



TECHNICAL DATA

Electronic Tubes

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8083

TRIODE

The 8083 is a high-mu triode of ceramic-and-metal planar construction primarily intended for radio-frequency amplifier service from low frequencies into the ultra-high frequency range.

GENERAL

Electrical

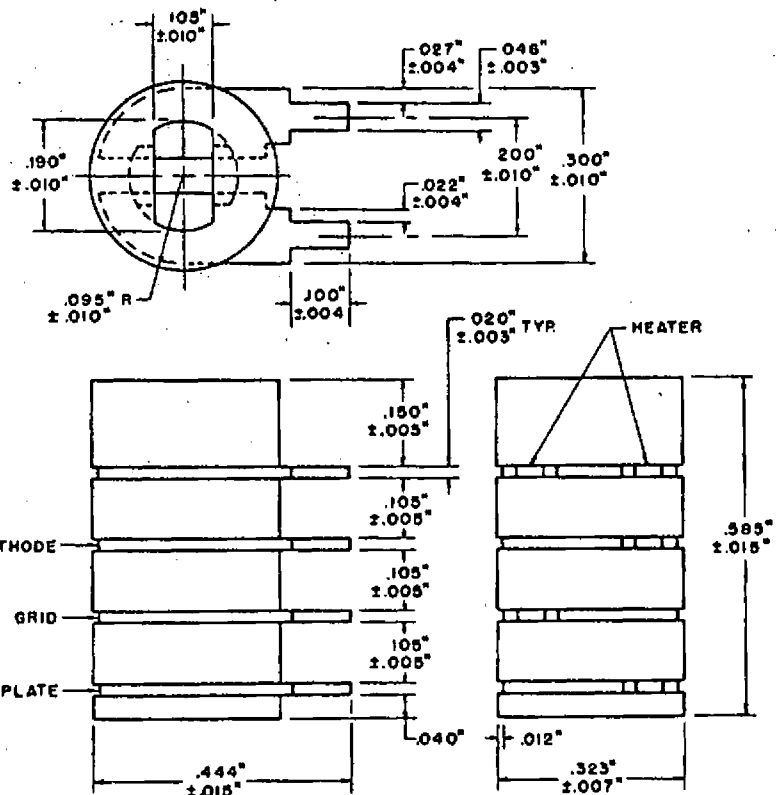
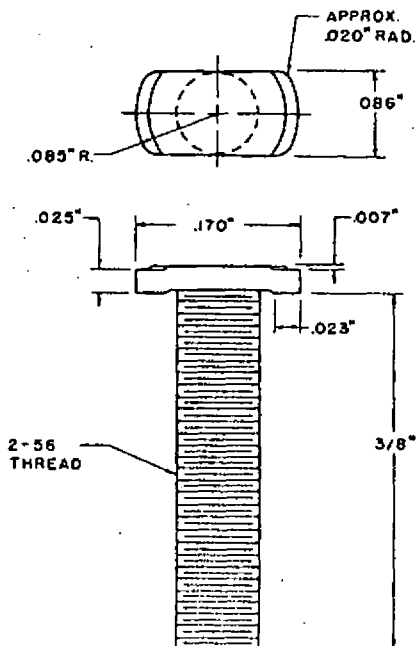
Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC+	6.3±0.3	Volts
Heater Current‡	0.24	Amperes
Direct Interelectrode Capacitances§		
Grid to Plate: (g to p)	1.2	pf
Grid to Heater and Cathode: g to (h + k)	1.8	pf
Plate to Heater and Cathode: p to (h + k)	0.032	pf
Heater to Cathode: (h to k)	1.5	pf

Mechanical

Mounting Position - Any[¶]



ETR-2186

MAXIMUM RATINGS

Absolute-Maximum Values

Plate Voltage	250	Volts
Peak Plate Voltage	400	Volts
Positive Peak and DC Grid-to-Cathode Voltage	0	Volts
Negative Peak and DC Grid-to-Cathode Voltage	50	Volts
Plate Dissipation	1.1	Watts
DC Cathode Current	11	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	50	Volts
Heater Negative with Respect to Cathode	50	Volts
Grid-Circuit Resistance, with Fixed Bias Δ	0.01	Megohms
Envelope Temperature at Hottest Point \ddagger	250	C

Absolute-Maximum ratings are limiting values of operating and environmental conditions applicable to any 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 no allowance for equipment variations, environmental variations, and the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration and of all other electron devices in the equipment.

The equipment manufacturer should design so that initially and throughout life no absolute-maximum value for the intended service is exceeded with any 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 the tube under consideration and of all other electron devices in the equipment.

CHARACTERISTICS AND TYPICAL OPERATION

Average Characteristics

Plate Voltage	150	Volts
Grid Voltage	+6.0	Volts
Cathode-Bias Resistor	910	Ohms
Amplification Factor	94	
Plate Resistance, approximate	9000	Ohms
Transconductance	10500	Micromhos
Plate Current	7.2	Milliamperes
Grid Voltage, approximate I _b = 100 Microamperes	-2.2	Volts

+ 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.

\ddagger Heater current of a bogey tube at E_f = 6.3 volts.

§ Without external shield.

- ¶ One method of mounting the 8083 is to use a stainless-steel "T" bolt (see drawing) to attach the mounting base of the tube to a chassis or circuit board. The "T" bolt should be inserted in the slot in the base of the tube, turned 90 degrees, and attached to the chassis or circuit board with a 2-56 nut and lock washer. Torque used to tighten the nut should not exceed 3 inch-pounds.
- Δ If resistance is used in the cathode or plate circuits, the grid-circuit resistance may be as high as $(10000 + 100 R_K + 10 R_L)$ ohms, where R_K is the cathode-bias resistance in ohms, and R_L is the DC plate load resistance in ohms.
- # Operation below the rated maximum envelope temperature is recommended for applications requiring the longest possible tube life.

8/18/61 (E)

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