

S.Q. TUBE

Special quality pentode designed for use as controlled R.F. or I.F. amplifier (max. freq. 400 MHz).

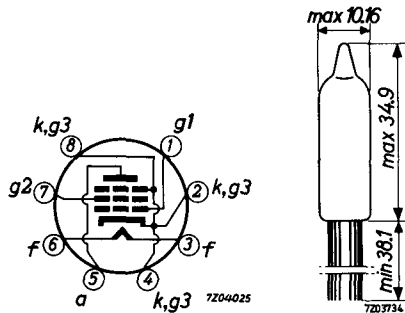
QUICK REFERENCE DATA

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	150 mA
Anode current	I_a	7.2 mA
Mutual conductance	S	4.5 mA/V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Subminiature



Leads should not be soldered nearer than 5 mm to the seal
Leads should not be bent nearer than 2 mm to the seal

CHARACTERISTICS

Column I Nominal value 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	150	140-160		mA
Anode voltage	V_a	100			V
Grid No.2 voltage	V_{g2}	100			V
Cathode resistor	R_k	120			Ω
Anode current	I_a	7.2	5.2-9.2		mA
Grid No.2 current	I_{g2}	2.0	1.0-3.0		mA
Mutual conductance	S	4.5	3.8-5.2	ΔS max. 25%	mA/V
Internal resistance	R_i	260	min.175		k Ω
Negative grid No.1 current	$-I_{g1}$		max.0.3	max. 0.8	μA
Mutual conductance	S	25	1 - 75		$\mu A/V$
Grid No.1 voltage	$-V_{g1}$	14			V
<u>Leakage current between cathode and heater</u>	I_{kf}		max. 5	max. 10	μA
Voltage between cathode and heater $V_{kf} = 100$ V					
Insulation resistance between electrodes	R_{ins}		min.100		M Ω

CHARACTERISTICS (continued)

		I	II	
<u>Vibrational noise output</u>	V_o		max. 60	mV _{RMS}
Anode supply voltage				
$V_{ba} = 100$ V				
Grid No.2 supply voltage				
$V_{bg2} = 100$ V				
Cathode resistor $R_k = 120$ Ω				
Anode resistor $R_a = 10$ k Ω				
Grid No.1 resistor $R_{g1} = 1$ M Ω				
Cathode bypass capacitor				
$C_k = 1000$ μ F				
Vibration frequency = 50 Hz				
Acceleration = 15 g				
CAPACITANCES With external shield				
Anode to grid No.2, cathode heater and screen	$C_{a/g2kfs}$	3.4	2.9 - 3.9	pF
Grid No.1 to grid No.2, cathode heater and screen	$C_{g1/g2kfs}$	4.2	3.8 - 4.8	pF
Anode to grid No.1	C_{ag1}		max. 15	mpF

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.

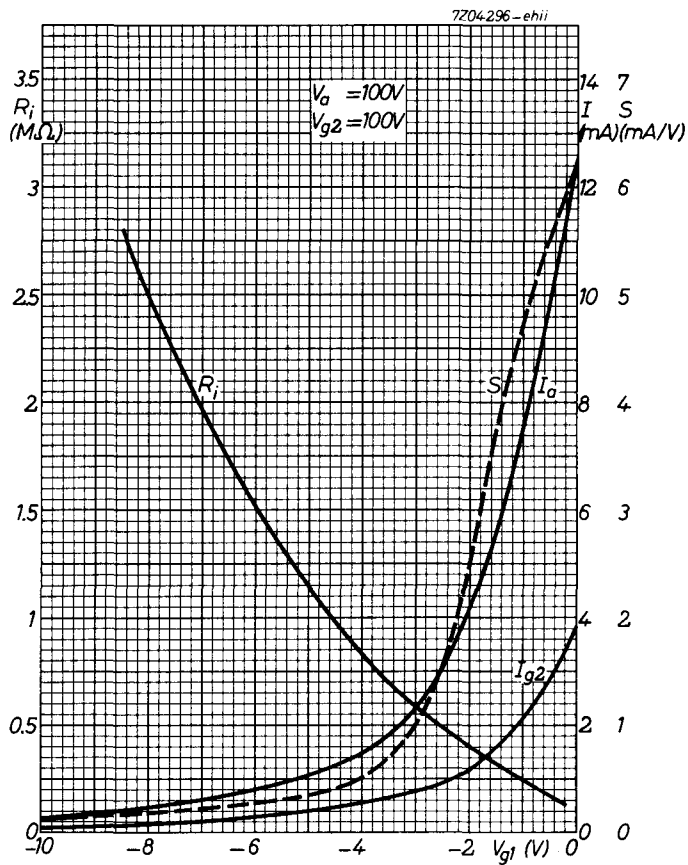
LIFE

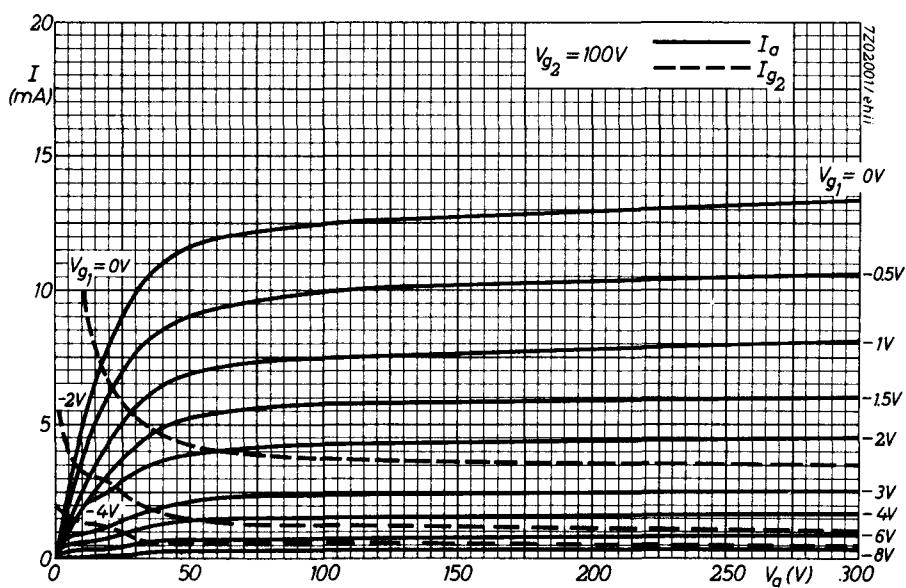
Production samples are tested to be within the end of life values (column III) under the following conditions during 1000 hours.

Anode voltage	V_a	100	V
Grid No.2 voltage	V_{g2}	100	V
Cathode resistor	R_k	120	Ω

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_a	max.	165	V
Grid No.2 voltage	V_{g2}	max.	155	V
Anode dissipation	W_a	max.	1.1	W
Grid No.2 dissipation	W_{g2}	max.	0.55	W
Cathode current	I_k	max.	16.5	mA
Voltage between cathode and heater	V_{kf}	max.	200	V
Grid No.1 resistor	R_{g1}	max.	1.2	M Ω
Bulb temperature	t_{bulb}	max.	220	$^{\circ}\text{C}$





PHILIPS

Data handbook



**Electronic
components
and materials**

5899

page	sheet	date
1	1	1968.12
2	2	1968.12
3	3	1968.12
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6	6	1968.12
7	FP	2001.05.12