

S.Q. TUBE

Special quality pentode designed for use as A.F. power output tube.

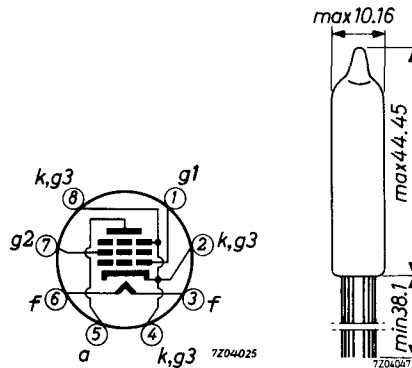
QUICK REFERENCE DATA

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	450 mA
Anode current	I_a	30 mA
Output power	W_o	1.0 W

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 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	450	420 - 480		mA
Anode voltage	V_a	100			V
Grid No. 2 voltage	V_{g2}	100			V
Grid No. 1 voltage	$-V_{g1}$	9			V
Anode current	I_a	30			mA
Grid No. 2 current	I_{g2}	2.2			mA
Mutual conductance	S	4.2			mA/V
Anode supply voltage	V_{ba}	109			V
Grid No. 2 supply voltage	V_{bg2}	109			V
Cathode resistor	R_k	270			Ω
Anode current	I_a	30	23 - 37		mA
Grid No. 2 current	I_{g2}	2.2	max. 4.0		mA
Mutual conductance	S	4.2	3.5 - 4.9		mA/V
Internal resistance	R_i	15	min. 10		$k\Omega$
Negative grid No. 1 current	$-I_{g1}$	1		2	μA
Output power	W_o	1.0	min. 0.75	$\Delta W_o : \text{max. } 25\%$	W
Load resistance $R_{a\sim} = 3 k\Omega$					
Leakage current between cathode and heater	I_{kf}		max. 15	max. 60	μA
Voltage between cathode and heater $V_{kf} = 100 \text{ V}$					

CHARACTERISTICS (continued)Vibrational noise output

	II	
V_o	max. 100	mV _{RMS}

Anode supply voltage $V_{ba} = 110$ V

Grid No. 2 supply voltage $V_{bg_2} = 110$ V

Cathode resistor $R_k = 270 \Omega$

Cathode by-pass capacitor $C_k = 1000$ pF

Anode resistor $R_a = 2$ k Ω

Vibration frequency = 50 Hz

Acceleration = 15 g

CAPACITANCES

Anode to grid No. 2, cathode,
heater and screen

Grid No. 1 to grid No. 2 cathode,
heater and screen

Anode to grid No. 1

	I	II	
C_{a/g_2kfs}	7.2	6.5 - 8.5	pF
C_{g_1/g_2kfs}	6.5	5.5 - 7.5	pF
C_{ag_1}		max. 0.2	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.

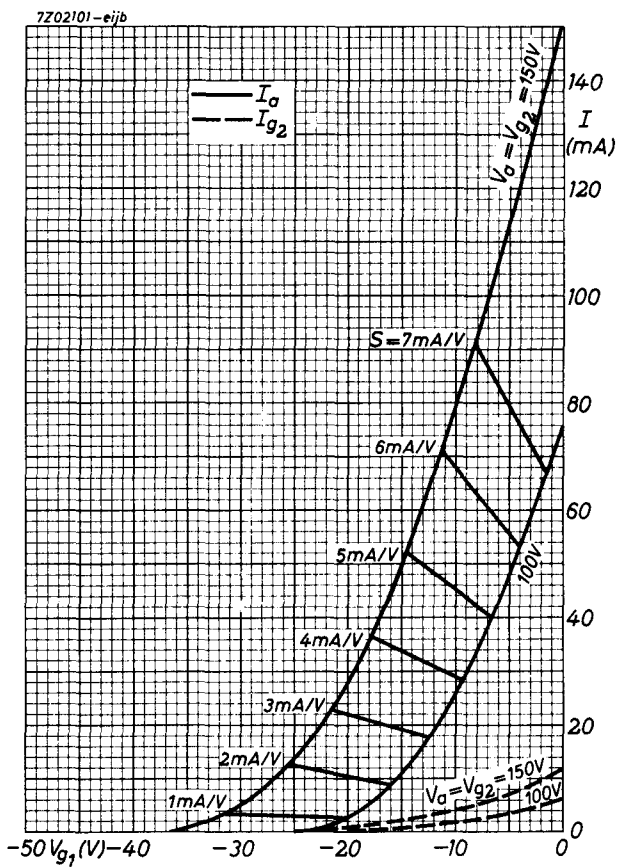
LIFE

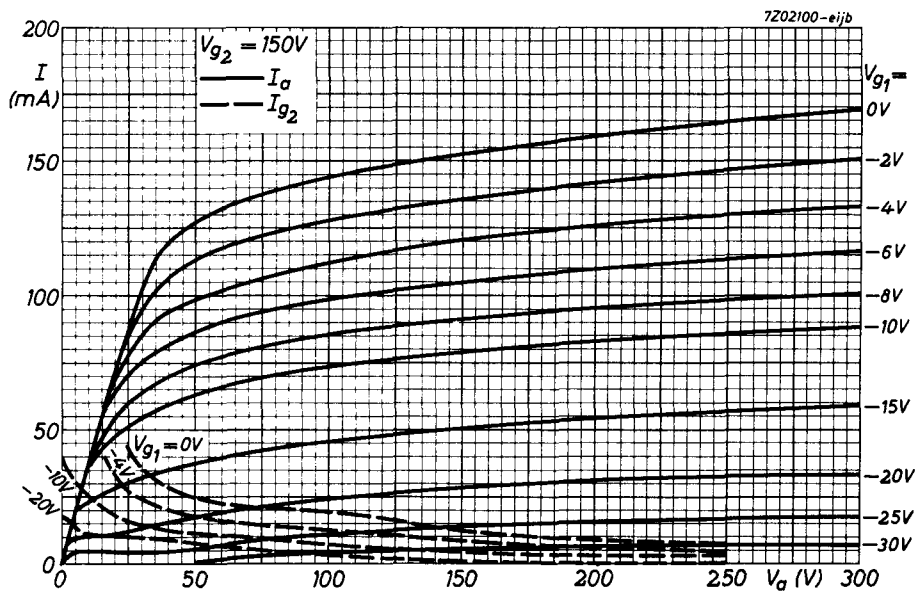
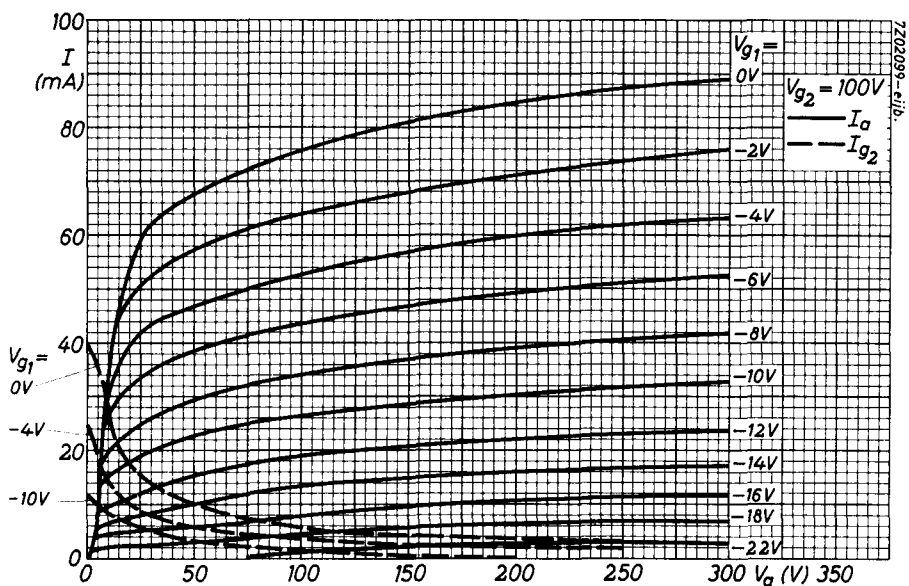
Production samples are tested to be within the end of life values (column III) under the following conditions during 1000 hours

Anode supply voltage	V_{ba}	109	V
Grid No.2 supply voltage	V_{bg2}	109	V
Cathode resistor	R_k	270	Ω

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_{a0}	max.	330	V
	V_a	max.	165	V
Grid No.2 voltage	V_{g20}	max.	310	V
	V_{g2}	max.	155	V
Grid No.1 voltage	$-V_{g1}$	max.	55	V
Anode dissipation	W_a	max.	4	W
Grid No.2 dissipation	W_{g2}	max.	1	W
Cathode current	I_k	max.	50	mA
Peak voltage between cathode and heater	V_{kf}	max.	200	V
Grid No.1 resistor, fixed bias automatic bias	R_{g1}	max.	0.1	$M\Omega$
	R_{g1}	max.	0.55	$M\Omega$
Bulb temperature	t_{bulb}	max.	220	$^{\circ}C$





PHILIPS

Data handbook



**Electronic
components
and materials**

5902

page	sheet	date
1	1	1968.12
2	2	1968.12
3	3	1968.12
4	4	1968.12
5	5	1968.12
6	6	1968.12
7	FP	2001.05.12