



D.1

TELEVISION SINGLE DIODE

RATING.

Heater Voltage	...	...	...	...	...	...	4.0
Heater Current (amps.)	...	...	...	...	...	...	0.2
Maximum Peak Anode Current (mA)	...	...	...	...	...	...	50
Maximum Peak Inverse Anode Voltage	...	...	...	...	...	...	500

TYPICAL OPERATION.

Vision Signal Detector—Half Wave.

Anode Load (R) (ohms)	...	...	...	...	...	...	3,700
Compensating Inductance (L) (μ H)	...	...	...	...	...	...	140

$$CR = 95,000 \text{ ohms} \times \mu\mu\text{F.} \quad \frac{L}{CR^2} = 0.4$$

D.C. Restoring in Cathode Ray Tube.

Load Resistance (megohms)	...	...	...	...	...	...	1
Coupling Condenser (μ F.)	...	...	...	...	...	...	0.005

INTER-ELECTRODE CAPACITIES.

Anode—Cathode	...	...	...	...	...	...	1.35 $\mu\mu$ F.
Anode Heater	...	...	...	...	...	...	0.45 $\mu\mu$ F.
Heater—Cathode	...	...	...	...	...	...	2.4 $\mu\mu$ F.

The Hot Heater—to—Cathode capacity increases by 0.2 $\mu\mu$ F.

The Hot Anode—to—Cathode capacity increases by 0.1 $\mu\mu$ F.

DIMENSIONS.

Maximum Overall Length	...	...	...	...	...	...	46 mm.
Maximum Diameter	...	...	...	...	...	...	11 mm.

GENERAL.

The D.1 is a single diode specially designed and constructed for use in television circuits. The self-capacity has been reduced to a minimum by the use of short pins sealed through the glass bulb to which the electrodes are joined. It is important that leads are *not soldered direct to these pins* and a special anti-capacity holder should be used. The connections to the pins are given overleaf.



APPLICATION.

When used as a diode detector in television receivers it is recommended that the DI should be connected with its cathode at the high potential end of the tuned circuit, and the load connected between the anode and the chassis. By using it in this position it is possible appreciably to reduce the stray capacities across the load circuit, and this in turn allows the use of a higher load resistance. It is recommended that in the average television receiver where no compensation is attempted in the diode load, a C.R. product of the order of 95,000 ohms should be employed in order to prevent phase shift troubles. This C.R. product should be

used combined with an $\frac{L}{CR^2}$ of the order of 0.4.

D.C. Restoring to the Cathode Ray Tube Grid.

In the case of circuits using the high potential anode of the cathode ray tube at earth potential, the DI will have to be fed through a separate winding on the transformer insulated to the high voltage. This secondary winding should be connected to the anode of the DI. This is necessary in order to prevent a high voltage being developed across the heater to cathode insulation of the valve. This high voltage may be caused by a low insulation resistance between the windings of the transformer. The circuit constants should also be calculated so as to ensure that the peak voltage across the D.C. restoring diode load resistance does not exceed 500 volts on switching on.



D.I.

The drawing shows the connections to the pins.