



**ELECTRONIC
INNOVATIONS
IN ACTION**

TUBES

—PRODUCT INFORMATION—

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12-70

Compactron Diode

6BW3

FOR TV DAMPING DIODE APPLICATIONS

■ COLOR TV TYPE

■ DIFFUSION BONDED CATHODE

■ 5000 VOLTS DC

■ 175 MILLIAMPERES DC

The 6BW3 is a compactron containing a single heater-cathode type diode. It is intended for service as the damping diode in the horizontal deflection circuit of color 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*..... 6.3 ± 0.6 Volts

Heater Current.....1.6 Amperes

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

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

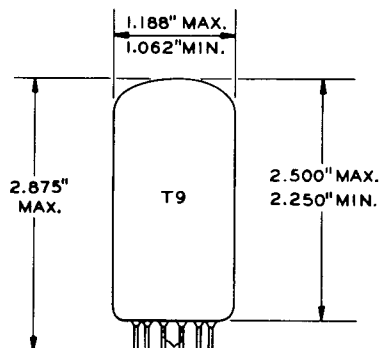
Total DC and Peak.....300 Volts

Heater Negative with respect to Cathode

DC Component.....900 Volts

Total DC and Peak.....5000 Volts

PHYSICAL DIMENSIONS



EIA 9-60

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

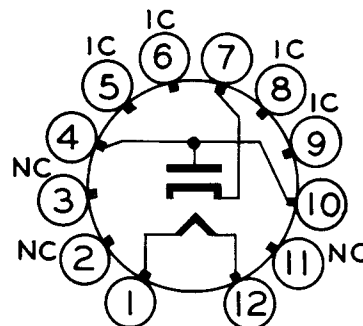
Pin 9 - Internal Connection - Do Not Use

Pin 10 - Plate

Pin 11 - No Connection

Pin 12 - Heater

BASING DIAGRAM



EIA 12FX

GENERAL ELECTRIC



MAXIMUM RATINGS (Cont'd)

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.

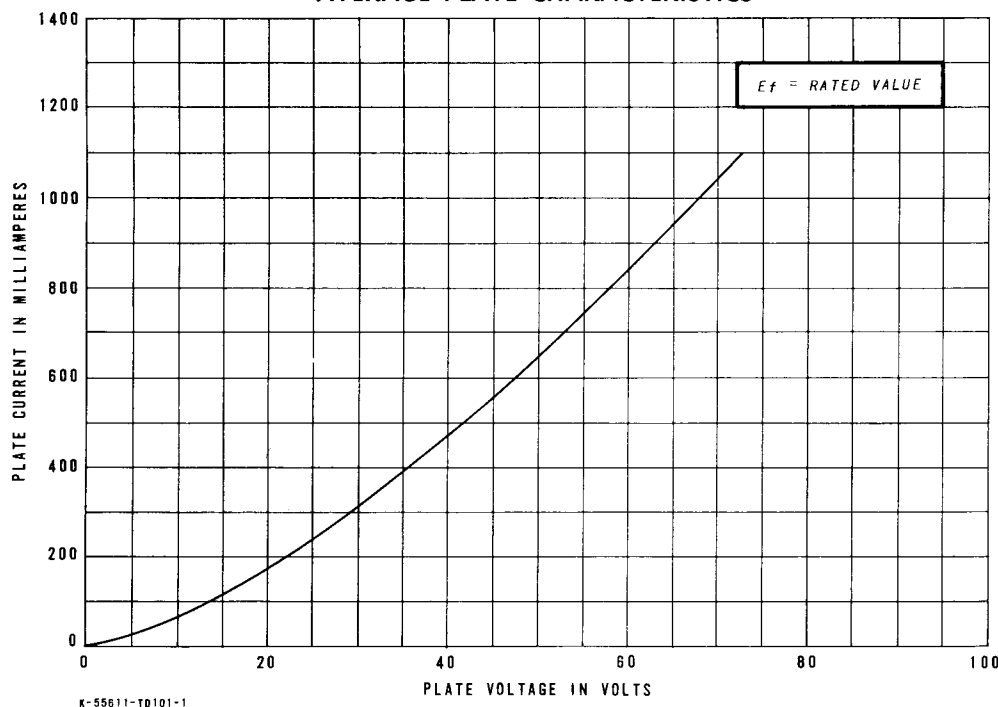
AVERAGE CHARACTERISTICS

Tube Voltage Drop

$I_b = 350$ Milliamperes DC 32 Volts

NOTES

- ★ The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.
- Heater current of a bogey tube at $E_f = 6.3$ volts.
- ◆ 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.

AVERAGE PLATE CHARACTERISTICS

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an

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TUBE PRODUCTS DEPARTMENT

GENERAL  ELECTRIC

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