

S.Q. DOUBLE DIODE

Special quality double diode designed for use as detector or low-current power rectifier.

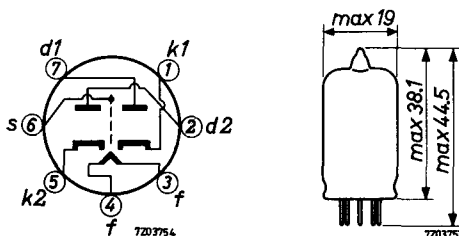
QUICK REFERENCE DATA

Life test	1000 hours	
Mechanical quality	Shock and vibration resistant	
Base	Miniature 7 pin	
Heating	Indirect	
	A.C. or D.C.	
	Series or parallel supply	
Heater voltage	V_f	6.3 V
Heater current	I_f	300 mA
Diode current	I_d	10 mA
Inverse peak voltage	V_{invp}	360 V

DIMENSIONS AND CONNECTIONS

Base: Miniature 7 pin

Dimensions in mm



CHARACTERISTICS (both systems if applicable)

Column I Nominal value or setting of the tube

II Range values for equipment design: Initial spread

		I	II	
Heater voltage	V_f	6.3		V
Heater current	I_f	300	275 - 325	mA
<u>Diode current</u>	I_d		min. 40	mA
Diode voltage	V_d	10		V
<u>Diode current</u>	I_{do}		2 - 20	μ A
Diode voltage	V_d	0		V
Series resistor	R	40		k Ω
<u>Difference in diode current</u>	$ I_d - I_d' $		max. 5	μ A
Diode voltage	V_d	0		V
Series resistor	R	40		k Ω
<u>Leakage current between cathode and heater</u>	I_{kf}		max. 10	μ A
Voltage between cathode and heater $V_{kf} = 100$ V				
<u>Insulation resistance between two electrodes</u>	R_{ins}		min. 100	M Ω
Voltage between electrodes = 300 V				
<u>Resonant frequency</u>		700		MHz
CAPACITANCES				
Diode to cathode heater and screen	$C_{d/kfs}$	3.2	2.4 - 4	pF
Cathode to diode heater and screen	$C_{k/dfs}$	3.9	3.1 - 4.7	pF
Diode No. 1 to diode No. 2	$C_{d_1d_2}$		max. 0.026	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 700 g supplied by an NRL shock machine with the hammer lifted over an angle of 45°.

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 during 1000 hours.

LIMITING VALUES (Absolute max. rating system) (Per system if applicable)

Inverse peak voltage	V_{invp}	max.	360 V
Diode current	I_d	max.	10 mA
Diode peak current	I_{dp}	max.	60 mA
Peak voltage between cathode and heater	V_{kfp}	max.	360 V
Bulb temperature	t_{bulb}	max.	165 °C

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

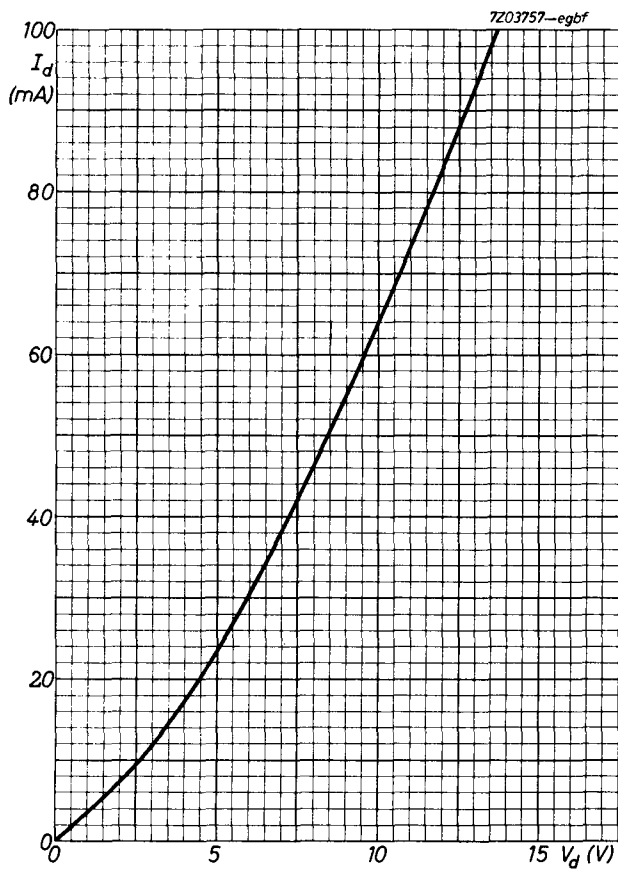
Variations of the heater voltage exceeding the range of 5.7 V to 7.0 V will shorten the tube life.

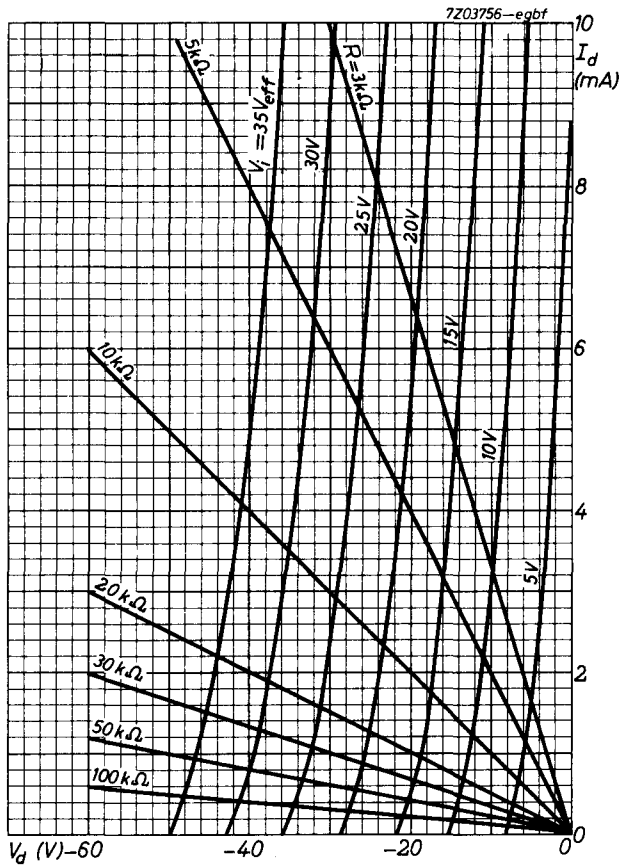
OPERATING CHARACTERISTICSAs full wave power rectifier

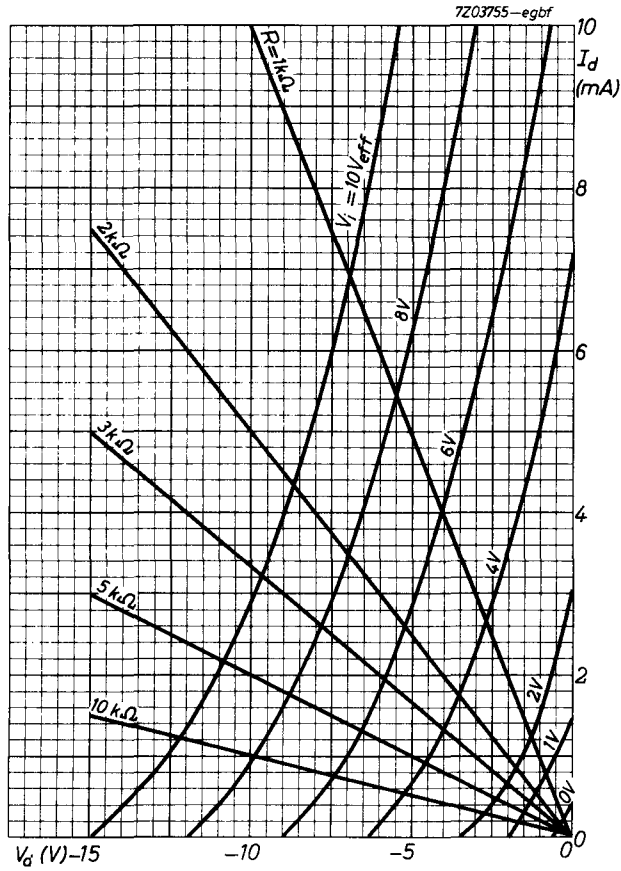
A.C. supply voltage	V_{tr}	2 x 165	V_{RMS}
Capacitance	C	8	μF
Series resistor per diode	R_s	300	Ω
Load resistor	R_l	11	k Ω
D.C. current	I_o	min. 16	mA

As half wave rectifier (per system)

A.C. supply voltage	V_{tr}	117	V_{RMS}
Capacitance	C	8	μF
Series resistor	R_s	300	Ω
D.C. current	I_o	9	mA







PHILIPS

Data handbook



**Electronic
components
and materials**

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page	sheet	date
1	1	1968.12
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