

S.Q. TUBE

Special quality double triode designed for use as A.F. amplifier and multi-
brator.

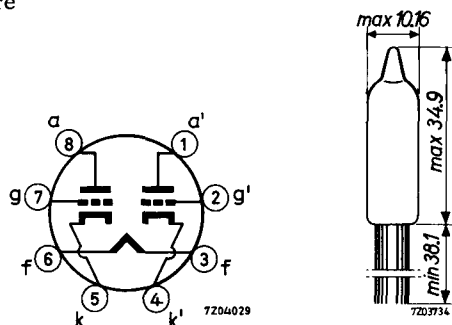
QUICK REFERENCE DATA

Life test	1000 hours
Mechanical quality	Shock and vibration resistant
Base	Subminiature
Heating	Indirect A.C. or D.C.; parallel supply
Heater voltage	V_f 6.3 V
Heater current	I_f 300 mA
Anode current	I_a 0.8 mA
Mutual conductance	S 1.8 mA/V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Subminiature



The leads should not be soldered nearer than 5 mm to the seal and should not be bent nearer than 1.5 mm to the seal.

CHARACTERISTICS

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	V_f	6.3			V
Heater current	I_f	300	280 - 320		mA
Anode voltage	V_a	100			V
Grid voltage	$-V_g$	1.2			V
Anode current	I_a	0.8			mA
Mutual conductance	S	1.8			mA/V
Amplification factor	μ	70			
Internal resistance	R_i	38.8			k Ω
Anode voltage	V_a	100			V
Cathode resistor	R_k	1500			Ω
Anode current	I_a	0.8	0.5 - 1.1		mA
Mutual conductance	S	1.8	1.5 - 2.1		mA/V
Amplification factor	μ	70	60 - 80		
<u>Cut off voltage</u>	$-V_g$	2.8			V
Anode voltage	V_a	100			V
Anode current	I_a		max. 50		μ A
<u>Leakage current between cathode and heater</u>	I_{kf}		max. 5	max. 10	μ A
Voltage between cathode and heater $V_{kf} = 100$ V					
<u>Negative grid current</u>	$-I_g$		max. 0.3	max. 0.9	μ A
Anode voltage	V_a	150			V
Cathode resistor	R_k	820			Ω

CHARACTERISTICS (continued)Vibrational noise outputAnode supply voltage $V_{ba} = 100 \text{ V}$ Cathode resistor $R_k = 1500 \Omega$ Anode resistor $R_a = 10 \text{ k}\Omega$ Grid resistor $R_g = 0.1 \text{ M}\Omega$ Cathode bypass capacitor $C_k = 1000 \mu\text{F}$

Vibration frequency 50 Hz

Acceleration 15 g

CAPACITANCES

Anode to cathode and heater

 C_a/kf 0.23 0.16 - 0.30 pF $C_{a'}/k'f$ 0.28 0.21 - 0.35 pF

Grid to cathode and heater

 C_g/kf 1.7 1.3 - 2.1 pF

Anode to anode other section

 $C_{aa'}$ max. 0.8 pF

Grid to grid other section

 $C_{gg'}$ max. 14.0 mpF

Anode to grid

 C_{ag} 1.0 0.8 - 1.2 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.

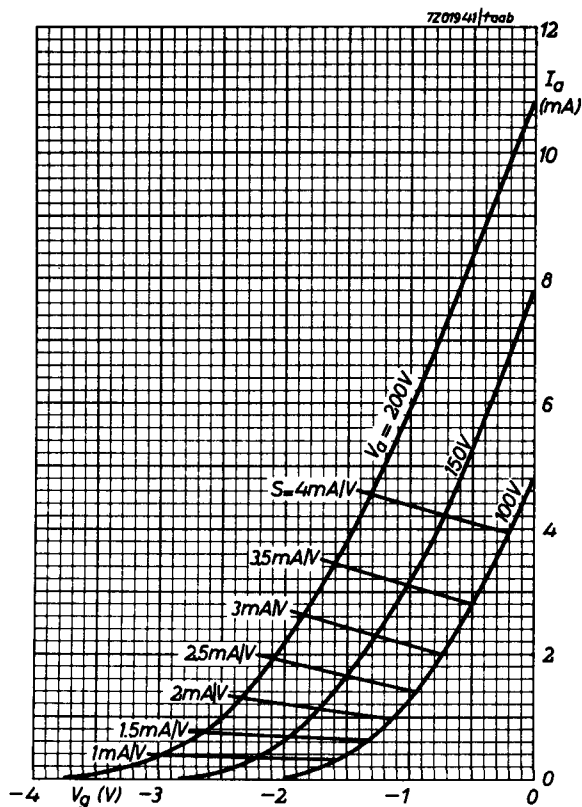
LIFE

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

Anode supply voltage V_{ba} 100 VCathode resistor R_k 1500 Ω

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_{a0}	max.	330 V
	V_a	max.	165 V
Grid voltage	$+V_g$	max.	0 V
	$-V_g$	max.	55 V
Anode dissipation	W_a	max.	0.55 W
Anode current	I_a	max.	3.3 mA
Peak voltage between cathode and heater	V_{kfP}	max.	200 V
Grid resistor	R_g	max.	1 M Ω
Bulb temperature	t_{bulb}	max.	220 °C



PHILIPS

Data handbook



**Electronic
components
and materials**

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page	sheet	date
1	1	1968.12
2	2	1968.12
3	3	1968.12
4	4	1968.12
5	FP	2001.05.12