S.Q. TUBE

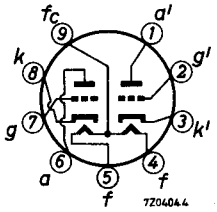
Special quality double triode designed for use as A.F. amplifier.

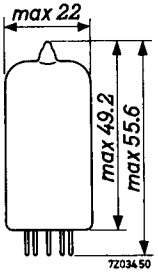
QUICK REFERENCE DATA			
Life test	1000 hours		
Mechanical quality	Shock and vibration resistant		
Base	Noval		
Heating	Indirect A.C. or D.C.; Parallel supply		
Heater voltage	V_f	6.3 or 12.6	V
Heater current	I_f	300 or 150	mA
Anode current	I_a	11.8	mA
Mutual conductance	S	3.2	mA/V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval





CHARACTERISTICS (Both sections if applicable)

Column I Nominal values or setting of the tube
II Range values for equipment design: Initial spread
III Range values for equipment design: End of life

		I	II	III	
Heater voltage (pin 9 and 4+ 5)	V_f	6.3			V
Heater current	I_f	300	276- 324		mA
Heater voltage (pin 4 and 5)	V_f	12.6			V
Heater current	I_f	150			mA
Anode voltage	V_a	100			V
Grid voltage	$-V_g$	0			V
Anode current	I_a	11.8			mA
Mutual conductance	S	3.2	2.5- 4.0		mA/V
Amplification factor	μ	19.5			
Internal resistance	R_i	6.25			kΩ
Anode voltage	V_a	250			V
Grid voltage	$-V_g$	8.5			V
Anode current	I_a	10.5	6.5-14.5		mA
Mutual conductance	S	2.2	1.8- 2.6	min. 1.5	mA/V
Amplification factor	μ	17	15.5-18.5		
Internal resistance	R_i	7.7			kΩ
Negative grid current	$-I_g$		max. 0.5	max.0.5	μA
Cathode peak current	I_{kp}		min. 400		mA
Anode voltage	V_a	250			V
Grid voltage	V_g	55			V
Cut-off voltage	$-V_g$	25			V
Anode voltage	V_a	250			V
Anode current	I_a		max. 20		μA

CHARACTERISTICS (continued)

		I	II	III	
Leakage current between cathode and heater	I_{kf}		max. 5	max. 5	μA
Voltage between cathode and heater V_{kf} = 100 V					
Vibrational noise output	V_o		max. 100		mV_{RMS}
Anode voltage V_a = 250 V					
Grid voltage $-V_g$ = 8.5 V					
Anode resistor R_a = 2 kΩ					
Grid resistor R_g = 0.1 MΩ					
Vibration frequency = 50 Hz					
Acceleration = 10 g					

CAPACITANCES

Anode to cathode and heater	$C_{a/kf}$	0.5	0.3- 0.7		pF
	$C_{a'/k'f}$	0.4	0.2- 0.6		pF
Grid to cathode and heater	$C_{g/kf}$	1.6	1.25-1.95		pF
Anode to grid	C_{ag}	1.5	1.2- 1.8		pF

SHOCK AND VIBRATION RESISTANCE

The following test conditions are applied to assess the mechanical quality of the tube. These conditions are not intended to be used as normal operating conditions.

Shock

The tube is subjected 5 times in each of 4 positions to an acceleration of 500 g supplied by an NRL shock machine with the hammer lifted over an angle of 30°.

Vibration

The tube is subjected during 32 hours in each of 3 positions to a vibration frequency of 50 Hz with an acceleration of 2.5 g.

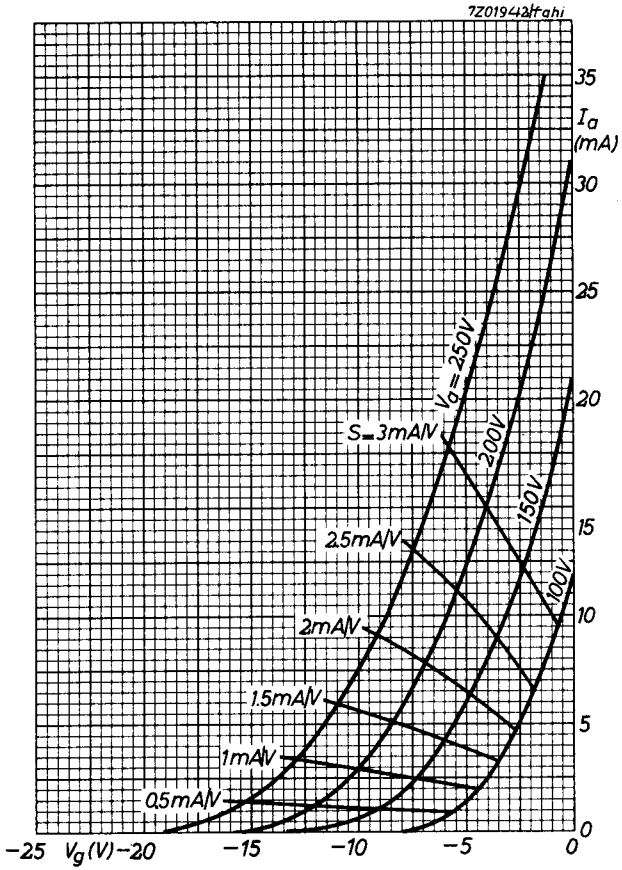
LIFE

Production samples are tested to be within the end of life values (column III) under the following conditions during 1000 hours.

Anode voltage	V_a	250	V
Grid voltage	$-V_g$	8.5	V

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_a	max.	330	V
Anode dissipation	W_a	max.	3	W
Cathode current	I_k	max.	22	mA
Grid resistor: fixed bias	R_{g_1}	max.	0.5	MΩ
automatic bias	R_{g_1}	max.	1.0	MΩ
Voltage between cathode and heater	V_{kf}	max.	110	V
Bulb temperature	t_{bulb}	max.	165	°C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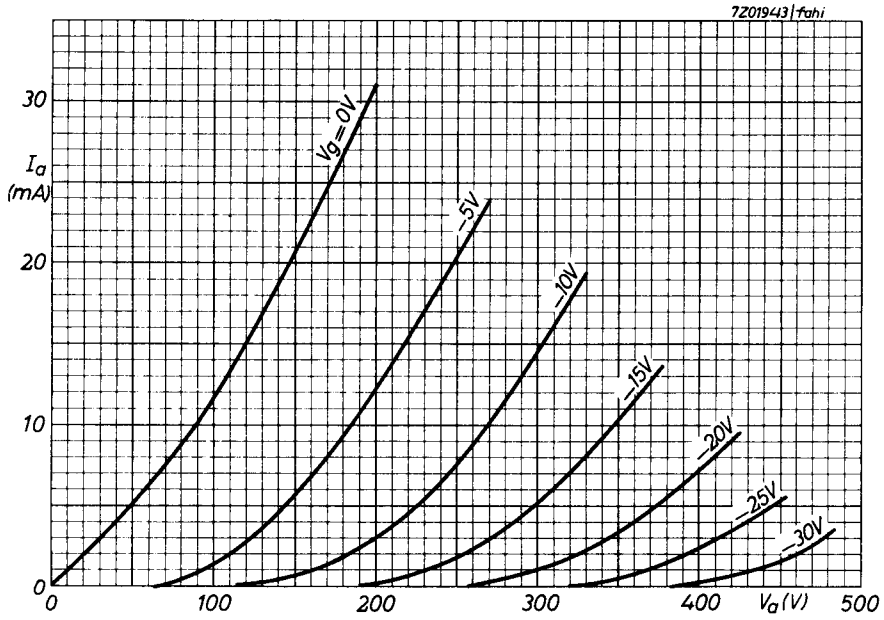
35
I_a
(mA)
30
25
20
15
10
5
0
V_a = 250V
S = 3mA/V
200V
150V
100V
2.5mA/V
2mA/V
1.5mA/V
1mA/V
0.5mA/V
−25
V_g(V)
−20
−15
−10
−5
0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30
I_a
(mA)
20
10
0
0
100
200
300
400
V_a(V)
500
V_g=0V
−5V
−10V
−15V
−20V
−25V
−30V

PHILIPS

Data handbook

Electronic components and materials

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