



**ELECTRONIC
INNOVATIONS**
IN ACTION

TUBES

— PRODUCT INFORMATION —

22BW3

Compactron Diode

FOR TV DAMPING DIODE APPLICATIONS

● **DIFFUSION BONDED CATHODE**

● **5000 VOLTS DC**

● **175 MILLIAMPERES DC**

The 22BW3 is a compactron, single heater-cathode type diode intended for service as the damping diode in the horizontal deflection circuit of television receivers.

The diffusion bonded cathode practically eliminates one of the major failure mechanisms in damping diodes, which is plate-to-cathode arcing caused by emissive particles being pulled from the cathode by the high electrostatic field.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC* 22.4 Volts

Heater Current†. 0.45±0.03 Amperes

Heater Warm-up Time, Average§ 11 Seconds

Direct Interelectrode Capacitances, approximate¶

Cathode to Plate and Heater:

 k to (p + h). 8.5 pf

Plate to Cathode and Heater:

 p to (k + h). 6.0 pf

Heater to Cathode: (h to k) 3.8 pf

MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E12-70, Button 12-Pin

Outline Drawing - EIA 9-60

Maximum Diameter 1.188 Inches

Minimum Diameter 1.062 Inches

Maximum Over-all Length 2.875 Inches

Maximum Seated Height. 2.500 Inches

Minimum Seated Height. 2.250 Inches

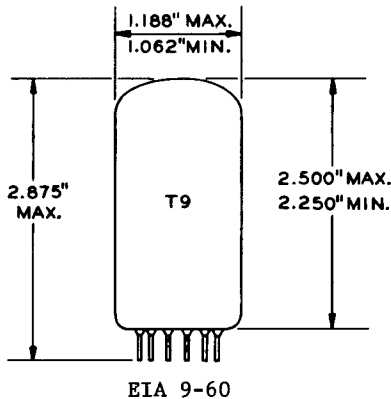
MAXIMUM RATINGS

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

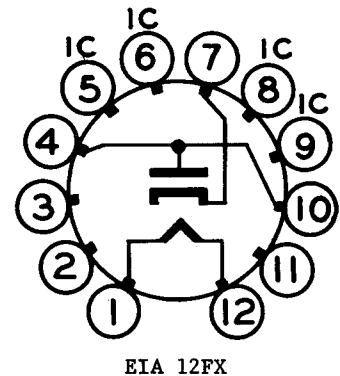
PHYSICAL DIMENSIONS



TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - No Connection
- Pin 3 - No Connection
- Pin 4 - Plate
- Pin 5 - Internal Connection - Do Not Use
- Pin 6 - Internal Connection - Do Not Use
- Pin 7 - Cathode
- Pin 8 - Internal Connection - Do Not Use
- Pin 9 - Internal Connection - Do Not Use
- Pin 10 - Plate
- Pin 11 - No Connection
- Pin 12 - Heater

BASING DIAGRAM



GENERAL ELECTRIC

Supersedes 22BW3 D and R Sheet dated 12-63

MAXIMUM RATINGS (Cont'd)

TV DAMPER SERVICE#—DESIGN-MAXIMUM VALUES

Peak Inverse Plate Voltage	5000	Volts
Plate Dissipation	6.5	Watts
Steady-State Peak Plate Current	1100	Milliamperes
DC Output Current	175	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	300	Volts
Heater Negative with Respect to Cathode		
DC Component	900	Volts
Total DC and Peak	5000	Volts

AVERAGE CHARACTERISTICS

Tube Voltage Drop		
Ib = 350 Milliamperes DC.	32	Volts

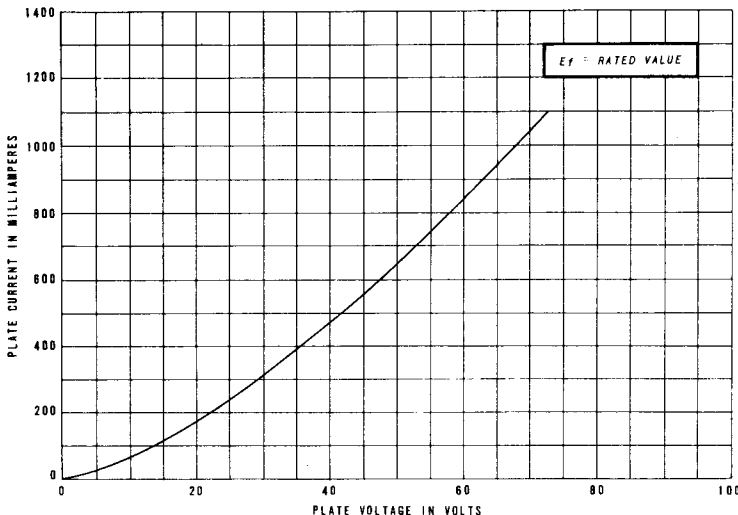
NOTES

- * Heater voltage for a bogey tube at If = 0.45 amperes.
- ‡ The equipment designer should design the equipment so that heater current is centered at the specified bogey value, with heater supply variations restricted to maintain heater current within the specified tolerance.
- § The time required for the voltage across the heater to reach 80 percent of the bogey value after applying 4 times the bogey heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the bogey heater voltage divided by the bogey heater current.
- ¶ Without external shield.
- # 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.

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AVERAGE PLATE CHARACTERISTICS



TUBE DEPARTMENT
GENERAL ELECTRIC
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