PDF-XChange Viewer
Click to buy NOW!
www.docu-track.com

ROHDE&SCHWARZ

SERVICE DOCUMENTATION

Power Supply A22 (Display Unit)

805.8813.02

PDF-XChange Viewer Click to buy NOW! www.docu-track.com

Contents

6 Service Instructions Power Supply A22 (Display Unit)

(See circuit diagrams 805.8813 S and 805.8013 S)

6.1 Function Description

This module contains the rectifier with the unregulated voltages of ± 19 V from which 3 voltages (+ 15 V, -15 V, + 12 V) are generated as well as its own reference voltage, voltage monitoring and blower control with temperature monitoring for the RF unit.

The transformer voltages are applied to the module via X223. The module is to a limited extent a stand-alone unit.

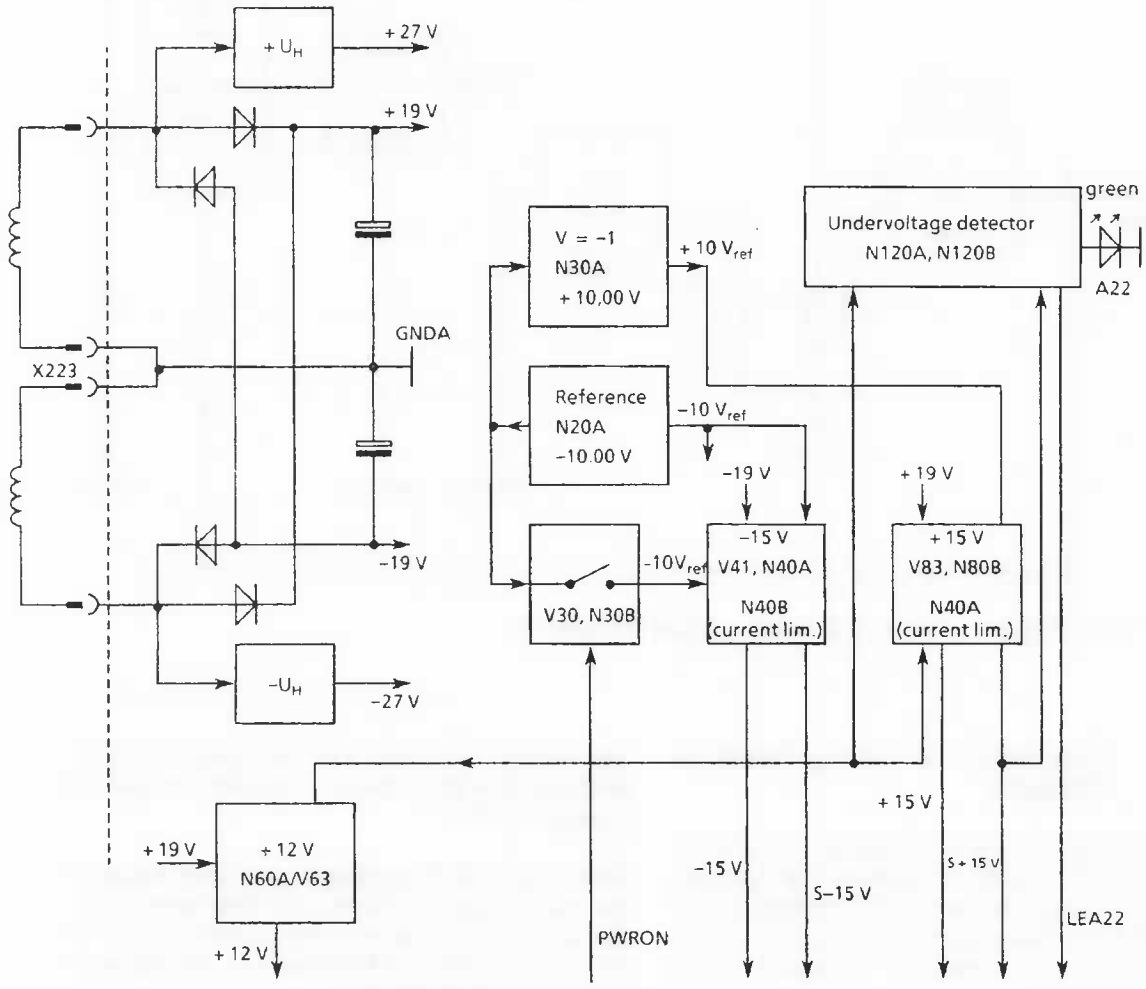


Fig. 6-1 Block diagram of the power supply module A22 (part 1)

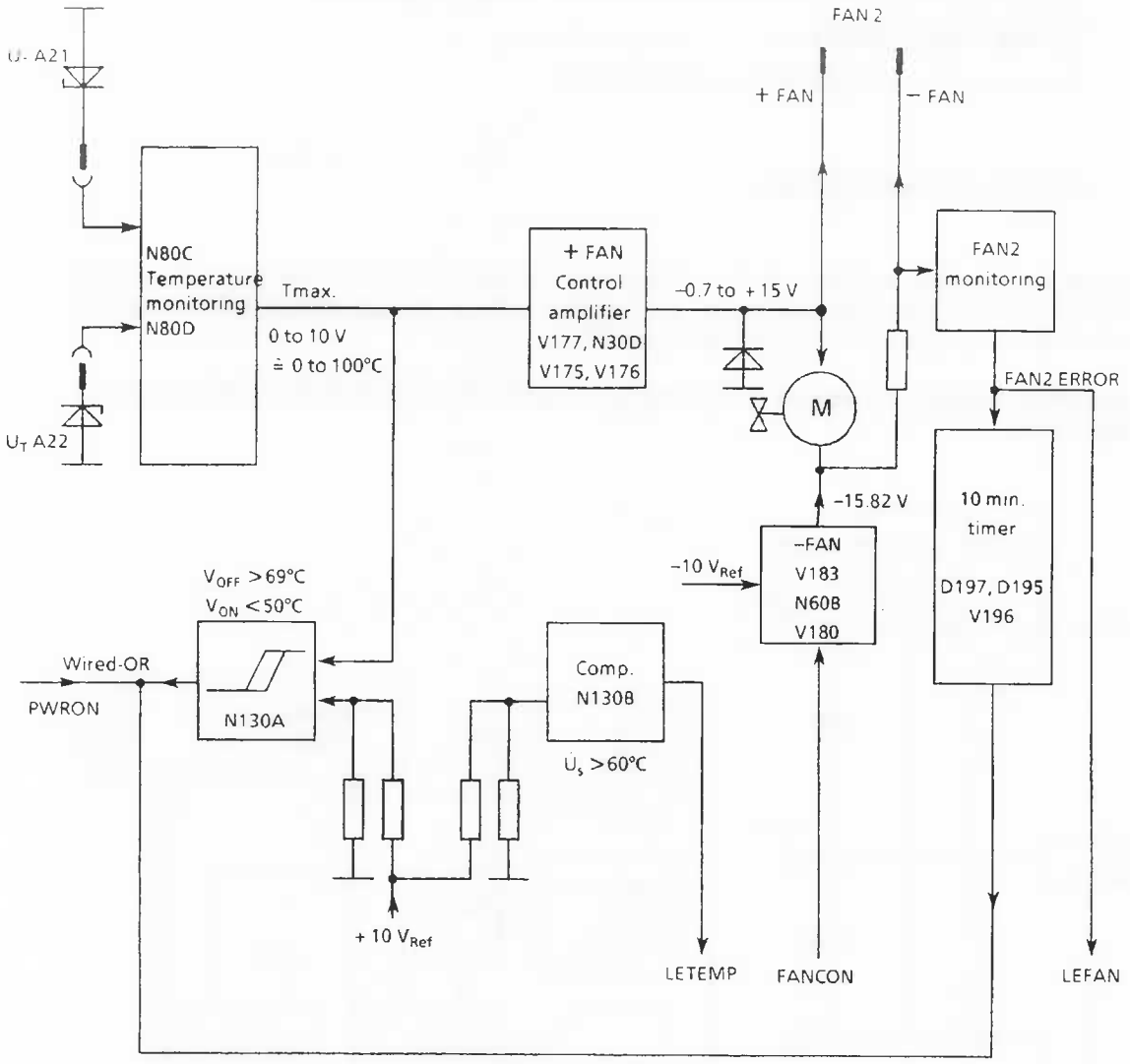


Fig. 6-1 Block diagram of the power supply module A22 (part 2)

6.1.1 Generation of Unregulated DC Voltages

An AC voltage of 17.6 V is applied to diodes V1 to V4 via X223. C1 and C2 suppress high-frequency rectifier noise. A positive DC voltage of approx. 19.5 V is then present at the charging capacitors C3, C4 and a negative voltage of equal magnitude at C5.

The voltage doubling circuit (V6, V7, C6, V7) generates a positive auxiliary voltage whose internal impedance (R6, R7) makes it short-circuit-proof. V8 limits the voltage to 27 V.

The same type of circuit (V9, V10) is present to generate a negative auxiliary voltage.

The diodes V12 and V13 are used for test purposes if a DC voltage is applied instead of transformer T1.

Several ground designations are used because the power supply is fitted with some sense lines. The complete chassis with the ground surface of the instrument motherboard is designated "Ground analog" (GNDA).

The + 15-V voltage is fitted with sense lines. Although these connections are made during the operation via the lines of the motherboard (several mΩ), a resistor R3 is provided on the module A22 in order to guarantee defined operation and adjustment of the module without the motherboard.

PDF-XChange Viewer Click to buy NOW! www.docu-track.com

6.1.2 Reference Voltage

The reference voltage of this module is adjusted using R23. Since all voltages are derived from this and are programmed using fixed resistors, the reference voltage is first adjusted to a nominal value of -10 V and a fine adjustment then carried out to + 15.00 V.

If the PWRON signal is applied via X222/20, V30 is switched off via N30B and -10 V are present at C36.

The generated reference voltage refers to SGNDA.

6.1.3 Voltage Regulator

The *voltage regulator -15 V* obtains its reference voltage of -10 V via R36. The Darlington transistor V41 is driven via R40. The voltage divider R52, R53, R54 divides the output voltage by a factor of 1.5 and closes the control loop at N40/2. C40, C41, R41 are used for phase compensation. R42, R43 are current sense resistors; the circuitry of R40B implements the foldback current limitation where N40B/7 with a voltage of approx. −10.65 V takes over control of the loop as a current limiter.

R50, R51 are shorted during operation by a line on the motherboard and prevent open sense lines in test mode.

The LED H60 is powered via R60; V60 is a protection diode against reversed polarity. If the output voltage reaches a non-permissible value because of a fault, thyristor V62 is fired and fuse F1 blown.

The *voltage regulator + 15 V* has the same circuitry as the -15-V section, but the voltage is derived from the -15 V.

The *voltage regulator + 12 V* obtains a -15-V reference voltage from N30A and can be switched off via the PWRON signal. N30C operates as a control amplifier, V113 as a series regulator. V111 is used for current limitation. H110 is used for voltage indication.

6.1.4 Blower Control

The blower control monitors the temperature of the heat sinks in the power pack and switches the voltages off if the blower fails or if overheating is imminent as a result of restricted air flow.

The blowers operate at a low speed to reduce the noise. The speed is increased at higher ambient temperatures by means of a control circuit such that the heat sinks, and thus the inside of the instrument, are maintained at a constant temperature.

The temperature sensor V160 is connected to N80D such that a voltage of 100 mV/K is available at cathode V156. The absolute temperature is related to the voltage as follows:

0 to 10 V = 0 to 100 °C.

A second temperature sensor is connected to N80C in the same manner at X222/4. The diodes V155, V156 represent an analog OR gate so that the control is taken over by whichever temperature is higher.

The minimum blower speed is generated by a negative voltage of -15.8 V by means of V183 and N60B.

V180 is blocked if the FANCON signal is applied and thus switches on the voltage. The current through the blower flows via V178.

A positive voltage is added to the negative blower voltage if the temperature reaches the value programmed by R171, R172 (voltage divider comprises V177, V175; N30B and V176 are used for current limitation). The speed is then increased until the temperature of the heat sinks no longer rises.

The second blower connected to X222/17/18 draws a pulsed current. This is evaluated by R186, C187 and N130C such that C191 is discharged with each pulse. If the pulses are absent, the capacitor C191 is charged via R191 and the comparator N130D outputs the error message LEFAN at X222/9.

Since D195/12 (reset) becomes Low with the error message, this can add the counted pulses from D197 until Q14 becomes High from D195 after approx. 10 minutes and the voltages switched off by V196.

This measure prevents damage to the instrument should the second blower not work. The blocking can only be cancelled by switching off the AC supply.

Undervoltages are monitored by N120A. H125 lights up if all voltages are present. The error message LEA22 (Low Error A22) is also output with N120B via X222/7 in the event of a fault.

6.2 Testing and Adjustment

As already mentioned in the circuit description, all voltages are derived from the -10-V reference voltage and depend on its adjustment.

The + 15 V is factory-set to ± 0.1% using the reference voltage. An aging error of ± 1% is permissible for the + 15 V.

Caution: Adjustment of R23 changes all voltages by the same percentage.

The output voltages should have the following tolerances after adjustment:

+ 15 V ± 1 % (measured at sense point)
–15 V ± 2 % (measured at sense point)
+ 12 V ± 4 %
–5 V ± 4 %
–FAN = –15.6 V ± 5 %

Note: If a voltage exceeds the tolerance limits when the + 15 V is adjusted, an adjustment is also permissible whilst all other voltages are within their tolerances.

6.3 Troubleshooting

The instrument does not respond on power-up.

- Check AC supply and fuse.
- Check that the power-on command (PWRON = High at X222/20) is available at the module. If the signal is Low, the power-on command can be simulated by the jumper X191/1 and 2 on module A21.
- If the above-mentioned measures are not successful, the voltages at the charging capacitors C3, C5, the auxiliary voltage at C7, C10 and the reference voltages at X222/15 (-10 V) and X222/19 (+ 10 V) must be checked. The latter is switched by V30.

Only the red LED lights up and possibly the blowers are working.

- The 2nd blower in the instrument is not plugged in or is faulty. X222/9 (LEFAN) must be Low in this case. The long-term timer switches the PWRON signal (X212/20) to ground via V196 after approx. 10 minutes.
- An overtemperature fault is present. The blowers rotate at a medium speed in this case, the output voltages are switched off. The instrument switches itself on again when cooled down (see circuit description).

The instrument can be switched on, but the green LED does not light up.

- Check missing voltages using the yellow LEDs. If all LEDs light up, check the tolerances of the voltages using a voltmeter.

PDF-XChange Viewer Click to buy NOW! www.docu-track.com

Possible causes for a missing voltage:

- Current drain in instrument is too high, or a module is faulty.
  In this case, disconnect the modules in succession from the power supply by pulling out and then switch the instrument on again. The faulty module can then be determined.

- The overvoltage protection has been triggered. A short-circuit may be present on a module, or the series regulator or control is faulty.

  The voltage usually then enters the current limitation unless the series transistor is faulty and the fuse is blown.

- A short-circuit is present in the instrument with a voltage of opposite polarity. The current then flows via the polarity protection diode.

Refer to the circuit description if components are suspect within the module.

PDF-XChange Viewer
Click to buy NOW!
www.docu-track.com

ROHDE & SCHWARZ
MÜNCHEN

Schaltteillisten
Stromläufe
Bestückungspläne

Parts lists
Circuit diagrams
Components plans

R 29500 Bl. 2

Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
C1	CK 1,0UF+-10%100V QUADER PLASTIC-FOIL CAPACITOR	CK 006.5091	ROEDERST	MKT1822-510/0+10%	
C2	CK 1,0UF+-10%100V QUADER PLASTIC-FOIL CAPACITOR	CK 006.5091	ROEDERST	MKT1822-510/0+10%	
C3	CE 10MF+-20%40V RD35XH45 ELECTROLYTIC CAPACITOR	808.4548	VALVO	2222-051-57103	
C5	CE 4,7MF+-20%40V RD25X45 ELECTROLYTIC CAPACITOR	808.4554	VALVO	2222-051-57472	
C6	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C7	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C9	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C10	CE 22UF-10+50% 63V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7120	ROEDERST	EK 00 CB 222 J	
C30	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C36	CK 1UF+-10%50V5RM MKT CAPACITOR	CK 099.2998	WIMA	MKS2/50/1UF/10%	
C40	CK RICHTIGE SNR.0007.7598 POLYPROPYLENE CAPACITOR	CK 099.6129	WIMA	FKP2 1000/2,5%/63V	
C41	CK 1UF+-10%50V5RM MKT CAPACITOR	CK 099.2998	WIMA	MKS2/50/1UF/10%	
C48	CC 100NF+-10%50V5K1200VIE CAPACITOR	CC 084.5350	UNION CARB	CK05BX104K	
C49	CK 10NF+-5%63V5RM MKT CAPACITOR	CK 099.2869	WIMA	FKS 2/100/0,01UF/5%	
C50	CE 47UF-10+50% 40V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7142	ROEDERST	EK 00 CB 247 G	
C63	TRIMMWERT / SELECTED				
C65	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C70	CE 47UF-10+50% 40V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7142	ROEDERST	EK 00 CB 247 G	
C81	CK 1UF+-10%50V5RM MKT CAPACITOR	CK 099.2998	WIMA	MKS2/50/1UF/10%	
C82	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C83	CK 1UF+-10%50V5RM MKT CAPACITOR	CK 099.2998	WIMA	MKS2/50/1UF/10%	
C90	CE 47UF-10+50% 40V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7142	ROEDERST	EK 00 CB 247 G	
C91	CE 4,7UF+-20%20V 7X 4X 8 ELECTROLYTIC CAPACITOR	CE 022.8110	ROEDERSTEI	ETR 2 4,7/20 20%	
C93	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C95	CK 10NF+-5%63V5RM MKT CAPACITOR	CK 099.2869	WIMA	FKS 2/100/0,01UF/5%	
C110	CE 47UF-10+50% 40V 9X13 ELECTROLYTIC CAPACITOR	CE 006.7142	ROEDERST	EK 00 CB 247 G	
C112	CK 22NF+-5%63V5RM MKT CAPACITOR	CK 099.2881	WIMA	MKS2/63/0,022UF/5%	
C113	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C131	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C137	CC 15PF+-2%3X4NPO CAPACITOR	CC 087.6441	VALVO	2222 678 10159	
C174	CC 47PF+-2%5X6NPO CAPACITOR	CC 087.6506	VALVO	2222 678 10479	
C177	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C183	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C187	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C188	CC 10NF-20+50%7X8R4000 CAPACITOR	CC 087.7525	VALVO	2222 63051 64051103	
C191	CK 1UF+-10%50V5RM MKT CAPACITOR	CK 099.2998	WIMA	MKS2/50/1UF/10%	
C196	CK 100NF+-5%63V5RM MKT CAPACITOR	CK 099.2930	WIMA	MKS/2/63/0,1UF/5%	
C197	CK 10NF+-5%63V5RM MKT CAPACITOR	CK 099.2869	WIMA	FKS 2/100/0,01UF/5%	
C198	CK 330NF+-5%63V5RM MKT CAPACITOR	CK 099.2969	WIMA	MKS2/63/0,33UF/5%	

Kenn-Nr.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
D195	BL MM74HC4060N 14ST.B.CTR 14 STAGE BINARY COUNTER	BL 394.9122	NSC	MM74HC4060N	
D197	BO SE555JG TIMER TIMER	BO 262.3886	RAYTHEON	RM555DE	
F1	SS SCHMELZS.F4 DIN41660 FUSE	SS 020.7581	WICKMANN	F 4 DIN 41660	
F2	SS SCHMELZS.F2 DIN41660 FUSE F2E DIN 41571	SS 087.4884	WICKMANN	F 2 DIN 41660	
H60	AF HLMP1401 LED GE RD3 LED	AF 235.4604	GEN.INSTR.	HLMP1401	
H74	AF HLMP1401 LED GE RD3 LED	AF 235.4604	GEN.INSTR.	HLMP1401	
H100	AF HLMP1401 LED GE RD3 LED	AF 235.4604	GEN.INSTR.	HLMP1401	
H110	AF HLMP1401 LED GE RD3 LED	AF 235.4604	GEN.INSTR.	HLMP1401	
H125	AF HLMP3502 LED GN RD5 LED	AF 235.4862	HEWLETT	HLMP3502	
N20	BO UA741MJG OPAMP OPERATIONAL AMPLIFIER	275.0822	TEXAS	UA741MJG	
N30	BO LM124J 4XL.P.OPAMP OPERATIONAL AMPLIFIER	300.6353	NSC	LM124J	
N40	BO LF353N 2XFET OPAMP OPERATIONAL AMPLIFIER	342.2291	NSC	LF353N	
N60	BO LF353N 2XFET OPAMP OPERATIONAL AMPLIFIER	342.2291	NSC	LF353N	
N80	BO LM124J 4XL.P.OPAMP OPERATIONAL AMPLIFIER	300.6353	NSC	LM124J	
N120	BO TAE2453A 2XOC. OPAMP OPERATIONAL AMPLIFIER	354.9850	SIEMENS	TAE2453A	
N130	BO LM339AN 4X COMPAR COMPARATOR	291.5148	NSC	LM339AN	
O4	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 078.2747	-	R&S-ZCHNG.078.2747	
O5	VL STECKLOETOESE 7,5X1,1 PLUG-IN SOLDERING LUG	VL 078.2747	-	R&S-ZCHNG.078.2747	
P1	FP INDIREKT.STECKERL.36P. PIN CONNECTOR	FP 242.3600	BERG	75160-102-36	
P2	FP INDIREKT.STECKERL.36P. PIN CONNECTOR	FP 242.3600	BERG	75160-102-36	
P3	FP INDIREKT.STECKERL.36P. PIN CONNECTOR	FP 242.3600	BERG	75160-102-36	
P4	FP INDIREKT.STECKERL.36P. 4X1POLIG/1PIN PIN CONNECTOR	FP 242.3600	BERG	75160-102-36	
R3	RD 2.4 W 0,1 OHM+-3% WIRE-WOUND RESISTOR	RD 082.0974	SAGE	1200S/0,10HM/3%	
R6	RL 0,35W 681 OHM+-1%TK50 RESISTOR	RL 083.0490	DRALORIC	SMA0207/6810HM-F-D	
R7	RL 0,35W 681 OHM+-1%TK50 RESISTOR	RL 083.0490	DRALORIC	SMA0207/6810HM-F-D	
R9	RL 0,35W 681 OHM+-1%TK50 RESISTOR	RL 083.0490	DRALORIC	SMA0207/6810HM-F-D	
R10	RL 0,35W 681 OHM+-1%TK50 RESISTOR	RL 083.0490	DRALORIC	SMA0207/6810HM-F-D	
R11	RL 0,35W 681 OHM+-1%TK50 RESISTOR	RL 083.0490	DRALORIC	SMA0207/6810HM-F-D	
R20	RL 0,35W 1,21KOHM+-1%TK50 RESISTOR	RL 083.0655	DRALORIC	SMA0207/1,21K-F-D	
R21	RL 0,35W 6,81KOHM+-1%TK50 RESISTOR	RL 082.2560	DRALORIC	SMA 0207/6,81K-F-C	
R22	RL 0,35W 8,25KOHM+-1%TK50 RESISTOR	RL 083.1239	DRALORIC	SMA0207/8,25K-F-D	
R23	RS 0,3W 5KOHM+-10%CERMET CERMET POTENTIOMÈTER	RS 086.7938	BOURNS	3292X-1-502	
R24	RL 0,35W 562 OHM+-1%TK50 RESISTOR	RL 083.0461	DRALORIC	SMA0207/5620HM-F-D	
R25	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R30	RL 0,35W 33,2KOHM+-1%TK50 RESISTOR	RL 083.1674	DRALORIC	SMA0207/33,2K-F-C	

Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R31	RL 0,35W 22,1KOHM+-1%TK50 RESISTOR	RL 083.1545	DRALORIC	SMA/207/22,1K-F-C	
R32	RL 0,35W 27,4KOHM+-1%TK50 RESISTOR	RL 082.2583	DRALORIC	SMA 0207/27,4K-F-C	
R33	RL 0,35W 1,50KOHM+-1%TK50 RESISTOR	RL 083.0732	DRALORIC	SMA0207/1,50K-F-D	
R34	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R36	RL 0,35W 47,5KOHM+-1%TK50 RESISTOR	RL 083.1800	DRALORIC	SMA/207/47,5K-F-C	
R37	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R38	RL 0,35W 47,5KOHM+-1%TK50 RESISTOR	RL 083.1800	DRALORIC	SMA/207/47,5K-F-C	
R39	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R40	RL 0,21W 475 OHM+-1%TK50 RESISTOR	RL 092.1409	RESISTA	MK1 475OHM 1% TK50	
R41	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR	RL 082.8852	DRALORIC	SMA0207/100HM-F-D	
R42	RD 0,8W 0,15 OHM+-3% WIRE-WOUND RESISTOR	RD 087.5222	SAGE	1000S0,150HM+3%	
R43	RD 0,8W 0,15 OHM+-3% WIRE-WOUND RESISTOR	RD 087.5222	SAGE	1000S0,150HM+3%	
R44	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R45	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R46	RL 0,35W 150 KOHM+-1%TK50 RESISTOR	RL 083.2129	DRALORIC	SMA/207/150K-F-C	
R47	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R48	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R50	RL 0,35W 825 OHM+-1%TK50 RESISTOR	RL 082.2502	DRALORIC	SMA 0207/8250HM-F-C	
R51	RL 0,35W 825 OHM+-1%TK50 RESISTOR	RL 082.2502	DRALORIC	SMA 0207/8250HM-F-C	
R52	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R53	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R54	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R60	RL 0,35W 1,21KOHM+-1%TK50 RESISTOR	RL 083.0655	DRALORIC	SMA0207/1,21K-F-D	
R61	RL 0,35W 392 OHM+-1%TK50 RESISTOR	RL 082.2183	DRALORIC	SMA0207/392K-F-C	
R62	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR	RL 082.8852	DRALORIC	SMA0207/100HM-F-D	
R63	RL 0,35W 100 OHM+-1%TK50 METALFILM-RESISTOR	RL 082.6543	DRALORIC	SMA0207/100/HM-F-D	
R64	RL 0,35W2,21 OHM+-1%TK50 METALFILMRESISTOR	RL 099.7948	RESISTA	MK2 2,21 OHM 1% TK50	
R65	RL 0,35W 4,75KOHM+-1%TK50 RESISTOR	RL 083.1097	DRALORIC	SMA0207/4,75K-F-D	
R66	RL 0,21W 10,0KOHM+-1%TK50 RESISTOR	RL 092.1567	RESISTA	MK1 10KO 1% TK50	
R67	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R71	RL 0,35W 150 OHM+-1%TK50 RESISTOR	RL 082.9942	DRALORIC	SMA0207/150OHM-F-D	
R72	RL 0,35W 100 OHM+-1%TK50 METALFILM-RESISTOR	RL 082.6543	DRALORIC	SMA0207/100/HM-F-D	
R73	RL 0,35W 100 OHM+-1%TK50 METALFILM-RESISTOR	RL 082.6543	DRALORIC	SMA0207/100/HM-F-D	
R74	RL 0,35W 274 OHM+-1%TK50 RESISTOR	RL 083.0178	DRALORIC	SMA0207/2740HM-F-D	
R80	RL 0,35W 15,0KOHM+-1%TK50 RESISTOR	RL 083.1400	DRALORIC	SMA0207/15K-F-D	
R81	RL 0,35W 3,32KOHM+-1%TK50 RESISTOR	RL 083.0990	DRALORIC	SMA0207/3,32K-F-D	
R82	RL 0,35W 475 OHM+-1%TK50 RESISTOR	RL 083.0390	DRALORIC	SMA0207/4750HM-F-D	
R83	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR	RL 082.8852	DRALORIC	SMA0207/100HM-F-D	
R85	RD 0,8W 68MIOHM+-3% WIRE-WOUND RESISTOR	RD 451.4920	SAGE	1000S/0,0680HM/3%	

Kenn.-Nr.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R87	TRIMMWERT / SELECTED				
R88	RL 0,35W 1,21KOHM+-1%TK50 RESISTOR	RL 083.0655	DRALORIC	SMA0207/1,21K-F-D	
R89	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R90	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R91	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R92	RL 0,35W 56,2KOHM+-1%TK50 RESISTOR	RL 082.2231	DRALORIC	SMA0207/56,2K-F-C	
R93	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R94	TRIMMWERT / SELECTED				
R95	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R96	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R97	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R98	RL 0,35W 825 OHM+-1%TK50 RESISTOR	RL 082.2502	DRALORIC	SMA 0207/825OHM-F-C	
R99	RL 0,35W 825 OHM+-1%TK50 RESISTOR	RL 082.2502	DRALORIC	SMA 0207/825OHM-F-C	
R100	RL 0,35W 1,21KOHM+-1%TK50 RESISTOR	RL 083.0655	DRALORIC	SMA0207/1,21K-F-D	
R101	RL 0,35W 392 OHM+-1%TK50 RESISTOR	RL 082.2183	DRALORIC	SMA0207/392K-F-C	
R102	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR	RL 082.8852	DRALORIC	SMA0207/100HM-F-D	
R108	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR	RL 082.2190	DRALORIC	SMA0207/5,62K-F-C	
R109	RL 0,35W 332 OHM+-1%TK50 RESISTOR	RL 083.0255	DRALORIC	SMA0207/3320HM-F-D	
R110	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R111	RL 0,35W 1,21OHM+-1%TK50 METALFILMRESISTOR	RL 099.7883	RESISTA	MK2 1,21 OHM 1% TK50	
R112	RL 0,35W 47,5KOHM+-1%TK50 RESISTOR	RL 083.1800	DRALORIC	SMA/207/47,5K-F-C	
R113	RL 0,35W 100 OHM+-1%TK50 METALFILM-RESISTOR	RL 082.6543	DRALORIC	SMA0207/100/HM-F-D	
R115	RL 0,35W 22,1KOHM+-1%TK50 RESISTOR	RL 083.1545	DRALORIC	SMA/207/22,1K-F-C	
R116	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR	RL 082.2190	DRALORIC	SMA0207/5,62K-F-C	
R118	RL 0,35W 1,50OHM+-1%TK50 METALFILMRESISTOR	RL 099.7902	RESISTA	MK2 1,50 OHM 1% TK50	
R119	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R120	RL 0,35W 121KOHM+-1%TK50 RESISTOR	RL 083.2070	DRALORIC	SMA/207/121K-F-C	
R121	RL 0,35W 15,0KOHM+-1%TK50 RESISTOR	RL 083.1400	DRALORIC	SMA0207/15K-F-D	
R122	RL 0,35W 82,5KOHM+-1%TK50 RESISTOR	RL 082.2302	DRALORIC	SMA0207/82,5K-F-C	
R123	RL 0,35W 182 KOHM+-1%TK50 RESISTOR	RL 083.2193	DRALORIC	SMA0207/182K-F-C	
R124	RL 0,35W 39,2KOHM+-1%TK50 RESISTOR	RL 083.1745	DRALORIC	SMA/207/39,2K-F-C	
R125	RL 0,35W 1,82KOHM+-1%TK50 RESISTOR	RL 082.2277	DRALORIC	SMA0207/1,82K-F-C	
R127	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R130	RL 0,35W 56,2KOHM+-1%TK50 RESISTOR	RL 082.2231	DRALORIC	SMA0207/56,2K-F-C	
R131	RL 0,35W 681 KOHM+-1%TK50 RESISTOR	RL 083.2735	DRALORIC	SMA0207/381K-F-C	
R133	RL 0,35W 27,4KOHM+-1%TK50 RESISTOR	RL 082.2583	DRALORIC	SMA 0207/27,4K-F-C	
R134	RL 0,35W 18,2KOHM+-1%TK50 RESISTOR	RL 083.1480	DRALORIC	SMA/207/18,2K-F-C	
R135	TRIMMWERT / SELECTED				
R136	RL 0,35W 56,2KOHM+-1%TK50 RESISTOR	RL 082.2231	DRALORIC	SMA0207/56,2K-F-C	
R137	RL 0,35W 2.74MOHM+-1%TK50 METALFILMRESISTOR	RL 099.8980	RESISTA	MK2 2.74MOHM+-1%TK50	

Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R138	RL 0,35W 18,2KOHM+-1%TK50 RESISTOR	RL 083.1480	DRALORIC	SMA/207/18,2K-F-C	
R139	RL 0,35W 12,1KOHM+-1%TK50 RESISTOR	RL 083.1351	DRALORIC	SMA0207/12,1K-F-D	
R140	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R150	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R151	RL 0,35W 22,1KOHM+-1%TK50 RESISTOR	RL 083.1545	DRALORIC	SMA/207/22,1K-F-C	
R152	RL 0,35W 221 KOHM+-1%TK50 RESISTOR	RL 083.2270	DRALORIC	SMA0207/221K-F-C	
R153	RL 0,35W 392 KOHM+-1%TK50 RESISTOR	RL 083.2512	DRALORIC	SMA0207/392K-F-C	
R154	RL 0,35W 33,2KOHM+-1%TK50 RESISTOR	RL 083.1674	DRALORIC	SMA0207/33,2K-F-C	
R155	RL 0,35W 221 KOHM+-1%TK50 RESISTOR	RL 083.2270	DRALORIC	SMA0207/221K-F-C	
R156	RL 0,35W 82,5KOHM+-1%TK50 RESISTOR	RL 082.2302	DRALORIC	SMA0207/82,5K-F-C	
R157	RL 0,35W4,75MOHM+-1%TK50 METALFILMRESISTOR	RL 099.8250	RESISTA	MK2 4,75MOHM 1% TK50	
R158	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R159	RL 0,35W 22,1KOHM+-1%TK50 RESISTOR	RL 083.1545	DRALORIC	SMA/207/22,1K-F-C	
R160	RL 0,35W 221 KOHM+-1%TK50 RESISTOR	RL 083.2270	DRALORIC	SMA0207/221K-F-C	
R161	RL 0,35W 10,0 OHM+-1%TK50 RESISTOR	RL 082.8852	DRALORIC	SMA0207/10OHM-F-D	
R170	RL 0,35W 221 KOHM+-1%TK50 RESISTOR	RL 083.2270	DRALORIC	SMA0207/221K-F-C	
R171	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R172	RL 0,35W 182 KOHM+-1%TK50 RESISTOR	RL 083.2193	DRALORIC	SMA0207/182K-F-C	
R174	RL 0,35W4,75MOHM+-1%TK50 METALFILMRESISTOR	RL 099.8250	RESISTA	MK2 4,75MOHM 1% TK50	
R175	RL 0,35W 475 OHM+-1%TK50 RESISTOR	RL 083.0390	DRALORIC	SMA0207/475OHM-F-D	
R176	RL 0,35W 1,0 OHM+-1%TK50 METALFILMRESISTOR	RL 099.7860	RESISTA	MK2 1,00 OHM 1% TK50	
R179	RL 0,35W 1,0 OHM+-1%TK50 METALFILMRESISTOR	RL 099.7860	RESISTA	MK2 1,00 OHM 1% TK50	
R180	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R181	RL 0,35W 15,0KOHM+-1%TK50 RESISTOR	RL 083.1400	DRALORIC	SMA0207/15K-F-D	
R182	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R183	RL 0,35W 475 OHM+-1%TK50 RESISTOR	RL 083.0390	DRALORIC	SMA0207/475OHM-F-D	
R184	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR	RL 082.2190	DRALORIC	SMA0207/5,62K-F-C	
R185	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R186	RL 0,35W3,32 OHM+-1%TK50 METALFILMRESISTOR	RL 099.7983	RESISTA	MK2 3,32 OHM 1% TK50	
R187	RL 0,35W 562 KOHM+-1%TK50 RESISTOR	RL 083.2664	DRALORIC	SMA0207/562K-F-C	
R188	RL 0,35W 33,2KOHM+-1%TK50 RESISTOR	RL 083.1674	DRALORIC	SMA0207/33,2K-F-C	
R189	RL 0,35W 33,2KOHM+-1%TK50 RESISTOR	RL 083.1674	DRALORIC	SMA0207/33,2K-F-C	
R190	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R191	RL 0,35W 1MOHM+-1%TK50 RESISTOR	RL 082.7862	DRALORIC	SMA0207/1M-F-D	
R195	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R196	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R197	RL 0,35W 100 OHM+-1%TK50 METALFILM-RESISTOR	RL 082.6543	DRALORIC	SMA0207/100/HM-F-D	
R198	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	
R199	RL 0,35W 100KOHM+-1%TK50 RESISTOR	RL 082.1764	DRALORIC	SMA0207/100K-F-C	

ROHDE & SCHWARZ	AI	Datum Date	Schaltteilliste für Parts list for	Sachnummer Stock Nr.	Blatt Page
	24	1287	ED POWER SUPPLY D-A22	805.8813.01 SA	5+

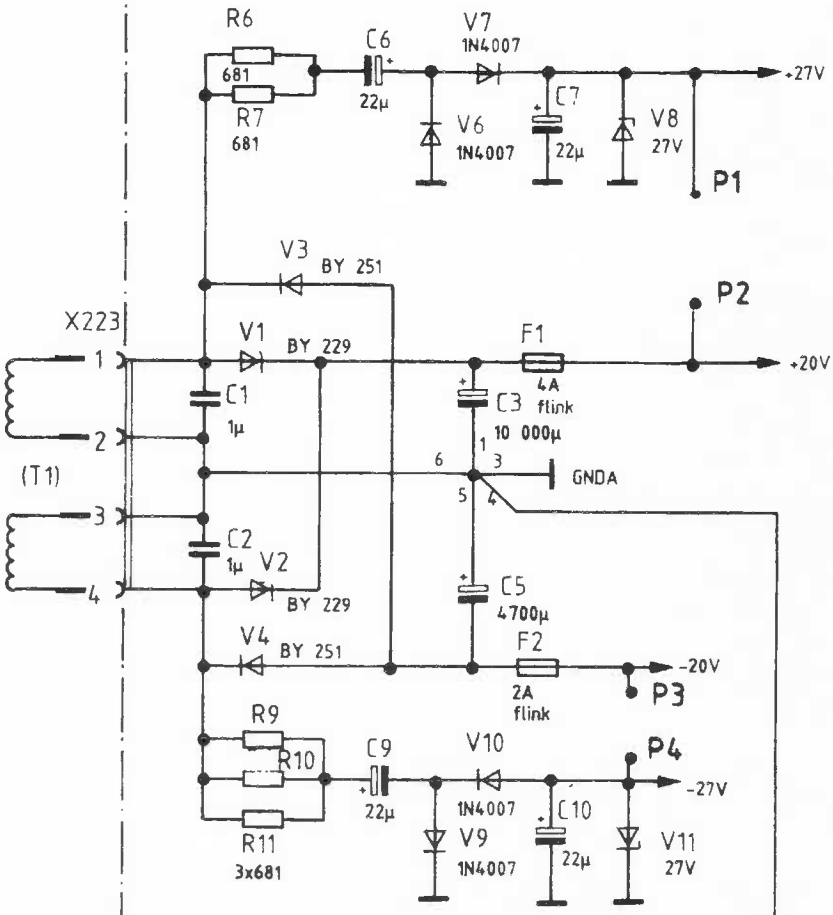
Kenn-Nr.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
R200	RL 0,35W 1KOHM+-1%TK50 RESISTOR	RL 082.2160	DRALORIC	SMA0207/1K-F-C	
R220	RL 0,35W 39,2KOHM+-1%TK50 RESISTOR	RL 083.1745	DRALORIC	SMA/207/39,2K-F-C	
R221	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R230	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R240	RL 0,35W 10,0KOHM+-1%TK50 RESISTOR	RL 083.1297	DRALORIC	SMA0207/10K-F-D	
R250	RL 0,35W 56,2KOHM+-1%TK50 RESISTOR	RL 082.2231	DRALORIC	SMA0207/56,2K-F-C	
R251	RL 0,35W 5,62KOHM+-1%TK50 RESISTOR	RL 082.2190	DRALORIC	SMA0207/5,62K-F-C	
R666	RL 0,21W 10,0KOHM+-1%TK50 RESISTOR	RL 092.1567	RESISTA	MK1 10K0 1% TK50	
V1	AG BY229/600 GL 600V 7A0 RECTIFIER	AG 208.5226	VALVO	BY229/600	
V2	AG BY229/600 GL 600V 7A0 RECTIFIER	AG 208.5226	VALVO	BY229/600	
V3	AG BY251 GL 200V 3A0 RECTIFIER	AG 250.3128	INTERMETAL	BY251	
V4	AG BY251 GL 200V 3A0 RECTIFIER	AG 250.3128	INTERMETAL	BY251	
V6	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V7	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V8	AE BZX55/B27 0,5W Z-DI ZENER DIODE	AE 615.9085	VALVO	BZX55/B27	
V9	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V10	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V11	AE BZX55/B27 0,5W Z-DI ZENER DIODE	AE 615.9085	VALVO	BZX55/B27	
V24	AE 1N827 6,2V REF.DI REFERENCE DIODE	AE 418.0029	CDI	1N827	
V30	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V41	AL BDX34B PNP 80V DARL TRANSISTOR	AL 092.9339	RCA	BDX34B	
V48	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V60	AG BY251 GL 200V 3A0 RECTIFIER	AG 250.3128	INTERMETAL	BY251	
V61	AE BZX55/B16 0,5W Z-DI ZENER DIODE	AE 418.1390	VALVO	BZX55/B16	
V62	AG TIC126S THY700V12A0 THYRISTOR	AG 553.0397	TEXAS INST	TIC126S	
V63	AL BDX78 PNP 80V 8A0 TRANSISTOR	AL 284.4562	VALVO	BDX78	
V64	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V70	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V71	AE BZX79/B5V6 0,5W Z-DI ZENER DIODE	AE 012.5254	VALVO	BZX79/B5V6	
V72	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V83	AL BDT65B NPN 100V DARL DARLINGTON TRANSISTOR	805.8859	VALVO	BDT65B	
V91	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V93	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V100	AG BY251 GL 200V 3A0 RECTIFIER	AG 250.3128	INTERMETAL	BY251	
V101	AE BZX55/B16 0,5W Z-DI ZENER DIODE	AE 418.1390	VALVO	BZX55/B16	
V102	AG TIC126S THY700V12A0 THYRISTOR	AG 553.0397	TEXAS INST	TIC126S	
V108	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V109	AG 1N4007 GL1000V 1A0 RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	

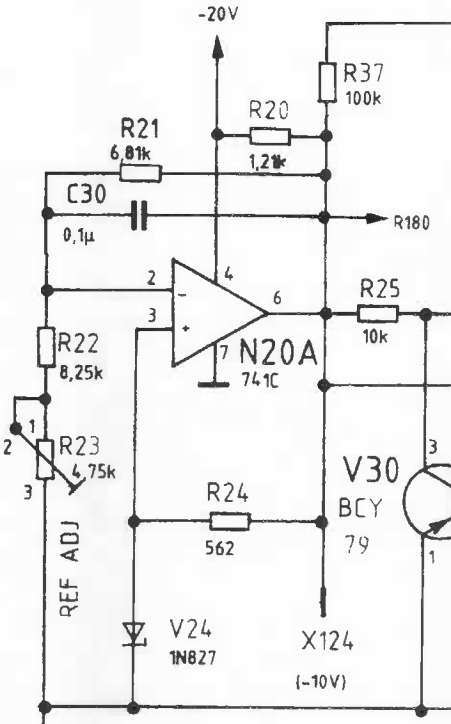
Kennz. Comp.No.	Benennung Designation	Sachnummer Stock No.	Hersteller Manufacturer	Bezeichnung Designation	enthalten in contained in
V110	AG 1N4007 GL1000V 1AO RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V111	AK BCY59IX NPN 45V 200MA TRANSISTOR	AK 010.5163	SIEMENS	BCY59IX	
V113	AL BDX77 NPN 80V 8AO TRANSISTOR	AL 300.6318	VALVO	BDX77	
V155	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V156	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V160	BJ LM335H TEMP.SENSOR PRECION TEMP.SENSOR	395.2867	NSC	LM335H	
V175	AK BCY59IX NPN 45V 200MA TRANSISTOR	AK 010.5163	SIEMENS	BCY59IX	
V176	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V177	AL BDX78 PNP 80V 8AO TRANSISTOR	AL 284.4562	VALVO	BDX78	
V178	AG 1N4007 GL1000V 1AO RECTIFIER	AG 013.0310	AEG-TELEF	1N4007	
V180	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V182	AK BCY79IX PNP 45V 200MA TRANSISTOR	AK 010.3777	SIEMENS	BCY79IX	
V183	AL BDX78 PNP 80V 8AO TRANSISTOR	AL 284.4562	VALVO	BDX78	
V196	AK BCY59IX NPN 45V 200MA TRANSISTOR	AK 010.5163	SIEMENS	BCY59IX	
V198	AD 1N4448 75V 0,15A UDI DIODE	AD 012.0700	TEXAS INST	1N4448 GEGURTET	
V200	AE BZX79/C4V7 0,5W Z-DI ZENER DIODE	AE 012.2432	VALVO	BZX79/C4V7	
X124	VL WIRE-WRAP PIN WIRE-WRAP PIN	VL 088.4507	BERG	NR. 75 403-001	
X170	FP INDIREKT.STECKERL.36P. 4-POLIG PIN CONNECTOR	FP 242.3600	BERG	75160-102-36	
X196	VL WIRE-WRAP PIN WIRE-WRAP PIN	VL 088.4507	BERG	NR. 75 403-001	
X197	VL WIRE-WRAP PIN WIRE-WRAP PIN	VL 088.4507	BERG	NR. 75 403-001	
X221	FP EINLOETSTECKER 9POL CONNECTOR 9POL	681.1150	AMP	350712-1	
X222	FP LP-STECKER 2REIH.20W PCB CONNECTOR,20 CONTACT	805.8936			
X223	FP EINLOETBUCHSE 4POL CONNECTOR 4POL	808.4560	AMP	350826-1	
					- ENDE -

ROHDE&SCHWARZ

ÄZ	Datum / Date	Schaltteilliste für / Parts list for	Sachnummer / Stock No.	Blatt / Page
03	0585	ZE D-POWER SUPPLY	805.8013.01 SA	1

Kennzeichen / Component No.	Benennung/Beschreibung / Designation	Sachnummer / Stock No.	enthalten in / contained in
A21	ED POWER-SUPPLY D-A21	805.8513.02	
A22	ED POWER SUPPLY D-A22	805.8813.02	
E1	ZE LUEFTER	808.4177	
F1	SS SCHMELZS.T2,5DDIN41571 FUSE WICKMANN T2,5D DIN 41571 TROP FUER/FOR 220/240V FUER/FOR 100/120V SS099.6735	SS 020.7575	
R1	RK VARISTOR 35-540V/1KA VARISTOR CONRADTY CONOX 17M 130 VB	808.4202	
R2	RK VARISTOR 35-540V/1KA VARISTOR CONRADTY CONOX 17M 130 VB	808.4202	
S1	SK WIPPSCH.2POL.AUS SW SWITCH MARQUARDT 1802.1102	SK 553.2925	
T1	ZE TRANSFORMATOR	805.8136	
X1	FN NETZFILT.M.SPANNUNGSW. FILTER SCHAFFNER FN 369-2/01	FN 099.3313	
X213	FP BUCHSENGEHAEUSE 6POL. CONNECTORHOUSING 6POL AMP 350 715-1	805.7800	805.8136
X223	FP KUPPLUNGSGEHAEUSE 4POL CONNECTOR 4POL AMP 350779-1	808.4660	805.8136
			- ENDE -





X222

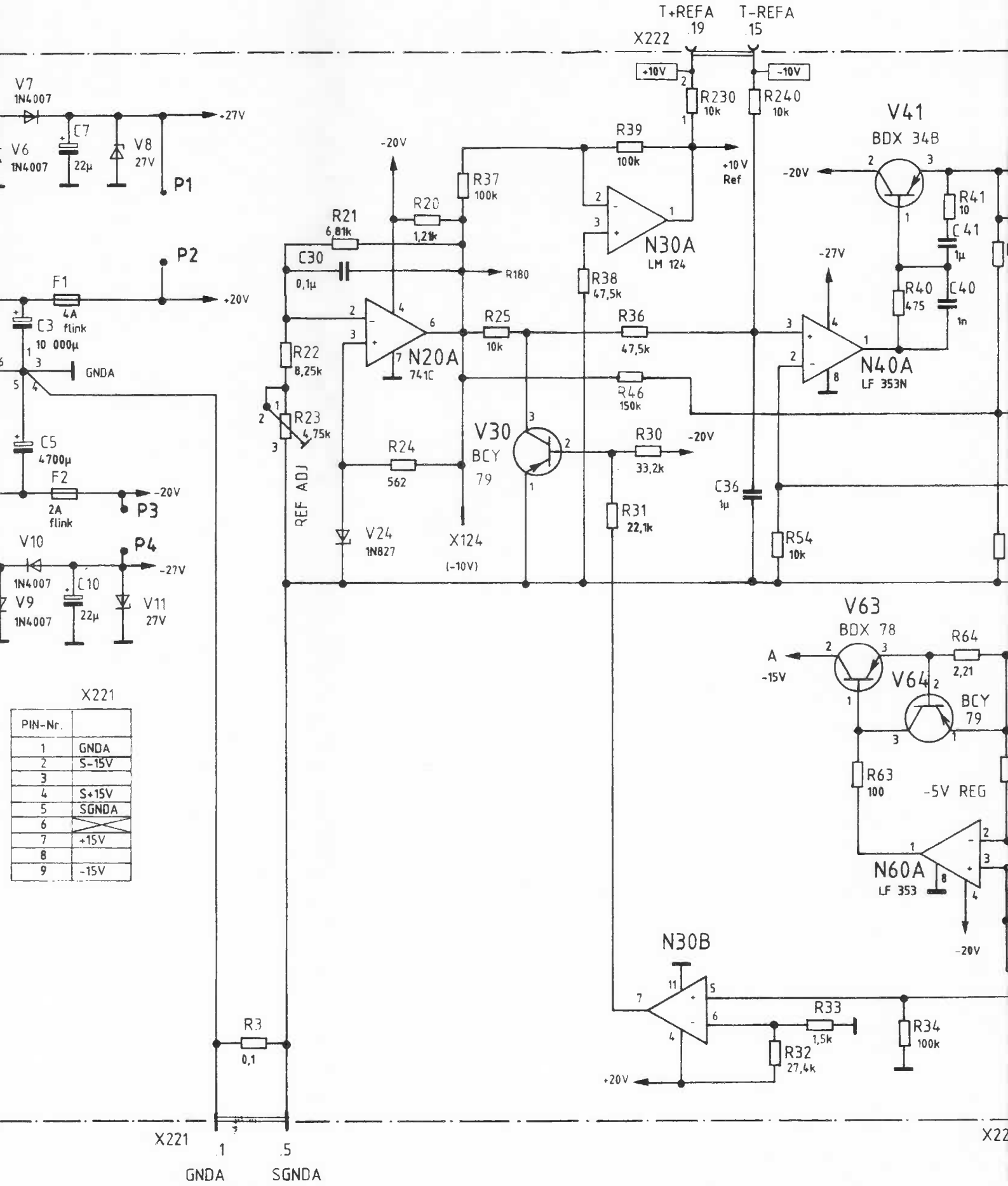
PIN-Nr.	
1	GNDD
2	ST +12V
3	FAN CON
4	TEMPC
5	GNDA
6	GNDA
7	LE-A22
8	LE-TEMP
9	LE-FAN
10	
11	ST TEMP
12	-5V
13	GNDA
14	+12V
15	T-REFA
16	
17	FAN -
18	FAN +
19	T+REFA
20	PWR ON

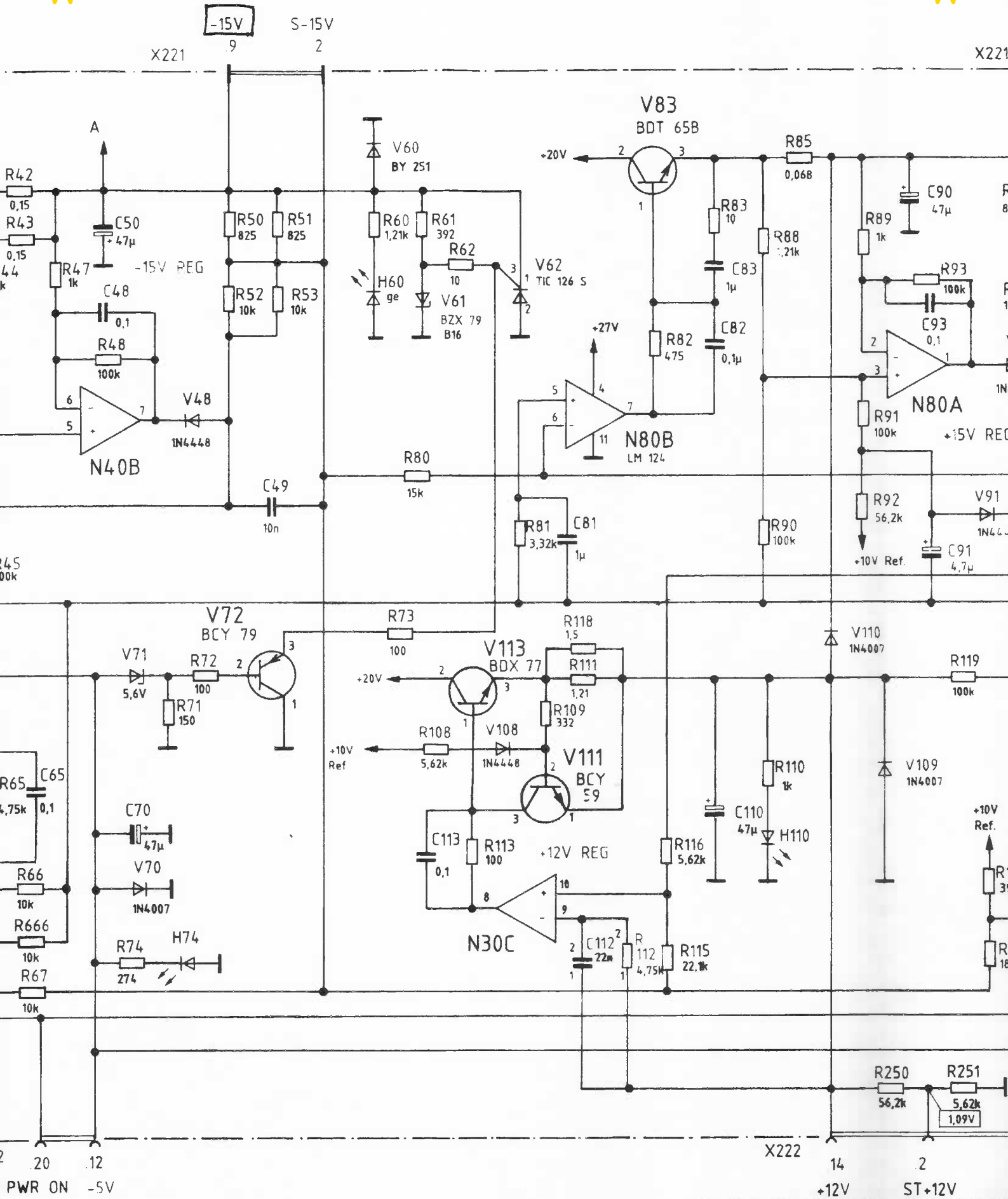
X221

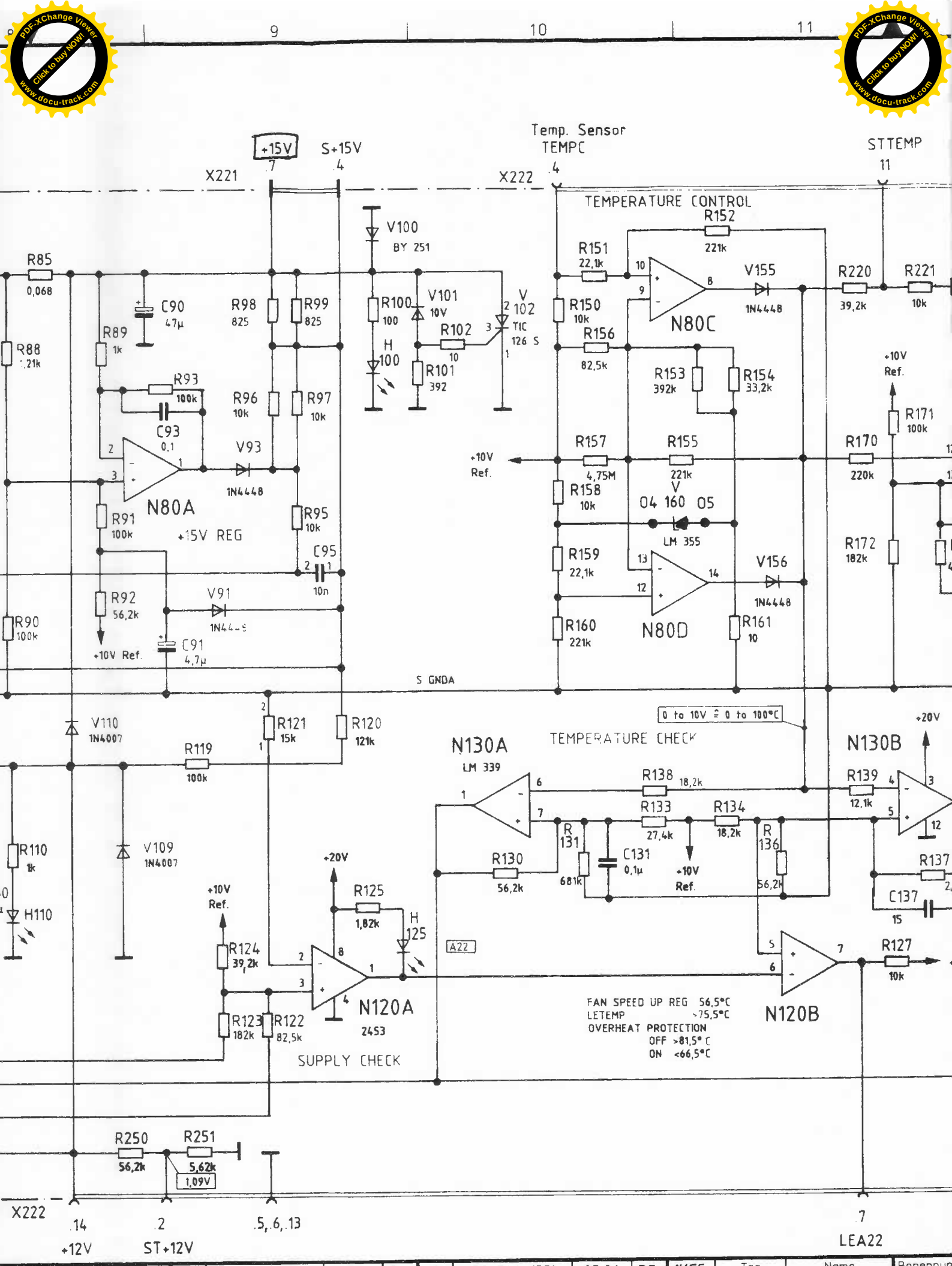
PIN-Nr.	
1	GNDA
2	S-15V
3	
4	S+15V
5	SGNDA
6	
7	+15V
8	
9	-15V

X221 .1 GNDA .5 SGNDA

Zeichn.-Nr. 805. d813 S

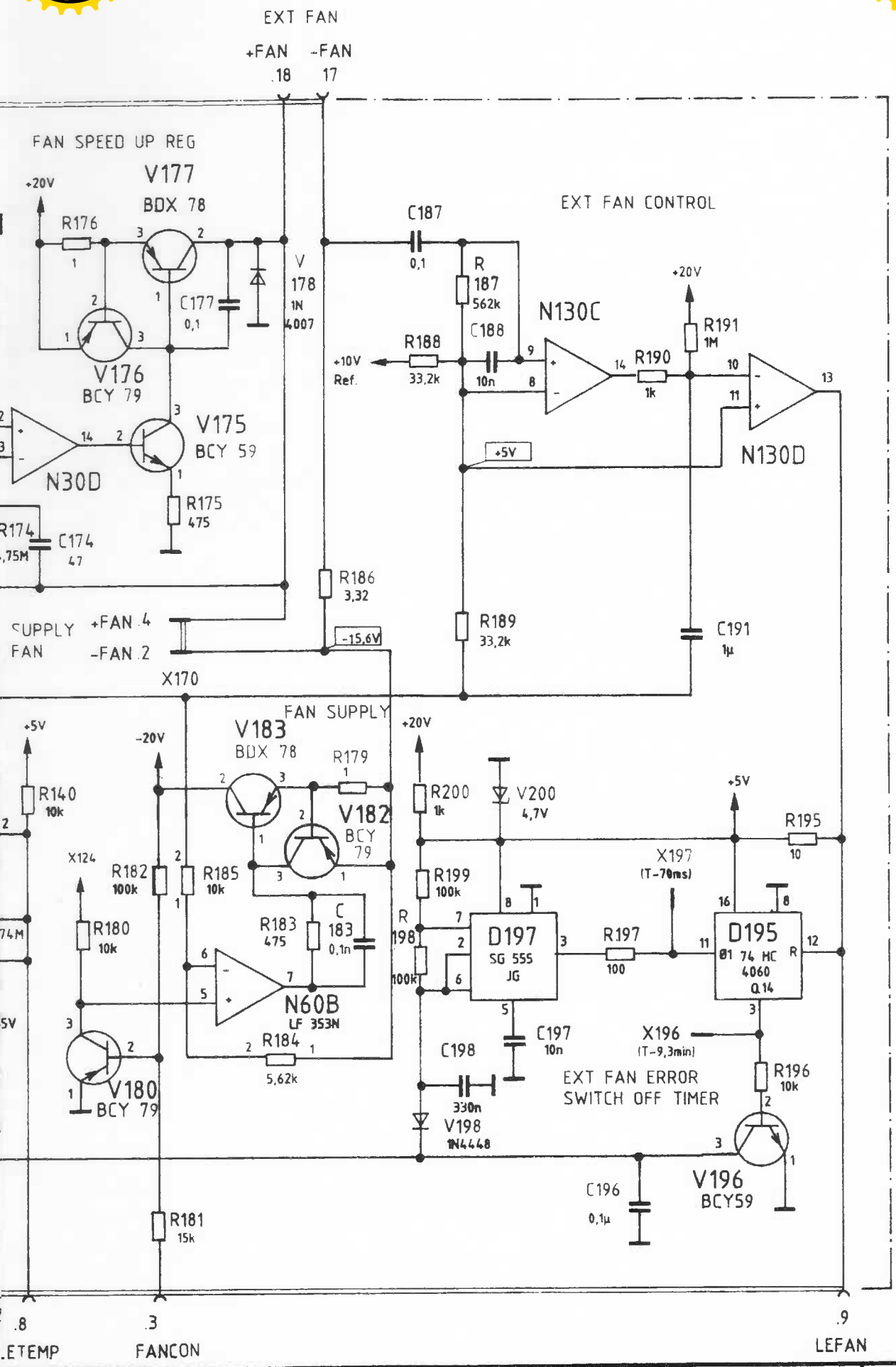






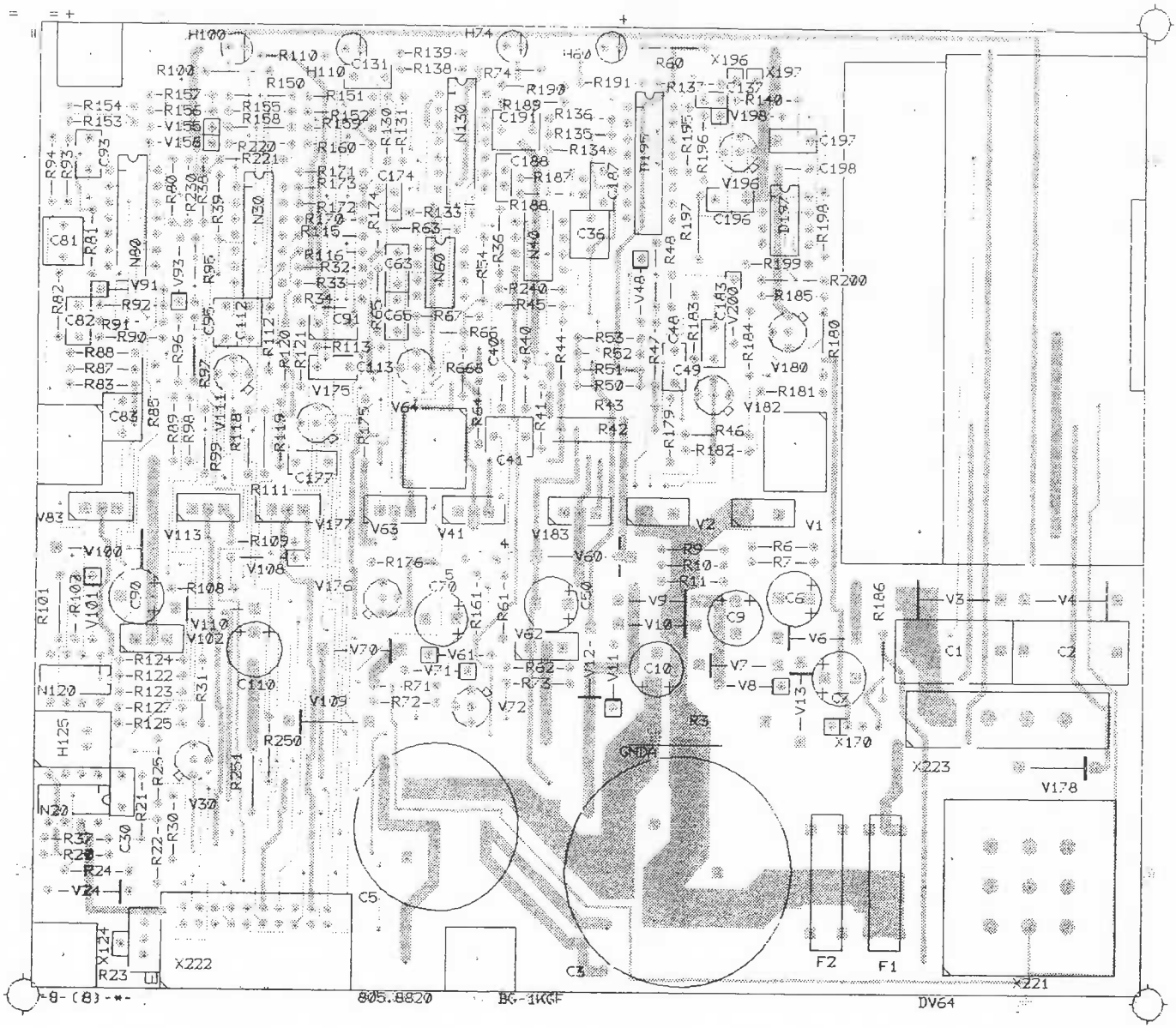
G	32 744 (78)	01.87	Bg	D	32 744 (33)	05.86	BG	1KGF	Tag	Name	Benennun
H	32765	12. 87	PA	E	32 744 (38)	07.86	Bg	Bearb	08.85	BG	
				F	32 744 (60)	11.86	Bg	Gepr			
And Zust	Änderungs-Mitteilung	Datum	Name	And Zust	Änderungs-Mitteilung	Datum	Name	Norm			

HDE&SCHWARZ



POWER-SUPPLY D-A22	Zeichn.-Nr. 805. 8813 S		Blatt-Nr 1
zu Gerät FSA	reg. i. V 804. 9516 V	erste Z. 805. 8013	v 1 B!

Ansicht und Leitungsfuhrung Bauteilseite
View of tracks on component side

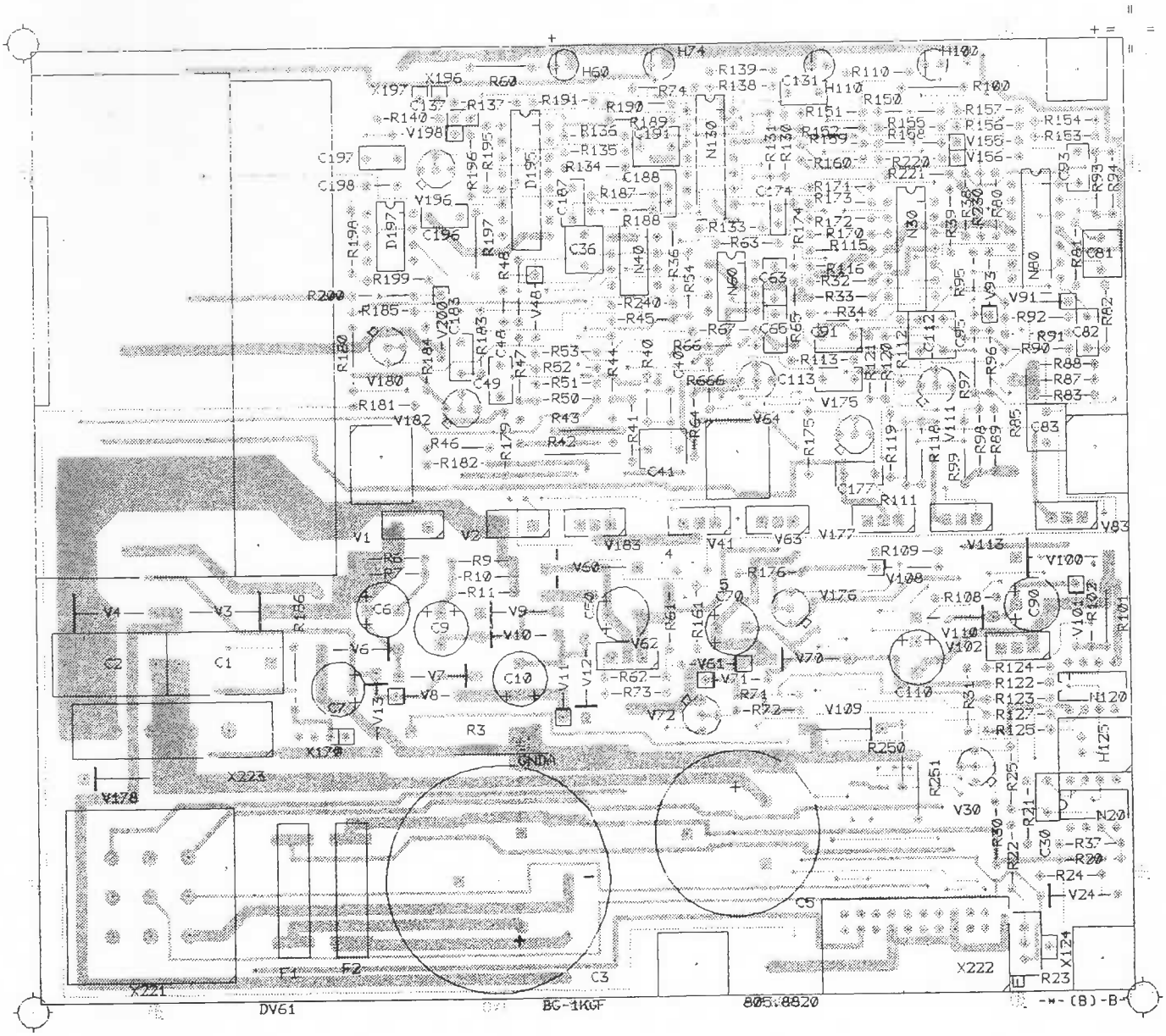


ACHTUNG: EGB!
Elektrostatisch gefährdete Bauelemente erfordern eine besondere Handhabung

ATTENTION ESD!
Electrostatic sensitive devices require a special handling

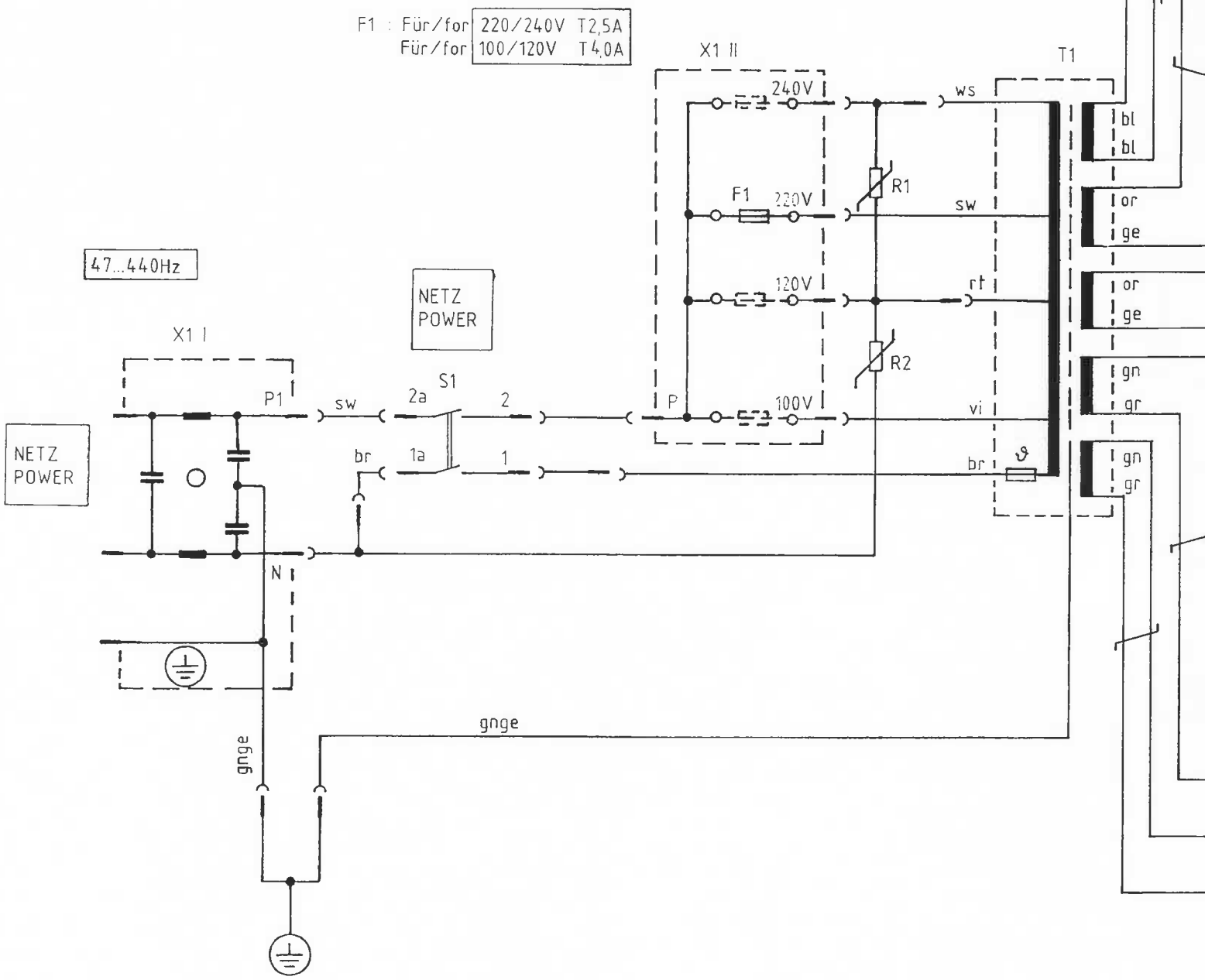
Anderungen Zust

Ansicht und Leitungsführung Lotseite
View of tracks on solder side



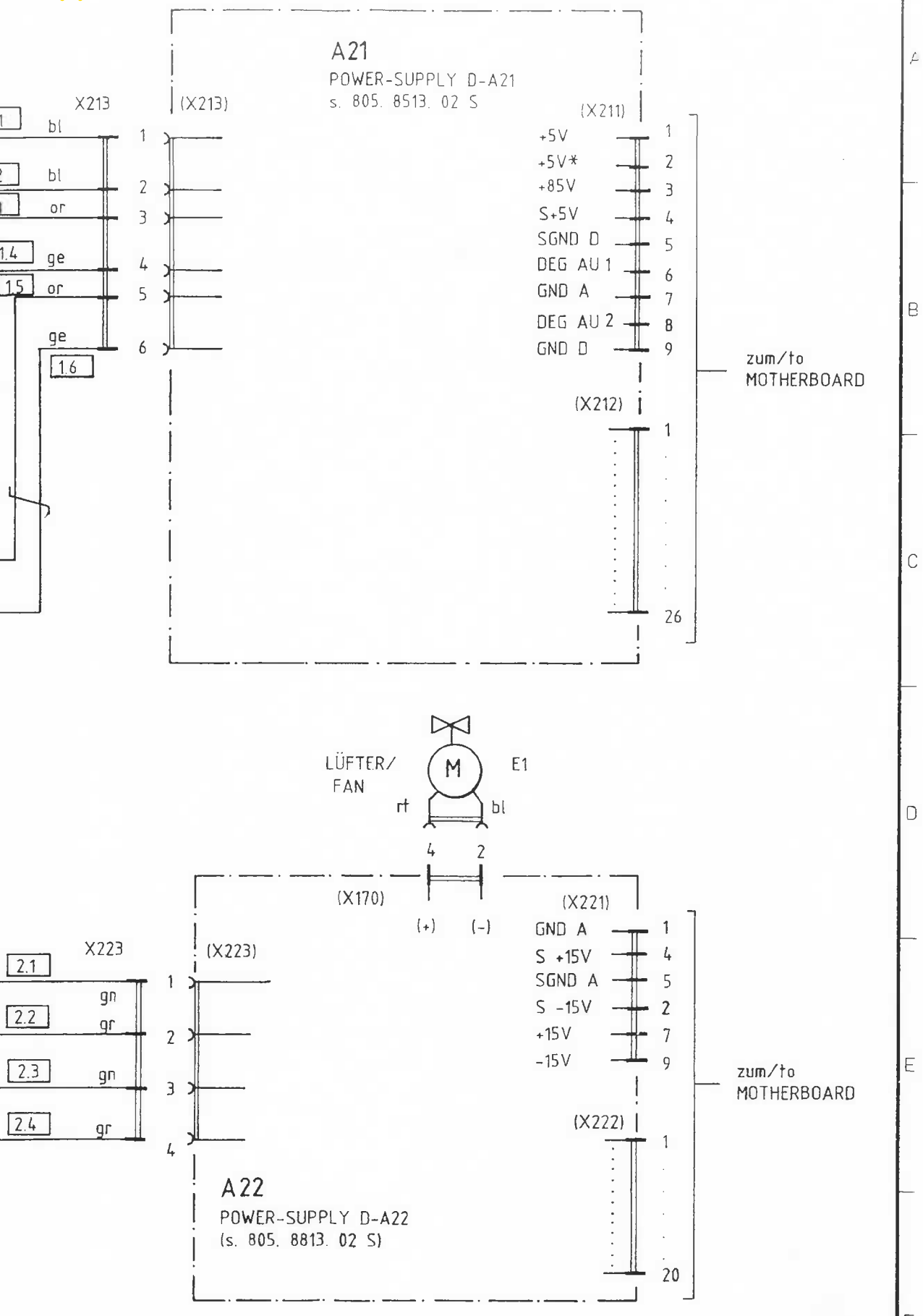
VARIANTENERKLÄRUNG/VERSION
VAR02 – GRUNDAUSFÜHRUNG/BASIC MODEL

G	32744.1601	11.86	BG	Maße ohne Toleranzangabe	Maßstab 1 : 1	
					Halbzeug, Werkstoff	
				1KGF / Bearb / Gepr / Norm	Tag: 11.86	Name: BG
					Benennung: POWER-SUPPLY D-A22	Z
				ROHDE&SCHWARZ	Zeichn.-Nr.: 805.8813.01 ED	Blatt Nr. 2 Bl.
And. Zust.	Änderungs-Mitteilung	Tag	Name	zu Gerät FSA	reg.-Nr. 804.9516 V	erste Z. 805.8013



ROHDE&SCHWARZ					A	—	12.85	BG	1KGF	Tag	Name
					B	[illegible]	03.86	BG	Bearb	07.85	BG
					C	32 744 (102)	06.87	Bg	Gepr		
	And Zus!	Anderungs Mitteilung	Datum	Name	And Zus!	Anderungs Mitteilung	Datum	Name	Norm		

Benennur



D-POWER-SUPPLY	Zeichn. Nr. 805. 8013 S	Blatt-Nr. 1 / v. 1 Bl.
zu Gerät FSA-Display	ers. f. 804. 9516 V	erste Z. 804. 9516