

S.Q. TUBE

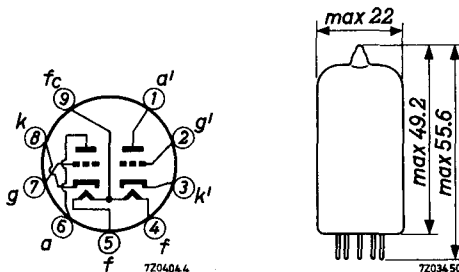
Special quality double triode designed for use as A.F. amplifier.

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			k Ω
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			k Ω
<u>Negative grid current</u>	$-I_g$		max. 0.5	max. 0.5	μ A
<u>Cathode peak current</u>	I_{kp}		min. 400		mA
Anode voltage	V_a	250			V
Grid voltage	V_g	55			V
<u>Cut-off voltage</u>	$-V_g$	25			V
Anode voltage	V_a	250			V
Anode current	I_a		max. 20		μ A

CHARACTERISTICS (continued)

		I	II	III	
<u>Leakage current between cathode and heater</u>	I_{kf}		max. 5	max. 5	μA
Voltage between cathode and heater $V_{kf} = 100 \text{ V}$					
<u>Vibrational noise output</u>	V_o		max. 100		mV_{RMS}
Anode voltage $V_a = 250 \text{ V}$					
Grid voltage $-V_g = 8.5 \text{ V}$					
Anode resistor $R_a = 2 \text{ k}\Omega$					
Grid resistor $R_g = 0.1 \text{ M}\Omega$					
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.

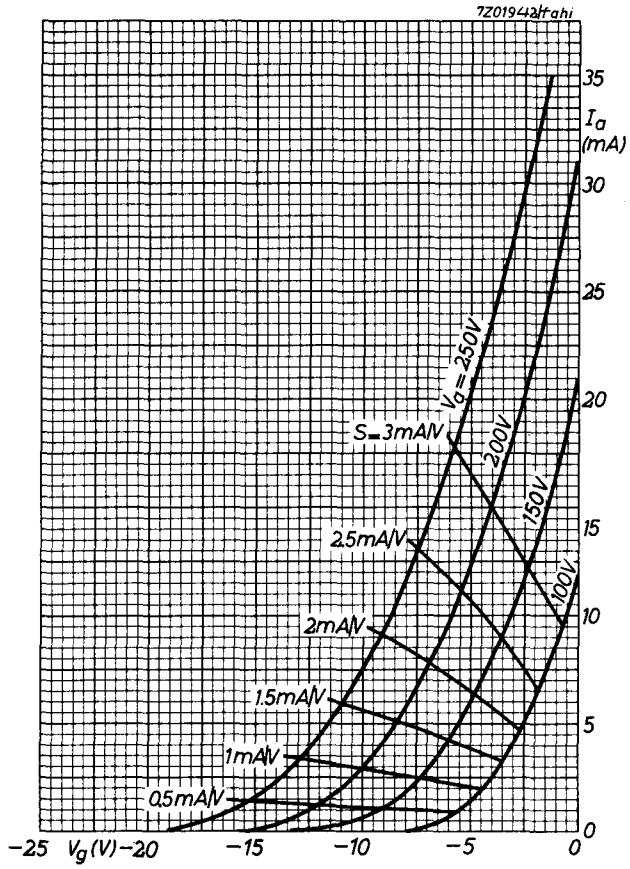
LIFE

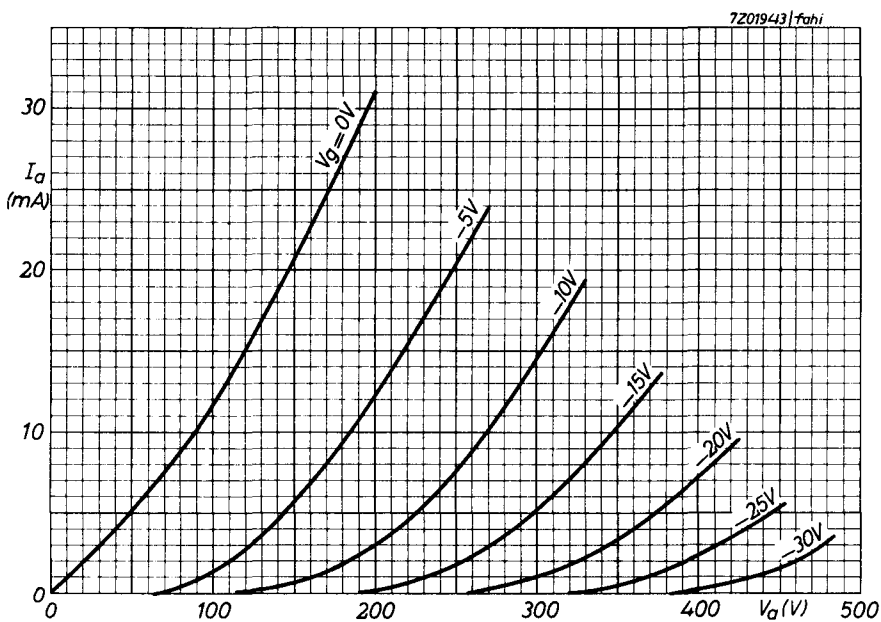
Production samples are tested to be within the end of life values (column III) under the following conditions during 1000 hours.

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_{g1}	max. 0.5	M Ω
automatic bias	R_{g1}	max. 1.0	M Ω
Voltage between cathode and heater	V_{kf}	max. 110	V
Bulb temperature	t_{bulb}	max. 165	$^{\circ}\text{C}$





PHILIPS

Data handbook



**Electronic
components
and materials**

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