

June 25, 1956

DIODE FOR T.V. DAMPING DIODE APPLICATIONS

Type 12B3 is an indirectly heated half-wave rectifier in a miniature envelope, intended for service as the damping diode in the horizontal deflection circuit of television receivers. It is capable of withstanding high pulse voltages between the heater and the cathode and high inverse pulse voltages between the plate and the cathode:

The 12B3 incorporates controlled heater warm up time for service in television receivers which employ series connected heaters.

GENERAL DATA

Electrical

Heater for unipotential cathode

Voltage	12.6 AC or DC volts
Current	0.6 amp.
Warm up time (average) ①	11 seconds.

Direct interelectrode capacitance, approximately (without external shield.)

Heater to cathode	2.7 μf
Plate to cathode and heater	5.3 μf

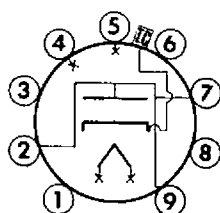
Mechanical:

Mounting position	Any
Maximum overall length	3 inches
Maximum seated length	2 $\frac{3}{4}$ inches
Maximum diameter	$\frac{7}{8}$ inches
Bulb	T6 $\frac{1}{2}$
Cap	Skirted Miniature (JETEC No. C1-2 or C1-33)
Base	Small Button Noval 9 pin (JETEC No. E9-1)

TERMINAL CONNECTIONS

- Pin 1 - No connection
- Pin 2 - Plate
- Pin 3 - No connection
- Pin 4 - Heater
- Pin 5 - Heater
- Pin 6 - No connection
- Pin 7 - Plate
- Pin 8 - No connection
- Pin 9 - Plate
- T.C. - Cathode

BASING DIAGRAM



9BD

DAMPER SERVICE ②

Maximum Ratings (Design center values unless otherwise indicated)

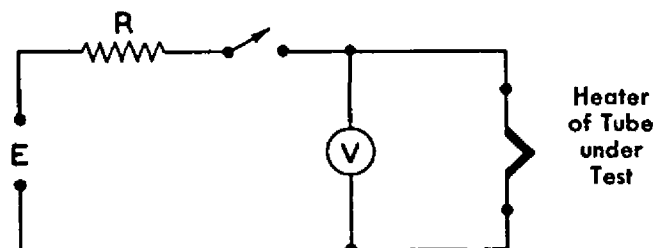
Peak Inverse Plate Voltage	4400 ③ volts
Steady State Peak Plate Current	750 mA
Maximum Transient Peak Plate Current	3.0 amp.
Maximum D.C. Plate Current	150 mA
Heater-Cathode Voltage	
Heater Positive with Respect to Cathode	
D.C. Component	100 volts
Total D.C. and Peak	300 volts
Heater Negative with Respect to Cathode	
D.C. Component	900 volts
Total D.C. and Peak	4400 volts

Average Characteristics:

Tube Voltage drop	
$I_b = 250\text{MA}$	32 volts

NOTES

- ① Heater warm-up time is defined as the time required in the circuit shown for the voltage across the heater terminals (V) to increase from zero to the heater test voltage (V1). For this type, E=50 volts (RMS or DC), V1=10.0 volts (RMS or DC), and R=63 ohms.



- ② For operation in a 525 line, 30 frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.
- ③ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

AVERAGE PLATE CHARACTERISTICS

