Half-Wave Vacuum Rectifier

ELECTRICAL CHARACTERISTICS – Bogey Values

Heater Voltage, ac	E_h	3.15	V
Heater Current at E_h=3.15 V	I_h	0.48	A
Warm-up Time	T_h	4	s
Direct Interelectrode Capacitance:[a]			
P to (K + IS + H)	$c_{p\text{-}all}$	1.6	pF
Instantaneous Tube Voltage Drop for Instantaneous Plate Current (i_b) = 7 mA	e_b	60	V

MECHANICAL CHARACTERISTICS

Maximum Overall Length . . . . . 4.312 in (109.52 mm)

Maximum Seated Length . . . . . 3.750 in (95.25 mm)

Maximum Diameter . . . . . 1.188 in (30.17 mm)

Envelope . . . . . JEDEC T9

Top Cap . . . . . Small embossed (JEDEC C1-48)

Base:

Ultra-Short Small-Wafer with External Barriers:
6-pin (JEDEC No. B6-253)

Terminal-Connections Designation . . . . . JEDEC 8EZ

Type of Cathode . . . . . Coated Unipotential

Operating Position . . . . . Any

MAXIMUM RATINGS – Design-Maximum Values[b]

For operation as a pulsed rectifier tube in a 525-line, 30-frame system

Inverse Plate Voltage:[c]			
Total DC and Peak	$-e_{bm}$	38,000	V
DC	$E_{b(av)}$	30,000	V
Plate Current:			
Peak	i_b	110	mA
Average	$I_{b(av)}$	2.2	mA
Heater Voltage	E_h	2.65 to 3.65	V

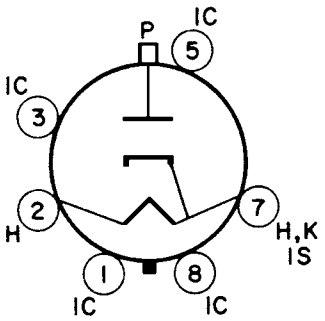
[a] Measured without external shield in accordance with the current issue of EIA Standard RS-191.

[b] As defined in the current issue of EIA Standard RS-239.

[c] 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 μs.

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
Top Cap - Plate



JEDEC 8EZ

OPERATING CONSIDERATIONS

Socket Connections. The base pins of the 3CZ3 fit the standard octal socket. 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. Terminals 4 and 6 may be used as tie points at or near cathode potential. Otherwise, do not use.

High Voltages. The high voltages at which the 3CZ3 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 with respect to 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 point in the electrical system.

X-Radiation. Operation of the 3CZ3 with a plate voltage above approximately 16,000 V results in the production of X-radiation which can constitute a health hazard on prolonged exposure at close range unless the tube is adequately shielded. Relatively simple shielding should prove adequate, but the need for this precaution should be considered in equipment design.