

Compactron Diode

19DE3

FOR TV DAMPING DIODE APPLICATIONS

- COLOR TV TYPE
- LOW TUBE DROP
- DIFFUSION BONDED CATHODE
- 5000 VOLTS DC
- 350 MILLIAMPERES DC

The 19DE3 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* 19 Volts

Heater Current 0.6 ± 0.04 Amperes

Heater Warm-up Time, average 11 Seconds

Direct Interelectrode Capacitances, approximate▲

Cathode to Plate and Heater: k to (p + h) 21 pf

Plate to Cathode and Heater: p to (k + h) 13 pf

Heater to Cathode: (h to k) 1.7 pf

MECHANICAL

Operating Position - Any

Envelope - T-9, Glass

Base - E12-70, Button 12-Pin

Top Cap - C1-1, Small

Outline Drawing - EIA 9-101

Maximum Diameter 1.188 Inches

Minimum Diameter 1.062 Inches

Maximum Over-all Length 3.875 Inches

Maximum Seated Height 3.500 Inches

Minimum Seated Height 3.250 Inches

MAXIMUM RATINGS

TV DAMPER SERVICE □ —DESIGN-MAXIMUM VALUES

Peak Inverse Plate Voltage 5000 Volts

Plate Dissipation 9.0 Watts

Steady-State Peak Plate Current 1050 Milliamperes

DC Output Current 350 Milliamperes

Heater-Cathode Voltage

Heater Positive with respect to Cathode

DC Component 100 Volts

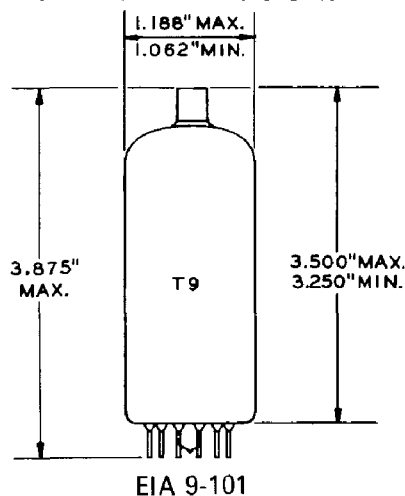
Total DC and Peak 300 Volts

Heater Negative with respect to Cathode

DC Component 900 Volts

Total DC and Peak 5000 Volts

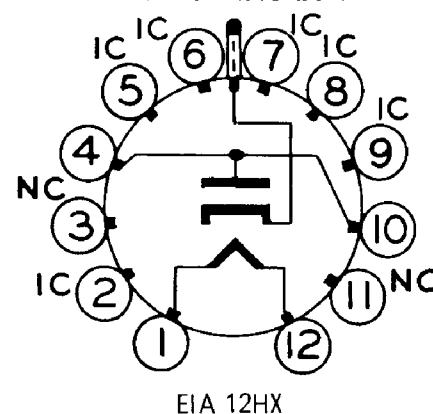
PHYSICAL DIMENSIONS



TERMINAL CONNECTIONS

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

BASING DIAGRAM



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, approximate

$I_b = 700$ Milliamperes DC.....25 Volts

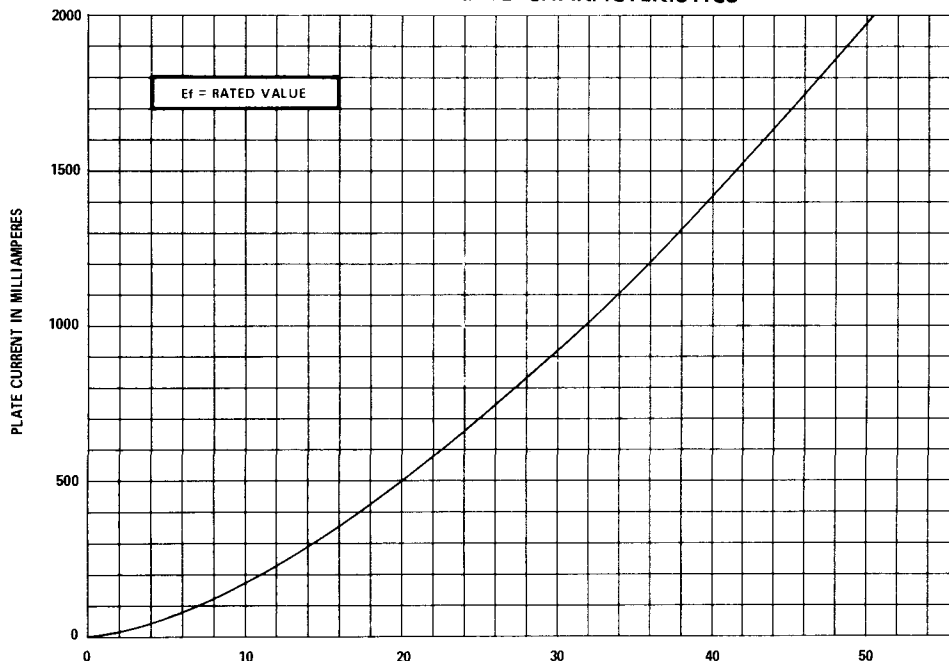
NOTES

- ★ Heater voltage for a bogey tube at $I_f = 0.6$ 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.

AVERAGE PLATE CHARACTERISTICS



K-55611-TD298-1A

PLATE VOLTAGE IN VOLTS

OCTOBER 29, 1969

TUBE DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky 42301