Controlled for X-Radiation

\[-ebm = 33,000 \text{ max. V} \quad ibm = 100 \text{ mA}\]

**ELECTRICAL CHARACTERISTICS — Bogey Values**

- Filament Voltage, ac or dc: \( E_h = 3.15 \pm 0.5 \text{ V} \)
- Filament Current at \( E_f = 3.15 \text{ V} \): \( I_h = 0.280 \text{ A} \)
- Direct Interelectrode Capacitance:\(^a\)
  - \( P \to (F + IS) \): \( C_{p-all} = 1.5 \text{ pF} \)
- Instantaneous Tube Voltage
  - Drop for Instantaneous Plate Current (\( i_b \)) = 7 mA
    \( e_b = 50 \text{ V} \)

**MECHANICAL CHARACTERISTICS**

- Maximum Overall Length: \( 3.812 \text{ in (96.82 mm)} \)
- Maximum Seated Length: \( 3.250 \text{ in (82.55 mm)} \)
- Maximum Diameter: \( 1.188 \text{ in (30.17 mm)} \)
- Envelope: JEDEC T9
- Top Cap: Small embossed (JEDEC C1-50)
- Base: Ultra-Short Small-Wafer Octal with External Barriers: 6-Pin, (JEDEC Group 1, No. B6-253)

**MAXIMUM RATINGS\(^b\) — High Voltage Rectifier**

*For operation as a pulsed rectifier tube in a 525-line, 30-frame system\(^c\)*

- Inverse Plate Voltage\(^d\)
  - Total DC and Peak (absolute max.): \( -ebm = 33,000 \text{ V} \)
  - DC (absolute max.): \( E_{b(av)} = 27,500 \text{ V} \)

- Plate Current:
  - Peak (design max.): \( ibm = 100 \text{ mA} \)
  - Average (design max.): \( I_{b(av)} = 2 \text{ mA} \)
  - Filament Voltage (absolute max.): \( E_f = 3.65 \text{ V} \)
  - Filament Voltage (absolute min.): \( E_f = 2.65 \text{ V} \)

\(^a\) 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-239A.
As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission.

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 10µs.

OPERATING CONSIDERATIONS

Socket Connections. The base pins of the 3CU3A 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 filament potential. Otherwise, do not use.

Measurement of Filament Voltage. It is recommended that a thermocouple rms voltmeter be used to measure filament voltage. The meter and its leads must be insulated to withstand 33,000 V. To minimize loading of the rectifier circuit during this measurement, stray capacitances to ground should be kept as low as possible.

X-Radiation Characteristic

X-Radiation, Maximum 25 mR/hr

Operation of the 3CU3A outside of the absolute values indicated above may result in either temporary or permanent changes in the X-radiation characteristic of the tube. Equipment design must be such that these absolute values are not exceeded.

X-Radiation is measured in accordance with JEDEC Publication No. 67A, "Recommended Practice for Measurement of X-Radiation from Receiving Tubes", and controlled in accordance with JEDEC Publication No. 73A, "Recommended Practice for Quality Control of X-Radiation Emitted from High Voltage Rectifier and Shunt Regulator Receiving Tubes".

Warning

X-Radiation

The high voltages associated with the 3CU3A result in production of X-Radiation which may constitute a health
hazard on prolonged exposure at close range unless the tube is adequately shielded. Equipment design must provide for this shielding.

Precautions must be exercised during the servicing of equipment employing the 3CU3A to assure that the high voltage is adjusted to the recommended value and that any shielding components are replaced to their intended positions before the equipment is operated.

Shock Hazard

The high voltages at which the 3CU3A is operated can be extremely dangerous to the user or serviceman. Extreme care should be taken in the use of, and for the servicing and adjustment of, any high voltage circuit.

Precautions must be exercised during the replacement or servicing of the 3CU3A in equipment to assure that the high voltage output terminal is properly grounded while inserting or removing the tube from its socket or while disconnecting the top cap connector.

THE EQUIPMENT MANUFACTURER SHOULD PROVIDE A WARNING LABEL IN AN APPROPRIATE POSITION ON THE EQUIPMENT TO ADVISE THE SERVICEMAN OF ALL PRECAUTIONS HEREIN.

TERMINAL DIAGRAM – JEDEC 8MK – Bottom View

Pin 1 - Do Not Use
Pin 2 - Filament
Pin 3 - Do Not Use
Pin 5 - Do Not Use
Pin 7 - Filament
Internal Shield
Pin 8 - Do Not Use
Top Cap - Plate
### Dimensional Outline

**CAP**
JEDEC No.
CI-50

**Envelope**
T9

**Base**
JEDEC No.
88-251

92CS-15232RI

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>INCHES</th>
<th>MILLIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>B</td>
<td>1.062*</td>
<td>1.188</td>
</tr>
<tr>
<td>C</td>
<td>–</td>
<td>3.812</td>
</tr>
<tr>
<td>D</td>
<td>3.062</td>
<td>3.250</td>
</tr>
</tbody>
</table>

**Millimeter Dimension Derived from Inch Dimension**

* Applies to the minimum diameter except in the area of the seal.