3AT2

COMPACTRON DIODE

FOR TV HIGH-VOLTAGE RECTIFIER APPLICATIONS

DESCRIPTION AND RATING

The 3AT2 is a compactron containing a heater-cathode type diode designed for use in television receivers as the high-voltage rectifier to supply power to the anode of the picture tube.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential
Heater Characteristics and Ratings

Heater Voltage, AC or DC*	3.15±0.32	Volts
Heater Current†	0.22	Amperes
Direct Interelectrode Capacitances, approximate‡		
Plate to Heater, Cathode, and Internal Shield: p to (h + k + i.s.)	1.5	pf

MECHANICAL

Operating Position - Any
Envelope - T-9, Glass
Base - E12-70, Button 12-Pin
Top Cap - C1-34, Small
Outline Drawing - EIA 9-100

Maximum Diameter	1.188	Inches
Maximum Over-all Length	3.625	Inches
Maximum Seated Height	3.250	Inches
Minimum Seated Height	3.000	Inches

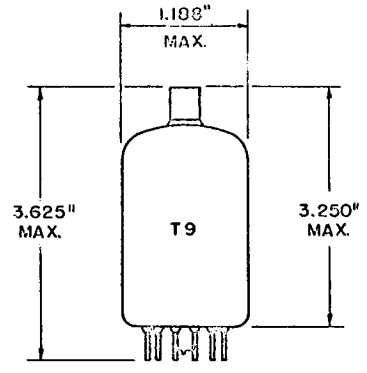
MAXIMUM RATINGS

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

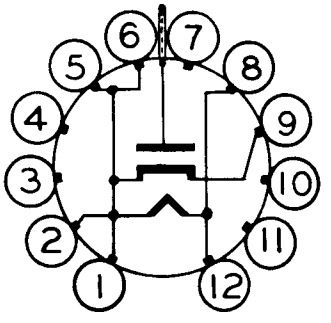


EIA 9-100

TERMINAL CONNECTIONS

Pin 1 - Heater, Cathode, and Internal Shield
Pin 2 - Heater, Cathode, and Internal Shield
Pin 3 - No Connection
Pin 4 - No Connection
Pin 5 - Heater, Cathode, and Internal Shield
Pin 6 - Heater, Cathode, and Internal Shield
Pin 7 - No Connection
Pin 8 - Heater
Pin 9 - Heater, Cathode, and Internal Shield
Pin 10 - No Connection
Pin 11 - No Connection
Pin 12 - Heater
Top Cap - Plate

BASING DIAGRAM



EIA 12EX

MAXIMUM RATINGS (Cont'd)

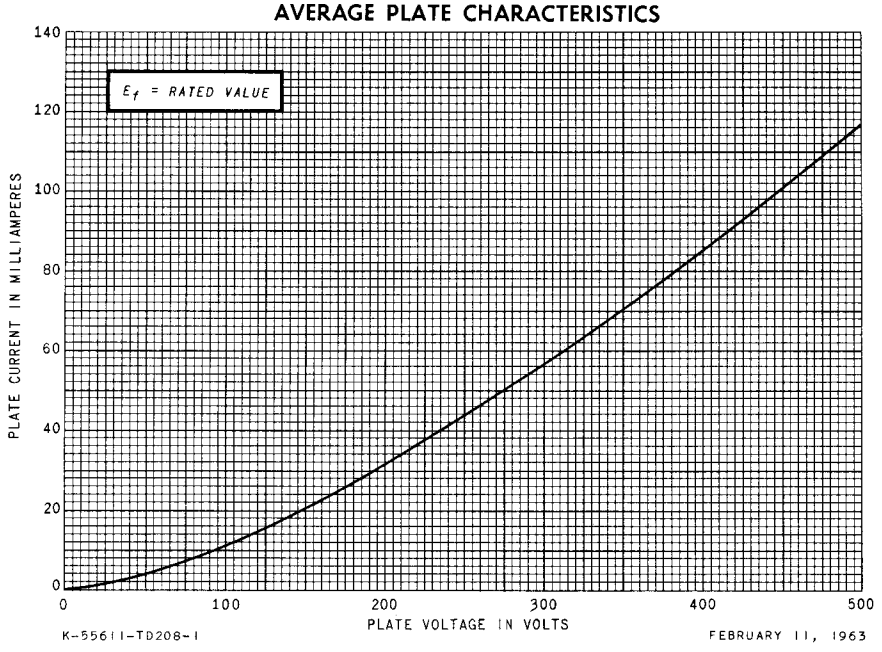
FLYBACK RECTIFIER SERVICE§ DESIGN-MAXIMUM VALUES

Peak Inverse Plate Voltage	30000	Volts
Steady-State Peak Plate Current	88	Milliamperes
DC Output Current	1.7	Milliamperes

AVERAGE CHARACTERISTICS

Tube Voltage Drop, approximate Ib = 7.0 Milliamperes	77	Volts

AVERAGE PLATE CHARACTERISTICS



FOOTNOTES

* 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 Ef = 3.15 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.

Note: The voltages employed in some television receivers and other high-voltage equipment are sufficiently high that high-voltage rectifier tubes may produce soft x-rays which can consititute a health hazard unless such tubes are adequately shielded. The need for this precaution should be considered in equipment design. Relatively simple shielding should prove adequate.

RECEIVING TUBE DEPARTMENT
GENERAL ELECTRIC
Owensboro, Kentucky