

# Half-Wave Vacuum Rectifier

For High-Voltage Rectifier Circuits in  
Color and Black-and-White TV Receivers

## ELECTRICAL CHARACTERISTICS

### Bogey Values

#### Heater Characteristics and Ratings

Voltage (AC) . . . . .	$E_h$	3.15	V
Current at 3.15 V . . . . .	$I_h$	0.220	A

#### Direct Interelectrode Capacitance (Approx.)

Without external shield

P to (K + IS + H) . . . . .	$C_{p-all}$	1.5	pF
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#### Instantaneous Tube Voltage Drop

For $i_b = 7$ mA . . . . .	$e_b$	100	V
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## MECHANICAL CHARACTERISTICS

Operating Position . . . . .		Any
Type of Cathode . . . . .	Coated Unipotential	
Maximum Overall Length . . . . .		3.812 in
Maximum Seated Length . . . . .		3.250 in
Maximum Diameter . . . . .		1.281 in
Envelope . . . . .		JEDEC T9

#### Caps (Alternates)

Small (JEDEC No.C1-1)

Small with Tubular Support (JEDEC No.C1-34)

#### Base (Alternates)

Intermediate-Shell Octal:

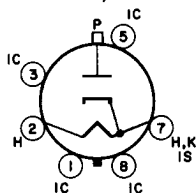
6-Pin, Arrangement 1 (JEDEC Group 1, No.86-8)

Short Intermediate-Shell Octal with External Barriers:

6-Pin, Arrangement 1 (JEDEC Group 1, No.86-60)

## TERMINAL DIAGRAM (Bottom View)

- Pin 1 - Do Not Use
- Pin 2 - Heater
- Pin 3 - Do Not Use
- Pin 5 - Do Not Use
- Pin 7 - Heater, Cathode,  
Internal Shield
- Pin 8 - Do Not Use
- Cap - Plate



Note: May be used only under conditions specified in Operating Considerations.

## PULSED-RECTIFIER SERVICE

### Design-Maximum Ratings

For operation in a 525-line, 30-frame system

Peak Inverse Plate Voltage <sup>a</sup> . . . . .	-	30000	V
Peak Plate Current . . . . .	$i_b$	100	mA
Average Plate Current . . . . .	$I_b(av)$	2	mA
Heater Voltage, AC . . . . .	$E_h$	2.65 min—3.65 max	V



<sup>a</sup> This rating is applicable when the duration of the voltage pulse does not exceed 15% of one horizontal scanning cycle. In a 525-line, 30-frame system, 15% of one horizontal scanning cycle is 10  $\mu$ s.

### OPERATING CONSIDERATIONS

Socket terminals 1, 3, 4, 5, 6 and 8 may be connected to terminal 7 or to a corona shield which connects to terminal 7. Socket terminals 4 and 6 may be used as tie points at or near cathode potential. Otherwise, do not use.

The high voltages at which the 3A3A is operated may be extremely dangerous to the user. Great care should be taken during the adjustment of circuits. The tube and its associated apparatus, especially all parts which may be at high potential above ground, should be housed in a protective enclosure. The protective housing should be designed with interlocks so that personnel cannot possibly come in contact with any high potential points in the electrical system. The interlock devices should function to break the primary circuits of the high-voltage supply when any gate or door on the protective housing is opened, and should prevent the closing of this primary circuit until the door is locked again.

It should be noted that high voltages may appear at normally low-potential points in the circuit as a result of capacitor breakdown or incorrect circuit connections. Therefore, before any part of the circuit is touched, the power-supply switch should be turned off and both terminals of any capacitor should be grounded.

Operation of the 3A3A with a plate voltage above approximately 16000 volts (absolute value) results in the production of X-radiations which can constitute a health hazard on prolonged exposure at close range unless the tube is adequately shielded. Relatively simply shielding should prove adequate, but the need for this precaution should be considered in equipment design.

### DIMENSIONAL OUTLINE

