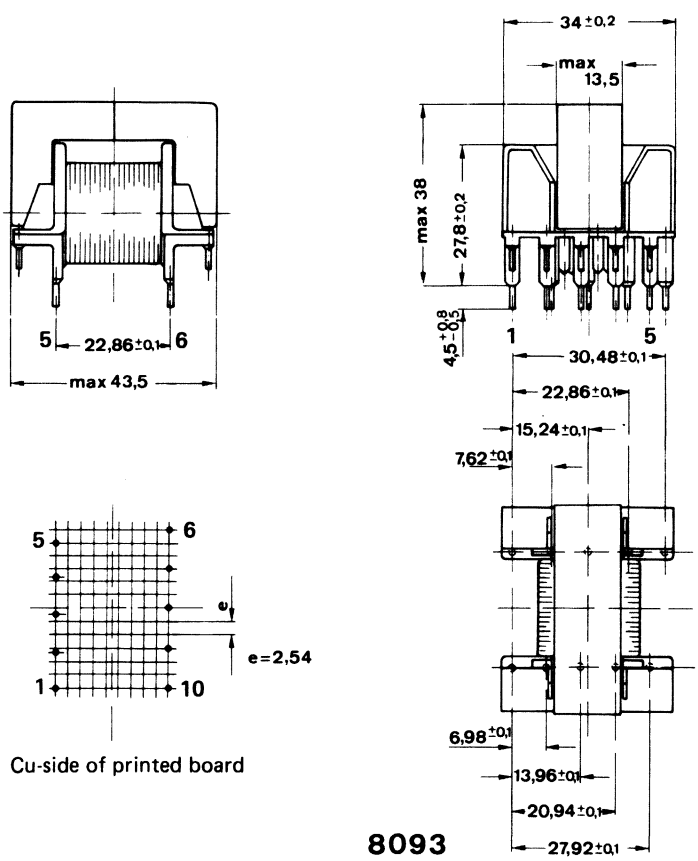


Fig. 1 Horizontal shift transformer assembly.

ELECTRICAL DATA

Inductance primary (2-4)*	20 mH ± 15%
Maximum current primary (peak)	300 mA
Number of turns primary	(2-4) = 190
Number of turns secondary	(6-7) = 1 (7-8) = 3 (8-9) = 3 (9-10) = 2

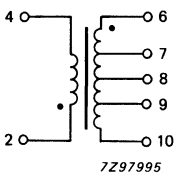


Fig. 2 Transformer circuit.

Test voltage (DC)	
between primary and secondary	5600 V
between windings and core	2000 V

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,1 T.

BRIDGE COIL

- For consumer applications, e.g. monitors and television sets

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U20 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

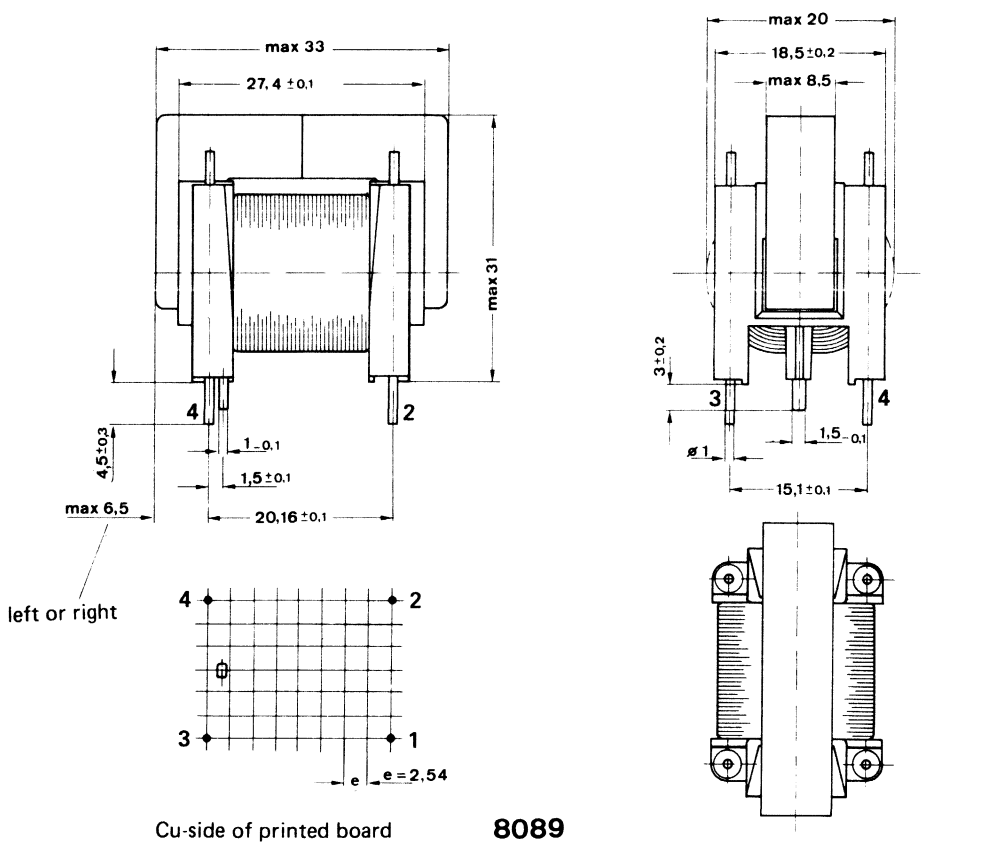


Fig. 1 Coil assembly.

ELECTRICAL DATA

Inductance (1-2)	50 μH ± 12%
Resistance (1-2) at 25 °C	37 mΩ ± 12%
Maximum permissible peak current	5 A
Maximum working temperature	100 °C

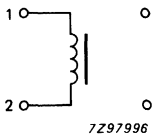


Fig. 2 Coil circuit.

INPUT CHOKE

- For 110 ^{o} deflection colour TV in twin switch power pack system
- For 30 V/2 A audio power
- Mains insulation

APPLICATION

The AT4043/16A is for use as a supply choke in the twin switch power pack system (TSP^{2}) for 110^{o} colour TV receivers and colour monitors. It is used in conjunction with mains transformer TS561/2 or TS521B, mains filter choke AT4043/55, current sensing transformer AT4043/46, driver transformer AT4043/17 and diode-split line output transformer AT2077/82.

The secondary winding of the choke can be used for generating the stereo audio power in 110^{o} colour TV receivers, up to 2 x 15 W.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube E42 cores, grade 3C8. The choke has 11 pins for mounting on a printed-wiring board.

Outlines

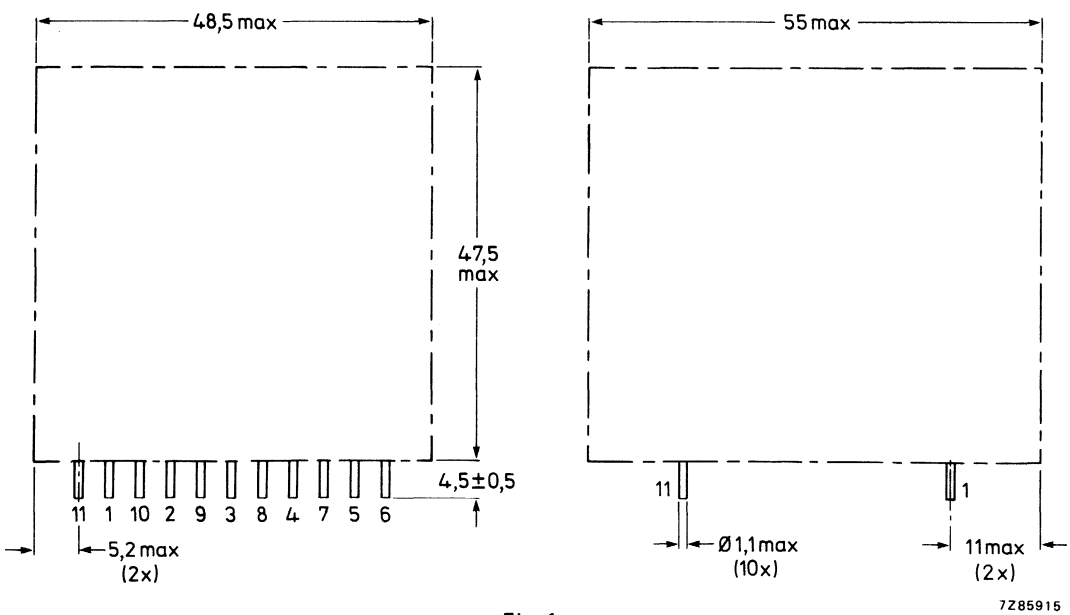


Fig. 1.

Mounting

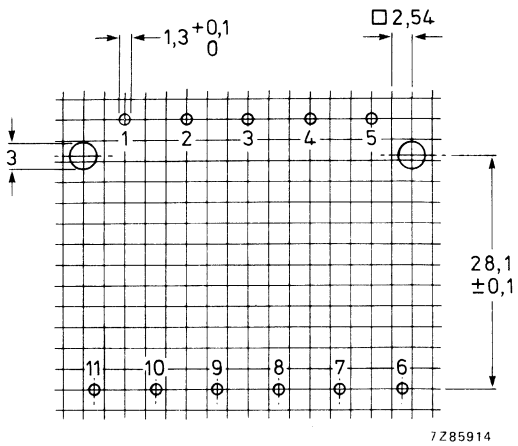


Fig. 2 Hole pattern for mounting on a printed-wiring board (solder side).

ELECTRICAL DATA

Inductance, L_{1-4}*	14 mH ± 10%
Resistance, R_{1-2}	0,44 Ω ± 12%
Resistance, R_{2-4}	0,98 Ω ± 12%
Resistance, R_{7-8}	68 mΩ ± 12%
Resistance, R9-10	68 mΩ ± 12%
Turns ratio 1-4/7-8	27,7 ± 5%
Turns ratio 1-4/9-10	27,7 ± 5%
Test voltage (DC) of winding 1-4 to winding 7-10 and core for 1 min	5600 V
Test voltage (DC) of winding 7-10 to core for 1 min	500 V
Maximum operating temperature	115 °C
Inflammability	according to UL94 V-1

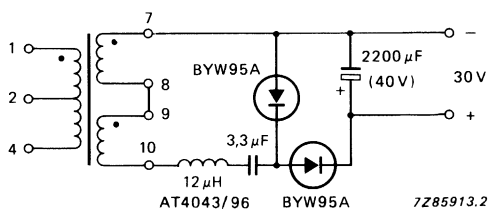


Fig. 3.

* Measured at 17,2 V, 1 kHz.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s^2, 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C, 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	⩽ 0,01%
after 10 000 h	⩽ 0,02%
after 30 000 h	⩽ 1%

LINE DRIVER/D.C. SHIFT TRANSFORMER

APPLICATION

This line driver, or d.c. shift, transformer, is for all transistor colour television receivers and monochrome data graphic display monitors.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U20 cores, grade 3C8. The transformer has four connecting pins and a location pin for mounting on a printed-wiring board.

Outlines

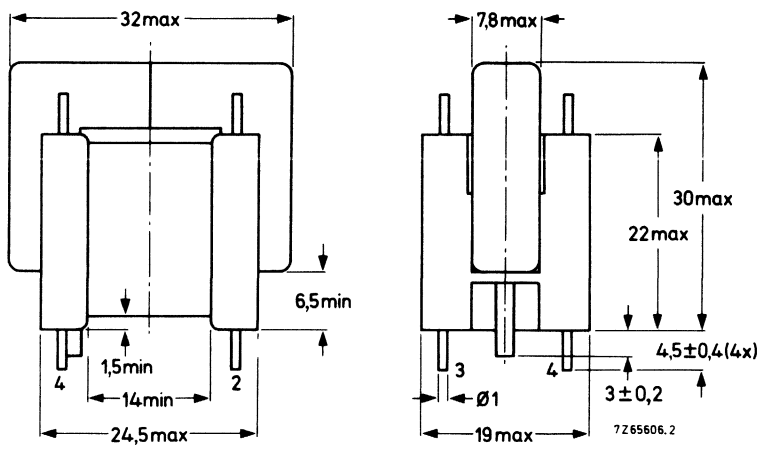


Fig. 1.

Mounting

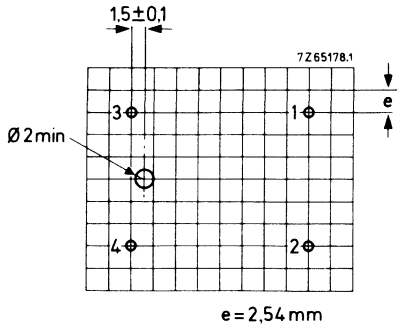
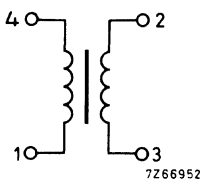


Fig. 2 Hole pattern for mounting on a printed-wiring board, hole diameter 1,3 + 0,1 mm.

ELECTRICAL DATA

Inductance primary (1-4)	370 mH ± 12%
Leakage inductance secondary (2-3)*	14 μH ± 20%
Resistance secondary (2-3) at 25 °C	0,35 Ω
Transformation ratio 4-1/2-3	31 : 1
Maximum working temperature	100 °C



* Primary short circuited.

DRIVER TRANSFORMER

APPLICATION

This line driver transformer is for all transistor colour television receivers and monochrome data graphic display monitors.

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U20 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

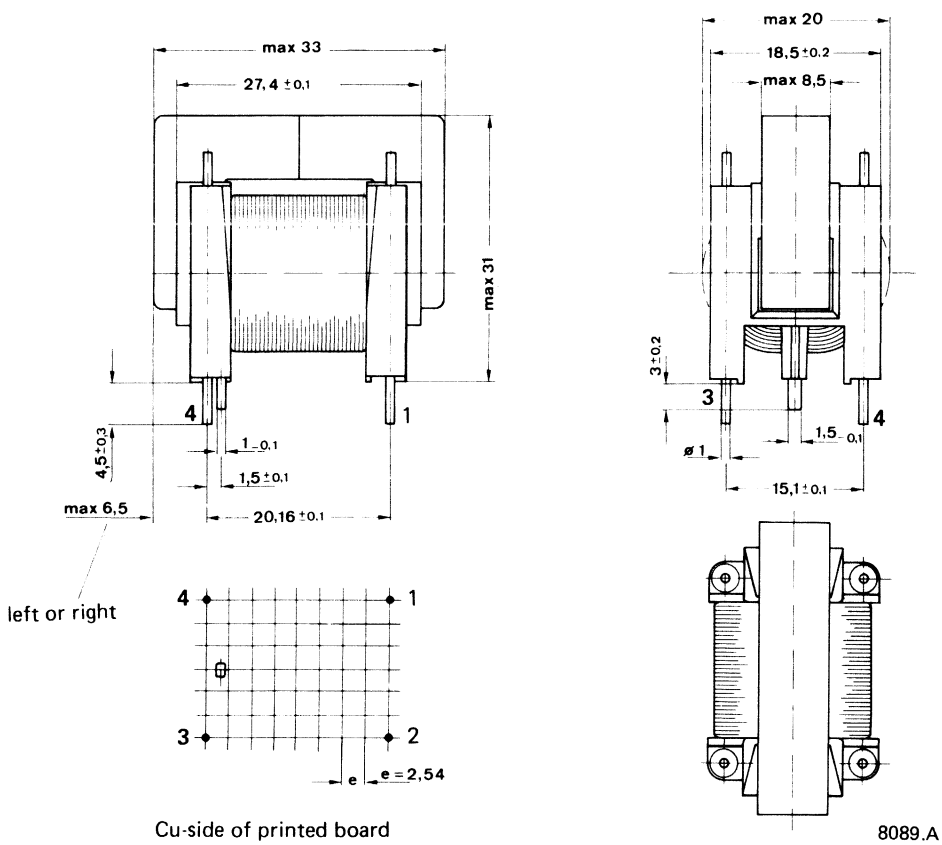


Fig. 1 Assembly.

ELECTRICAL DATA

Inductance primary (1-4)*	1.3 mH ± 10%
Leakage inductance secondary (2-3)**	< 1.2 μH
Resistance primary (1-4)	0.27 Ω ± 12%
Resistance secondary (2-3)	0.10 Ω ± 12%
Number of turns	
primary	67
secondary	26
Maximum working temperature	115 °C

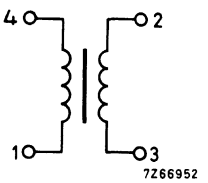


Fig. 2 Circuit diagram.

* Measured at 1 V, 10 kHz.
** Terminals 1 and 4 interconnected.

AUXILIARY TRANSFORMER

- For consumer applications, e.g. monitors and television sets

APPLICATION

This transformer has been designed for parallel connection to the primary winding of the line output transformers, AT2077/32 or AT2077/81.

DESCRIPTION

The magnetic circuit of the choke comprises two Ferroxcube U25 cores. The choke has 10 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

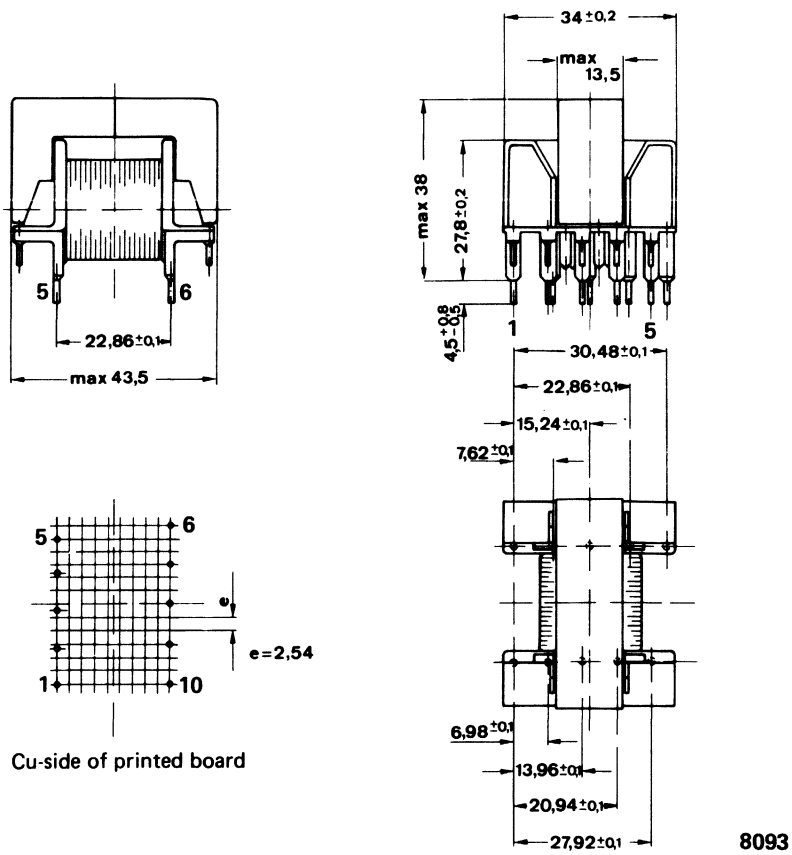


Fig. 1 Transformer assembly.

ELECTRICAL DATA

Inductance, primary (6-8)*	> 10 mH ± 10%
Maximum current, primary (6-8)	350 mA
Number of turns, primary	(10-9) = 2 (9-8) = 2 (8-6) = 143
Number of turns, secondary	(1-4) = 13 (2-5) = 6 (4-3) = 13

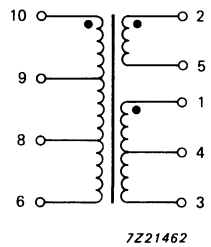


Fig. 2 Circuit diagram.

Test voltage (DC)	
between primary and secondary	2000 V
between primary and core	2000 V

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,1 T.

SWITCHED-MODE DRIVER TRANSFORMER

with mains isolation

APPLICATION

The transformer AT4043/45 has been designed for use as a driver transformer in the synchronous power pack system for colour tv receivers with mains isolation. It is used in conjunction with current sensing transformer AT4043/46 and mains transformer TS561/2.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U20-cores. Two separate coil formers guarantee the required isolation between primary and secondary. The transformer is provided with 6 pins for mounting on a printed-wiring board.

Outlines

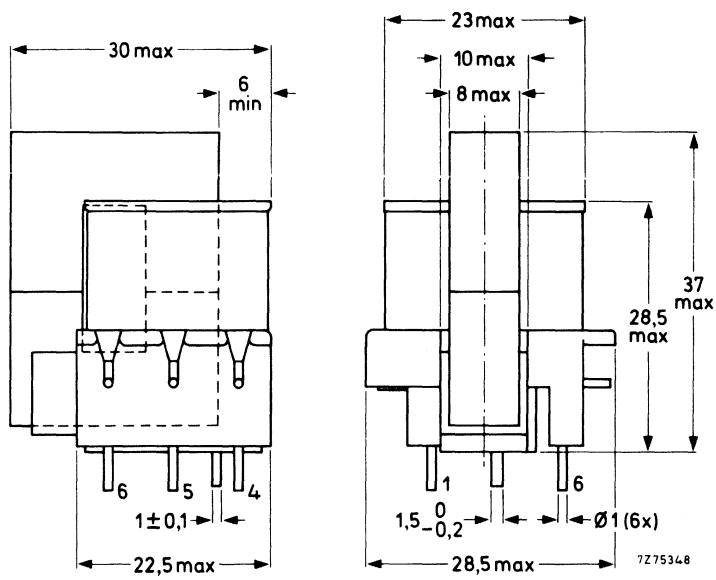


Fig. 1.

Mounting

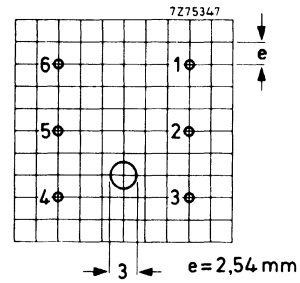


Fig.2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

ELECTRICAL DATA

Inductance, primary	(4 – 6)	⩾ 16 mH *
Resistance at 25 °C	(4 – 6)	2 Ω ± 12%
Leakage inductance, secondary	(1 – 3)	⩽ 6 μH **
Resistance at 25 °C	(1 – 3)	0,05 Ω ± 12%
Turns ratio		5 : 1
Mains isolation		acc. to IEC 65
Maximum working temperature		115 °C

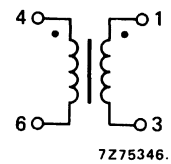


Fig. 3.

* Measuring condition: E = 8 V, f = 1 kHz.

** Measuring condition (primary short-circuited): E ⩽ 250 mV, 0,9 MHz ⩽ f ⩽ 1,1 MHz.

CURRENT SENSING TRANSFORMER
with mains isolation

APPLICATION

The transformer AT4043/46 has been designed for use as a sensing transformer in switched-mode power supply circuits.

MECHANICAL DATA

The magnetic circuit of the transformer comprises two Ferroxcube U15-cores. The primary turn is potted in the coil former to guarantee the required isolation. The transformer is provided with 4 pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

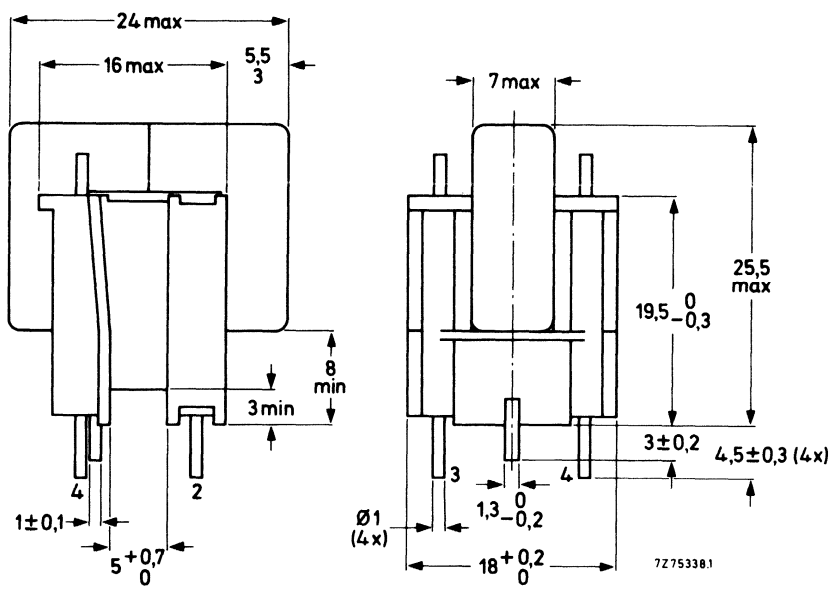
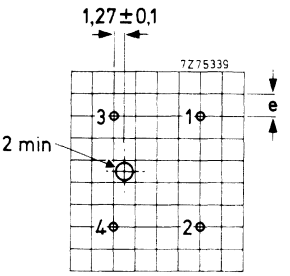


Fig.1

Mounting



e = 2,54 mm

Fig.2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

ELECTRICAL DATA

Inductance, secondary	(3 – 4)	⩾ 700 mH *
Resistance, secondary, at 25 °C	(3 – 4)	65 Ω ± 12%
Turns ratio		1 : 800
Mains isolation		acc. to IEC 65
Maximum working temperature		115 °C

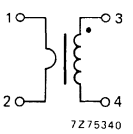


Fig.3

APPLICATION CIRCUIT

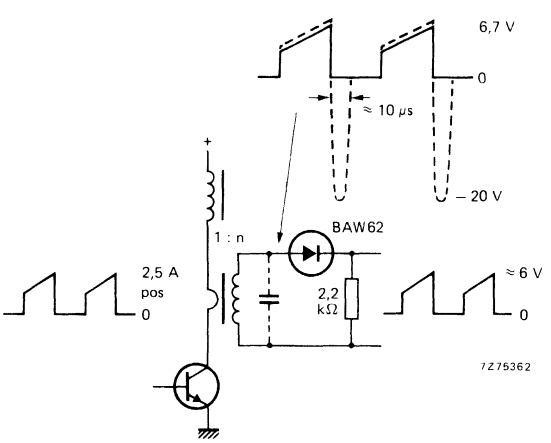


Fig. 4.

* Measuring condition: E = 10 V, f = 1 kHz.

CURRENT SENSING TRANSFORMER

with mains isolation

APPLICATION

The AT4043/47 is a current sensing transformer in professional switched-mode power supply circuits. It can also be used as a measuring device in many applications.

MECHANICAL DATA

Dimensions in mm

The ungapped magnetic circuit of the transformer comprises two Ferroxcube U15-cores in grade 3C8. The primary turn is potted in the coil former to guarantee the required isolation. The transformer is provided with 4 pins for mounting on a printed-wiring board.

Outlines

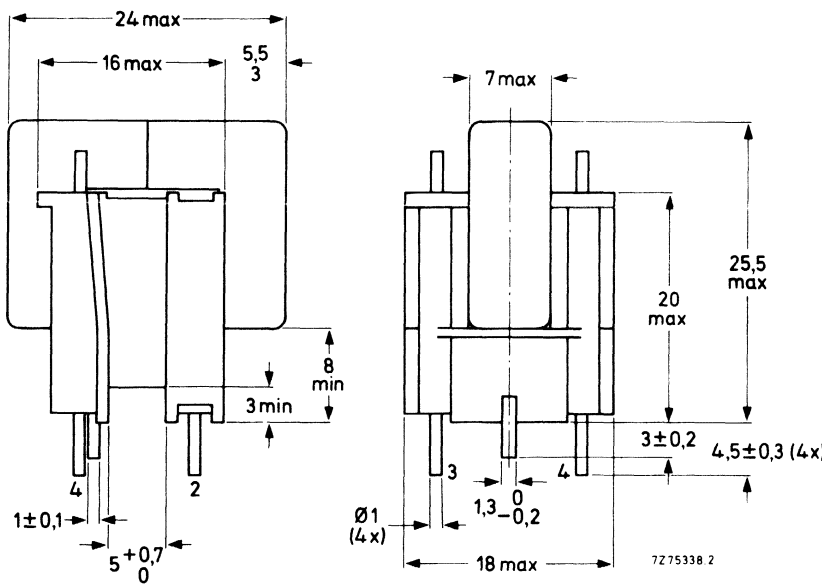


Fig. 1.

Mounting

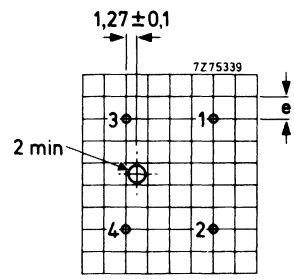


Fig. 2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

ELECTRICAL DATA

Inductance, secondary	(4 – 3)	⩾ 12,5 mH*
Resistance, secondary, at 25 °C	(4 – 3)	1 Ω ± 12%
Number of turns		1 prim., 100 sec.
Mains isolation at 5600 V d.c.		acc. to IEC 435
Maximum working temperature		115 °C
Inflammability		acc. to UL94V–1

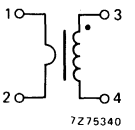


Fig. 3.

APPLICATION CIRCUIT

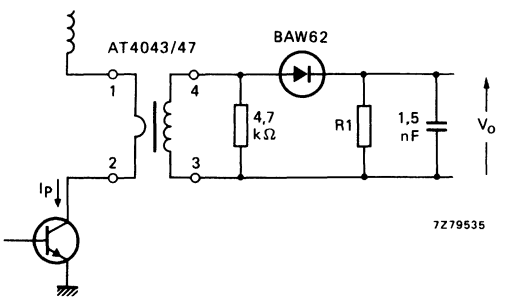


Fig. 4.

typical values

I_P A	V_o V	R1 Ω	t_p µs	droop %
10	1	10	20	3
5	1	22	20	5
2,5	1	39	20	10
2,5	1	39	10	5

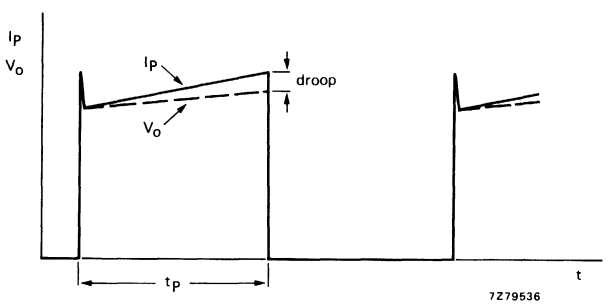


Fig. 5.

* Measuring condition: E = 1,3 V; f = 1 kHz.

The transformer withstands the following tests:

test	IEC68 test method	procedure
bump	Eb	1000 bumps, acceleration 40g, 6 directions
vibration	Fc	freq. 10-55-10 Hz, ampl. 0,75 mm, 6 directions, 30 min/direction
damp heat, steady state	Ca	21 days 40 °C; 93% R.H.
damp heat, cyclic	Db	21 days 40 °C
change of temperature	Na	−25 °C, +125 °C; 5 cycles
dry heat	Bb	16 h + 125 °C
solderability	T	230 ± 10 °C, 2 ± 0,5 s

THYRISTOR TRIGGER AND TRANSISTOR DRIVER TRANSFORMERS

- Mains isolation

APPLICATION

These transformers have been designed for use as thyristor and triac trigger transformers in professional applications where highly reliable primary to secondary voltage isolation is required, and as transistor driver transformers typically for use in switched-mode power supplies.

MECHANICAL DATA

Dimensions in mm

The magnetic circuits of the transformers comprise two Ferroxcube U20 cores in grade 3C8. Type AT4043/48 is ungapped, type AT4043/63 has two 60 μm gap spacers. The primary and secondary windings are wound on a two-part coil former with large creepage and clearance distances which ensure very safe isolation between mains and control circuits. The transformers are provided with pins for mounting on a printed-wiring board.

Outlines

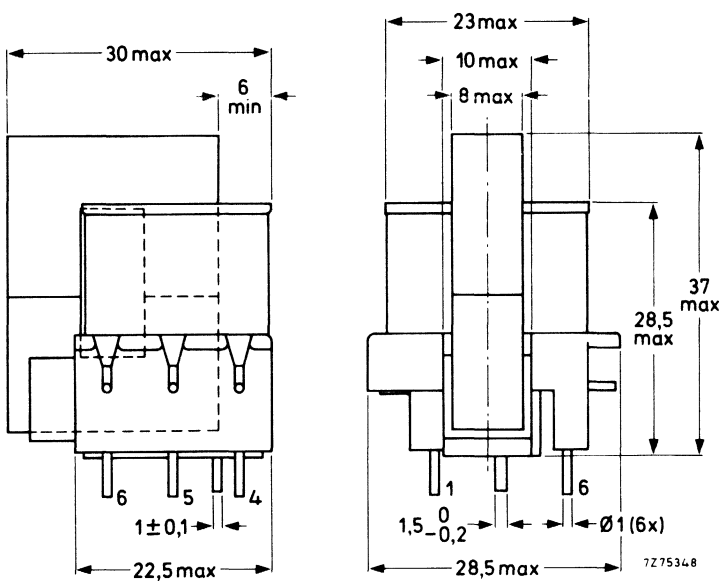


Fig. 1.

Mounting

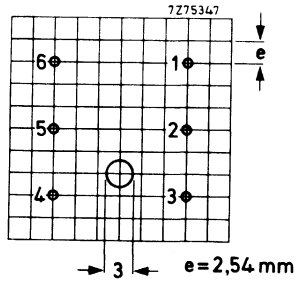


Fig. 2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

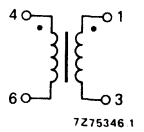


Fig. 3.

ELECTRICAL DATA (see Fig. 3)

		AT4043/48	AT4043/63
Inductance primary *	(4 – 6)	⩾ 6 mH	⩾ 1,9 mH
Resistance at 25 °C	(4 – 6)	0,9 Ω ± 12%	0,9 Ω ± 12%
Inductance, secondary	(1 – 3)	0,66 mH	0,22 mH
Resistance at 25 °C	(1 – 3)	0,05 Ω ± 12%	0,05 Ω ± 12%
Leakage inductance primary, secondary short-circuited **		⩽ 60 μH	
Leakage inductance secondary, primary short-circuited **		⩽ 6 μH	
Turns ratio 4-6/3-1		3/1	
Maximum Et product		1 mWb	
Maximum primary current (r.m.s.) for non-simultaneous switching		1 A	
Test voltage (d.c.) of winding 1-3 to winding 4-6 and core for 1 min		5600 V	
Test voltage (d.c.) of winding 4-6 to core for 1 mm		500 V	
Ambient temperature range operating		– 25 to +80 °C	
storage		–40 to +100 °C	
Inflammability		acc. to UL94 V-1	

* Measuring condition: E = 1,5 V, f = 1 kHz.
** Measuring condition: E ⩽ 250 mV; 0,8 MHz ⩽ f ⩽ 1 MHz.

Environmental tests

The transformers withstand the following tests:

test	IEC68 test method	procedure
bump	Eb	1000 bumps, acceleration 40g, 6 directions
vibration	Fc	freq. 10-55-10 Hz, ampl. 0,75 mm 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C, 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, +125 °C, 5 cycles
dry heat	Bb	16 h, +125 °C
solderability	T	230 ± 10 °C, 2 ± 0,5 s

APPLICATION CIRCUITS

Type AT4043/48 used as a thyristor trigger transformer. This transformer is suitable for triggering all our thyristors and triacs.

Typical operating conditions:

Rise time	$\leqslant 0{,}5\ \mu s$
Pulse duration	$15\ \mu s$
Duty factor	0,25
Trigger peak current	750 mA

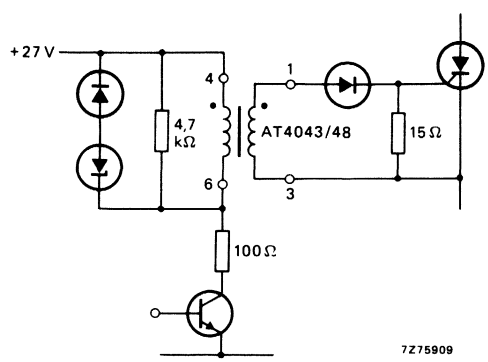


Fig. 4 Typical circuit.

Type AT4043/48 or type AT4043/63 as a transistor driver transformer.

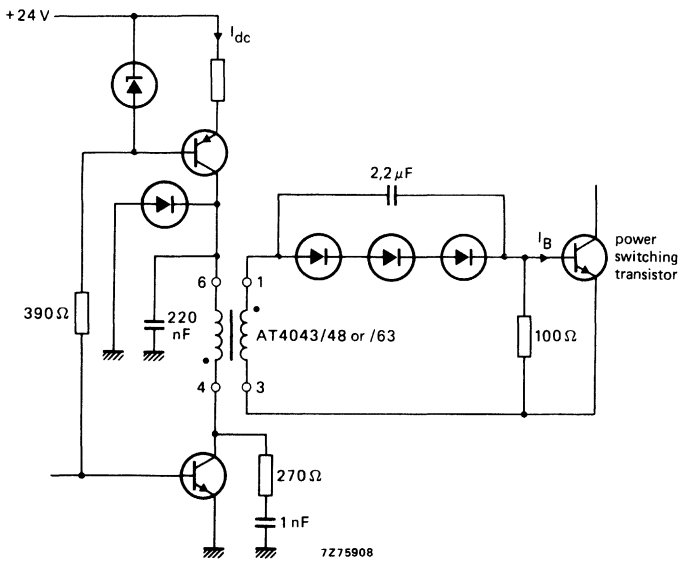


Fig. 5 Typical circuit.

Typical operating conditions:

AT4043/48			
frequency kHz	I_{dc} mA	I_{B1} A	I_{B2} A
20	160	0,9	0,4
50	230	1,0	0,7

AT4043/63			
frequency kHz	I_{dc} mA	I_{B1} A	I_{B2} A
20	310	1,5	1,0
50	290	1,2	1,0

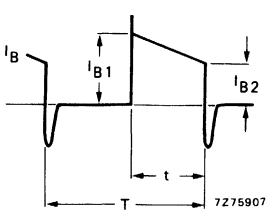


Fig. 6 $\frac{t}{T} = 0,4$.

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POWER PACK SYSTEM SUPPLY CHOKE

- For Colour Television

APPLICATION

The DT4043/52A is for use as a supply choke in a power pack system for colour TV receivers. It is used in conjunction with mains transformer TS61/2, mains filter choke AT4043/55, current sensing transformer AT4043/46, line choke AT4043/53 and synchronous power pack transformer AT2076/70A.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U25 cores, grade 3C8. The choke has 10 pins (ϕ1 + 0,1 mm, length 4,5 ± 0,5 mm) for mounting on a printed-wiring board. The maximum height of the choke is 36 mm.

Mounting

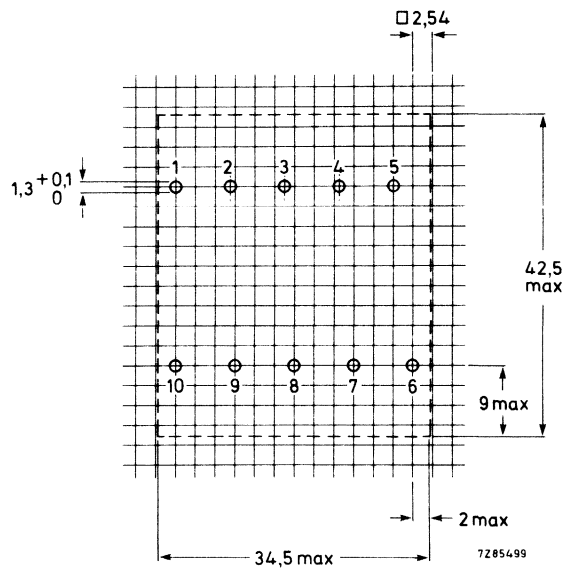


Fig. 1 Hole pattern for mounting on a printed-wiring board, viewed from the solder side.

ELECTRICAL DATA

Inductance, $L_{8\text{-}2}$	9 mH ± 10%
Resistance, $R_{8\text{-}2}$	2,3 Ω ± 12%
Maximum peak current	1,4 A
Maximum working temperature	115 °C
Flammability	according to UL94, category V-1

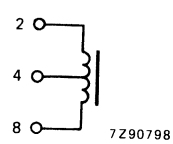


Fig. 2.

MAINS FILTER CHOKE FOR 1,5 A rms

APPLICATION

The AT4043/55 has been designed for use in consumer and professional equipment as part of the filter network in the power supply.

MECHANICAL DATA

The magnetic circuit of the filter choke comprises two Ferroxcube U25 cores. The unit is provided with four pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

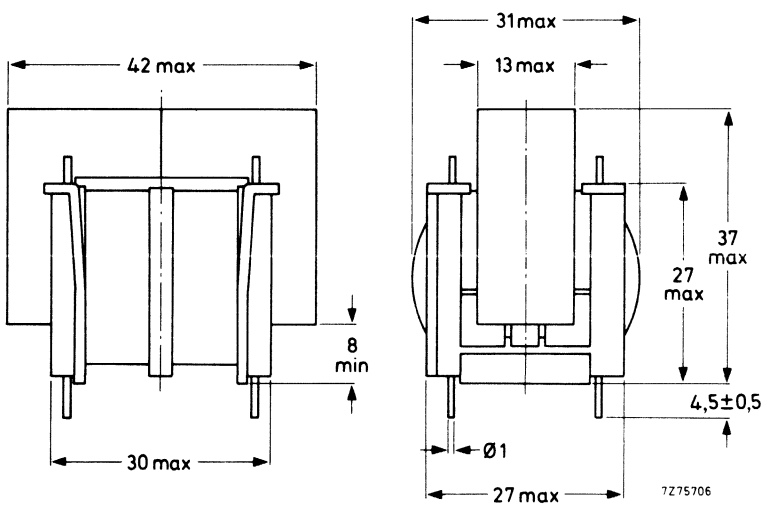
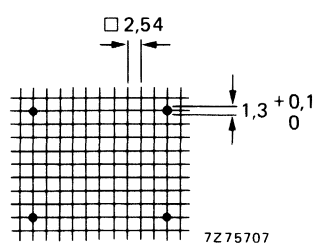


Fig. 1.

Fig. 2 Hole pattern for mounting on a printed-wiring board. Viewed from the solder side. The windings may be interchanged because the coil is symmetrical.



Marking

The catalogue number is printed on the Ferroxcube core.

ELECTRICAL DATA

Inductance, $L_{1-2} = L_{3-4}$	$\geqslant$ 25 mH
Resistance, $R_{1-2} = R_{3-4}$, at 25 °C	0,5 Ω
Leakage inductance	
$L_{s(1-2)}$, L_{3-4} short-circuited	0,65 mH
$L_{s(3-4)}$, L_{1-2} short-circuited	0,65 mH
Capacitance	37 pF
Maximum current (r.m.s.)	2 A
Maximum working temperature	115 °C

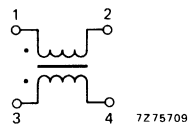


Fig. 3.

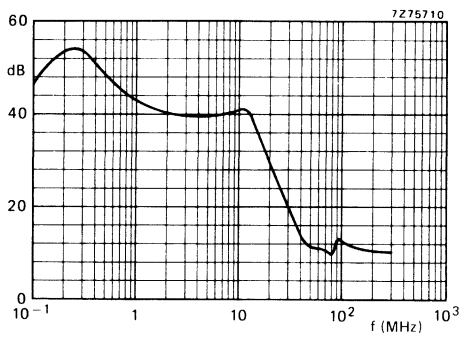


Fig. 4 Insertion loss measured in the 60 Ω circuit of Fig. 5.

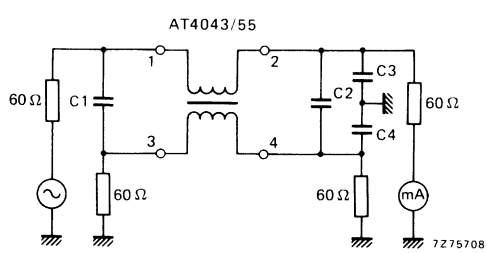


Fig. 5
C1 = C3 = C4 = 2200 pF, 250 V.
C2 = 0,47 μF, 250 V.

E/W INJECTION COIL

- For colour Television

APPLICATION

This injection coil is for the line deflection output stage of the 45AX system.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the injection coil comprises two Ferroxcube U15-cores. The coil has four pins for mounting on a printed-wiring board.

Outlines

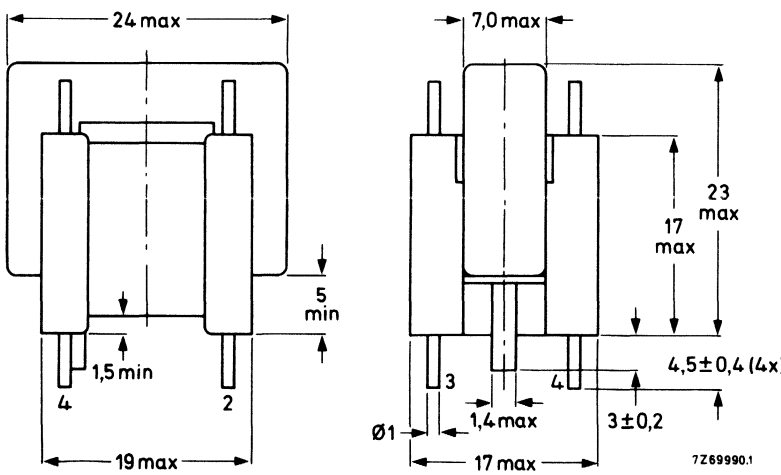


Fig. 1.

Mounting

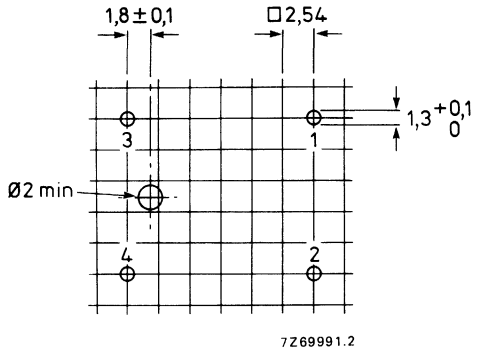


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance *	15 mH ± 12%	
Resistance	max. 3 Ω	
→ Maximum current (rms value)	120 mA	
Maximum working temperature	100 °C	

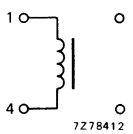


Fig. 3.

* Measuring conditions: E = 3,3 V; f = 1000 Hz.

Replaces AT4043/59 ←

LINE DRIVER TRANSFORMER

- For Monochrome Data Graphic Displays

APPLICATION

This transformer has been designed for use in monochrome monitors. The required supply voltage is 12 V. The transformer is used in conjunction with deflection unit AT1071/03, line-output transformer AT2102/02, and linearity control unit AT4036/00A.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U-cores. The unit is provided with pins for mounting on a printed-wiring board.

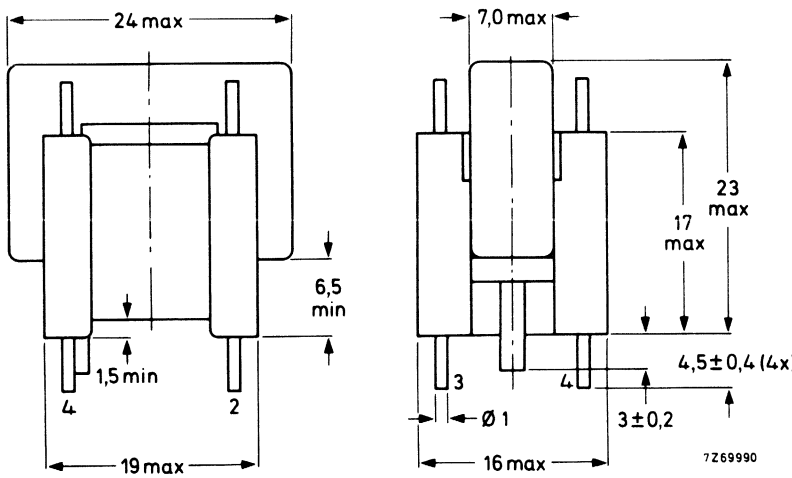


Fig. 1 Line driver transformer AT4043/64.

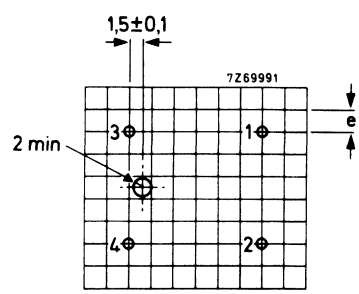


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side). Hole diameter 1,3 + 0,1 mm. e = 2,54 mm (0,1 in).

ELECTRICAL DATA

Inductance (primary, 1-2)	1,2 mH
Leakage inductance (secondary)	5 μH ± 10%
Transformation ratio	2 : 1
Maximum operating temperature	95 °C

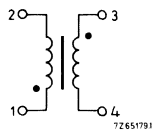


Fig. 3 Circuit diagram.

Application circuit

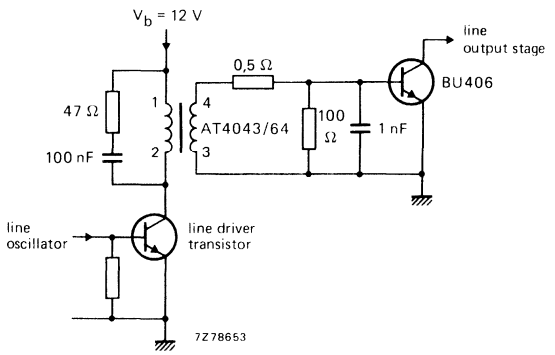


Fig. 4.

LINE CHOKE

- For consumer applications, e.g. horizontal supply choke for monitors with a seperate EHT generator

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U20 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

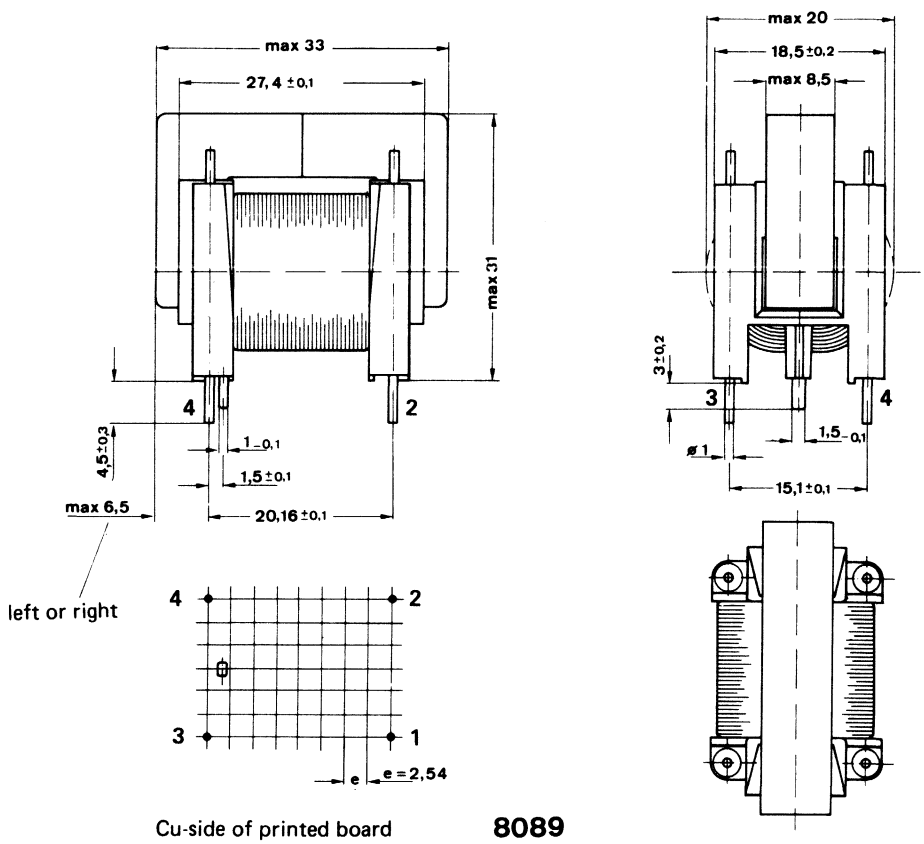


Fig. 1 Coil assembly.

ELECTRICAL DATA

Inductance (1-4)*	2,5 mH ± 10%
Resistance (1-4) at 25 °C	0,51 Ω ± 12%
Maximum permissible peak current	1 A
Maximum working temperature	100 °C

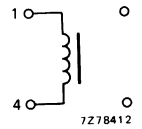


Fig. 2 Coil circuit.

TESTS

The unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +100 °C.

* Measured at 10 kHz, V=1 volt.

DYNAMIC FOCUSING TRANSFORMER

- For Monochrome Data Graphic Displays

APPLICATION

This transformer has been designed to improve the overall picture sharpness of the CRT. It is applied in series with the line coils of the deflection unit to generate a voltage which is fed to the focus electrode.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U20-cores, grade 3C8. The primary and secondary windings are wound on a two-part coil former.

The transformer is provided with 6 pins for mounting on a printed-wiring board.

Outlines

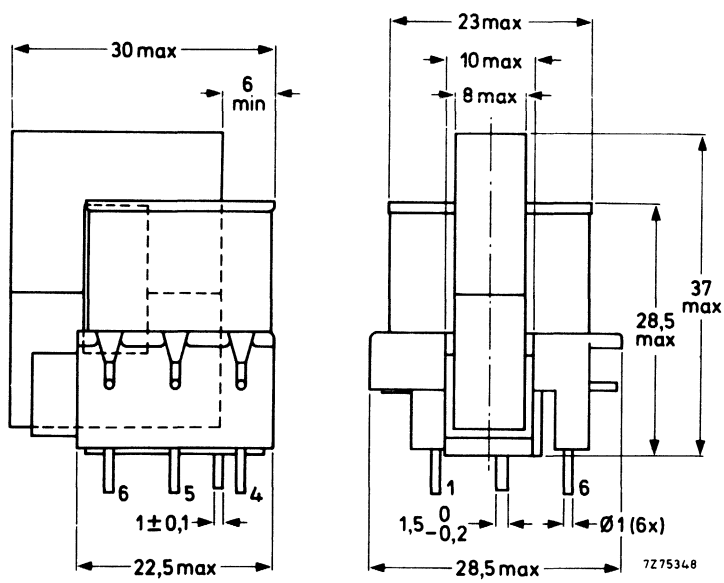


Fig. 1.

Mounting

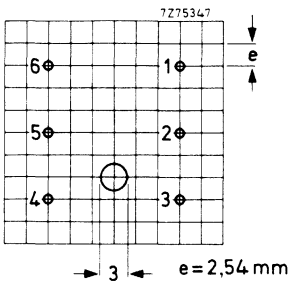


Fig. 2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

ELECTRICAL DATA

Inductance, secondary (1-3)*	⩾ 1 H
Resistance, primary (4-6), at 23 °C	⩽ 0,05 Ω
Resistance, secondary (1-3), at 23 °C	⩽ 44 Ω
Voltage ratio E_{1-3}/E_{4-6}**	60,75 ± 5%
Maximum permissible current (r.m.s. value)	
primary (4-6)	3 A
secondary (1-3)	0,125 A
Mains isolation	according to IEC 65
Breakdown voltage	
between winding 1-3 and winding 4-6 or core	⩾ 5600 V (d.c.)
between winding 4-6 and core	⩾ 500 V (d.c.)
Maximum working temperature	115 °C

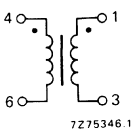


Fig. 3.

Application circuit

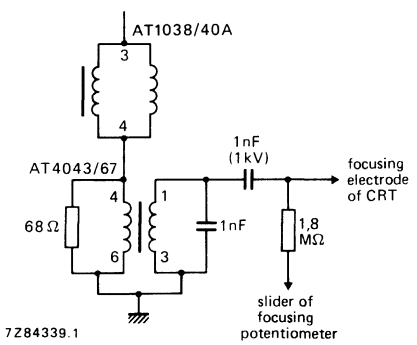


Fig. 4 Application circuit for use with deflection unit AT1038/40A.

* Measuring condition: E = 20 V, f = 1 kHz.
** Measuring condition: E_{1-3} = 5 V, f = 1 kHz.

TESTS AND REQUIREMENTS

The dynamic focusing transformer withstands the following tests.

IEC 68–2 test method	name of test	procedure (quick reference)
Ua1	Tensile strength of terminations	
Ub (method 1)	Bending of terminations	
Fc	Vibration	Frequency range 10-55-10 Hz, amplitude 0,35 mm, 3 directions, 30 min per direction.
Eb	Bump	1000 bumps in 6 directions, acceleration 25 g.
Ea	Shock	Half-sine pulse shape, 11 ms, 50g, 6 directions, 3 shocks per direction.
Ta (method 1)	Soldering	Solder temp. 230 °C, dwell time 2 s.
Tb (method 1A)	Resistance to soldering heat	
Bb	Dry heat	96 h at + 100 °C.
Db	Damp heat, cyclic	21 cycles of 24 h at + 40 °C, R.H. 95%.
Ab	Cold	96 h at −40 °C.
Ca	Damp heat, steady state	21 days.
Na	Rapid change of temperature	5 cycles of −25 °C/+ 100 °C.
	Flammability	UAN–L1082, class b.

BRIDGE COIL

APPLICATION

The AT4043/68 is designed for the horizontal deflection output stage of 110° and 90° colour deflection systems. It is used in conjunction with the three-layer diode-split line output transformer AT2076/51, AT2076/81 or AT2077/81.

MECHANICAL DATA (Dimensions in mm)

The coil is wound on a combination of two Ferroxcube U15-cores. It has four termination pins for mounting through a printed-wiring board.

Outlines

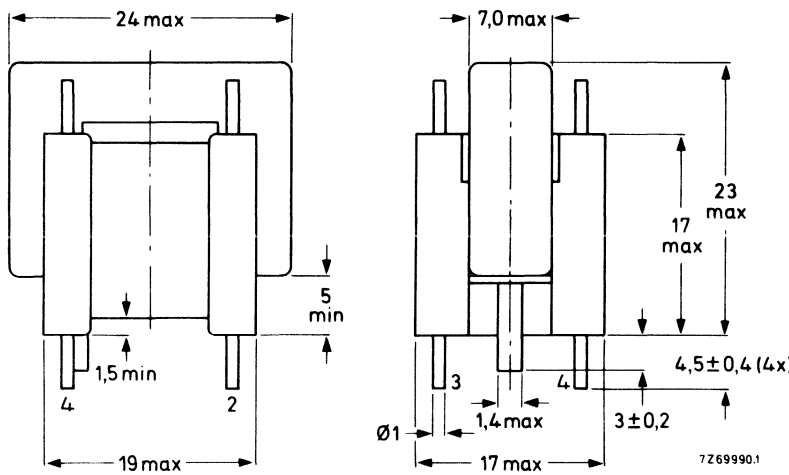


Fig. 1.

Mounting

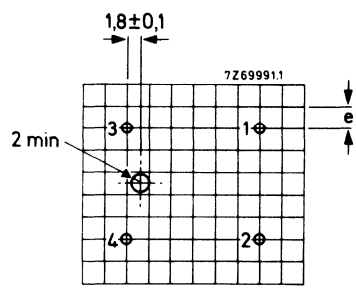


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side). Hole diameter 1,3 + 0,1 mm. e = 2,54 mm (0,1 in).

ELECTRICAL DATA

Inductance*	0,52 mH ± 10%
Resistance	max. 0,6 Ω
Maximum peak-to-peak voltage	800 V
Maximum peak-to-peak current	2,9 A
Maximum working temperature	100 °C

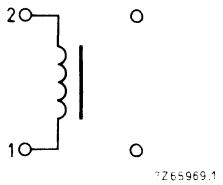


Fig. 3.

* Measuring conditions: E = 0,3 V; f = 1000 Hz.

BRIDGE COIL

- For Colour Data Graphic Displays

APPLICATION

The AT4043/69 is for the horizontal deflection output stage of 90° colour deflection systems. It is used in conjunction with the three-layer diode-split line output transformer AT2076/81 or AT2076/51, driver transformer AT4043/01, shift transformer AT4043/09 and dynamic focusing transformer AT4043/67.

MECHANICAL DATA

The coil is wound on a Ferroxcube I-15 core. It has four termination pins for mounting on a printed-wiring board.

Outlines

Dimensions in mm

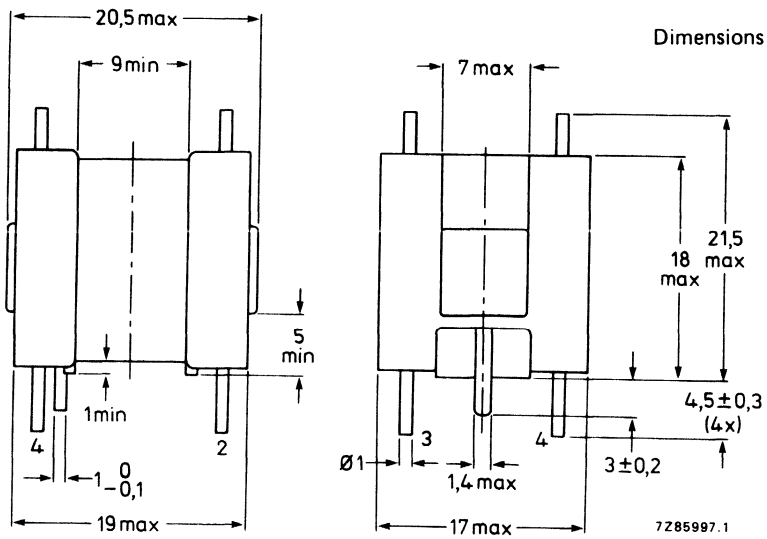


Fig. 1.

Mounting

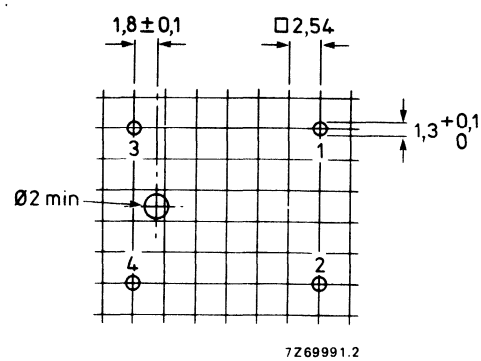


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance *	1,0 mH ± 10%
Resistance	max. 1,07 Ω
Maximum working temperature	100 °C

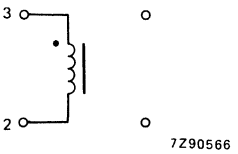


Fig. 3.

* Measuring conditions: E = 2,7 V; f = 1000 Hz.

E/W BALANCE COIL

APPLICATION

This coil has been designed for the horizontal deflection output stage used in 110°, 32 kHz television sets.

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U20 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

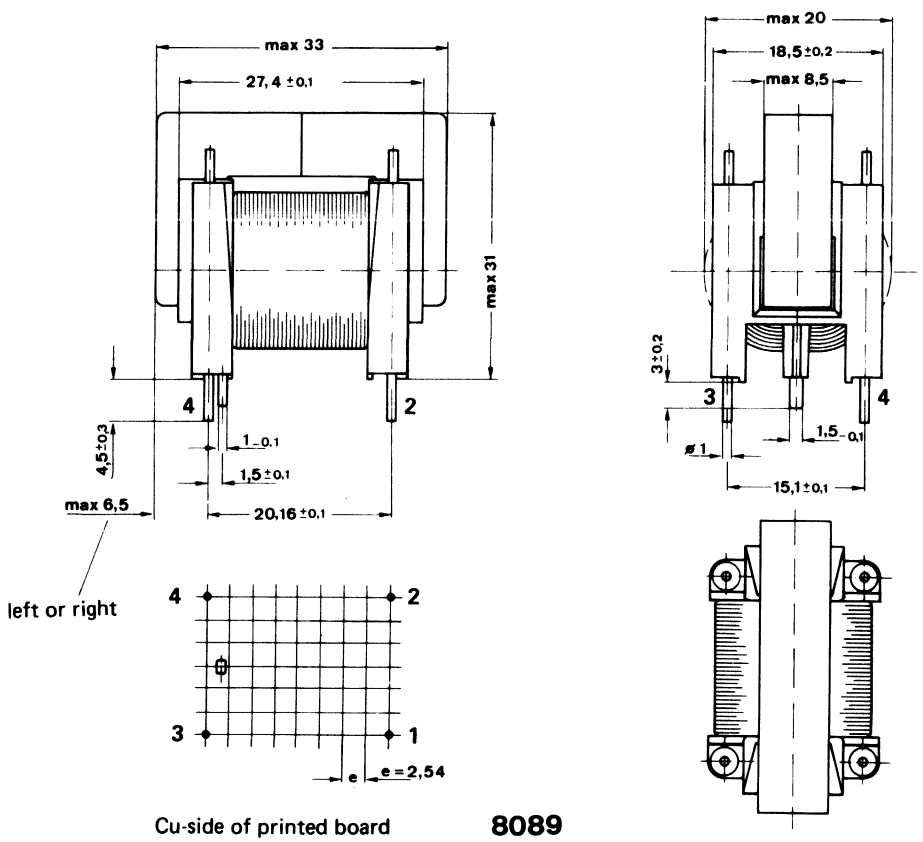


Fig. 1 Coil assembly.

ELECTRICAL DATA

Inductance (2-3)*	250 μH ± 12%
Resistance (2-3) at 25 °C	0,1 Ω ± 12%
Maximum permissible peak current	5 A
Maximum working temperature	100 °C
Working frequency	32 kHz

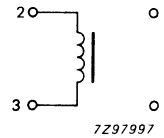


Fig. 2 Coil circuit.

TESTS

The unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C.

* Measured at 1 kHz, B_{max} = 0,1 T.

3122 138 50000

INPUT CHOKE

- For single switch power pack system

APPLICATION

The AT4043/81 is for use as a supply choke in the single switch power pack system (S^2P^2) for colour TV receivers. It is used in conjunction with mains transformer TS561/2 or TS521B, mains filter choke AT4043/55, current sensing transformer AT4043/46, driver transformer AT4043/82 and diode-split line output transformer AT2076/80.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U25 cores, grade 3C8. The choke has 10 pins (ϕ1 + 0,1 mm, length 4,5 ± 0,5 mm) for mounting on a printed-wiring board. The maximum height of the choke is 36 mm.

Mounting

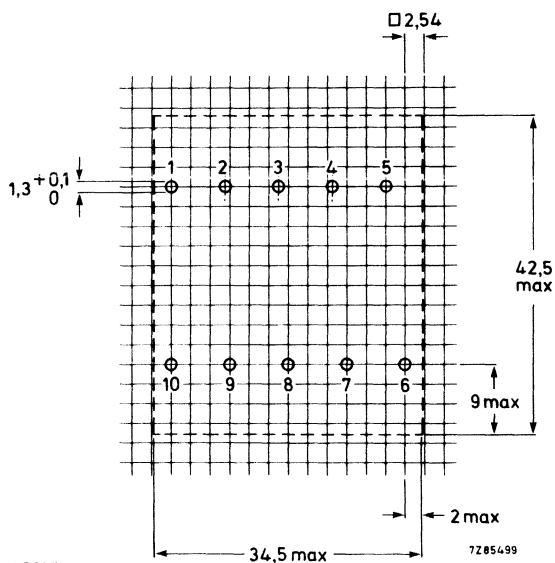


Fig. 1 Hole pattern for mounting on a printed-wiring board, viewed from the solder side.

ELECTRICAL DATA

Inductance (1-7)	25 mH ± 10%*
Resistance (1-4)	1,45 Ω ± 10%
Resistance (4-7)	1,85 Ω ± 10%
Resistance (10-3)	28 Ω ± 10%
Maximum peak current (1-7)	0,55 A
Maximum peak current (1-4)	1,1 A
Maximum working temperature	115 °C
Flammability	according to UL94, category V1.

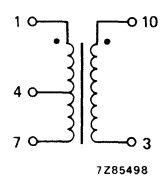


Fig. 2.

* Measuring conditions: E = 20 V, f = 1 kHz.

DRIVER TRANSFORMER

- For single switch power pack system
- Mains insulation

APPLICATION

The AT4043/82 is for use as a transistor driver transformer in the single switch power pack system (S^2P^2) for colour TV receivers. It is used in conjunction with mains transformer TS561/2 or TS521B, mains filter choke AT4043/90, current sensing transformer AT4043/46, input choke AT4043/81 and diode-split line output transformer AT2076/80 or AT2077/80.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U20 cores, grade 3C8. The primary and secondary windings are wound on a two-part coil former with large creepage distances and clearances, which ensure safe insulation between the mains and control circuits. The transformer has six pins for mounting on a printed-wiring board.

Outlines

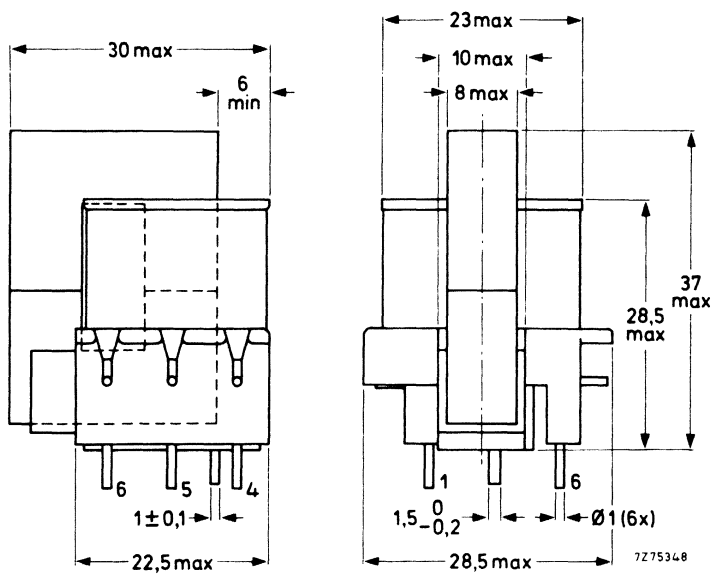


Fig. 1.

Mounting

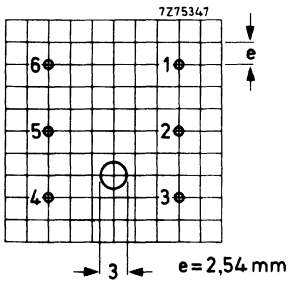


Fig. 2 Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm. Viewed from the component side.

ELECTRICAL DATA

Inductance, primary (4-6)	⩾ 6,8 mH*
Resistance, primary (4-6), at 25 °C	2,6 Ω ± 10%
Leakage inductance, secondary (1-3)	17 μH ± 10%**
Resistance, secondary (1-3)	0,11 Ω ± 10%
Transformation ratio	3,24
Permissible current (r.m.s. value)	
primary (4-6)	200 mA
secondary (1-3)	500 mA
Mains isolation	according to IEC65
Breakdown voltage (d.c.)	
between secondary (1-3) and primary (4-6) or core	⩾ 5600 V
between primary (4-6) and core	⩾ 500 V
Maximum working temperature	115 °C

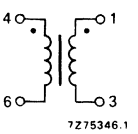


Fig. 3.

* Measuring condition: E = 3 V, f = 1 kHz.

** Measuring condition (primary short-circuited): E ⩽ 250 mV, 500 kHz ⩽ f ⩽ 600 kHz.

LINE DRIVER TRANSFORMER

APPLICATION

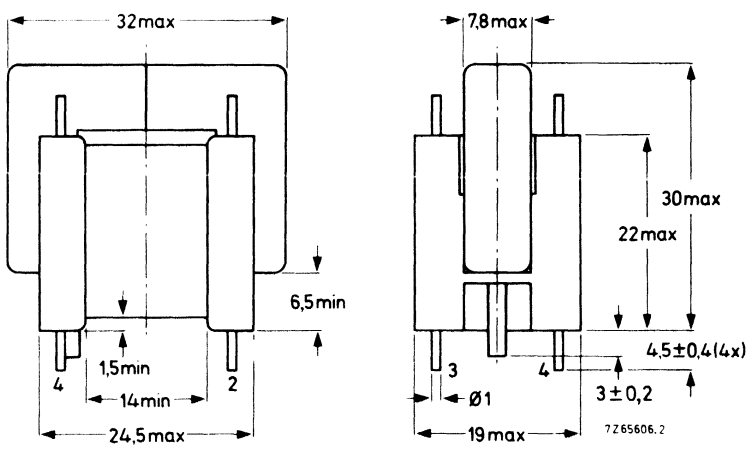
The transformer AT4043/87 has been designed for all-transistor black/white and colour television sets. In black and white television sets it can be used in the single-transistor (BU205) line-output circuit in conjunction with the line-output transformer AT2048/12; in colour television sets it can be used in the single-transistor (BU208A) line-output circuit in conjunction with the line-output transformer AT2076/30.

MECHANICAL DATA

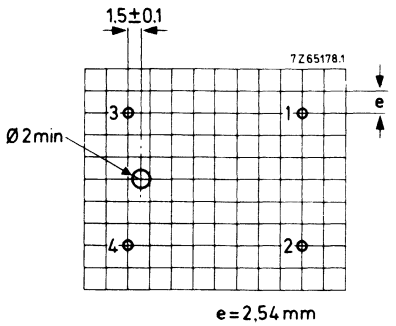
Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U-cores.
The unit is provided with pins for mounting on a printed-wiring board.

Outlines



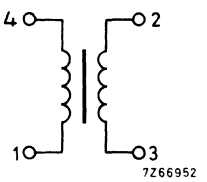
Mounting



Hole pattern for mounting on a printed-wiring board; hole diameter 1,3 + 0,1 mm.

ELECTRICAL DATA

Inductance (primary, 1-4)	76 mH ± 12%
Leakage inductance (secondary)*	⩽ 2,0 μH
Transformation ratio 4-1/2-3	29 : 1
Maximum working temperature	100 °C



* Primary short circuited.

LINE DRIVER TRANSFORMER

- For colour TV ("Two Chip Design")

APPLICATION

This transformer is for use in economic colour TV receivers with 14 or 16 in 90° picture tubes, in conjunction with line-output transformer AT2079/10 and linearity corrector AT4042/90 or AT4042/91. ←

MECHANICAL DATA

Dimensions in mm

The magnetic circuit of the transformer comprises two Ferroxcube U10-cores. The unit has pins for mounting on a printed-wiring board.

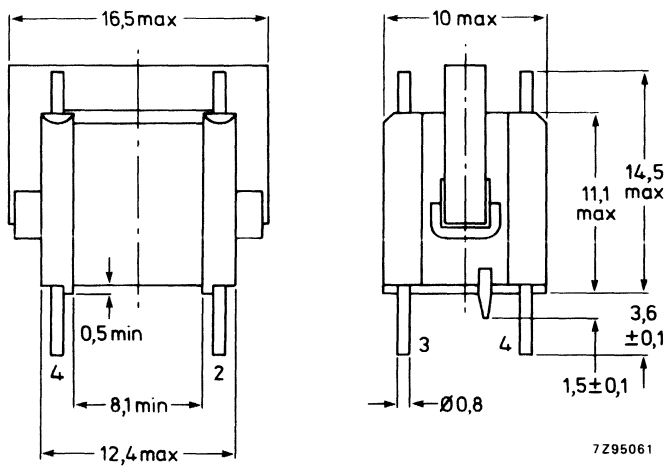


Fig. 1 Line driver transformer AT4043/89.

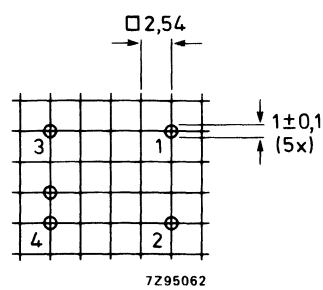


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance (primary, 1 – 2)	3,85 mH ± 15%
Transformation ratio	5 : 1
Maximum operating temperature	95 °C

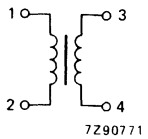


Fig. 3 Circuit diagram.

MAINS FILTER CHOKE FOR 1,0 A rms

APPLICATION

The AT4043/90 is for use in consumer and professional equipment as a part of the filter network in the power supply.

MECHANICAL DATA

The magnetic circuit of the filter choke comprises two Ferroxcube U20 cores. The choke has four pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

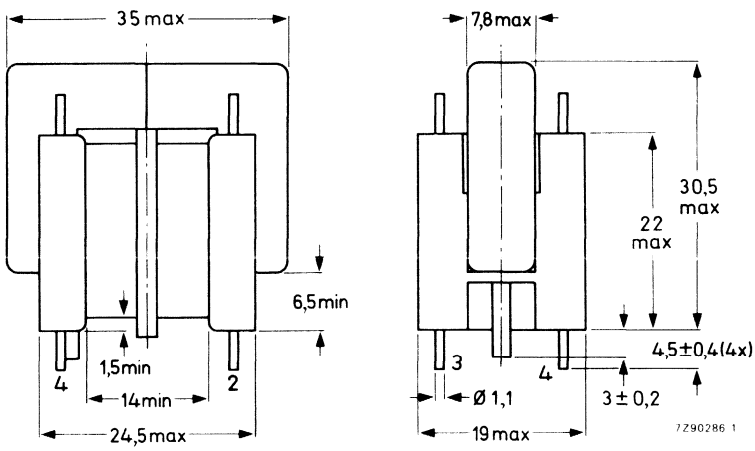


Fig. 1.

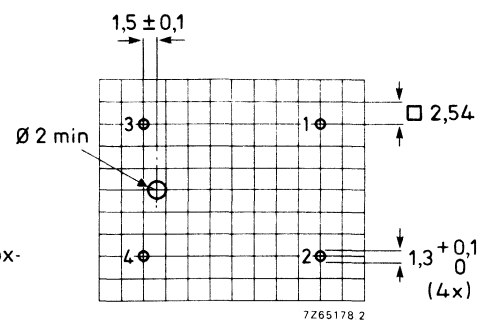


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side). The windings may be interchanged because the coil is symmetrical.

Marking

The 12-digit catalogue number is printed on the Ferroxcube cores.

ELECTRICAL DATA

Inductance, $L_{1-2} = L_{3-4}$	$\geqslant$ 28 mH*
Resistance, $R_{1-2} = R_{3-4}$, at 25 °C	1,0 Ω
Leakage inductance	
$L_{s(1-2)}$, L_{3-4} short-circuited	0,75 mH
$L_{s(3-4)}$, L_{1-2} short-circuited	0,75 mH
Maximum current (r.m.s.)	1,0 A
Maximum working temperature	115 °C

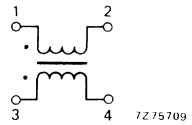


Fig. 3.

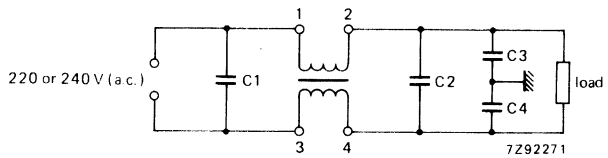


Fig. 4 Application circuit.
C1 = C3 = C4 = 3300 pF, 250 V;
C2 = 0,47 μF, 250 V.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C; 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures	
after 300 h	$\leqslant$ 0,01%
after 10 000 h	$\leqslant$ 0,02%
after 30 000 h	$\leqslant$ 1%

* Measured at 1 V, 1 kHz.

MAINS FILTER CHOKE FOR 0,25 A rms

APPLICATION

The AT4043/91A is for use in consumer and professional equipment as a part of the filter network in the power supply.

MECHANICAL DATA

The magnetic circuit of the filter choke comprises two Ferroxcube U15 cores. The choke has four pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

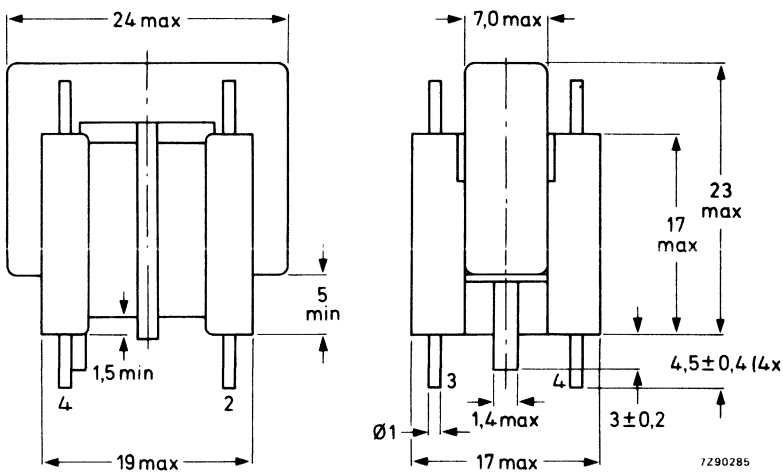
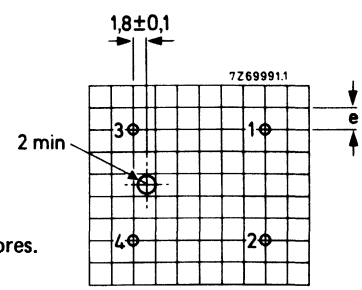


Fig. 1.

Fig. 2 Hole pattern for mounting on a printed-wiring board (component side); e = 2,54 mm; hole diameter is 1,3 + 0,1 mm. The windings may be interchanged because the coil is symmetrical.



Marking

The 12-digit catalogue number is printed on the Ferroxcube cores.

ELECTRICAL DATA

Inductance, $L_{1\text{-}2} = L_{3\text{-}4}$	$\geqslant$ 40 mH*
Resistance, $R_{1\text{-}2} = R_{3\text{-}4}$, at 25 °C	5,0 Ω ± 12%
Leakage inductance	
$L_{s(1\text{-}2)}$, $L_{3\text{-}4}$ short-circuited	1,5 mH
$L_{s(3\text{-}4)}$, $L_{1\text{-}2}$ short-circuited	1,5 mH
Maximum current (r.m.s.)	0,25 A
Maximum working temperature	115 °C

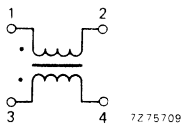


Fig. 3.

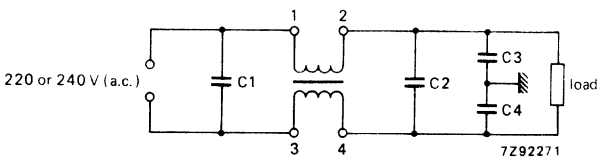


Fig. 4 Application circuit.
C1 = C3 = C4 = 3300 pF; 250 V;
C2 = 0,47 μF, 250 V.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp, heat, steady state	Ca	21 days, 40 °C; 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C; 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	$\leqslant$ 0,01%
after 10 000 h	$\leqslant$ 0,02%
after 30 000 h	$\leqslant$ 1%

* Measured at 1 V, 1 kHz.

MAINS FILTER CHOKE FOR 0,5 A rms

APPLICATION

The AT4043/92 is for use in consumer and professional equipment as a part of the filter network in the power supply.

MECHANICAL DATA

The magnetic circuit of the filter choke comprises two Ferroxcube U15 cores. The choke has four pins for mounting on a printed-wiring board.

Outlines

Dimensions in mm

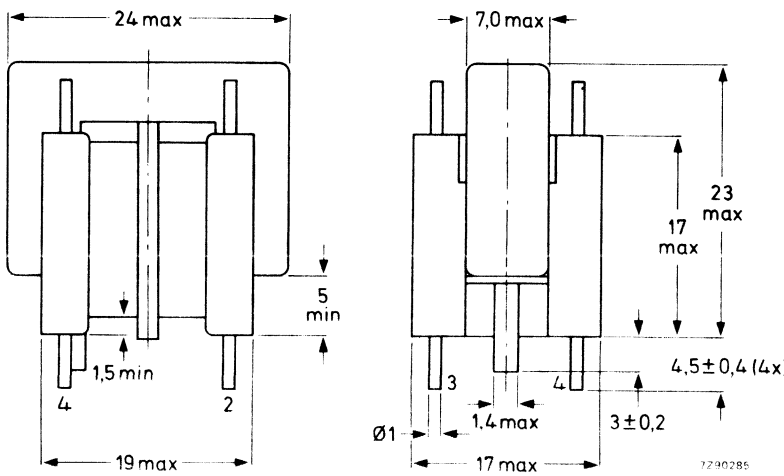


Fig. 1.

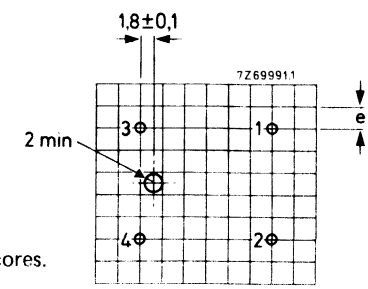


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side); e = 2,54 mm; hole diameter is 1,3 + 0,1 mm. The windings may be interchanged because the coil is symmetrical.

Marking

The 12-digit catalogue number is printed on the Ferroxcube cores.

ELECTRICAL DATA

Inductance, $L_{1-2} = L_{3-4}$	$\geqslant$ 15 mH*
Resistance, $R_{1-2} = R_{3-4}$, at 25 °C	2,0 Ω
Leakage inductance	
$L_{s(1-2)}$, L_{3-4} short-circuited	0,7 mH
$L_{s(3-4)}$, L_{1-2} short-circuited	0,7 mH
Maximum current (r.m.s.)	0,5 A
Maximum working temperature	115 °C

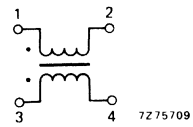


Fig. 3.

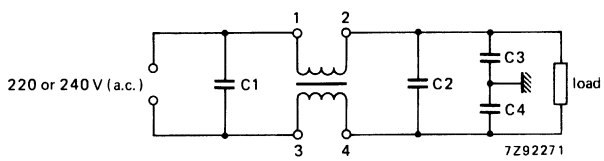


Fig. 4 Application circuit.
C1 = C3 = C4 = 3300 pF, 250 V;
C2 = 0,47 μF, 250 V.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C; 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	−25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	$\leqslant$ 0,01%
after 10 000 h	$\leqslant$ 0,02%
after 30 000 h	$\leqslant$ 1%

* Measured at 1,6 V, 1 kHz.

MAINS FILTER CHOKE FOR 1,5 A rms

APPLICATION

The AT4043/93 is for use in consumer and professional equipment as a part of the filter network in the power supply.

MECHANICAL DATA

The magnetic circuit of the filter choke comprises two Ferroxcube U20 cores. The choke has four pins for mounting on a printed-wiring board.

Outlines Dimensions in mm

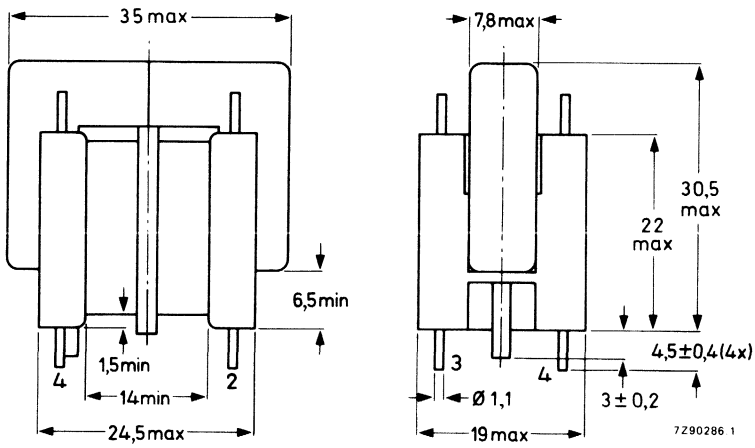


Fig. 1.

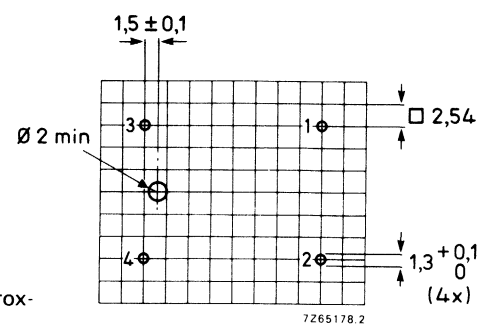


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side). The windings may be interchanged because the coil is symmetrical.

Marking

The 12-digit catalogue number is printed on the Ferroxcube cores.

ELECTRICAL DATA

Inductance, $L_{1-2} = L_{3-4}$	$\geqslant$ 12 mH*
Resistance, $R_{1-2} = R_{3-4}$, at 25 °C	0,4 Ω ± 10%
Leakage inductance	
$L_{s(1-2)}$, L_{3-4} short-circuited	0,5 mH
$L_{s(3-4)}$, L_{1-2} short-circuited	0,5 mH
Maximum current (r.m.s.)	1,5 A
Test voltage (d.c.) between the windings, and between windings and core	2000 V
Maximum working tepmerature	115 °C

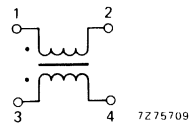


Fig. 3.

The choke withstands the following tests:

test	IEC 68 test method	procedure
bump	Eb	1000 bumps, acceleration 245 m/s², 6 directions
vibration	Fc	10-55-10 Hz, ampl. 0,35 mm, 3 directions, 30 min/direction
damp heat, steady state	Ca	21 days, 40 °C, 93% R.H.
damp heat, cyclic	Db	21 days, 40 °C
change of temperature	Na	–25 °C, + 100 °C; 5 cycles
dry heat	Bb	96 h, + 100 °C
solderability	Ta	230 ± 10 °C, 2 ± 0,5 s

Reliability

Maximum cumulative percentage catastrophic failures

after 300 h	$\leqslant$ 0,01%
after 10 000 h	$\leqslant$ 0,02%
after 30 000 h	$\leqslant$ 1%

* Measured at 2,2 V, 1 kHz.

FILTER

- For consumer applications, e.g. television sets and monitors

APPLICATION

Universal coil for high current filtering purposes, e.g. 32 kHz 45AX concept.

DESCRIPTION

The coil is wound on a Ferroxcube I-15 core. It has four termination pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

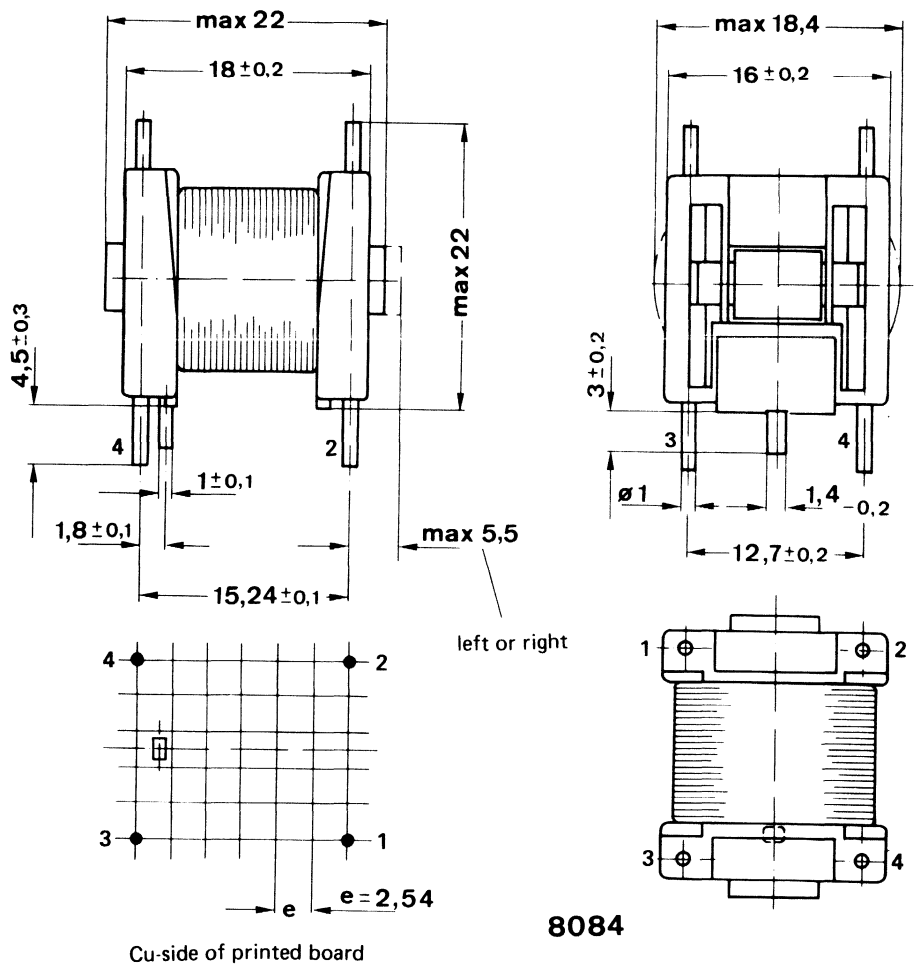


Fig. 1 Filter Assembly.

ELECTRICAL DATA

Inductance*	12,2 μH ± 12%
Resistance	27 mΩ ± 12%
Maximum working temperature	100 °C

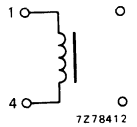


Fig. 2 Coil circuit.

* Measuring conditions: E = 0,3 V; f = 1000 Hz.

BRIDGE COIL

APPLICATION

This bridge coil is for the line deflection output stage of the 45AX system.

MECHANICAL DATA

Dimensions in mm

The magnetic circuit comprises two Ferroxcube U20 cores, grade 3C8. The transformer has four connecting pins and a location pin for mounting on a printed-wiring board.

Outlines

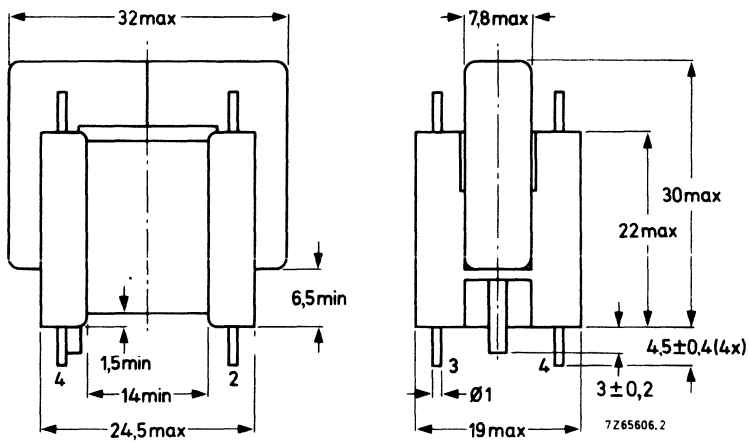


Fig. 1.

Mounting

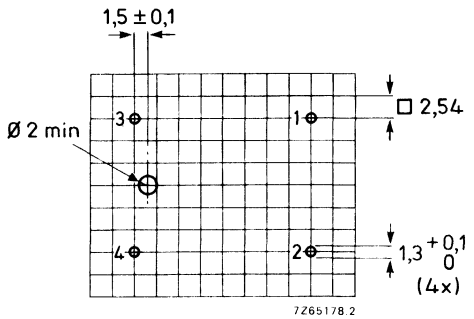


Fig. 2 Hole pattern for mounting on a printed-wiring board (component side).

ELECTRICAL DATA

Inductance (1-4)	1 mH ± 12%
Resistance (1-4) at 25 °C	0,125 Ω ± 12%
Maximum permissible peak current	1,3 A
Maximum working temperature	100 °C

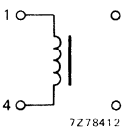


Fig. 3.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. record players, cassette recorders, television sets.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E12,6 cores. The transformer has 4 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

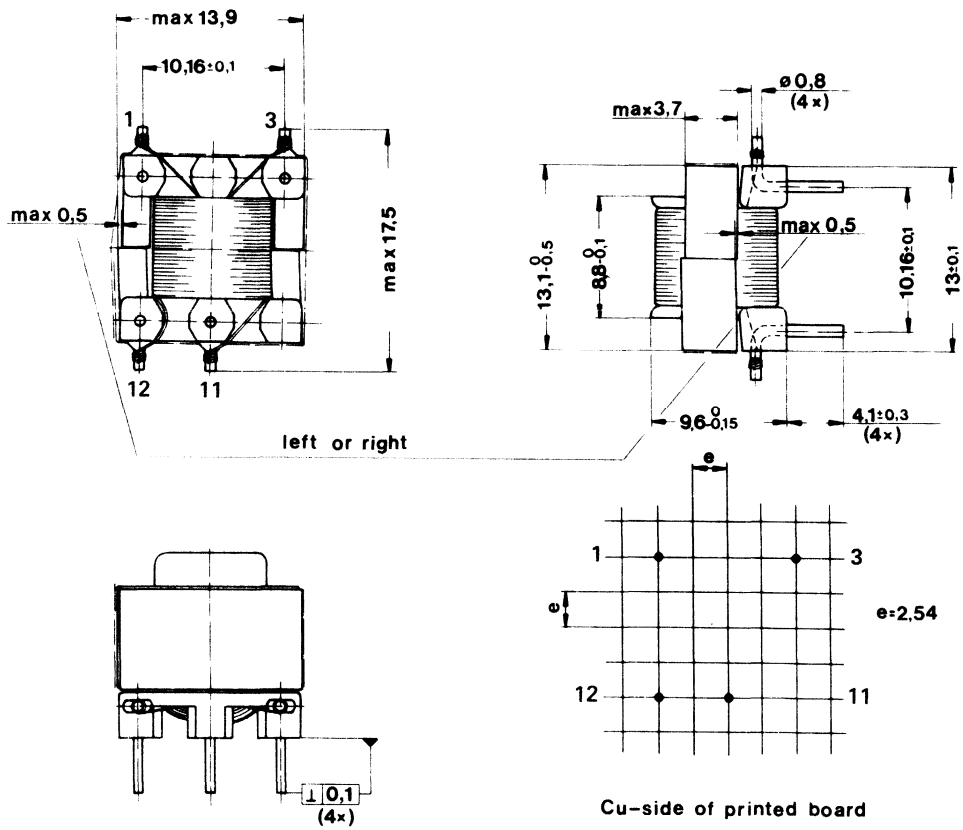


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30910
Inductance, primary*	(1-12) 3,3 mH ± 10%
Leakage inductance, primary	(1-6) 10%
Maximum current, primary	(1-6) 320 mA
Number of turns	
primary	(1-12) = 228
secondary	(11-3) = 16
Test voltage (DC) between primary and secondary	500 V

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E12,6 cores. The transformer has 5 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

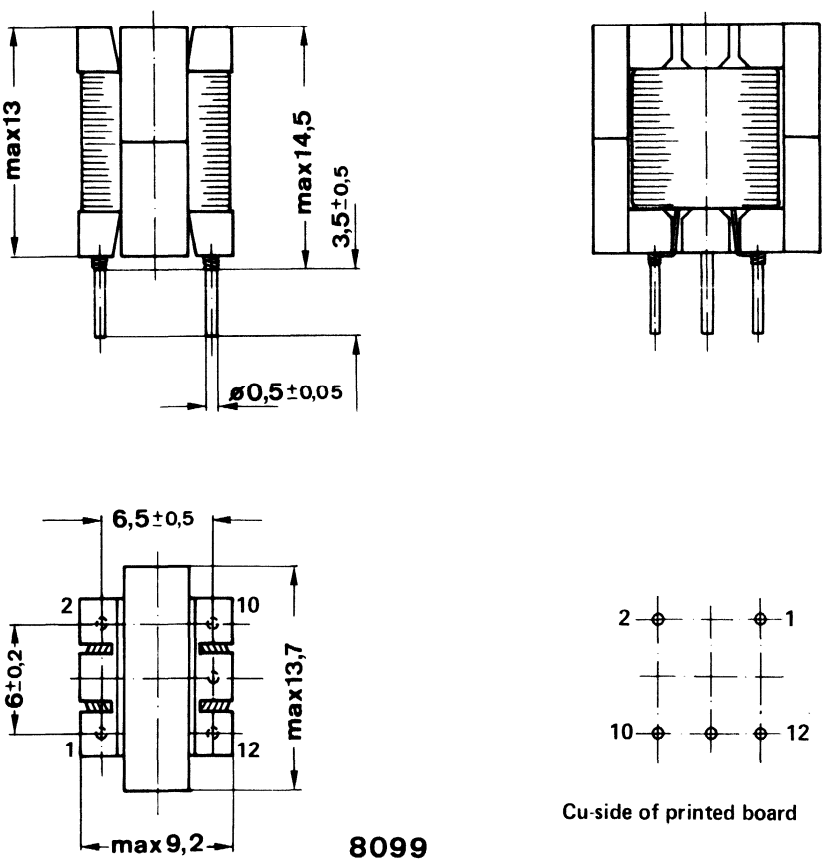


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30440
Inductance, primary (1-2)*	3 mH ± 10%
Leakage inductance, primary (1-2)	0,2%
Maximum current, primary (1-2)	300 mA
Number of turns	
primary (1-2)	220
secondary (10-12)	22
Test voltage (d.c.)	
between primary and secondary	1500 V
between primary and core	1500 V

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, tests Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 100 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. record players, cassette recorders, television sets.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E12,6-cores. The transformer has 10 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

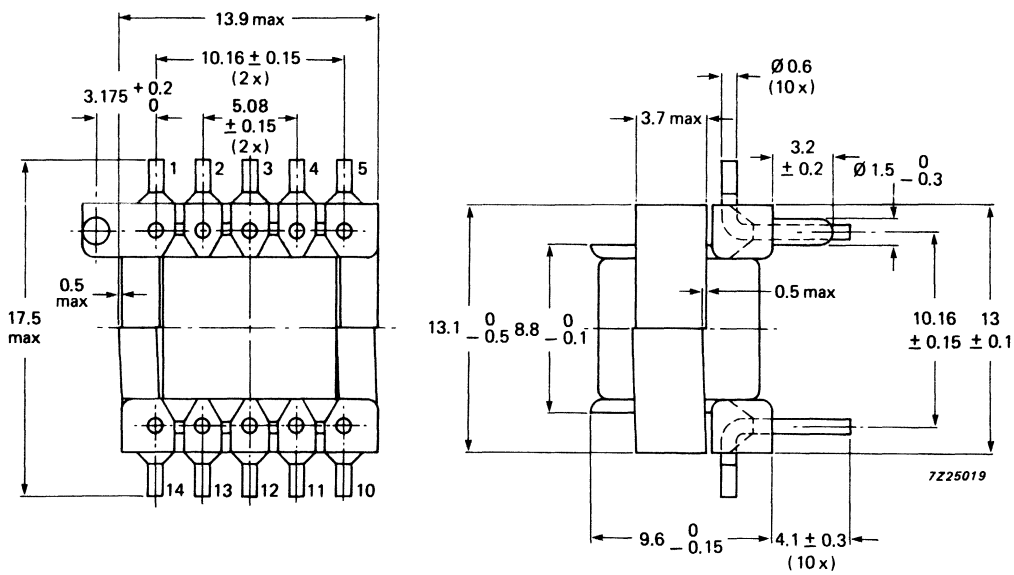
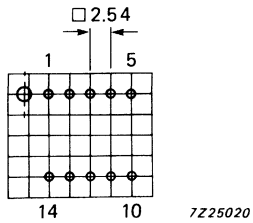


Fig. 1 Transformer assembly.



Cu-side of printed board.

Fig. 2 Hole pattern for mounting on a printed wiring board.

ELECTRICAL DATA

Inductance, primary*	(1-2) 2.8 mH ± 25%
Maximum current, primary	(1-2) 85 mA
Number of turns	
primary	(1-2) = 58
secondary	(3-13) = 7
	(5-10) = 70
	(12-4) = 5
	(4-11) = 5
Test voltage (DC) between primary and secondary	500 V

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. record players, cassette recorders, television sets.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E12,6-cores. The transformer has 4 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

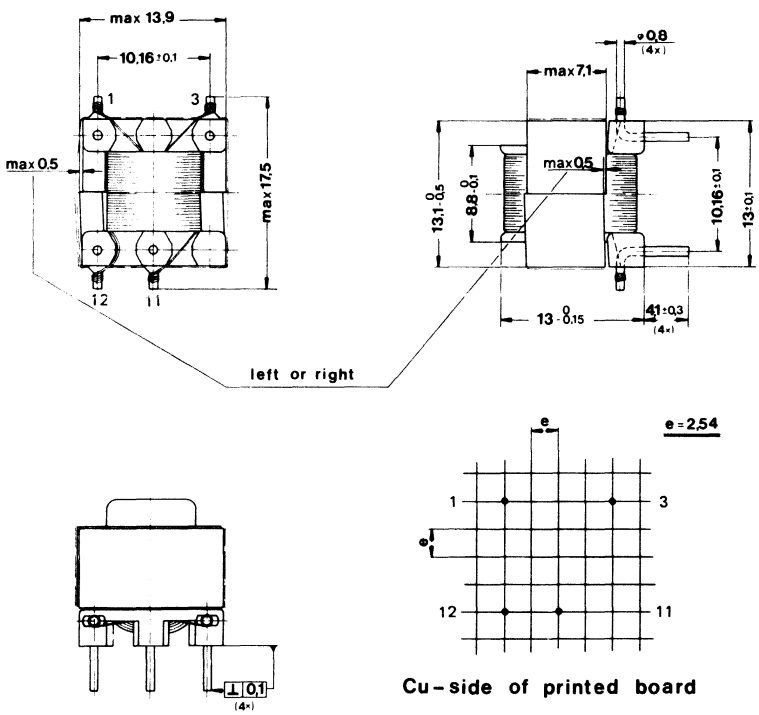


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30800
Inductance, primary*	(1-12) 5,6 mH ± 10%
Leakage inductance, primary	(1-12) 5,4%
Maximum current, primary	(1-12) 325 mA
Number of turns	
primary	(1-12) = 252
secondary	(11-3) = 14

Test voltage (DC)	
between primary and secondary	1500 V
between primary and core	1500 V

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. video recorders, television sets, monitors.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/15 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils. A screen between primary and secondary guarantees the required insulation between the windings.
The transformer has 22 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

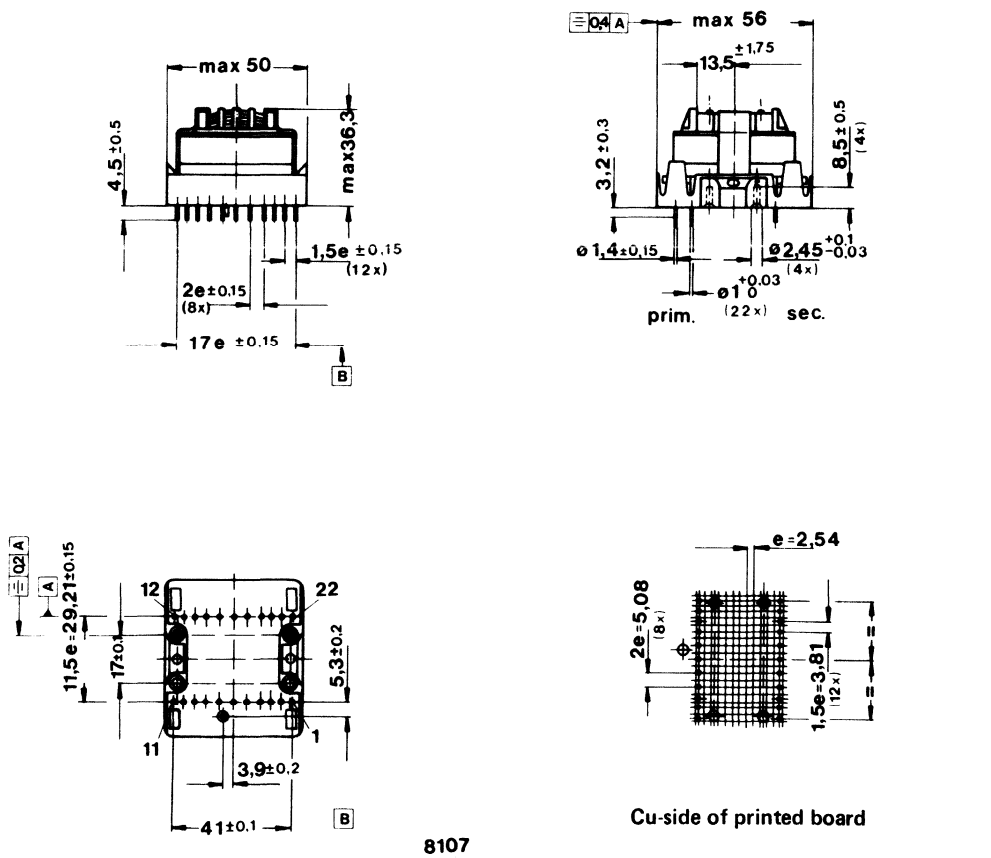
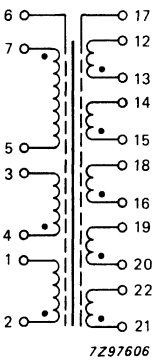


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number	
	3112 338 31070	3112 338 31150 **
Inductance, primary*	(7-5) 0,94 mH ± 10%	(5-7) 0,67 mH ± 10%
Leakage inductance, primary	(7-5) 2,1%	(5-7) 2,1%
Maximum current, primary	(7-5) 2,03 A	(5-7) 2,5 A
Number of turns		
primary	(2-1) = 4	(2-1) = 5
	(4-3) = 1	(4-3) = 1
	(7-5) = 34	(7-5) = 32
secondary	(20-19) = 6	(20-19) = 6
	(21-22) = 3	(21-22) = 4
	(16-18) = 5	(16-18) = 7
	(15-14) = 7	(15-14) = 16
	(13-12) = 14	(13-12) = 4
Diagram		

Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE0860 and UL1411
Maximum operating temperature	115 °C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +55 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

** UL approved.

SWITCHED-MODE TRANSFORMER

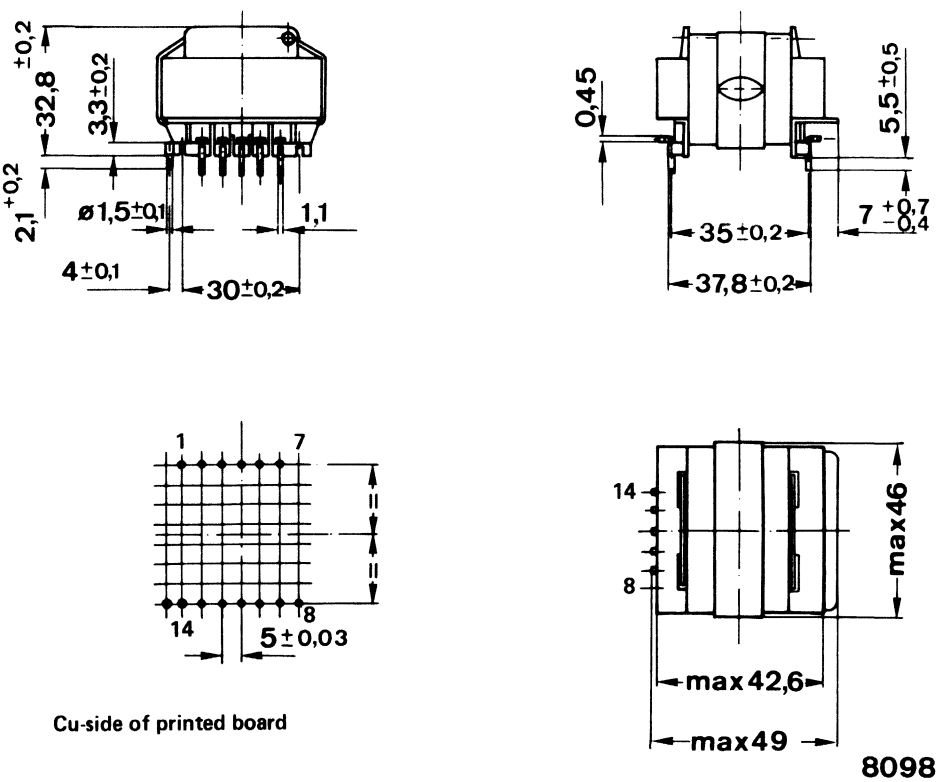
- For consumer applications, e.g. television sets, monitors

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/15 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils.
The transformer has 14 pins for mounting on a printed-wiring board.

MECHANICAL DATA

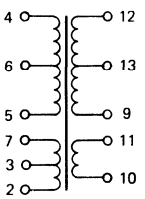
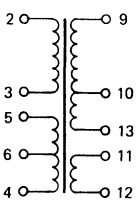
Dimensions in mm



Cu-side of printed board

Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number	
	3112 338 30550	3112 338 30970
Inductance, primary*	(5-4) 2,5 mH ± 10%	(3-2) 1,9 mH ± 10%
Leakage inductance, primary	(5-4) 1,2%	(3-2) 2%
Maximum current, primary	(5-4) 1,2 A	(3-2) 1,36 A
Number of turns		
primary	(5-4) = 78 (2-3) = 2 (3-7) = 2	(3-2) = 64 (4-6) = 2 (6-5) = 1
secondary	(5-6) = 39 (13-9) = 34 (12-13) = 33 (11-10) = 8	(9-10) = 52 (11-12) = 11 (13-10) = 7
Diagram		 7Z97605

Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860
Maximum operating temperature	115 °C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 85 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. television sets, monitors.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/15 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils.
The transformer has 18 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

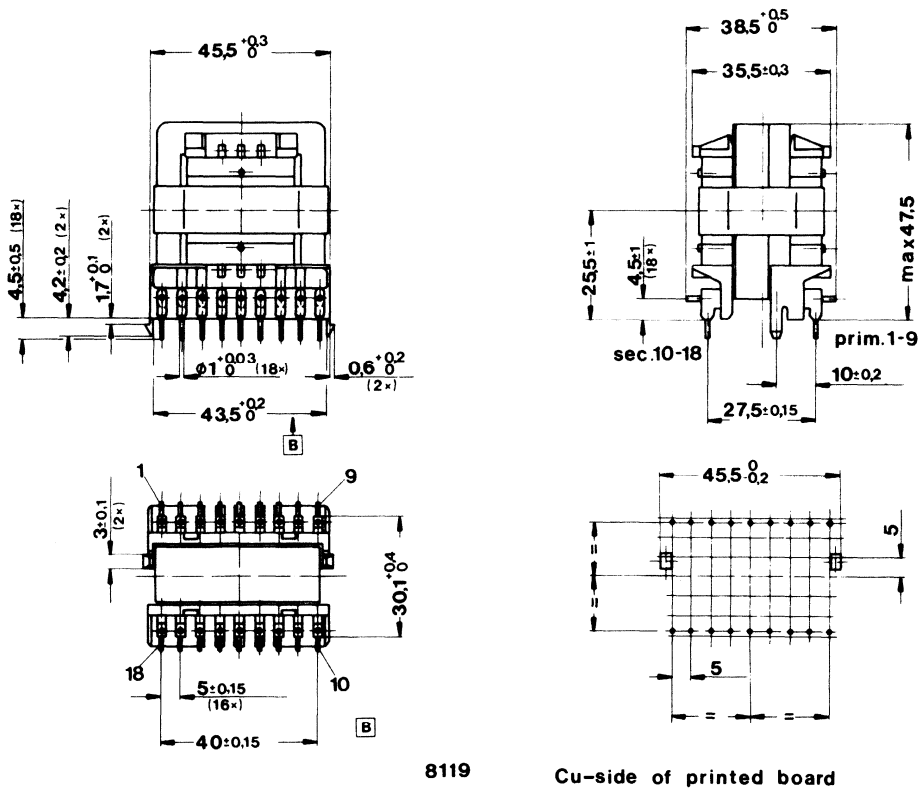


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30940
Inductance, primary*	(4-6) 1,8 mH ± 10%
Leakage inductance, primary	(4-6) 1,4%
Maximum current, primary	(4-6) 1,7 A
Number of turns	
primary	(1-2) = 1 (8-9) = 1 (3-7) = 3 (4-6) = 50
secondary	(13-15) = 19 (11-10) = 13 (16-12) = 4 (18-17) = 3

Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860
Maximum operating temperature	115°C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +55 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. television sets, monitors.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/20 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils. A screen between primary and secondary guarantees the required insulation between the windings.
The transformer has 22 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

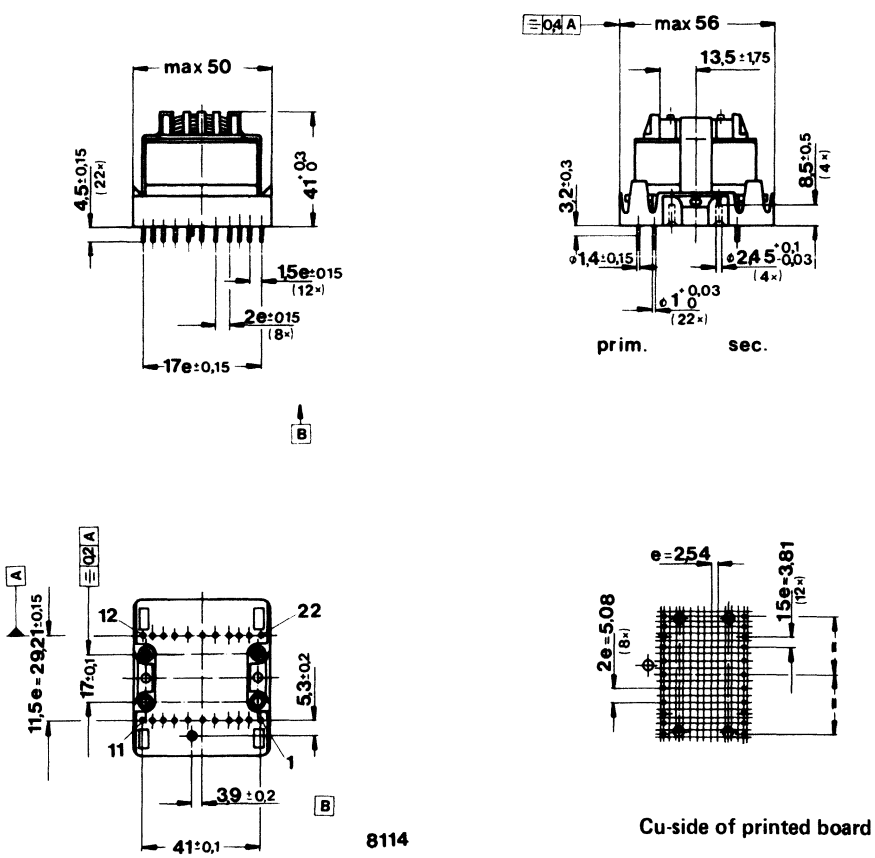


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number	
	3112 338 30620	3112 338 31040
Inductance, primary*	(5-7) 1,5 mH ± 10%	(7-5) 0,4 mH ± 10%
Leakage inductance, primary	(5-7) 2%	(7-5) 3,75%
Maximum current, primary	(5-7) 2,9 A	
Number of turns		
primary	(1-2) = 1 (8-9) = 1 (10-11) = 4 (5-7) = 51	(2-1) = 2 (9-8) = 2 (11-10) = 2 (7-5) = 31
secondary	(18-16) = 25 (12-13) = 10 (15-14) = 3	(18-16) = 45 (20-19) = 11 (22-21) = 9 (14-15) = 9 (12-13) = 5

Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860
Maximum operating temperature	115 °C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +55 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. television sets, monitors.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube E42/20 cores. The coil is built-up in layers of copper wire, separated from each other by insulation foils. A screen between primary and secondary guarantee the required insulation between the windings.
The transformer has 22 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

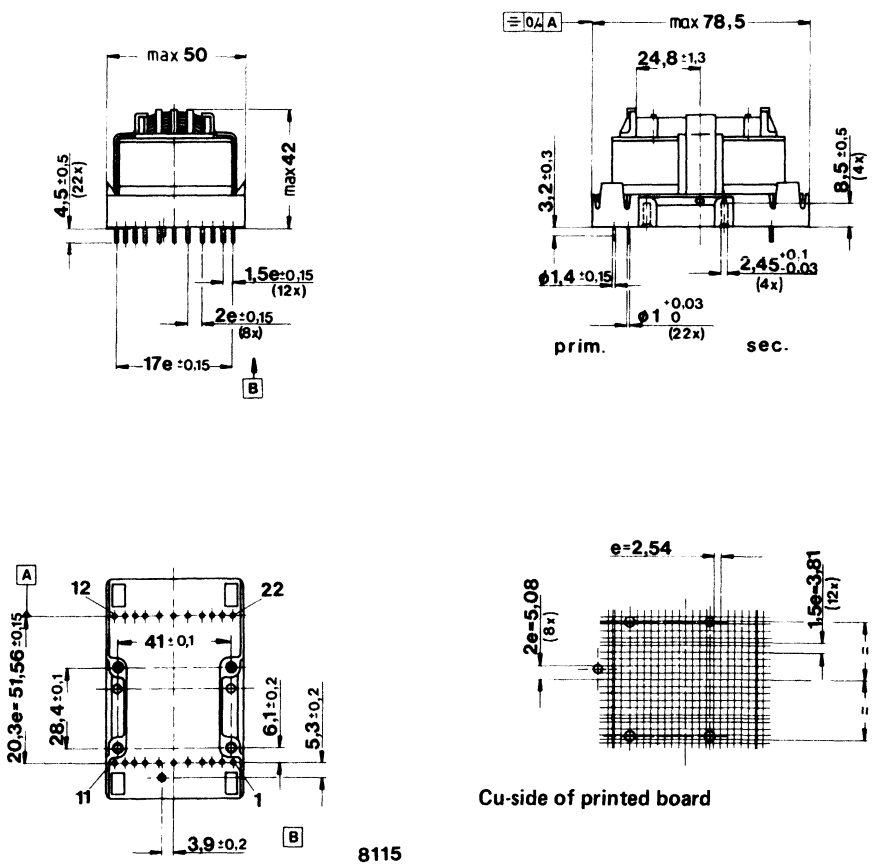


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30740
Inductance, primary*	(5-7) 1,35 mH ± 10%
Leakage inductance, primary	(5-7) 1,5%
Maximum current, primary	(5-7) 3,55 A
Number of turns	
primary	(1-2) = 2 (8-9) = 1 (10-11) = 5 (5-7) = 68
secondary	(18-16) = 37 (12-13) = 15 (15-14) = 4 (19-20) = 6 (21-22) = 6

Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860
Maximum operating temperature	115 °C

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +35 °C

* Measured at 10 kHz, B_{max} = 0,3 T.

BRIDGE COIL

- For consumer applications, e.g. record players, cassette recorders, television sets, monitors

DESCRIPTION

The coil is wound on a Ferroxcube I-10 core. It has four termination pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

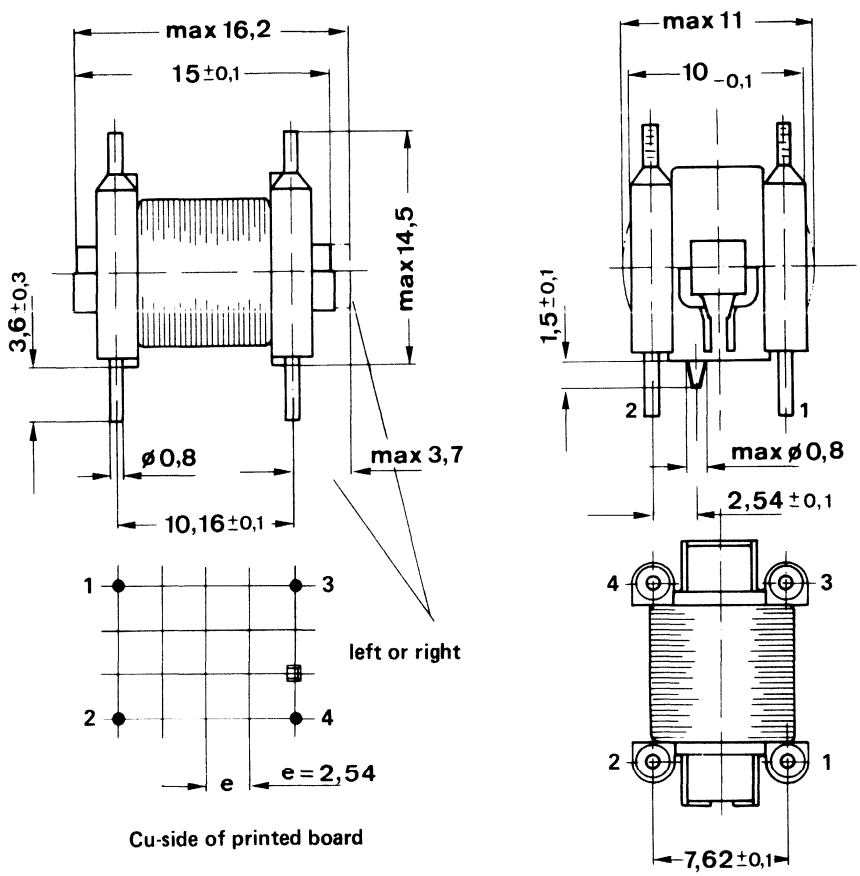


Fig. 1 Coil assembly.

ELECTRICAL DATA

	catalogue number				
	3122 138 71330	3122 138 74310	3122 138 74290	3112 338 30790	3112 338 30460
Inductance*	(1-4) 0,14 mH	(1-4) 0,2 mH	(1-2) 0,05 mH	(1-2) 0,03 mH	(3-1) 0,38 mH
Resistance**	(1-4) 0,29 Ω	(1-4) 0,37 Ω	(1-2) 0,17 Ω	(1-2) 0,056 Ω	(3-1) 0,68 Ω

Approbation

Sets with coils of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The bridge coil withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 100 °C

* Tol. ± 10%; measured at 1 kHz, B_{max} = 0,3 T.

** Tol. ± 12%; measured at T_{amb} = 23 °C.

PULSE TRANSFORMER

- For use in switched mode power supplies
- For consumer applications, e.g. record players, cassette recorders, television sets.

DESCRIPTION

The coil is wound on a Ferroxcube I-10 core. It has four termination pins for mounting on a printed-wiring board.

The coil former has three sections, of which the middle section is a safety distance between the other two.

MECHANICAL DATA

Dimensions in mm

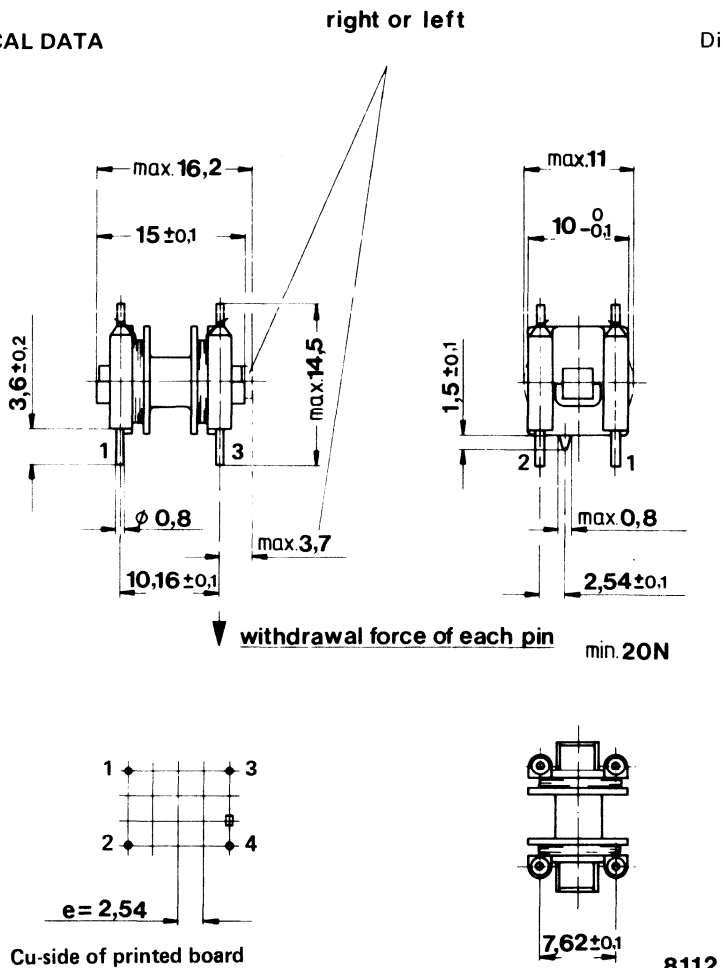
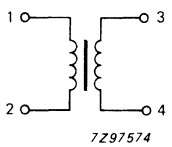


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number	
	3112 338 31010	3112 338 31190
Resistance, primary	(1-2) 18 Ω	(1-2) 20,5 Ω
secondary	(3-4) 18 Ω	(3-4) 3,5 Ω
Maximum current, primary	(1-2) 610 mA	(1-2) 690 mA
Turns ratio	200 : 200	225 : 45
Diagram		

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Insulation resistance between primary and secondary	> 60 MΩ
Test voltage (d.c.) between primary and secondary	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

BRIDGE COIL

- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

The coil is wound on a Ferroxcube I-15 core. It has four termination pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

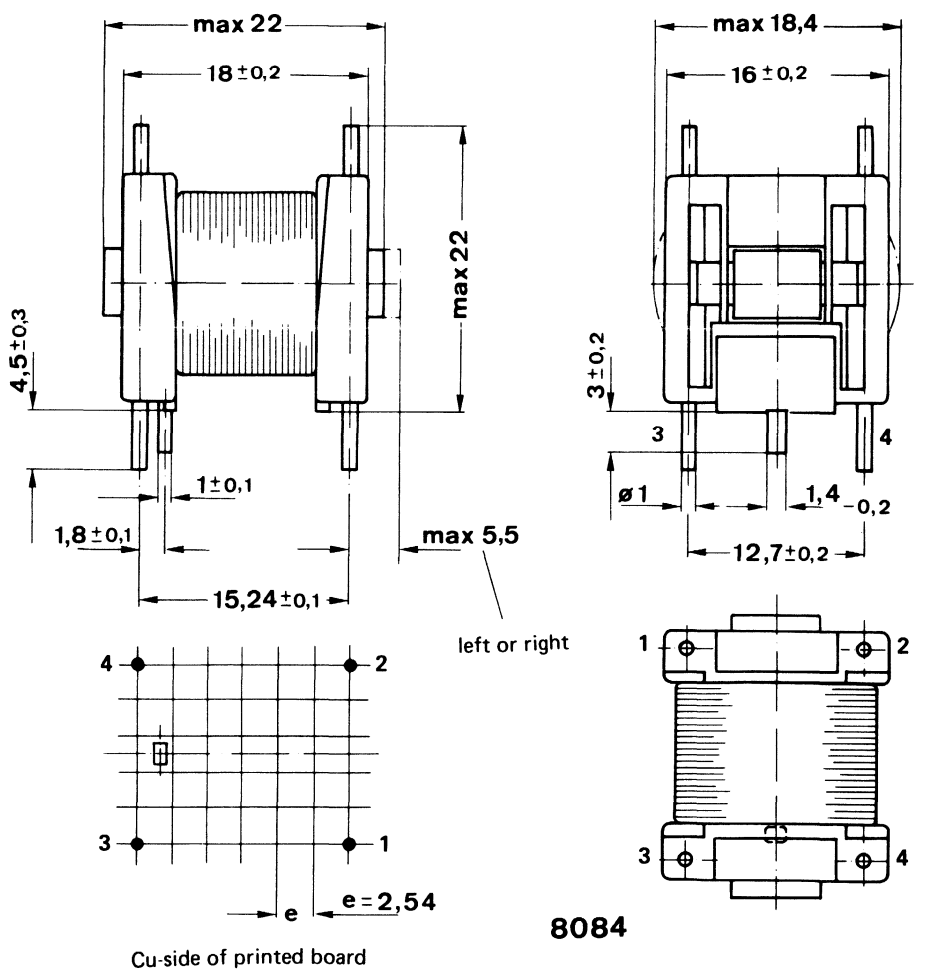


Fig. 1 Coil assembly

ELECTRICAL DATA

	catalogue number				
	3122 138 71800	3122 138 29390	3122 138 29360	3112 338 30650	3112 338 30200▲
Inductance*	(2-3) 1,0 mH	(1-3) 0,18 mH	(1-4) 0,14 mH	(3-4) 0,43 mH	(3-4) 0,2 mH
Resistance**	(2-3) 1,07 Ω	(1-3) 0,3 Ω	(1-4) 0,23 Ω	(3-4) 0,48 Ω	(3-4) 0,3 Ω

Approbation

Sets with coils of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The bridge coil withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25 g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 100 °C

* Tol. ± 10%; measured at 1 kHz, B_{max} = 0,3 T.

** Tol. ± 12%; measured at T_{amb} = 23 °C.

▲ UL approved.

BRIDGE COIL

- For consumer applications, e.g. record players, cassette recorders, television sets.

DESCRIPTION

The coil is wound on a Ferroxcube I-20 core. It has four termination pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

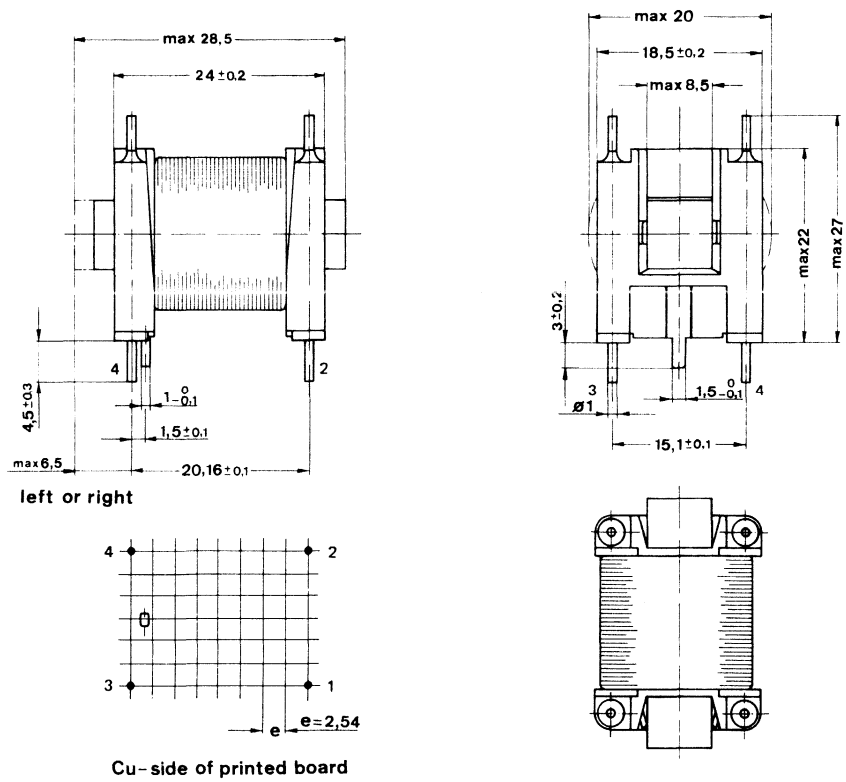


Fig. 1 Coil assembly.

ELECTRICAL DATA

	catalogue number		
	3112 338 30920	3122 138 94810	3122 138 28870
Inductance*	(1-2) 1,05 mH	(1-2) 0,43 mH	(1-2) 0,35 mH
Resistance**	(1-2) 1,17 Ω	(1-2) 0,55 Ω	(1-2) 0,21 Ω
Maximum current	(1-2) 3 A		

Approbation

Sets with coils of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The bridge coil withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +100 °C

* Tol. ± 10%; measured at 1 kHz, B_{max} = 0,3 T.
** Tol. ± 12%; measured at T_{amb} = 23 °C.

LINE DRIVER TRANSFORMERS, BRIDGE COILS AND CHOKES

- For consumer applications, e.g. television sets, monitors, video recorders

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U10 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

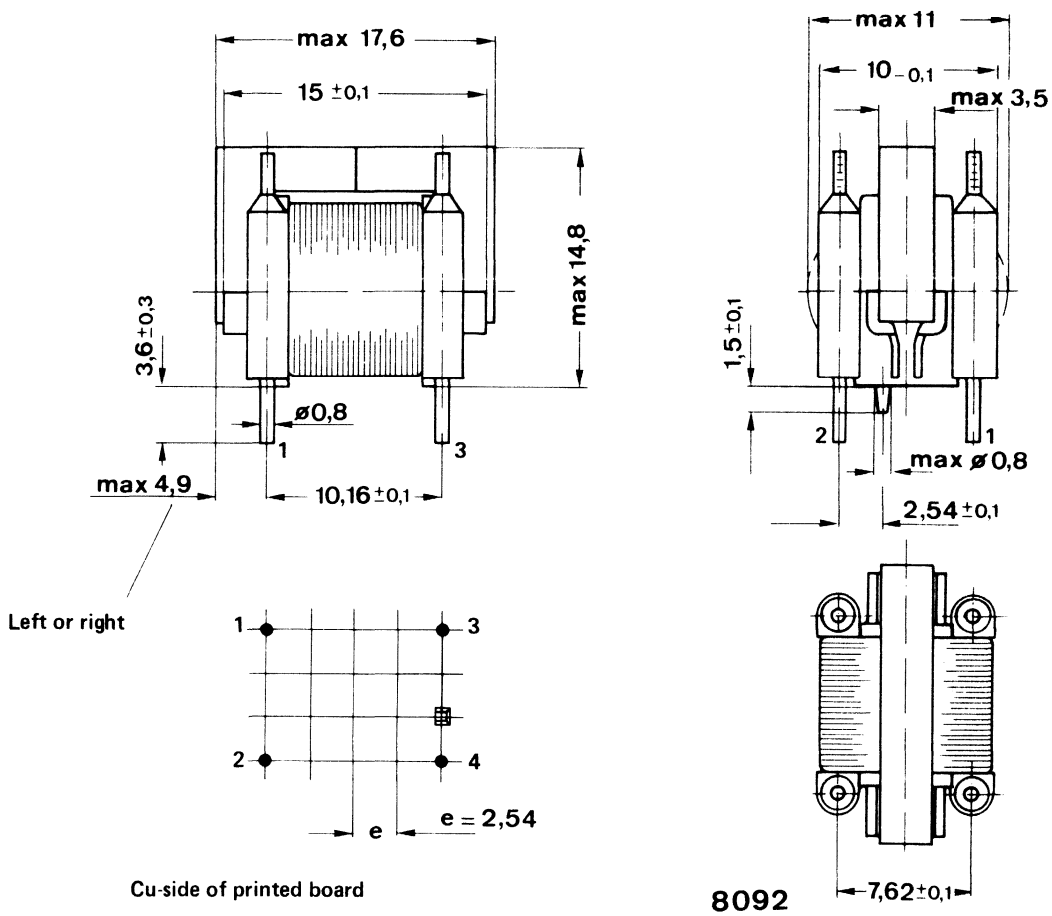
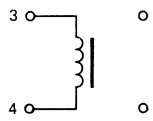
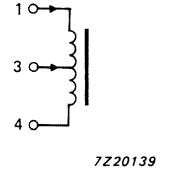
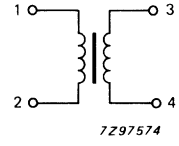


Fig. 1 Assembly.

ELECTRICAL DATA

	catalogue number					
	3112 338 30070	3112 338 30390	3112 338 30880	3112 338 31030	3112 338 31090	3122 138 90070
Inductance* (± 10%)	(3-4) 0,9 mH	(1-2) 0,1 mH	(1-2) 85 mH	(3-4) 2,5 mH	(1-2) 20 mH	(1-2) 3,85 mH
Resistance** (± 12%)	(3-4) 0,85 Ω	(1-2) 0,2 Ω (3-4) 0,03 Ω	(1-2) 39 Ω (3-4) 0,8 Ω	(1-2) 0,53 Ω (3-4) 1,05 Ω	(1-2) 1,02 Ω (3-4) 0,49 Ω	(1-2) 2,0 Ω (3-4) 0,6 Ω
Leakage inductance				(3-4) 2,4%		
Maximum current	(3-4) 385 mA	(1-2) 1200 mA	(1-2) 29 mA	(3-4) 1500 mA	(1-2) 36 mA	
Transformation ratio		45 : 7	1000 : 50	135 : 99	194 : 66	200 : 40
Diagram		 7Z20139	 7Z97574			

Approbation

Sets with units of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.

** Measured at T_{amb} = 23 °C.

FILTER COIL

- For applications where a low winding capacitance and a small stray field are required, e.g. car radios, video recorders.

DESCRIPTION

The magnetic circuit consists of a Ferroxcube U11 core. The winding is split up over two coil formers, each of which is mounted on a leg of the core.

MECHANICAL DATA

Dimensions in mm

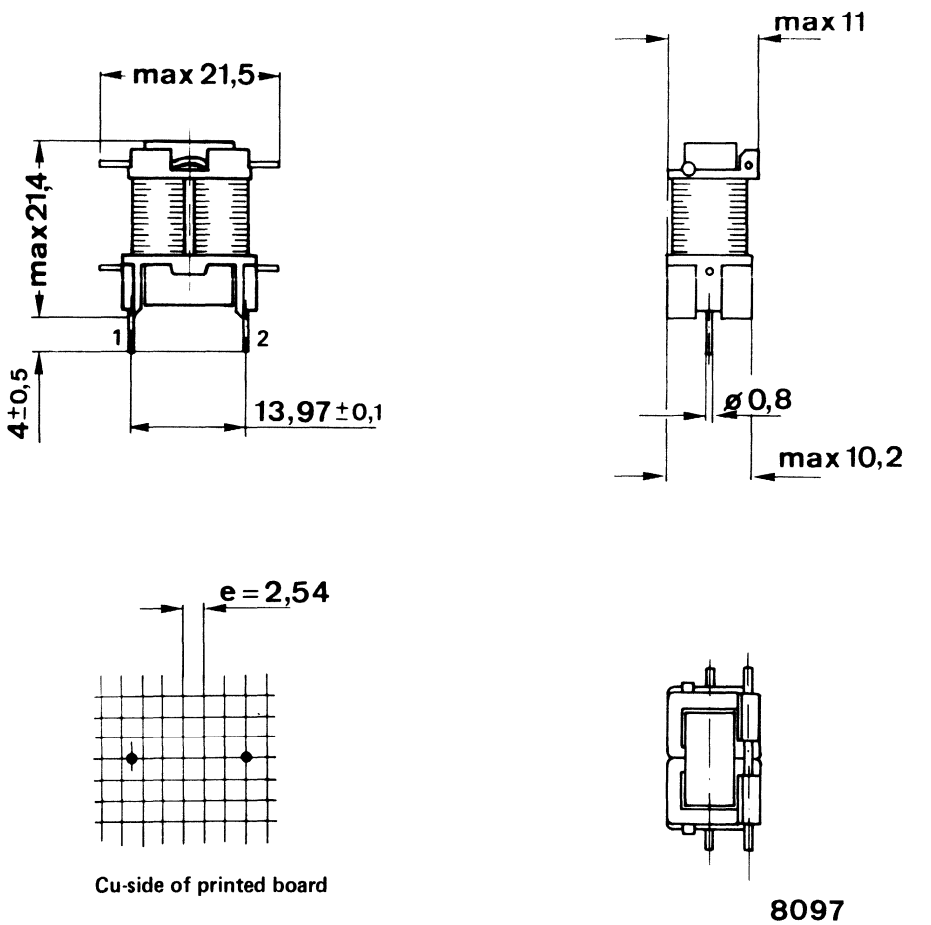
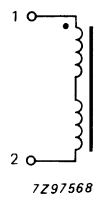


Fig. 1 Coil assembly.

ELECTRICAL DATA

	catalogue number	
	3122 138 51020	3122 138 99460
Inductance*	(1-2) 0,75 mH ± 10%	(1-2) 0,185 mH ± 10%
Resistance **	(1-2) 0,45 Ω ± 12%	(1-2) 0,11 Ω ± 12%
Maximum current	530 mA	2500 mA

Diagram



Approbation

Sets with coils of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The coil withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.

** Measured at T_{amb} = 23 °C.

LINE DRIVER TRANSFORMERS, BRIDGE COILS AND CHOKES

- For consumer applications, e.g. television sets, monitors

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U15 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

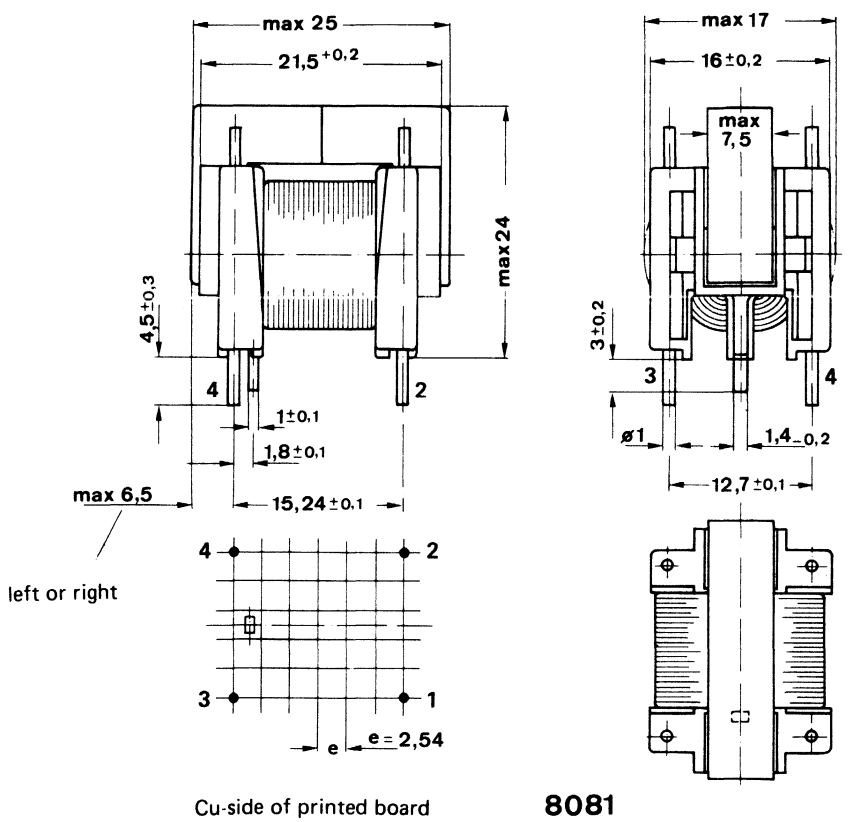
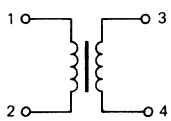
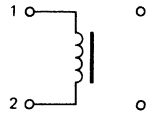
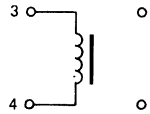


Fig. 1 Assembly.

ELECTRICAL DATA

	catalogue number			
	3122 138 93520	3122 138 93870	3122 138 96550	3112 338 31120
	driver transformer	E/W injection coil	bridge coil	choke
Inductance* (± 10%)	(1-2) 6,1 mH	(1-2) 15 mH	(1-2) 0,52 mH	(3-4) 8 mH
Resistance** (± 12%)	(1-2) 2,3 Ω (3-4) 0,22 Ω	(1-2) 2,6 Ω	(1-2) 0,6 Ω	(3-4) 1,7 Ω
Leakage inductance	(1-2) < 13,8 μH			
Maximum current		(1-2) 1200 mA	(1-2) 1850 mA	(3-4) 300 mA
Transformation ratio	180 : 43			
Diagram	 7Z97574	 7Z97575		

Approbation

Sets with units of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

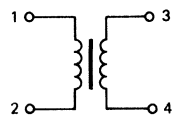
The unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C.

* Measured at 1 kHz, B_{max} = 0,1 T.

** Measured at T_{amb} = 23 °C

catalogue number				
3112 338 30980	3122 138 95450	3112 338 30840	3112 338 30820	3112 338 30420
driver transformer	driver transformer	driver transformer	driver transformer	driver transformer
(1-2) 8,5 mH	(1-2) 1,2 mH	(1-2) 12,8 mH	(1-2) 470 mH	(1-2) 1000 mH
(1-2) 2,8 Ω	(1-2) 0,55 Ω	(1-2) 9 Ω	(1-2) 320 Ω	(1-2) 105 Ω
(3-4) 0,16 Ω	(3-4) 0,3 Ω	(3-4) 0,14 Ω	(3-4) 0,28 Ω	(3-4) 1,65 Ω
	(3-4) < 6 μH	(3-4) < 9 μH	(3-4) $< 8{,}4$ μH	(3-4) < 25 μH
(1-2) 200 mA		(1-2) 220 mA	(1-2) 35 mA	(1-2) 15 mA
186 : 27	100 : 50	300 : 43	1750 : 51	1600 : 63



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FILTER COIL

- For applications where a low winding capacitance and a small stray field are required, e.g. record players, cassette recorders, car radios.

DESCRIPTION

The magnetic circuit consists of a Ferroxcube U15 core. The winding is split up over two coil formers, each of which is mounted on a leg of the core.
The transformer has 4 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

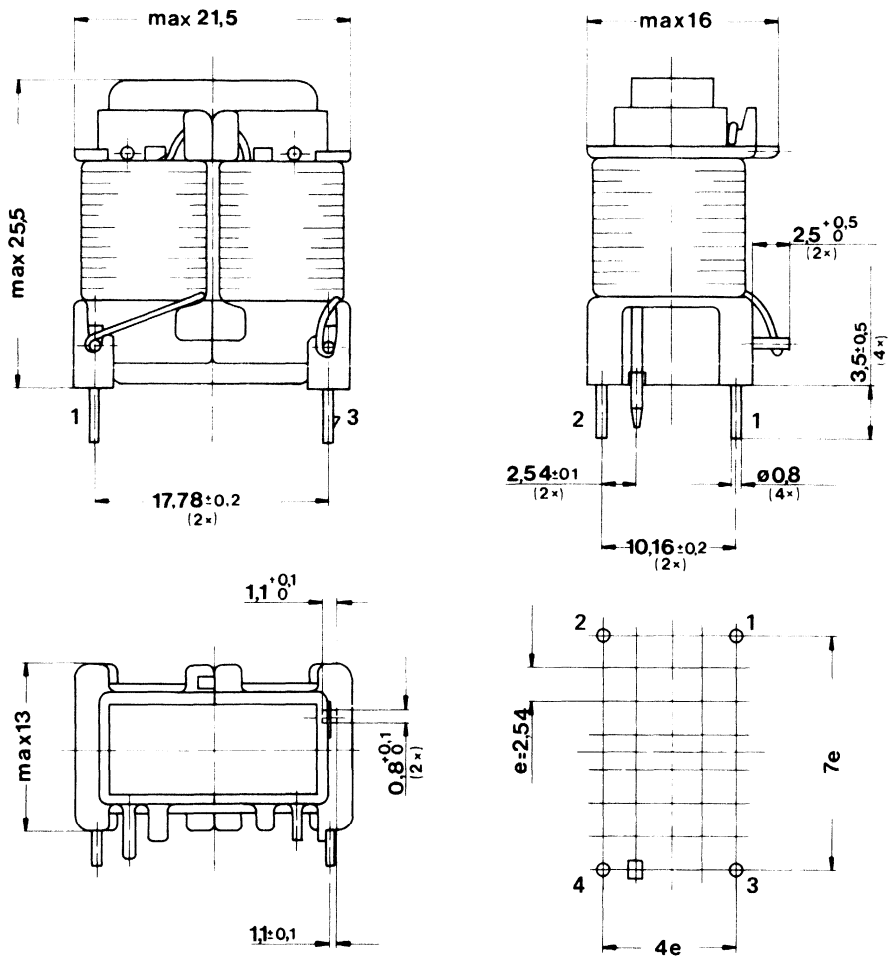
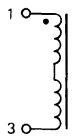


Fig. 1 Coil assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30720
Inductance (1-3)*	0,16 mH ± 10%
Resistance (1-3)**	0,055 Ω ± 12%
Maximum current (1-3)	5000 mA
Diagram	

Approbation

Sets with coils of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The coil withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.

** Measured at T_{amb} = 23 °C.

MAINS FILTER CHOKE

- For filter networks in the power supply
- For consumer applications, e.g. television sets, monitors, compact disc players.

DESCRIPTION

The magnetic circuit of the filter choke comprises two Ferroxcube U15 cores. The choke has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

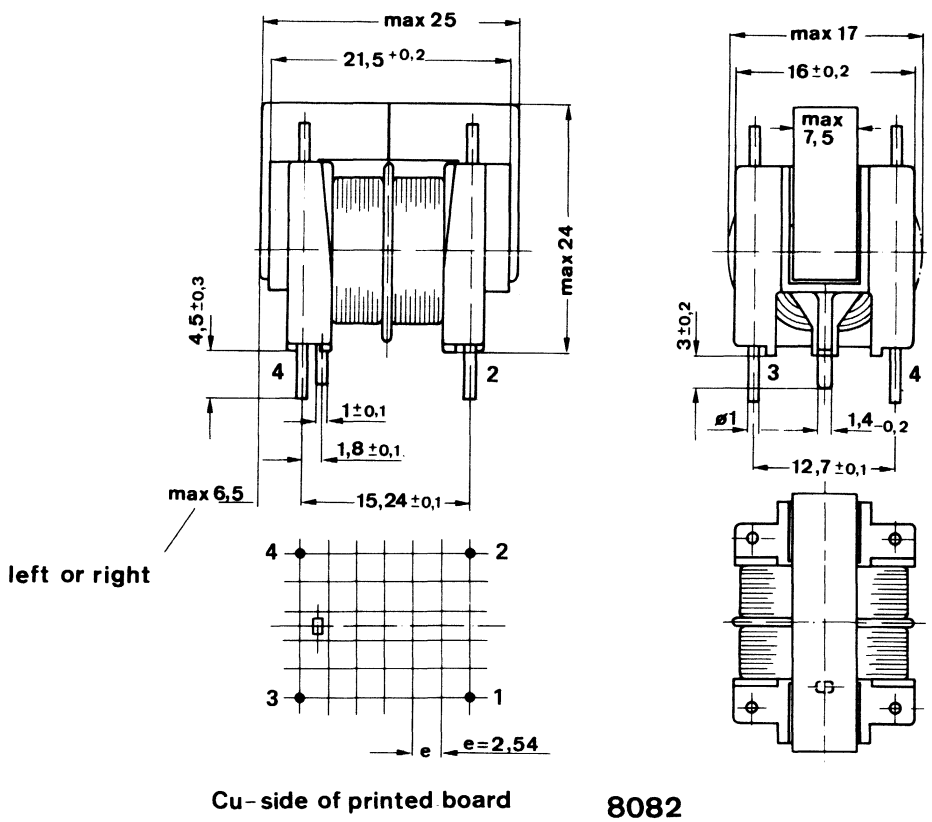


Fig. 1 Choke assembly.

ELECTRICAL DATA

	catalogue number			
	3122 138 52560	3112 338 30640	3112 338 30170	3112 338 31020
Inductance* (± 10%) $L_{1-2} = L_{3-4}$	0,7 mH	70 mH	25 mH	0,7 mH
Resistance** (± 12%) $R_{1-2} = R_{3-4}$	2,0 Ω	5,0 Ω	1,9 Ω	0,08 Ω
Maximum current, I_{1-2}	500 mA	250 mA	480 mA	290 mA

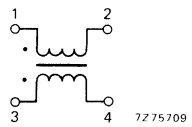


Diagram.

Test voltage (DC)	
between windings	2000 V
between windings and core	2000 V

Approbation

Sets with chokes of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, $T_A = -25$ °C, $T_B = +100$ °C

* Measured at 1 kHz, $B_{max} = 0,1$ T.
** Measured at $T_{amb} = 23$ °C.

LINE DRIVER TRANSFORMERS, BRIDGE COILS AND CHOKES

- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

The magnetic circuit of the unit comprises two Ferroxcube U20 cores. The unit has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

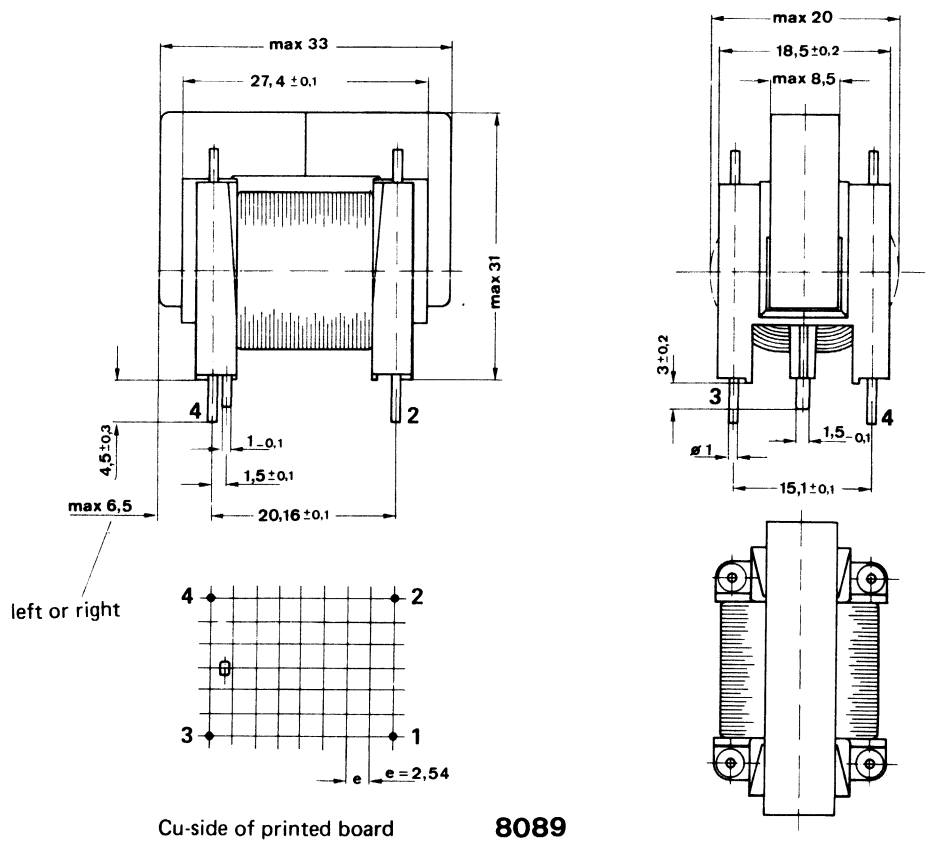
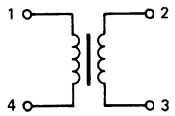
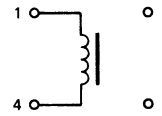
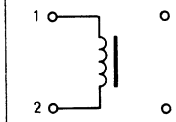
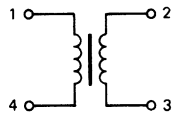
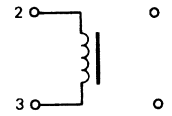


Fig. 1 Assembly.

ELECTRICAL DATA

	catalogue number					
	3112 338 30160	3122 138 26060	3112 338 30830	3112 338 31000	3112 338 30380	3112 338 30210
	driver transformer	driver transformer	bridge coil	bridge coil	driver transformer	choke
Inductance* (± 10%)	(1-4) 80 mH	(1-4) 76 mH	(1-4) 1 mH	(1-2) 0,05 mH	(1-4) 0,3 mH	(2-3) 20 mH
Resistance** (± 12%)	(1-4) 42 Ω (2-3) 0,64 Ω		(1-4) 0,14 Ω	(1-2) 0,04 Ω	(1-4) 0,17 Ω (2-3) 0,01 Ω	(2-3) 13,5 Ω
Leakage inductance	(2-3) $< 6{,}9\ \mu H$	(2-3) $< 2\ \mu H$				
Maximum current	(1-4) 95 mA	(1-4) 120 mA	(1-4) 1,3 mA	(1-2) 5000 mA	(1-4) 3400 mA	(2-3) 400 mA
Transformation ratio	184 : 40	574 : 20			62 : 3	
Diagram	 7Z97576		 7Z97575	 7Z97576		

Approbation

Sets with units of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The unit withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, $T_A = -25$ °C, $T_B = +100$ °C.

* Measured at 1 kHz, $B_{max} = 0{,}1$ T.

** Measured at $T_{amb} = 23$ °C.

DRIVER TRANSFORMER

- For consumer applications, e.g. television sets, monitors

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U20 cores. The primary and secondary windings are on separate coil formers, and concentrically mounted on one leg of the core. The transformer has six pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

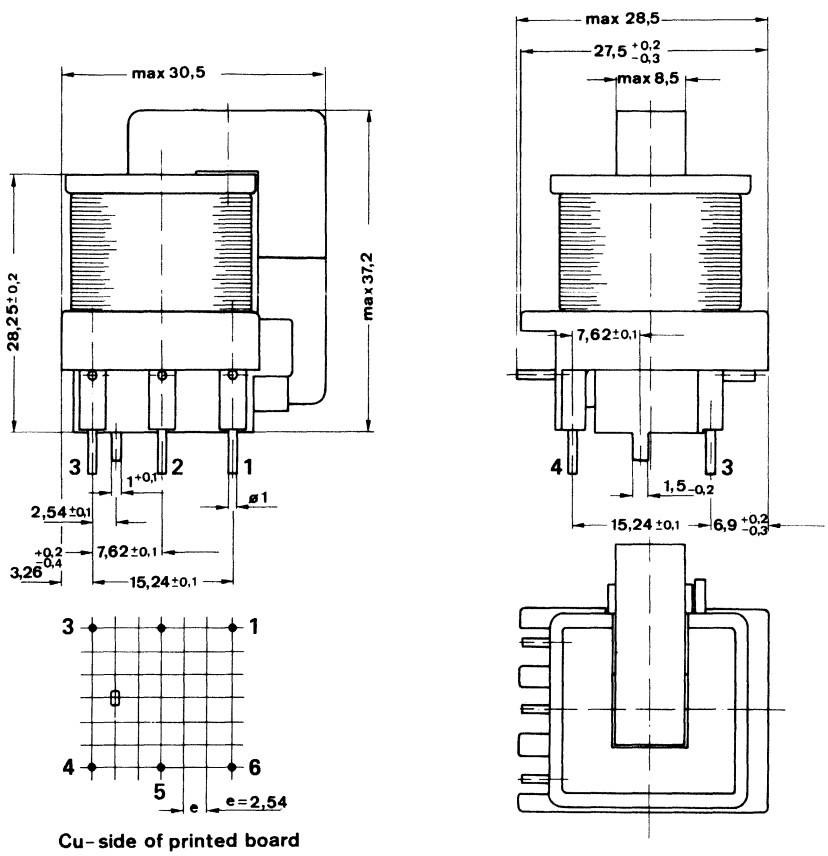
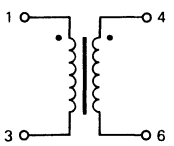
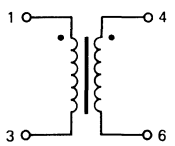
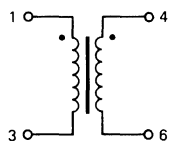
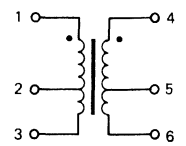


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number			
	3122 138 96570	3122 138 90290	3122 138 90580	3112 338 30780
Inductance * primary	(1-3) > 1 mH	(4-6) > 16 mH	(4-6) > 6 mH	(1-2) 5 mH
Leakage inductance primary			(4-6) 1%	(1-2) 1%
Number of turns primary	(1-3) = 800	(4-6) = 100	(4-6) = 60	(1-2) = 200 (2-3) = 20
secondary	(4-6) = 13	(1-3) = 20	(1-3) = 20	(4-5) = 15 (5-6) = 4
Diagram				

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Test voltage (DC)

between (1-2-3) and (4-5-6)	5600 V
between (1-2-3) and core	5600 V
between (4-5-6) and core	500 V
Mains insulation	according to IEC 65 class 2, VDE 0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.

MAINS FILTER CHOKE

- For filter networks in the power supply
- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

The magnetic circuit of the filter choke comprises two Ferroxcube U20 cores. The choke has four pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

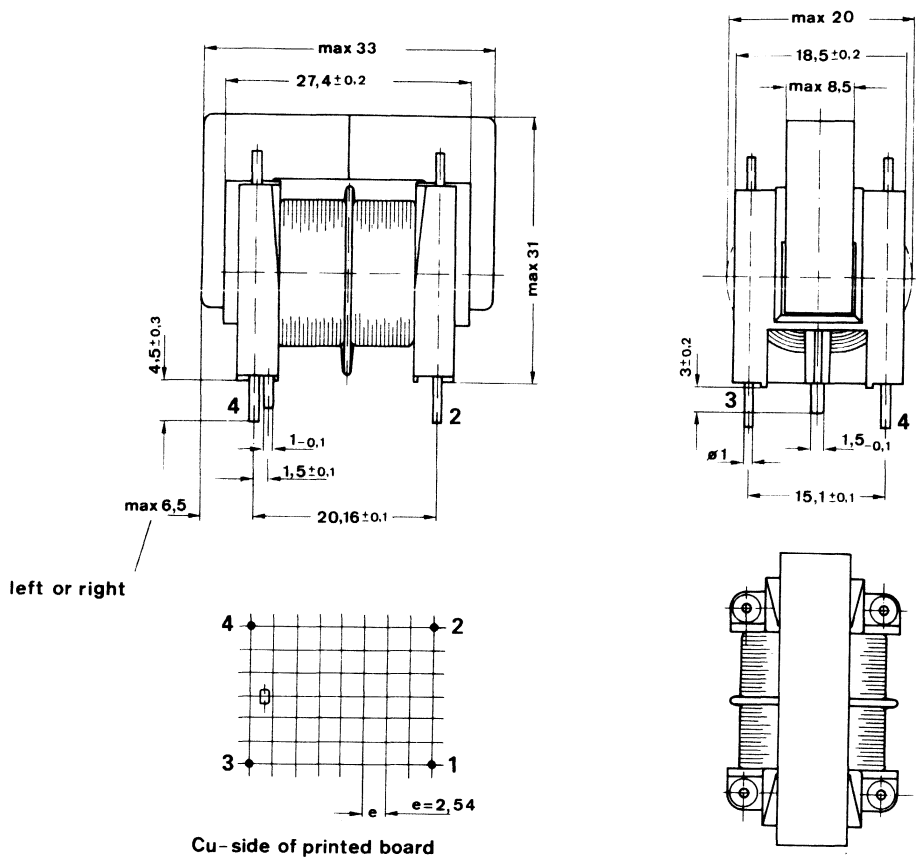


Fig. 1 Choke assembly.

ELECTRICAL DATA

	catalogue number						
	3122 138 53860	3112 338 30190	3112 338 30220	3112 338 30700	3112 338 30810	3112 338 30860	3111 108 33100
Inductance* (± 10%)							
$L_{1-2} = L_{3-4}$	12 mH	3,5 mH	1,7 mH	0,77 mH	64 mH	17,5 mH	28 mH
Resistance** (± 12%)							
$R_{1-2} = R_{3-4}$	0,44 Ω	0,21 Ω	0,44 Ω	0,26 Ω	1,7 Ω	0,48 Ω	1,0 Ω
Leakage inductance							
$L_{l(1-2)} = L_{l(3-4)}$	0,5 mH						
Maximum current,							
I_{1-2}	1400 mA	280 mA	950 mA	1260 mA	53 mA	100 mA	1000 mA

Test voltage (DC)	
between windings	2000 V
between windings and core	2000 V

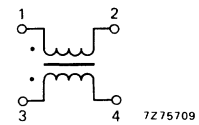


Diagram.

Approbation

Sets with chokes of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; + 40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, $T_A = -25$ °C, $T_B = +100$ °C

* Measured at 1 kHz, $B_{max} = 0,1$ T.

** Measured at $T_{amb} = 23$ °C.

CHOKE

- To be used as a choke or a transformer
- For consumer applications, e.g. monitors and television sets

DESCRIPTION

The magnetic circuit of the choke comprises two Ferroxcube U25 cores. The choke has 10 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

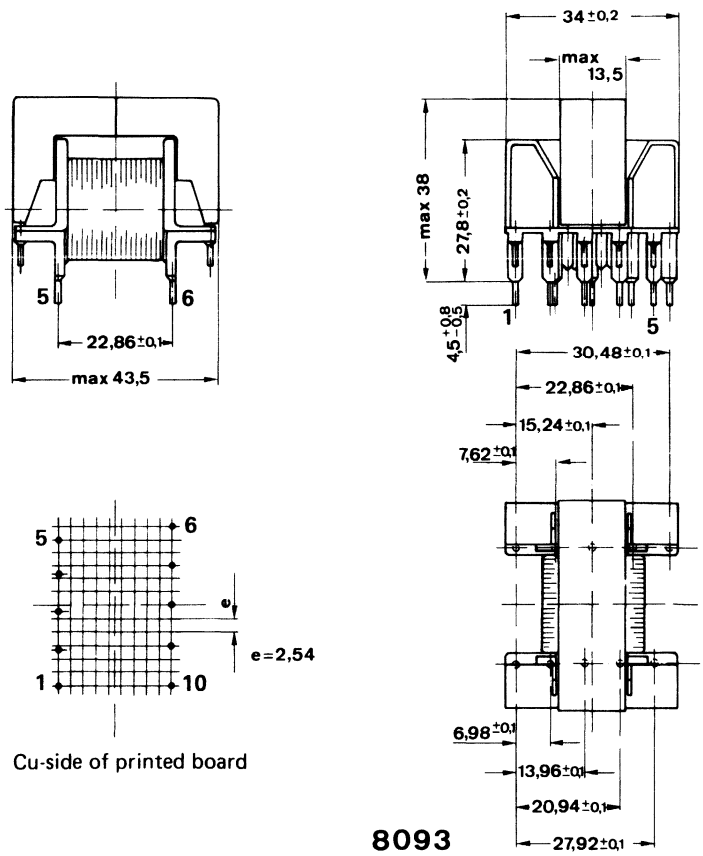
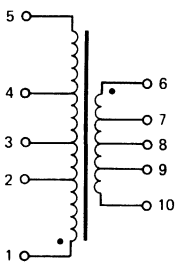
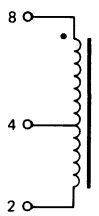
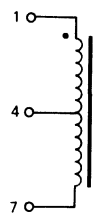
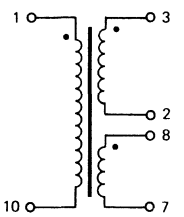


Fig. 1 Choke assembly.

ELECTRICAL DATA

	catalogue number			
	3112 338 30230	3112 338 30660	3122 138 50000	3122 138 50050
Inductance, primary* (tol. ± 10%)	(1-5) 150 mH	(8-2) 9 mH	(1-7) 25 mH	(1-10) 16 mH
Maximum current primary			(1-7) 560 mA	(1-10) 625 mA
Number of turns primary	(1-2) = 160 (2-3) = 80 (3-4) = 110 (4-5) = 165	(8-4) = 180 (4-2) = 162	(1-4) = 225 (4-7) = 225	(1-10) = 365
secondary	(6-7) = 1 (7-8) = 3 (8-9) = 3 (9-10) = 2			(3-2) = 62 (8-7) = 10
Diagram				

Test voltage (d.c.)

between primary and secondary	2000 V
between windings and core	500 V

Approbation

Sets with chokes of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 10 kHz, B_{max} = 0,1 T.

SWITCHED-MODE TRANSFORMER

- For consumer applications, e.g. monitors and television sets

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U25 cores. The primary and secondary windings are on separate coil formers, and concentrically mounted on one leg of the core. The transformer has 8 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

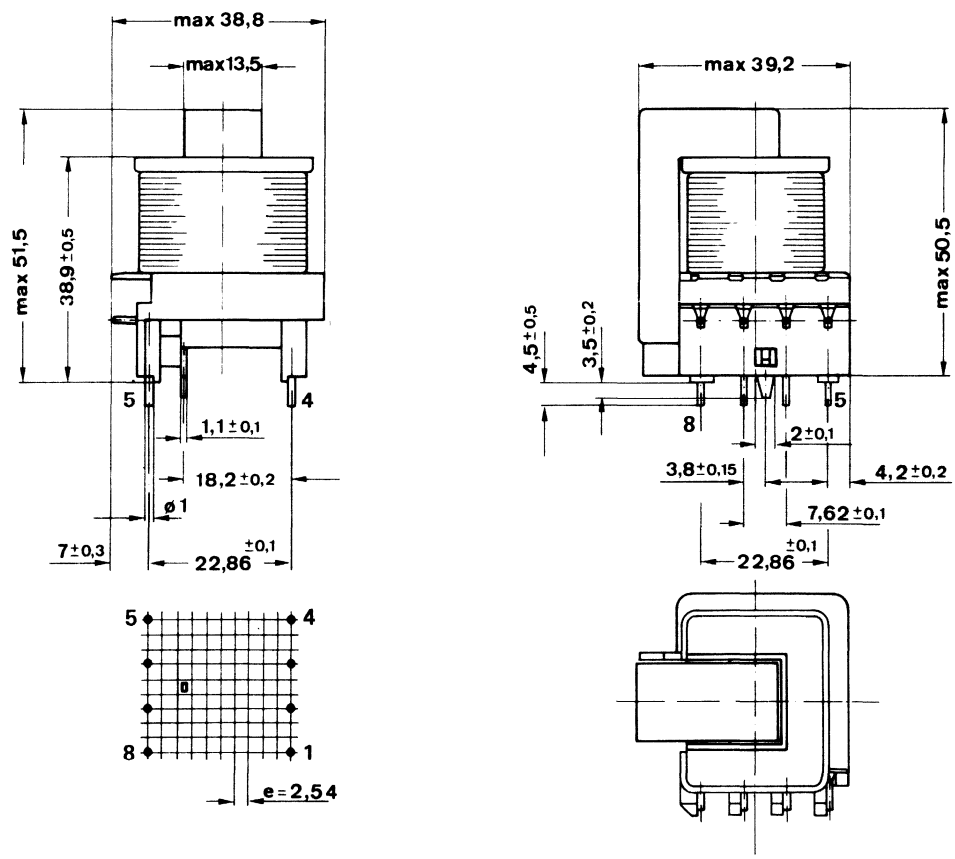
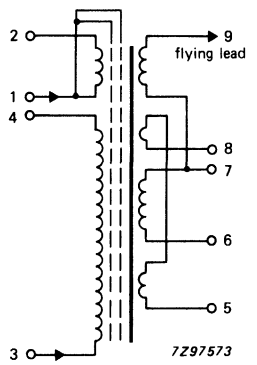


Fig. 1 Transformer assembly.

ELECTRICAL DATA

		catalogue number 3112 338 30120
Inductance, primary	(3-4)	2,2 mH
Leakage inductance, primary	(3-4)	4%
Number of turns, primary	(3-4)	70
	(1-2)	9
secondary	(7-8)	14
	(7-6)	17
	(7-5)	8
	(9-7)	8

Diagram



Test voltage (DC)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.

CHOKE

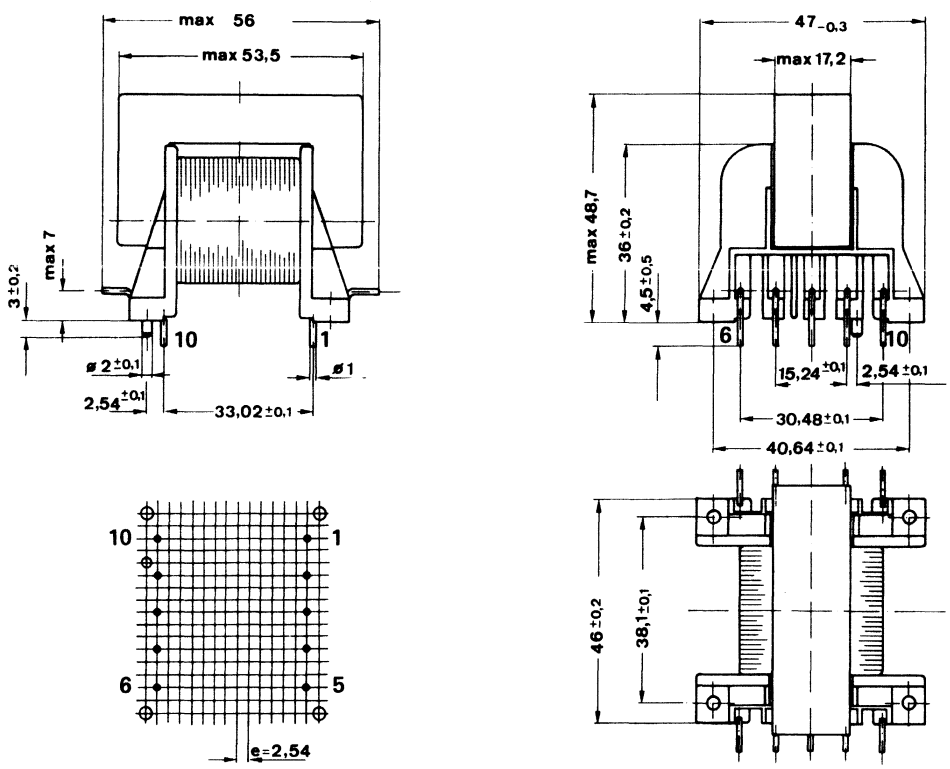
- To be used as a choke or a transformer
- For consumer applications, e.g. monitors and television sets

DESCRIPTION

The magnetic circuit of the choke comprises two Ferroxcube U30 cores. The choke has 10 pins for mounting on a printed-wiring board. It can be fixed to the board with four screws.

MECHANICAL DATA

Dimensions in mm



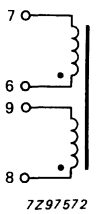
8105

Fig. 1 Choke assembly.

ELECTRICAL DATA

	catalogue number 3112 338 30150
Inductance (8-9)*	16 mH ± 10%
Resistance (8-9)**	1,65 Ω ± 12%
(6-7)**	0,054 Ω ± 12%
Maximum current (8-9)	1000 mA

Diagram



Test voltage (DC)
between windings 500 V

Approbation

Sets with chokes of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The choke withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.
** Measured at T_{amb} = 23 °C.

CURRENT SENSING TRANSFORMER

- For switched-mode power supply circuits.
- For consumer applications, e.g. record players, casette recorders, television sets.

DESCRIPTION

The magnetic circuit of the transformer comprises two Ferroxcube U15-cores. The primary turn is potted in the coil former to guarantee the required isolation. The transformer has 4 pins for mounting on a printed-wiring board.

MECHANICAL DATA

Dimensions in mm

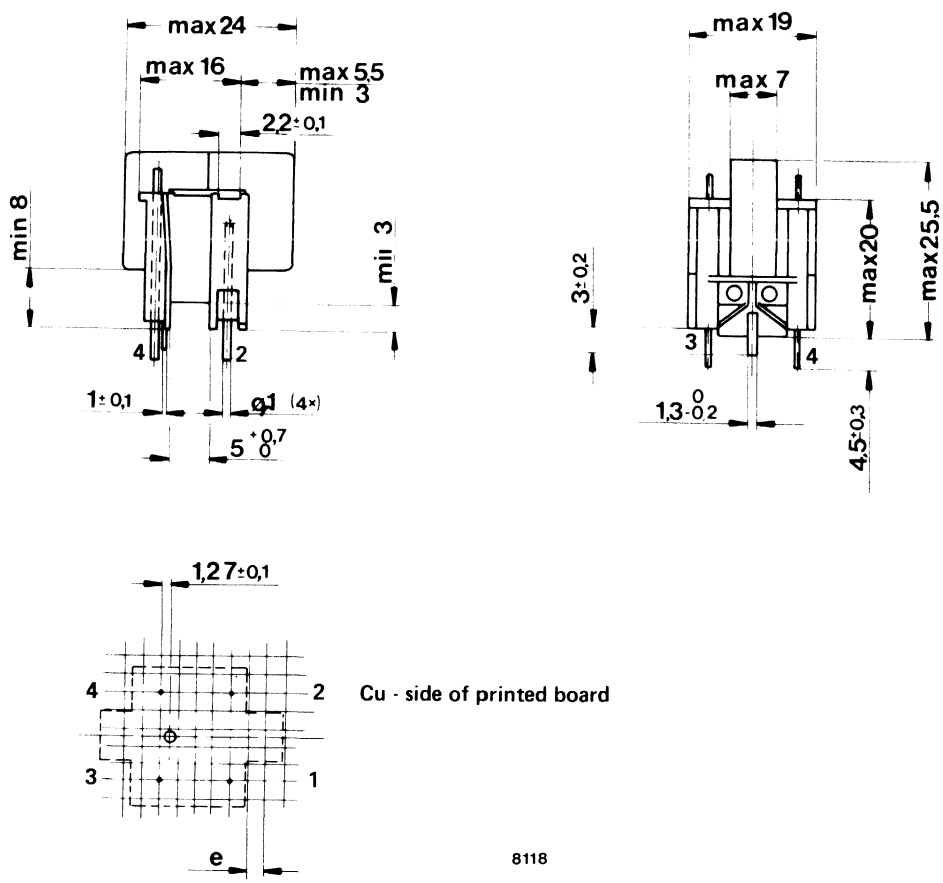
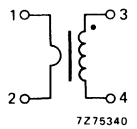


Fig. 1 Transformer assembly.

ELECTRICAL DATA

	catalogue number	
	3122 138 90300	3122 138 93390
Inductance (3-4)*	> 700 mH	> 12,5 mH
Resistance (3-4)**	44 Ω	1 Ω
Maximum current (1-2)	2,5 A	10 A
Turns ratio	1 : 800	1 : 100
Diagram		

Test voltage (DC) between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, and VDE0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc; 10-55-10 Hz, amplitude 0,35 mm 3 x 30 min
Bump	IEC 68-2-29, test Eb; 25g, 4000 bumps, 6 directions
Dry heat	IEC 68-2-2, test Bb; 96 h, +125 °C
Damp heat, steady state	IEC 68-2-3, test Ca; 21 days, R.H. 95%
Damp heat, accelerated	IEC 68-2-4, test Db; +40 °C, R.H. 95 to 100%
Rapid change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = +100 °C

* Measured at 1 kHz, B_{max} = 0,1 T.
** Measured at T_{amb} = 23 °C.

MAINS TRANSFORMERS

MAINS TRANSFORMER

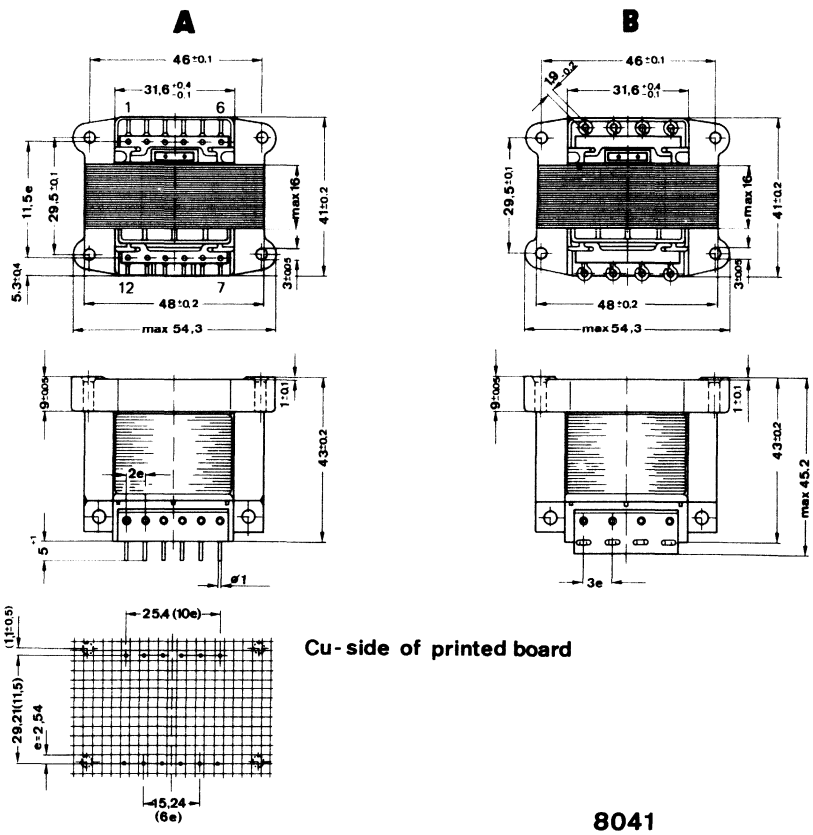
- Output power 8 VA
- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has 12 pins for mounting on printed-wiring boards (A), or solder tags with eyelets for wire connections (B).

MECHANICAL DATA

Dimensions in mm



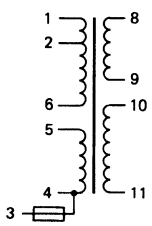
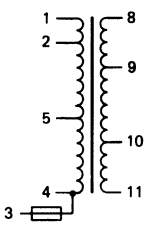
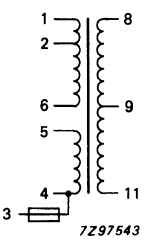
Mounting

The transformer is secured by means of four self-tapping screws of 3 mm.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 8 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number		
	3112 318 38130	3112 348 30110	3112 348 30330
Primary voltage	(3-5)* 110 V (3-1)* 127 V (3-2)** 220 V (3-1)** 240 V	(3-5) 110 V (3-2) 220 V (3-1) 240 V –	(3-5)* 110 V (3-1)* 127 V (3-2)** 220 V (3-1)** 240 V
Primary resistance (at T_{amb} = 25 °C)	(3-5)* 150 Ω (3-1)* 202 Ω (3-2)** 600 Ω (3-1)** 652 Ω	(3-5) 250 Ω (3-2) 590 Ω (3-1) 649 Ω –	(3-5)* 105 Ω (3-1)* 140 Ω (3-2)** 420 Ω (3-1)** 455 Ω
Secondary voltage	(8-9) 17,3 V (10-11) 28,3 V	(9-10) 9,2 V (8-11) 21 V	(8-9) 12,5 V (9-11) 12,5 V
Secondary resistance (at T_{amb} = 25 °C)	(8-9) 4,4 Ω (10-11) 110 Ω	(9-10) 2,1 Ω (8-11) 4,8 Ω	(8-9) 3,25 Ω (9-11) 3,25 Ω
Diagram			

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* (4-5) parallel connected to (6-2).

** Terminals 5 and 6 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, $T_A = -25$ °C, $T_B = +125$ °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

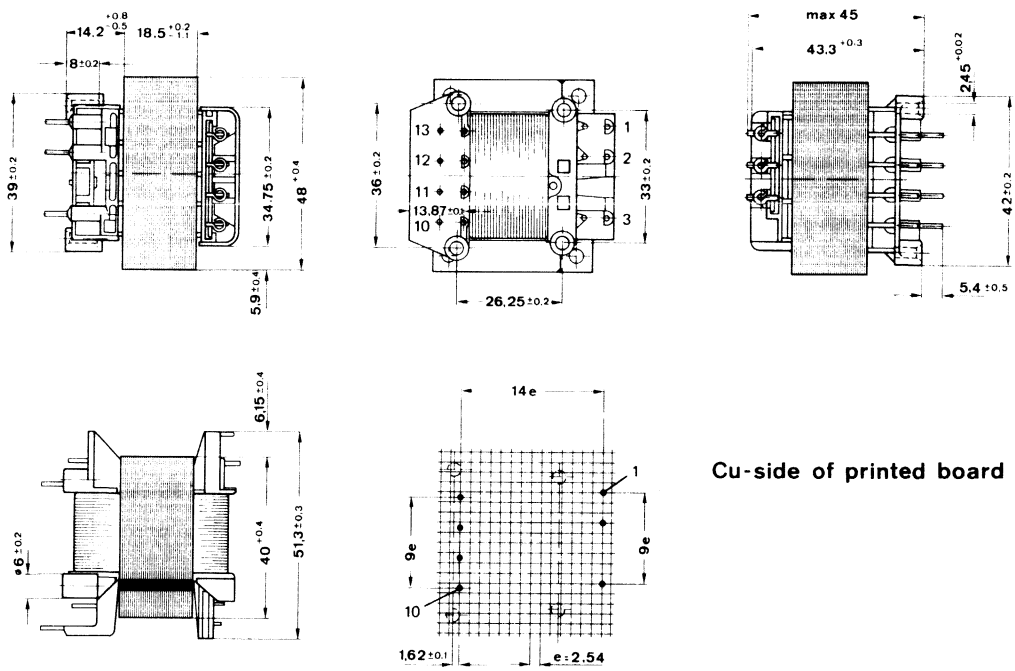
- Output power 8 VA
- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has 7 pins for mounting on printed-wiring boards.

MECHANICAL DATA

Dimensions in mm



8048

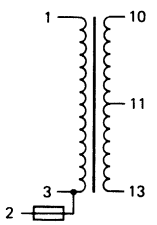
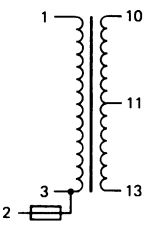
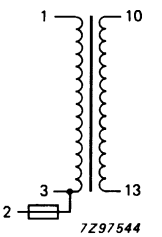
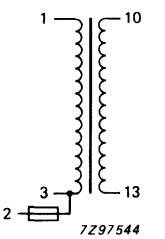
Mounting

The transformer is secured by means of four self-tapping screws of 3 mm.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 8 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112 318			
	35730	36940	37490	39190
Primary voltage	(1-2) 220 V (1-2) 240 V	(1-2) 220 V	(1-2) 220 V	(1-2) 240 V
Primary resistance (at T_{amb} = 25 °C)	(1-2) 400 Ω	(1-2) 400 Ω	(1-2) 540 Ω	(1-2) 540 Ω
Secondary voltage	(10-11) 25,2 V* (11-13) 25,2 V*	(10-11) 10,5 V (11-13) 10,5 V	(10-13) 10,8 V	(10-13) 22,3 V
Secondary resistance (at T_{amb} = 25 °C)	(10-11) 14 Ω (11-13) 14 Ω	(10-11) 2,2 Ω (11-13) 2,2 Ω	(10-13) 1,5 Ω	(10-13) 5,6 Ω
Diagram			 7Z97544	 7Z97544

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* At primary voltage of 220 V.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

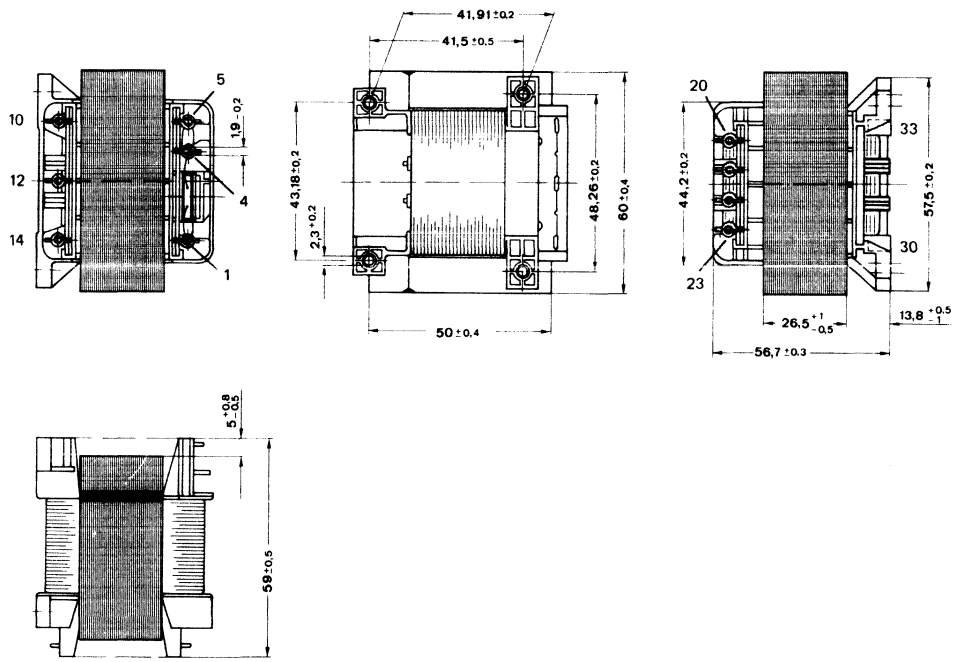
- Output power 25 VA
- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.

MECHANICAL DATA

Dimensions in mm



8103

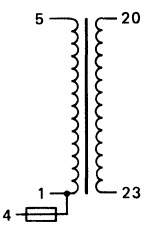
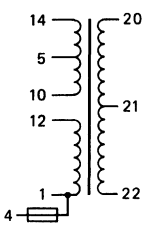
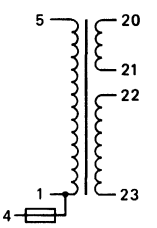
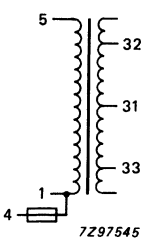
Mounting

The transformer is secured by means of four self-tapping screws of 3 mm.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 25 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112			
	318 38020	318 39560	318 39970	348 30340*
Primary voltage	(4-5) 220 V	(4-12)** 110 V (4-14)** 127 V (4-5)▲ 220 V (4-14)▲ 240 V	(4-5) 220 V	(4-5) 120 V
Primary resistance (at T_{amb} = 25 °C)	(4-5) 79,5 Ω	(4-12)** 22,3 Ω (4-14)** 30,2 Ω (4-5)▲ 89,3 Ω (4-14)▲ 97,2 Ω	(4-5) 61 Ω	(4-5) 20,5 Ω
Secondary voltage	(20-23) 14,8 V	(20-21) 12,3 V (21-22) 12,3 V	(20-21) 9,7 V (22-23) 17,1 V	(32-31) 10,3 V (31-33) 10,3 V
Secondary resistance (at T_{amb} = 25 °C)	(20-23) 0,37 Ω	(20-21) 0,7 Ω (21-22) 0,7 Ω	(20-21) 0,19 Ω (22-23) 2,3 Ω	(32-31) 0,46 Ω (31-33) 0,46 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* UL approved.

** (1-12) parallel connected to (10-5).

▲ Terminals 10 and 12 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

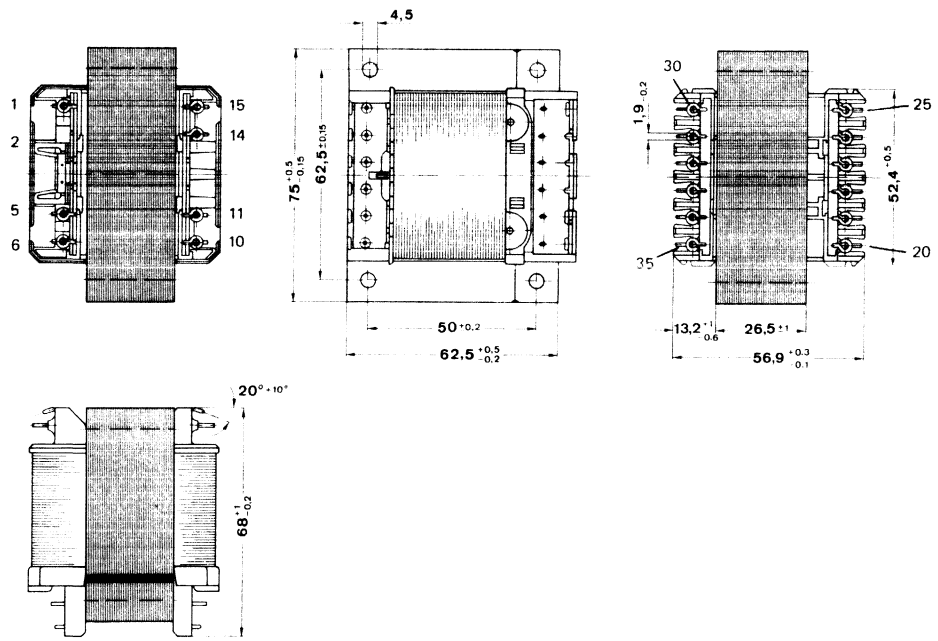
- Output power 48 VA
- For consumer applications, e.g. record players, video recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.

MECHANICAL DATA

Dimensions in mm



8061

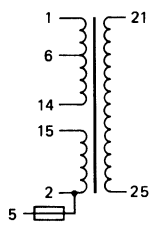
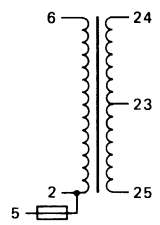
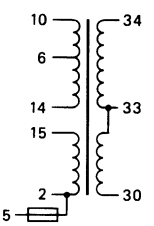
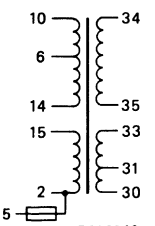
Mounting

The transformers can be fitted with four screws M4; the mounting holes are positioned according to DIN 41302.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 48 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112.			
	318 39480	318 39700	318 39990	348 30000
Primary voltage	(5-15)* 110 V (5-1)* 127 V (5-6)** 220 V (5-1)** 240 V	(5-6) 220 V	(5-6)* 110 V (5-10)* 127 V (5-6)** 220 V (5-10)** 240 V	(5-6)* 110 V (5-10)* 127 V (5-6)** 220 V (5-10)** 240 V
Primary resistance (at T_{amb} = 25 °C)	(5-15)* 10,2 Ω (5-1)* 13,8 Ω (5-6)** 41 Ω (5-1)** 44,6 Ω	(5-6) 39 Ω	(5-6)* 9,5 Ω (5-10)* 13 Ω (5-6)** 38 Ω (5-10)** 41,5 Ω	(5-6)* 9,5 Ω (5-10)* 13 Ω (5-6)** 38 Ω (5-10)** 41,5 Ω
Secondary voltage	(21-25) 62,5 V	(24-23) 9,1 V (23-25) 9,1 V	(34-33) 18,8 V (33-30) 10,2 V	(34-35) 27 V (33-30) 10,6 V
Secondary resistance (at T_{amb} = 25 °C)	(21-25) 3,1 Ω	(24-23) 0,16 Ω (23-25) 0,16 Ω	(34-33) 0,29 Ω (33-30) 2,6 Ω	(34-35) 0,8 Ω (33-30) 0,7 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Main insulation	according to IEC 65 class 2, VDE 0860

* (2-15) parallel connected to (14-6).

** Terminals 14 and 15 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

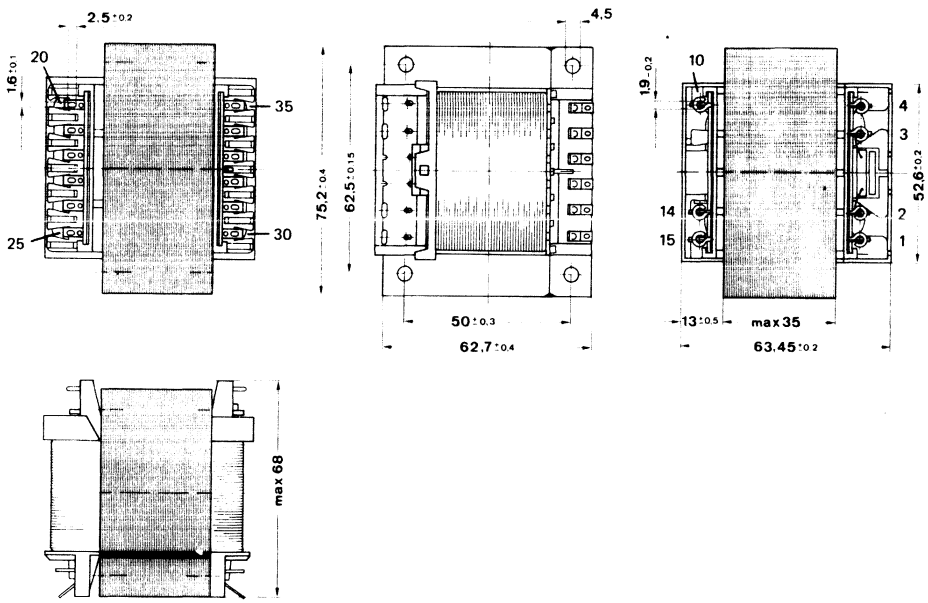
- Output power 60 VA
- For consumer applications, e.g. amplifiers, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has solder tags with eyelets for wire connections.

MECHANICAL DATA

Dimensions in mm



8054

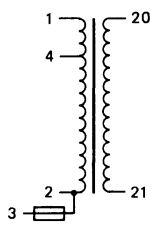
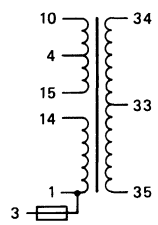
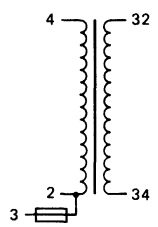
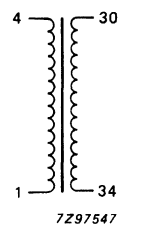
Mounting

The transformers can be fitted with four screws M4; the mounting holes are positioned according to DIN 41302.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 60 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112 318			
	38620	38820	39010	39440*
Primary voltage	(3-4) 220 V (3-1) 240 V	(3-14)** 110 V (3-10)** 127 V (3-4)▲ 220 V (3-10)▲ 240 V	(3-4) 220 V	(1-4) 120 V
Primary resistance (at T_{amb} = 25 °C)	(3-4) 27 Ω (3-1) 29,3 Ω	(3-14)** 6,7 Ω (3-10)** 9,2 Ω (3-4)▲ 27 Ω (3-10)▲ 29,5 Ω	(3-4) 21 Ω	(1-4) 7,0 Ω
Secondary voltage	(20-21) 15,5 V	(34-33) 25,6 V (33-35) 25,6 V	(32-34) 28 V	(30-34) 17,2 V
Secondary resistance (at T_{amb} = 25 °C)	(20-21) 0,13 Ω	(34-33) 0,65 Ω (33-35) 0,65 Ω	(32-34) 0,37 Ω	(30-34) 0,18 Ω
Diagram				 7Z97547

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* Without temperature/current fuse.

** (1-14) parallel connected to (15-4).

▲ Terminals 14 and 15 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

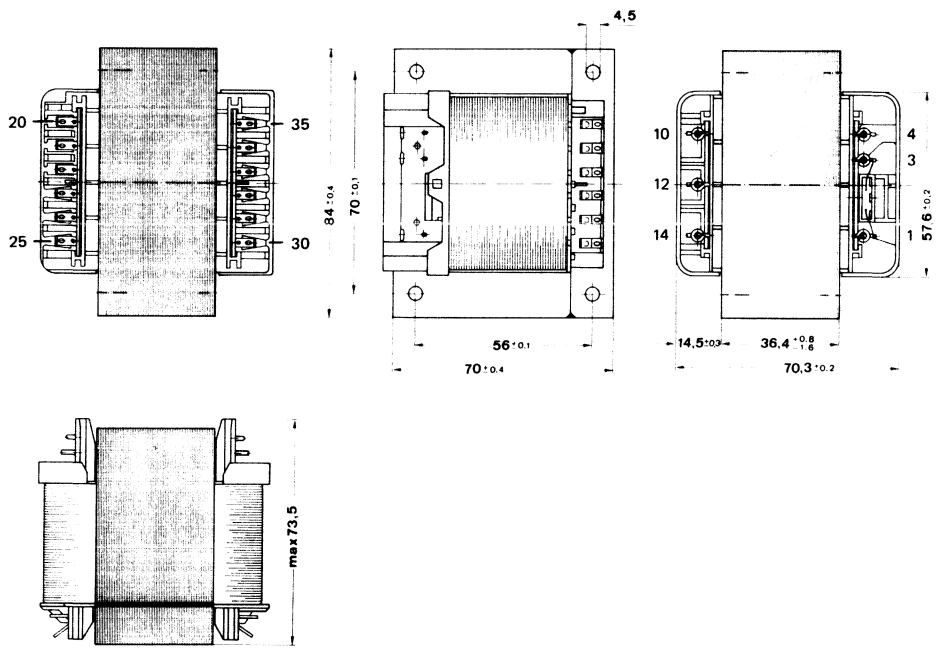
- Output power 95 VA
- For consumer applications, e.g. amplifiers, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has solder tags with eyelets for wire connections.

MECHANICAL DATA

Dimensions in mm



8064

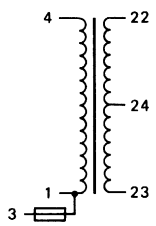
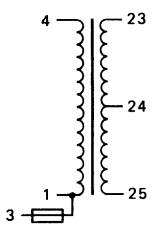
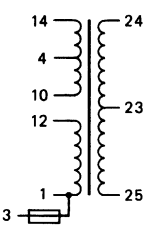
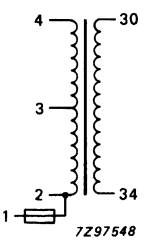
Mounting

The transformers can be fitted with four screws M4; the mounting holes are positioned according to DIN 41302.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 95 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112 318			
	37600	38710*	39030	39640**
Primary voltage	(2-4) 220 V	(3-4) 120 V	(3-12)▲ 110 V (3-14)▲ 127 V (3-4)▲▲ 220 V (3-14)▲▲ 240 V	(1-3) 120 V (1-4) 240 V
Primary resistance (at T_{amb} = 25 °C)	(2-4) 13 Ω	(3-4) 3 Ω	(3-12)▲ 4 Ω (3-14)▲ 5,4 Ω (3-4)▲▲ 16,0 Ω (3-14)▲▲ 17,4 Ω	(1-3) 5,3 Ω (1-4) 23,5 Ω
Secondary voltage	(22-24) 29,8 V (24-23) 29,8 V	(24-23) 28,4 V (23-25) 28,4 V	(24-23) 27,2 V (23-25) 27,2 V	(30-34) 49,7 V
Secondary resistance (at T_{amb} = 25 °C)	(22-24) 0,6 Ω (24-23) 0,6 Ω	(24-23) 0,36 Ω (23-25) 0,36 Ω	(24-23) 0,55 Ω (23-25) 0,55 Ω	(30-34) 0,78 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* UL approved.
** UL and CSA approved.
▲ (1-12) parallel connected to (10-4).
▲▲ Terminals 10 and 12 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

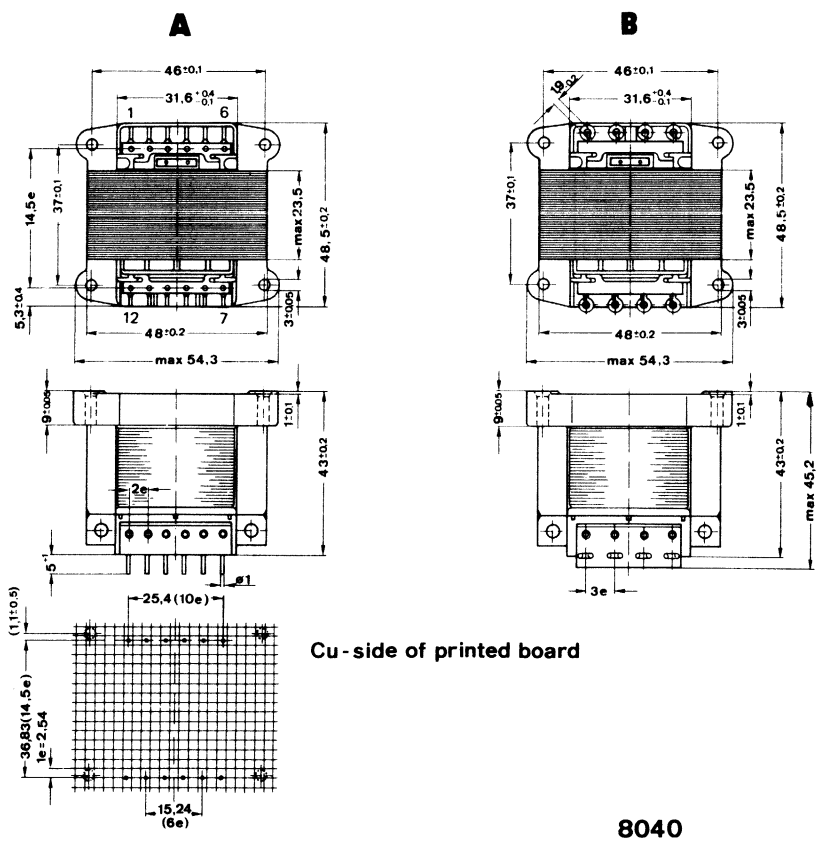
- Output power 12 VA
- For consumer applications, e.g. record players, cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has 12 pins for mounting on printed-wirings boards (A), or solder tags with eyelets for wire connections (B).

MECHANICAL DATA

Dimensions in mm



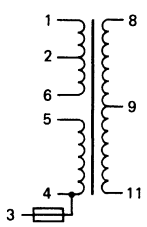
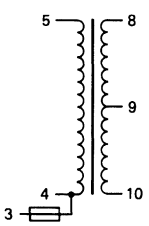
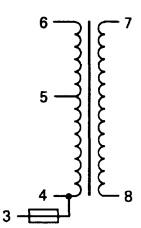
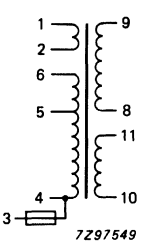
Mounting

The transformer is secured by means of four self-tapping screws of 3 mm.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 12 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112			
	348 30410	318 39470	348 30190	348 30430*
Primary voltage	(3-5)** 110 V (3-1)** 127 V (3-2)▲ 220 V (3-1)▲ 240 V	(3-5) 240 V	(3-5) 127 V (3-6) 220 V	(3-5) 220 V (3-6) 240 V (1-2) 7,9 V –
Primary resistance (at T_{amb} = 25 °C)	(3-5)** 79 Ω (3-1)** 106 Ω (3-2)▲ 315 Ω (3-1)▲ 342 Ω	(3-5) 270 Ω	(3-5) 147 Ω (3-6) 275 Ω	(3-5) 268 Ω (3-6) 294 Ω
Secondary voltage	(8-9) 11,9 V (9-11) 11,9 V	(8-9) 18,3 V (9-10) 18,3 V	(7-8) 11,8 V	(11-10) 10,9 V (9-8) 21,5 V
Secondary resistance (at T_{amb} = 25 °C)	(8-9) 2,2 Ω (9-11) 2,2 Ω	(8-9) 3,7 Ω (9-10) 3,7 Ω	(7-8) 1,23 Ω	(11-10) 1,2 Ω (9-8) 18 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* Vacuum sealed, VDE 0551 approved.

** (4-5) parallel connected to (6-2).

▲ Terminals 5 and 6 interconnected.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

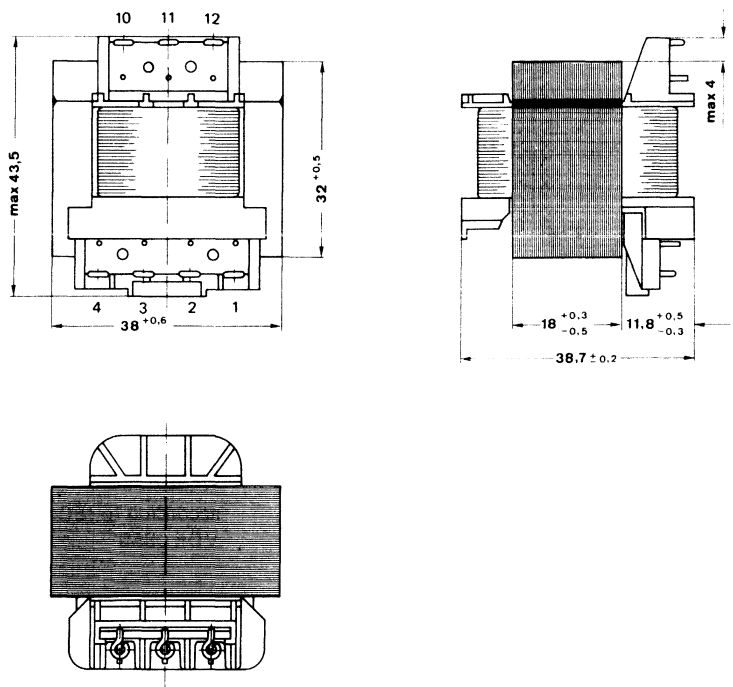
- Output power 3,2 VA
- For consumer applications, e.g. record players, radio-cassette recorders

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.

MECHANICAL DATA

Dimensions in mm

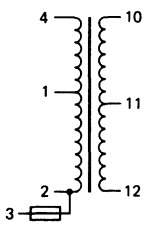
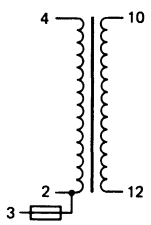
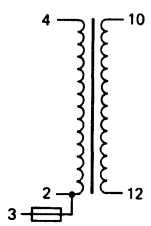
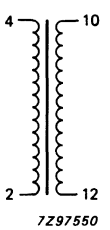


8067

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 3,2 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112 318			
	36510	38000	38010	39410*
Primary voltage	(3-1) 127 V (3-4) 220 V (3-4) 240 V	(3-4) 220 V	(3-4) 240 V	(2-4) 120 V
Primary resistance (at T_{amb} = 25 °C)	(3-1) 640 Ω (3-4) 1140 Ω	(3-4) 830 Ω	(3-4) 1140 Ω	(2-4) 290 Ω
Secondary voltage	(10-11) 10,3 V (11-12) 10,3 V	(10-12) 9,9 V	(10-12) 10 V	(10-12) 9,8 V
Secondary resistance (at T_{amb} = 25 °C)	(10-11) 7 Ω (11-12) 7 Ω	(10-12) 1,7 Ω	(10-12) 1,8 Ω	(10-12) 1,7 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* Without fuse; UL approved.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

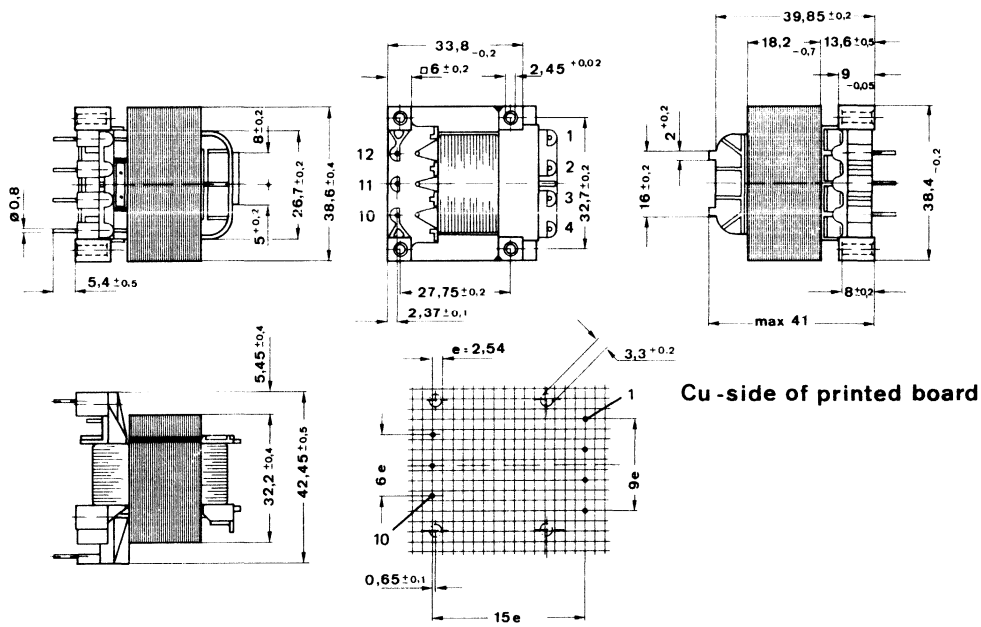
- Output power 3,2 VA
- For consumer applications, e.g. record players, radio-cassette recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination.
The transformer has 7 pins for mounting on printed-wiring boards.

MECHANICAL DATA

Dimensions in mm



8060

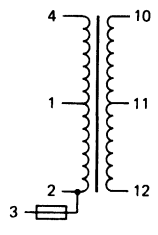
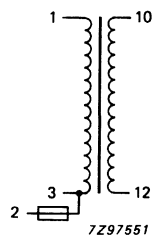
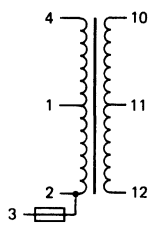
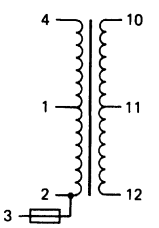
Mounting

The transformer is secured by means of four self-tapping screws of 3 mm.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 3,2 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

	catalogue number 3112			
	318 38210	318 39320*	318 39870**	348 30050
Primary voltage	(3-1) 115 V (3-4) 220 V	(2-1) 120 V	(3-1) 120 V (3-4) 230 V	(3-1) 127 V (3-4) 220 V (3-4) 240 V
Primary resistance (at T_{amb} = 25 °C)	(3-1) 360 kΩ (3-4) 1430 Ω	(2-1) 150 Ω	(3-1) 850 Ω (3-4) 2100 Ω	(3-1) 640 Ω (3-4) 1140 Ω
Secondary voltage	(10-11) 8,8 V (11-12) 8,8 V	(10-12) 14,6 V	(10-11) 20 V (11-12) 20 V	(10-11) 10,3 V (11-12) 10,3 V
Secondary resistance (at T_{amb} = 25 °C)	(10-11) 4,1 Ω (11-12) 4,1 Ω	(10-12) 2,4 Ω	(10-11) 38 Ω (11-12) 38 Ω	(10-11) 5,9 Ω (11-12) 5,9 Ω
Diagram				

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (d.c.)	
between primary and secondary	5600 V
between primary and core	5600 V
Mains insulation	according to IEC 65 class 2, VDE 0860

* UL approved.

** UL and CSA approved.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

MAINS TRANSFORMER

- Output power 17 VA
- For consumer applications, e.g. CD players

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination. Fullprint, additional shielding is optional.

MECHANICAL DATA

Dimensions in mm

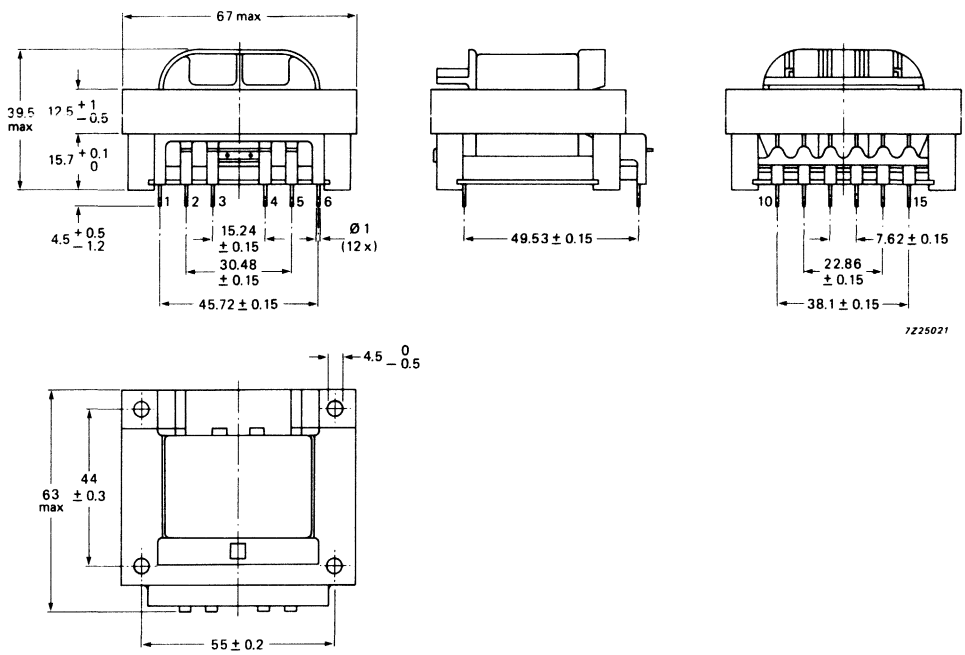
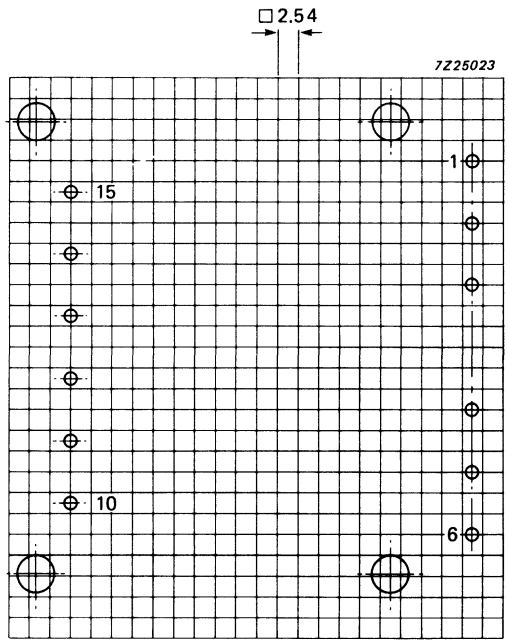


Fig. 1 Transformer assembly.

Mounting

The transformer is mounted to the printed-wiring board by means of a special mounting frame. The mounting holes are positioned according to DIN 41302. Four screws, size N6 are required.



Cu-side of printed board.

Fig. 2 Hole pattern for mounting on a printed wiring board.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 17 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

Primary voltages	(4-2)*	110 V
	(4-6)*	127 V
	(4-5)**	220 V
	(4-6)**	240 V
Primary resistances (at T_{amb} = 25 °C)	(4-2)*	95 Ω
	(4-6)*	111 Ω
	(4-5)**	190 Ω
	(4-6)**	206 Ω
Secondary voltages	(11-12)	21 V
	(14-15)	39,2 V
Secondary resistances (at T_{amb} = 25 °C)	(11-12)	2,1 Ω
	(14-15)	43 Ω

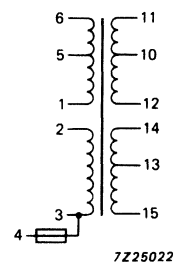


Fig. 3 Transformer circuit.

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (DC)	
between primary and secondary	5600 V
between primary and core	5600 V
Main insulation	according to IEC 65 class 2, VDE 0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, E!, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

* (3-2) parallel connected to (1-5).

** Terminals 1 and 2 interconnected.

MAINS TRANSFORMER

- Output power 25 VA
- For consumer applications, e.g. CD players, video recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination. Fullprint, additional shielding is optional.

MECHANICAL DATA

Dimensions in mm

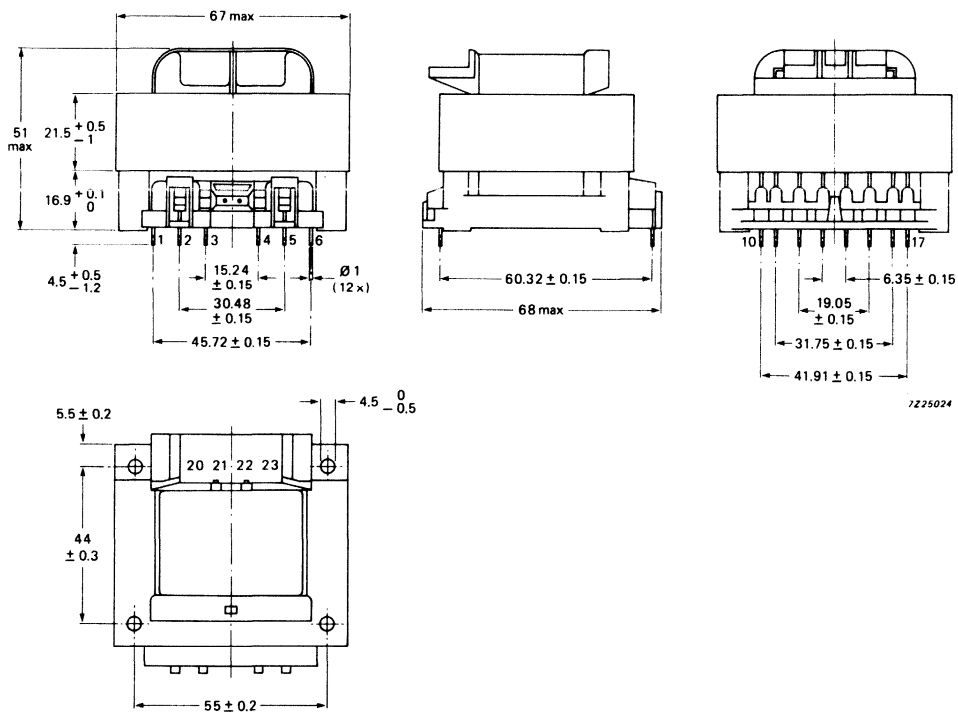
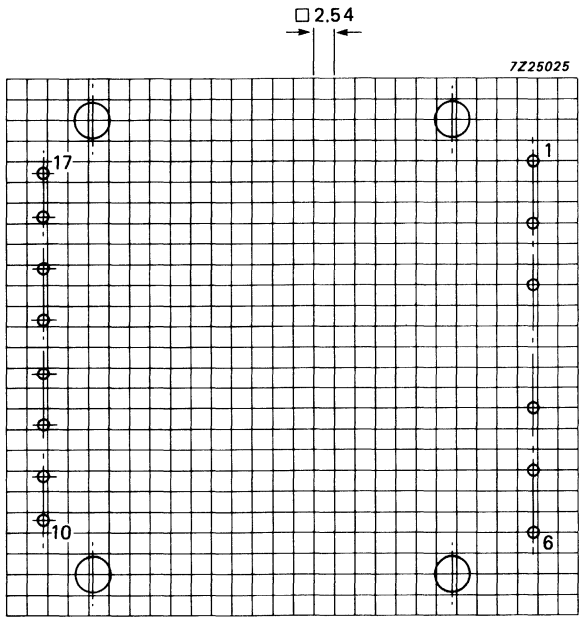


Fig. 1 Transformer assembly.

Mounting

The transformer is mounted to the printed-wiring board by means of a special mounting frame. The mounting holes are positioned according to DIN 41302. Four screws, size N6 are required.



Cu-side of printed board.

Fig. 2 Hole pattern for mounting on a printed wiring board.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 25 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

Primary voltages	(4-2)*	110 V
	(4-6)*	127 V
	(4-5)**	220 V
	(4-6)**	240 V
Primary resistances (at T_{amb} = 25 °C)	(4-1)*	22 Ω
	(4-6)*	29,5 Ω
	(4-5)**	88 Ω
	(4-6)**	95,5 Ω
Secondary voltages	(13-14)	2 x 10,0 V
	(15-16)	2 x 20,3 V
	(20-21)	2 x 38,0 V
	(22-23)	2 x 2,3 V
Secondary resistances (at T_{amb} = 25 °C)	(20-21)	25,7 Ω
Insulation resistance between primary and secondary		>60 MΩ
Insulation resistance between primary and core		>60 MΩ
Test voltage (DC) between primary and secondary		5600 V
Test voltage (DC) between primary and core		5600 V
Main insulation		according to IEC 65 class 2, VDE 0860

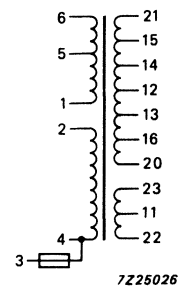


Fig. 3 Transformer circuit.

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = –25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

* (3-2) parallel connected to (1-5).

** Terminals 2 and 1 interconnected.

MAINS TRANSFORMER

- Output power 35 VA
- For consumer applications, e.g. CD players, video recorders, television sets

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination. Fullprint, additional shielding is optional.

MECHANICAL DATA

Dimensions in mm

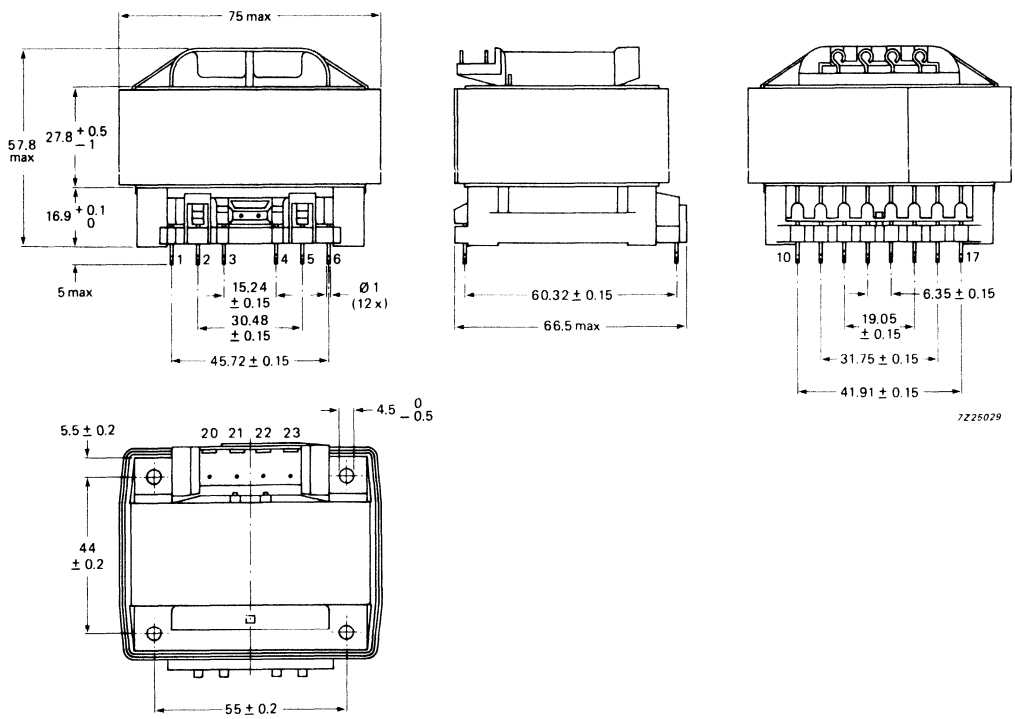
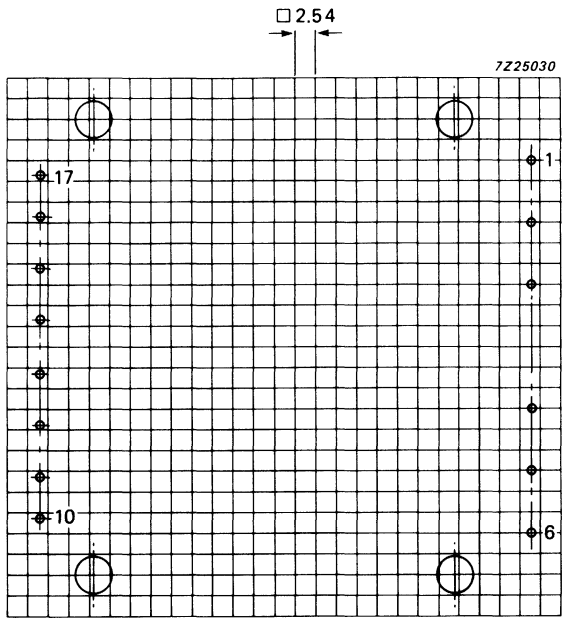


Fig. 1 Transformer assembly.

Mounting

The transformer is mounted to the printed-wiring board by means of a special mounting frame. The mounting holes are positioned according to DIN 41302. Four screws, size N6 are required.



Cu-side of printed board.

Fig. 2 Hole pattern for mounting on a printed wiring board.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 35 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

Primary voltages	(4-2)*	110 V
	(4-6)*	127 V
	(4-5)**	220 V
	(4-6)**	240 V
Primary resistances (at T_{amb} = 25 °C)	(4-2)*	15,5 Ω
	(4-6)*	20,5 Ω
	(4-5)**	62 Ω
	(4-6)**	67 Ω
Secondary voltages	(13-14)	13 V
	(14-15)	13 V
	(16-17)	20 V
Secondary resistances (at T_{amb} = 25 °C)	(13-14)	0,65 Ω
	(14-15)	0,65 Ω
	(16-17)	1,70 Ω

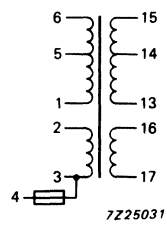


Fig. 3 Transformer circuit.

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (DC)	
between primary and secondary	5600 V
between primary and core	5600 V
Main insulation	according to IEC 65 class 2, VDE 0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

* (3-2) parallel connected to (1-5).

** Terminals 1 and 2 interconnected.

MAINS TRANSFORMER

- Output power 45 VA
- For consumer applications, e.g. video recorders, television sets, audio combinations

DESCRIPTION

This transformer has a laminated iron core (welded E-I combination). The primary and secondary windings are wound on separate coil formers, which are concentrically mounted on the centre leg of the E-I combination. Fullprint, additional shielding is optional.

MECHANICAL DATA

Dimensions in mm

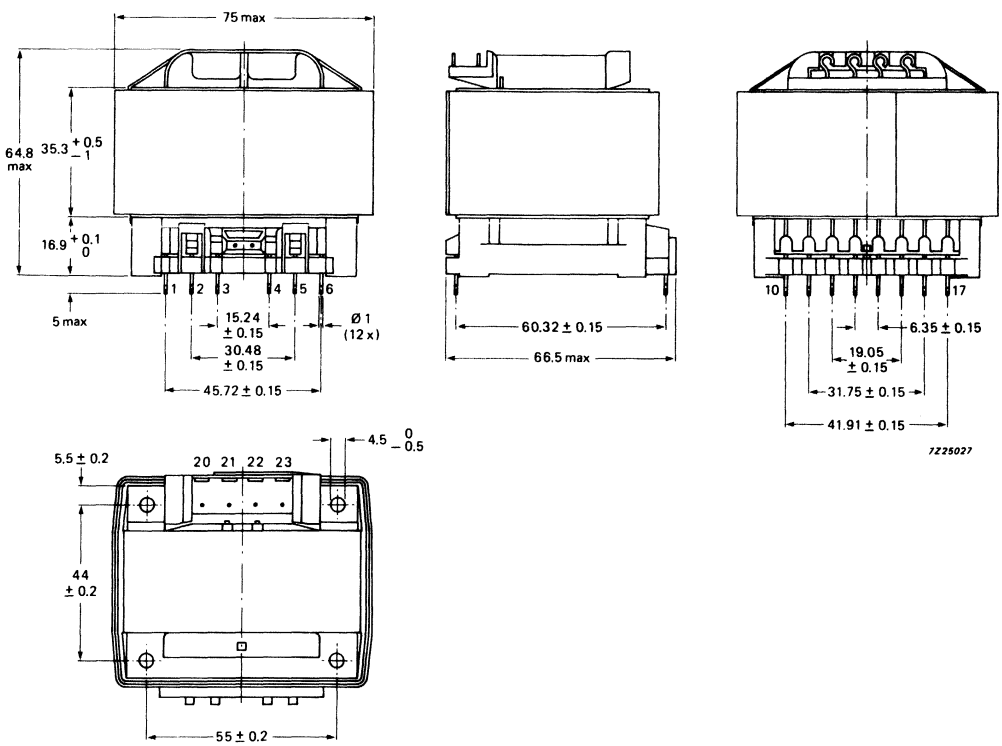
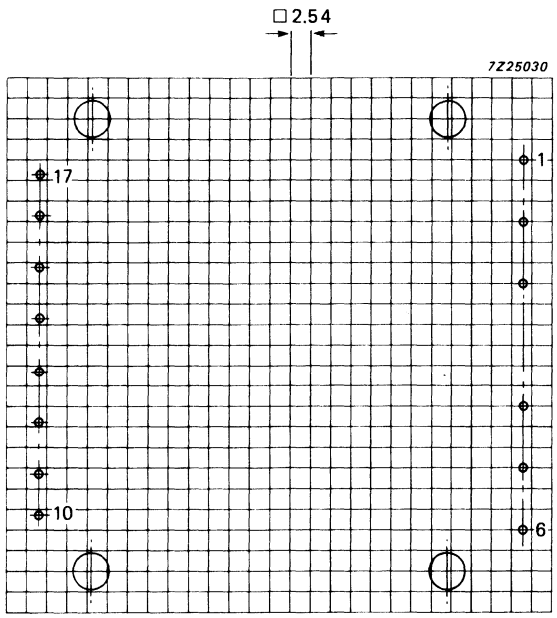


Fig. 1 Transformer assembly.

Mounting

The transformer is mounted to the printed-wiring board by means of a special mounting frame. The mounting holes are positioned according to DIN 41302. Four screws, size N6 are required.



Cu-side of printed board.

Fig. 2 Hole pattern for mounting on a printed-wiring board.

ELECTRICAL DATA

Output power at T = 115 °C (T_{amb} = 60 °C) 45 VA

Note: for over-temperature protection a built-in temperature/current fuse for 123 °C is used.

Primary voltages	(3-2)*	110 V
	(3-6)*	127 V
	(3-5)**	220 V
	(3-6)**	240 V
Primary resistances (at T_{amb} = 25 °C)	(3-2)*	12 Ω
	(3-6)*	15,5 Ω
	(3-5)**	47 Ω
	(3-6)**	50,6 Ω
Secondary voltages	(13-15)	2 x 11,2 V
	(16-17)	2 x 17,7 V
Secondary resistances (at T_{amb} = 25 °C)	(13-15)	1 Ω
	(16-17)	2 Ω

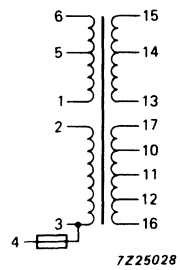


Fig. 2 Transformer circuit.

Insulation resistance	
between primary and secondary	> 60 MΩ
between primary and core	> 60 MΩ
Test voltage (DC)	
between primary and secondary	5600 V
between primary and core	5600 V
Main insulation	according to IEC 65 class 2, VDE 0860

Approbation

Sets with transformers of this construction are released by Demko, Nemko, Semko, EI, SEV, UL and BSI.

TESTS

The mains transformer withstands the following tests:

Vibration	IEC 68-2-6, test Fc, 10-55-10 Hz, amplitude 0,35 mm, 3 x 30 min.
Bump	IEC 68-2-29, test Eb; 40g, 4000 bumps, 3 directions.
Dry heat	IEC 68-2-2, test Bb; 96 h, + 125 °C.
Damp heat, steady state	IEC 68-2-3, test Ca, 21 days, R.H. 95%.
Damp heat, accelerated	IEC 68-2-4, test D, + 55 °C, R.H. 95 to 100%.
Change of temperature	IEC 68-2-14, test Na; 5 cycles, T_A = −25 °C, T_B = + 125 °C.
Flammability	UL94, category V2.

* (3-2) parallel connected to (1-5).

** Terminals 1 and 2 interconnected.

INDEX OF TYPE NUMBERS

CONVERSION LIST

INDEX OF TYPE NUMBERS

* Various versions.

* Various versions.

CONVERSION LIST

Conversion of catalogue number to type number

catalogue number	description	type number	page
3111 108 33100	mains filter choke	AT4043/90	359
34390	switched-mode transformer	AT3010/40	253
35400	line output transformer	AT2140/00A	151
35500	switched-mode transformer	AT3010/90L	257
35570	line output transformer	AT2140/16	155
35630	line output transformer	AT2140/17	155
35690	switched-mode transformer	AT3010/110LS	267
3111 268 30200	switched-mode transformer	AT3010/110LL	259
3112 318 35730	mains transformer	TS521	407
36510	mains transformer	TS561	431
36940	mains transformer	TS521	407
37490	mains transformer	TS521	407
37600	mains transformer	TS525	423
38000	mains transformer	TS561	431
38010	mains transformer	TS561	431
38020	mains transformer	TS522	411
38130	mains transformer	TS519	403
383210	mains transformer	TS561/3	435
38620	mains transformer	TS524	419
38710	mains transformer	TS525	423
38820	mains transformer	TS524	419
39010	mains transformer	TS524	419
39030	mains transformer	TS525	423
39190	mains transformer	TS521	407
39320	mains transformer	TS561/3	435
39410	mains transformer	TS561	431
39440	mains transformer	TS524	419
39470	mains transformer	TS531	427
39480	mains transformer	TS523	415
39560	mains transformer	TS522	411
39640	mains transformer	TS525	423
39700	mains transformer	TS523	415
39870	mains transformer	TS561/3	435
39970	mains transformer	TS522	411
39990	mains transformer	TS523	415
3112 338 30070	line driver transformer/bridge coil/choke	CU10	375
30120	switched-mode transformer	CU25c2	395
30140	line driver transformer	AT4043/01	275

catalogue number	description	type number	page
3112 338 30150	choke	CU30	397
30170	mains filter choke	CU15d	385
30190	mains filter choke	CU20d	391
30200	bridge coil	CI15	373
30210	choke	CU20	387
30220	mains filter choke	CU20d	391
30230	universal horizontal shift transformer	AT4043/09	281
30320	input choke	AT4043/16A	287
30380	driver transformer	CU20	387
30390	line driver transformer/bridge coil/choke	CU10	375
30420	driver transformer	CU15	379
30440	switched-mode transformer	CE134v	351
30460	bridge coil	CI10	367
30520	filter coil	AT4043/96	345
30550	switched-mode transformer	CE411	359
30620	switched-mode transformer	CE420	363
30640	mains filter choke	AT4043/91A	339
30650	bridge coil	CI15	371
30660	power pack system supply choke	AT4043/52A	309
30700	east/west choke	AT4043/08A	277
30720	filter coil	CU15b2	383
30740	switched-mode transformer	CE440	365
30780	driver transformer	CU20c2	389
30790	bridge coil	CI10	367
30800	switched-mode transformer	CE137h	355
30810	mains filter choke	CU20d	391
30820	driver transformer	CU15	379
30830	bridge coil	AT4043/100	347
30840	driver transformer	CU15	379
30860	mains filter choke	CU20d	391
30880	line driver transformer/bridge coil/choke	CU10	375
30910	switched-mode transformer	CE134h	349
30920	bridge coil	CI20	373
30940	switched-mode transformer	CE412v	361
30970	switched-mode transformer	CE411	359
30980	driver transformer	CU15	379
31000	bridge coil	CU20	387
31000	bridge coil	AT4043/13	285
31010	pulse transformer	CI10d2	369
31020	mains filter choke	CU15d	385
31030	line driver transformer/bridge coil/choke	CU10	375
31040	switched-mode transformer	CE420	363
31070	switched-mode transformer	CE410	357
31090	line driver transformer/bridge coil/choke	CU10	375
31120	choke	CU15	379

catalogue number	description	type number	page
3112 338 31150	switched-mode transformer	CE410	357
31190	pulse transformer	CI10d2	369
31330	switched-mode transformer	CE136h	353
31580	horizontal shift transformer	AT4043/09B	283
31761	line choke	AT4043/65B	317
31871	driver transformer	AT4043/30L	293
32020	east/west balance coil	AT4043/78	327
3112 348 30000	mains transformer	TS523	415
30050	mains transformer	TS561/3	435
30110	mains transformer	TS519	403
30190	mains transformer	TS531	427
30330	mains transformer	TS519	403
30340	mains transformer	TS522	411
30410	mains transformer	TS531	427
30430	mains transformer	TS531	427
30560	mains transformer	TS660	439
30630	mains transformer	TS685	451
30660	mains transformer	TS670	443
30710	mains transformer	TS680	447
3122 138 26060	line driver transformer	AT4043/87	333
28870	bridge coil	CI20	373
29360	bridge coil	CI15	371
29390	bridge coil	CI15	371
35840	asynchronous power pack transformer	AT2076/60	39
35990	diode-split line output transformer	AT2076/51	13
36230	diode-split line output transformer	AT2076/53	23
36240	miniature diode-split line output transformer	AT2076/81A	51
36300	miniature diode-split line output transformer	AT2076/81	51
36310	universal diode-split line output transformer	AT2076/54	33
36440	synchronous power pack transformer	AT2076/70A	45
36560	diode-split-box line output transformer	AT2077/80	77
36570	diode-split-box line output transformer	AT2077/81	83
36580	diode-split-box line output transformer	AT2077/82	93
36870	diode-split-box line output transformer	AT2077/85	107
36660	universal diode-split line output transformer	AT2076/84	99
36922	line output transformer	AT2079/10	137
37011	line output transformer	AT2079/09	131
37050	diode-split-box line output transformer	AT2077/88	123
37071	line output transformer	AT2102/02A	145
37121	line output transformer	AT2250/14	159
37360	diode-split-box line output transformer	AT2077/83	–
37390	diode-split-box line output transformer	AT2077/32	67
37400	diode-split-box line output transformer	AT2077/85A	117
37500	universal diode-split line output transformer	AT2077/84	99
50000	input choke	AT4043/81	329
50050	choke	CU25	393

catalogue number	description	type number	page
3122 138 50240	driver transformer	AT4043/82	331
50450	luminance delay line	DL390	227
51020	filter coil	CU11b2	377
51850	degaussing coil		237
51860	degaussing coil		237
52560	mains filter choke	CU15d	385
52860	mains filter choke	AT4043/92	341
53860	mains filter choke	AT4043/93	343
54000	linearity corrector	AT4042/90	337
55220	degaussing coil		239
55230	degaussing coil		239
55260	degaussing coil		241
55310	linearity corrector	AT4042/34	169
55920	degaussing coil		243
56070	degaussing coil		245
56170	degaussing coil		245
56310	degaussing coil		247
56320	degaussing coil		247
56330	linearity corrector	AT4042/51FS	177
56441	amplitude control unit	AT4044/35	209
56491	adjustable linearity control unit	AT4042/08A	191
56660	linearity corrector	AT4042/91	181
57021	amplitude control unit	AT4044/39D	213
57030	adjustable linearity control unit	AT4036/00A	187
57050	adjustable linearity control unit	AT4042/04A	189
57080	adjustable linearity control unit	AT4042/32A	197
57090	adjustable linearity control unit	AT4042/33A	201
57760	linearity corrector	AT4042/36FS	171
58191	adjustable linearity control unit	AT4042/43A	205
58281	linearity corrector	AT4042/41FS	173
58621	linearity corrector	AT4042/92	183
59101	adjustable linearity control unit	AT4042/35A	203
60510	adjustable linearity control unit	AT4042/31L	193
71330	bridge coil	CI10	367
71800	bridge coil	AT4043/69	325
73740	line driver/d.c. shift transformer	AT4043/29	291
74290	bridge coil	CI10	367
74310	bridge coil	CI10	367
90070	line driver transformer	AT4043/89	335
90290	switched-mode driver transformer	AT4043/45	297
90300	current sensing transformer	AT4043/46	299
90580	thyristor trigger and transistor driver transformer	AT4043/48	305
93240	mains filter choke	AT4043/55	311
93390	current sensing transformer	AT4043/47	301
93400	thyristor trigger and transistor driver transformer	AT4043/63	305

catalogue number	description	type number	page
3122 138 93870	east/west injection coil	AT4043/60	313
94810	bridge coil	CI20	373
95450	driver transformer	CU15	379
96042	luminance delay line	DL330	223
96550	bridge coil	AT4043/68	323
96570	dynamic focusing transformer	AT4043/67	319
97750	linearity corrector	AT4042/30	165
98990	linearity corrector	AT4042/46	175
99420	luminance delay line	DL270	219
99460	filter coil	CU11b2	377
99471	luminance delay line	DL470	231
99840	degaussing coil		249
99850	degaussing coil		249
8212 839 77941	switched-mode transformer	AT3020/01	271
78130	auxiliary transformer	AT4043/32B	295
8222 279 52121	line driver transformer	AT4043/64	315

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