S.Q. DOUBLE DIODE

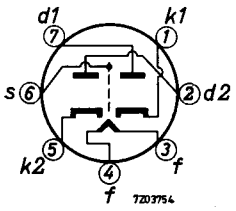
Special quality double diode designed for use as detector or low-current power rectifier.

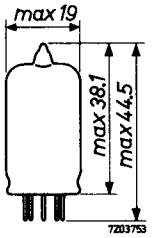
QUICK REFERENCE DATA			
Life test	1000 hours		
Mechanical quality	Shock and vibration resistant		
Base	Miniature 7 pin		
Heating	Indirect		
	A.C. or D.C.		
	Series or parallel supply		
Heater voltage	V_f	6.3	V
Heater current	I_f	300	mA
Diode current	I_d	10	mA
Inverse peak voltage	V_{invp}	360	V

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
Diode current	I_d		min. 40	mA
Diode voltage	V_d	10		V
Diode current	I_{do}		2 - 20	μA
Diode voltage	V_d	0		V
Series resistor	R	40		kΩ
Difference in diode current	$\lvert I_d - I_d' \rvert$		max. 5	μA
Diode voltage	V_d	0		V
Series resistor	R	40		kΩ
Leakage current between cathode and heater Voltage between cathode and heater V_{kf} = 100 V	I_{kf}		max. 10	μA
Insulation resistance between two electrodes Voltage between electrodes = 300 V	R_{ins}		min. 100	MΩ
Resonant frequency		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.

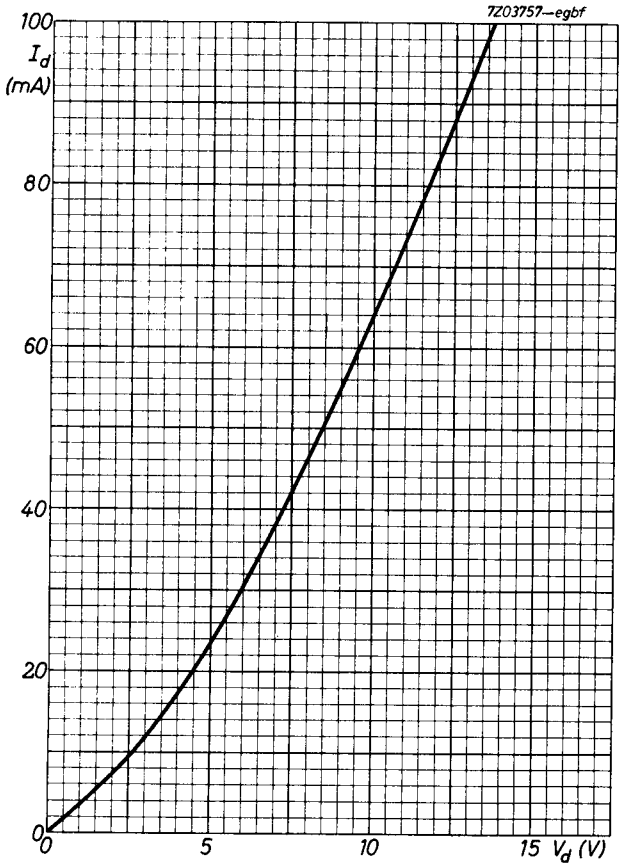
OPERATING CHARACTERISTICS

As 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	kΩ
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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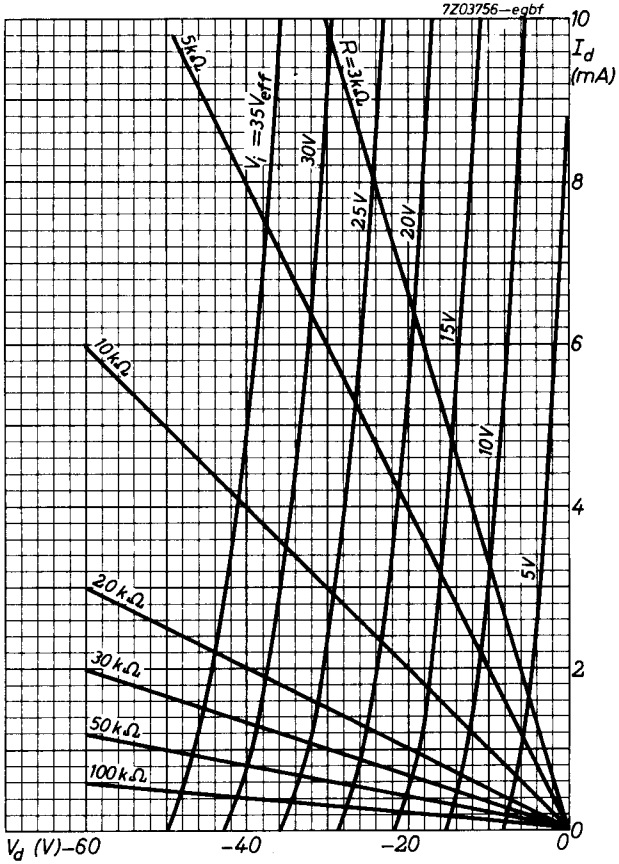
100
I_d
(mA)
80
60
40
20
0
0
5
10
15 V_d (V)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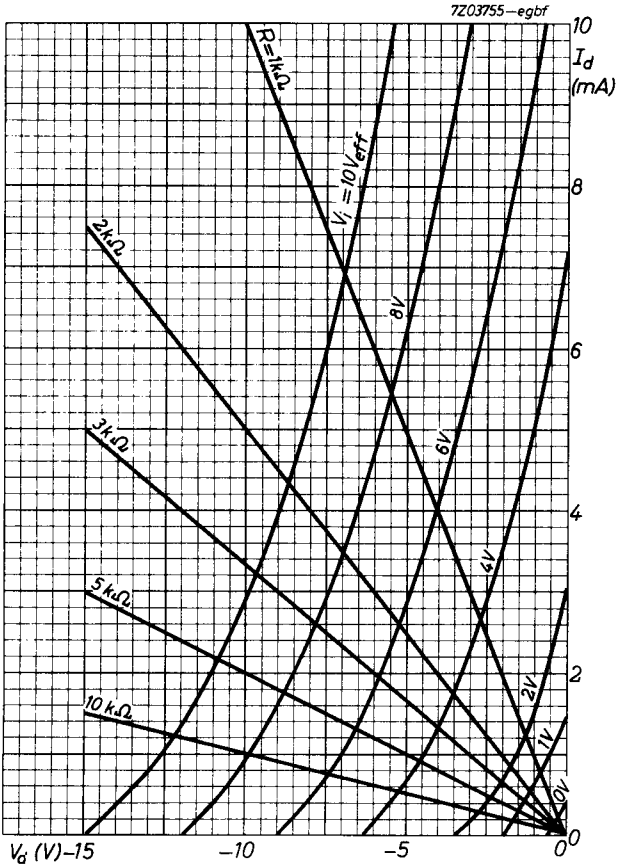
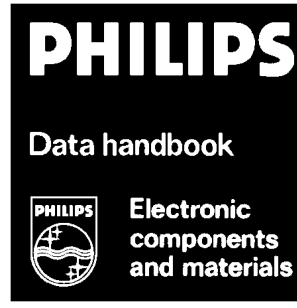
10
I_d
(mA)
8
6
4
2
0
5kΩ
V_i =35V_{eff}
30V
R=3kΩ
25V
20V
15V
10V
5V
10kΩ
20kΩ
30kΩ
50kΩ
100kΩ
V_d (V)−60
−40
−20
0


7Z03755—egbf
10
I_d
(mA)
8
6
4
2
0
R=1kΩ
V_i = 10V eff
8V
6V
4V
2V
1V
0V
2kΩ
3kΩ
5kΩ
10kΩ
V_d (V) −15
−10
−5
0



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