

## S.Q. DOUBLE DIODE

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

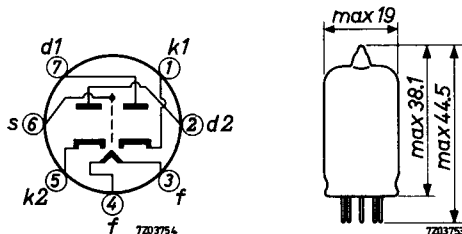
### QUICK REFERENCE DATA

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	$\mu$ A
Diode voltage	$V_d$	0		V
Series resistor	R	40		k $\Omega$
<u>Difference in diode current</u>	$ I_d - I_d' $		max. 5	$\mu$ A
Diode voltage	$V_d$	0		V
Series resistor	R	40		k $\Omega$
<u>Leakage current between cathode and heater</u>	$I_{kf}$		max. 10	$\mu$ A
Voltage between cathode and heater $V_{kf} = 100$ V				
<u>Insulation resistance between two electrodes</u>	$R_{ins}$		min. 100	M $\Omega$
Voltage between electrodes = 300 V				
<u>Resonant frequency</u>		700		MHz
<b>CAPACITANCES</b>				
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.

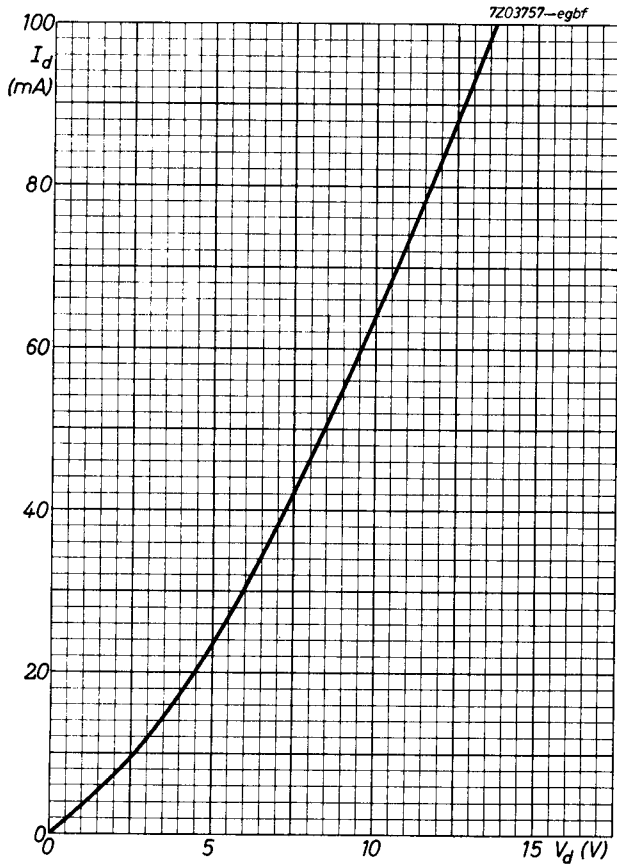
Variations of the heater voltage exceeding the range of 5.7 V to 7.0 V will shorten the tube life.

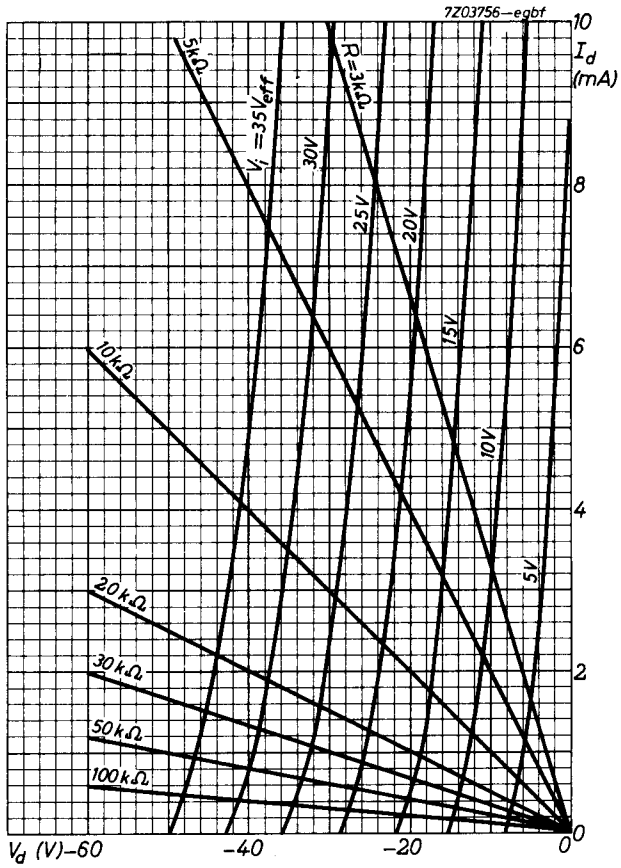
**OPERATING CHARACTERISTICS**As full wave power rectifier

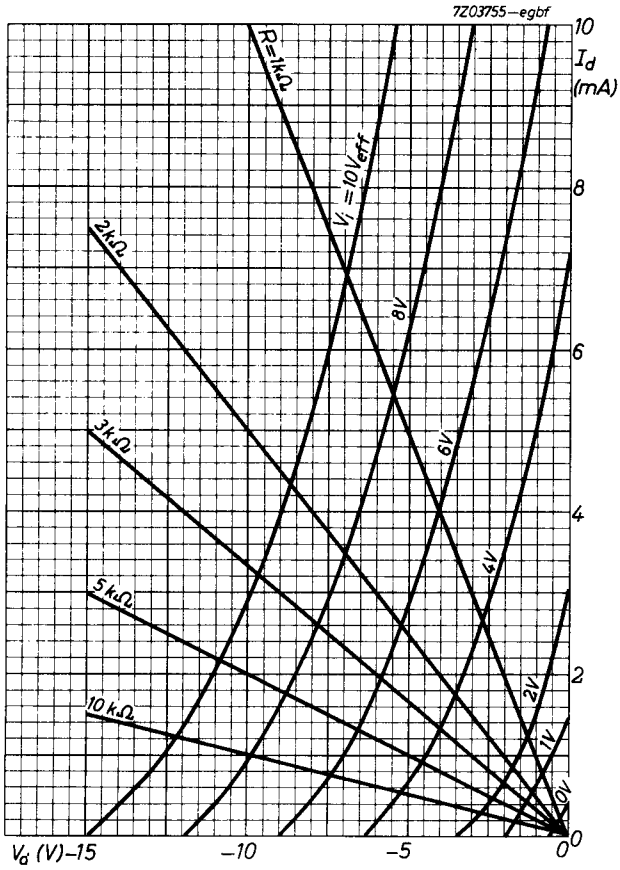
A.C. supply voltage	$V_{tr}$	2 x 165	$V_{RMS}$
Capacitance	C	8	$\mu F$
Series resistor per diode	$R_s$	300	$\Omega$
Load resistor	$R_l$	11	$k\Omega$
D.C. current	$I_o$	min. 16	mA

As half wave rectifier (per system)

A.C. supply voltage	$V_{tr}$	117	$V_{RMS}$
Capacitance	C	8	$\mu F$
Series resistor	$R_s$	300	$\Omega$
D.C. current	$I_o$	9	mA







# PHILIPS

Data handbook



Electronic  
components  
and materials

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