

S.Q. TUBE

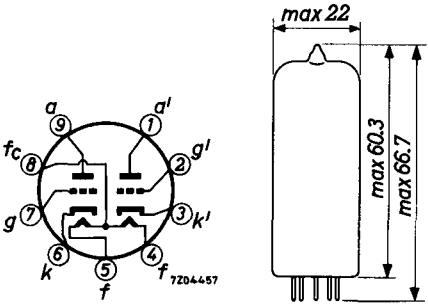
Special quality double triode designed for use in computer circuits.

QUICK REFERENCE DATA		
Life test	10 000 hours	
Low interface resistance		
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	640 or 320 mA
Anode current	I_a	36 mA
Mutual conductance	S	15 mA/V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval



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 (pin 8 and 4 + 5)	V_f	6.3			V
Heater current	I_f	640	605- 675		mA
Heater voltage (pin 4 and 5)	V_f	12.6			V
Heater current	I_f	320			mA
Anode voltage	V_a	120			V
Grid voltage	$-V_g$	2			V
Anode current	I_a	36	26- 45		mA
Mutual conductance	S	15			mA/V
Amplification factor	μ	24			
Negative grid current	$-I_g$		max. 0.2	max. 1.0	μA
Anode voltage	V_a	120			V
Cathode resistor	R_k	55			Ω
Mutual conductance	S	15	11.2-18.8	min. 8	mA/V
Anode voltage	V_a	90			V
Grid current	I_g	250			μA
Anode current	I_a		41- 62	min. 24	mA
<u>Cut-off voltage</u>	$-V_g$	14			V
Anode voltage	V_a	150			V
Anode current	I_a		max. 0.2		mA
<u>Leakage current between cathode and heater</u>	I_{kf}		max. 15	max. 30	μA
Voltage between cathode and heater = 200 V					
<u>Insulation resistance between two electrodes</u>			min. 100	min. 20	M Ω

CAPACITANCES Each system if applicable

		I	II	
Anode to cathode and heater	$C_{a/kf}$	1.1	0.75-1.45	pF
	$C_{a' / k' f}$	1.0	0.65-1.35	pF
Grid to cathode and heater	$C_{g/kf}$	6.0	5.3- 6.7	pF
Anode to grid	C_{ag}	4.0	3.4- 4.6	pF
	$C_{a' g'}$	4.1	3.4- 4.8	pF
Cathode to heater	C_{kf}	4.0		pF
Anode to anode other section	$C_{aa'}$	0.6	max. 0.8	pF
Grid to grid other section	$C_{gg'}$		max. 0.15	pF
Anode to grid other section	$C_{ag'}$		max. 0.1	pF

LIFE

Production samples are tested to be within the end of life values (column III) during 10 000 hours under the following conditions.

Anode supply voltage	V_{ba}	150 V
Anode resistor	R_a	1.5 k Ω
Grid supply voltage	V_{bg}	150 V
Grid resistor	R_g	62 k Ω
Voltage between cathode and heater (cath. neg.)	V_{kf}	120 V

LIMITING VALUES (Absolute max. rating system)

Anode voltage	V_{a0}	max. 600 V
	V_a	max. 300 V
Anode dissipation	W_a	max. 4.5 W
Anode dissipation (both sections)	$W_{a+a'}$	max. 8.0 W
Grid voltage	$-V_g$	max. 100 V
	$+V_g$	max. 1 V

LIMITING VALUES (continued)

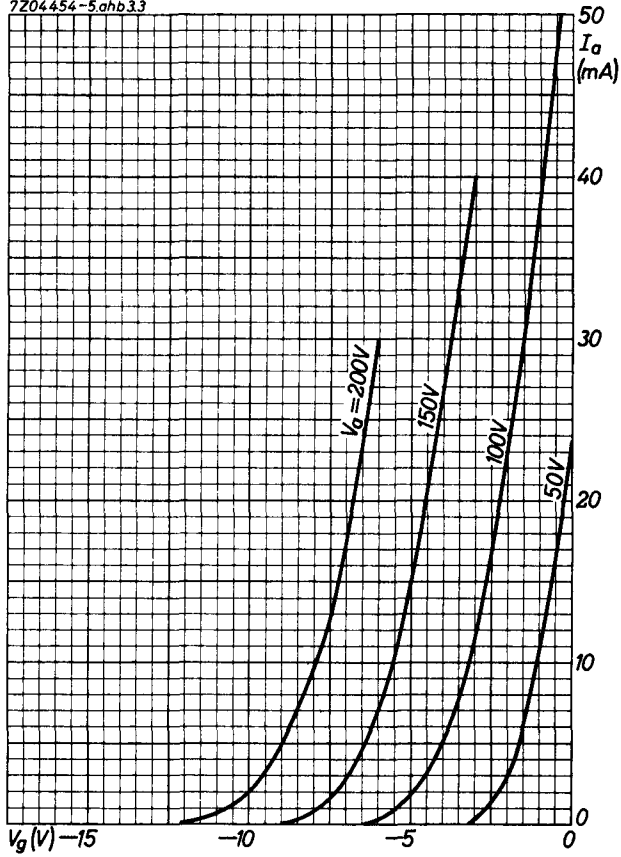
Grid voltage, peak	}	$+V_{gp}$	max.	30	V
Pulse duration max. $10\ \mu\text{s}$		$-V_{gp}$	max.	200	V
Duty factor max. 0.01					
Grid current		I_g	max.	8	mA
Grid peak current		I_{gp}	max.	200	mA
Pulse duration max. $10\ \mu\text{s}$					
Duty factor max. 0.01					
Cathode current		I_k	max.	60	mA
Cathode peak current		I_{kp}	max.	400	mA
Pulse duration max. $10\ \mu\text{s}$					
Duty factor max. 0.01					
Voltage between cathode and heater d.c. component		V_{kf}	max.	200	V
		V_{kf}	max.	120	V
Bulb temperature		t_{bulb}	max.	160	$^{\circ}\text{C}$
Grid resistor with automatic bias		R_g	max.	1	$\text{M}\Omega$
Grid resistor with fixed bias		R_g	max.	0.5	$\text{M}\Omega$

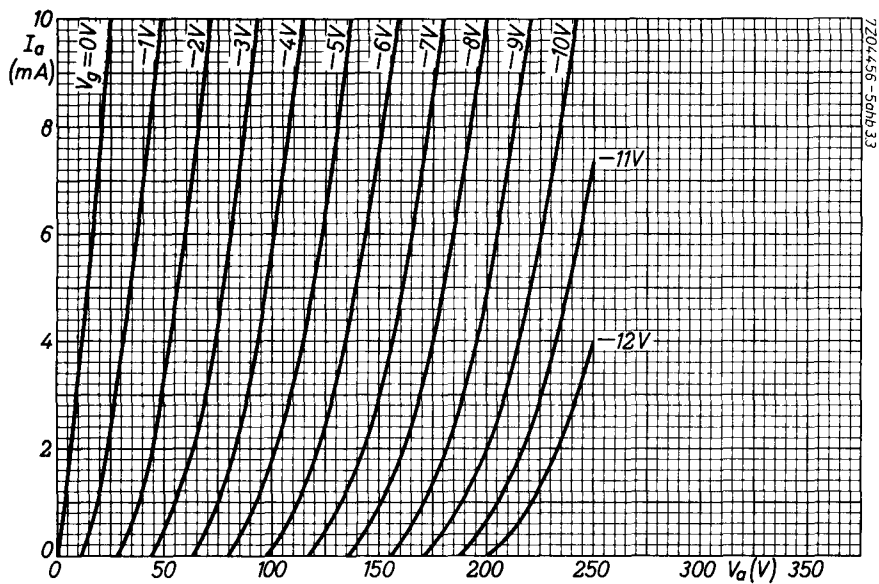
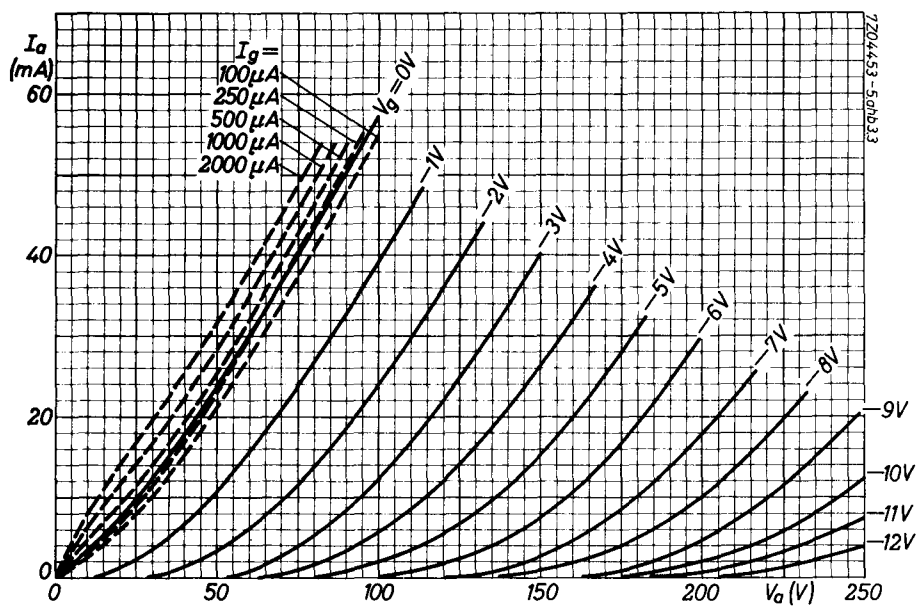
Heater voltage: The average heater voltage should be 6.3/12.6 V.

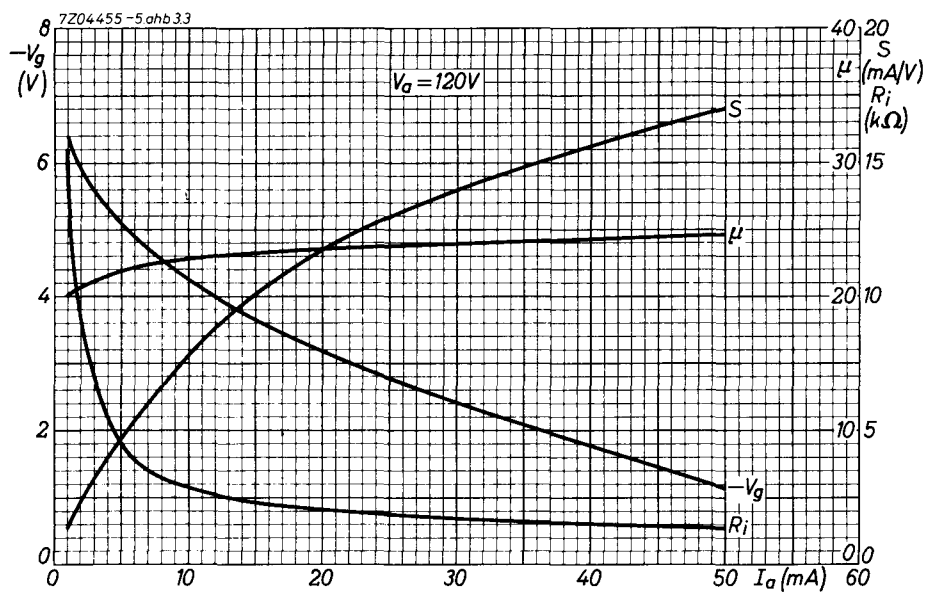
Variations of the heater voltage exceeding the range of 6.0/12.0 V to 6.6/13.2 V will shorten the tube life.

The tolerance of heater current (column II) should be taken into account.

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PHILIPS

Data handbook



**Electronic
components
and materials**

E182CC

page	sheet	date
1	1	1968.12
2	2	1968.12
3	3	1968.12
4	4	1968.12
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7	7	1968.12
8	FP	2000.12.04