

OBJECTIVE FOR DEVELOPMENTAL TYPE

Z-2354*

CERAMIC TRIODE

For Military and Industrial Applications

The Z-2354 is a low- μ triode of ceramic and metal planar construction. The tube is intended for use as an audio-frequency or radio-frequency power-amplifier or as a series regulator, in applications where unfavorable conditions of temperature, mechanical shock, mechanical vibration, and nuclear radiation are encountered.

GENERAL

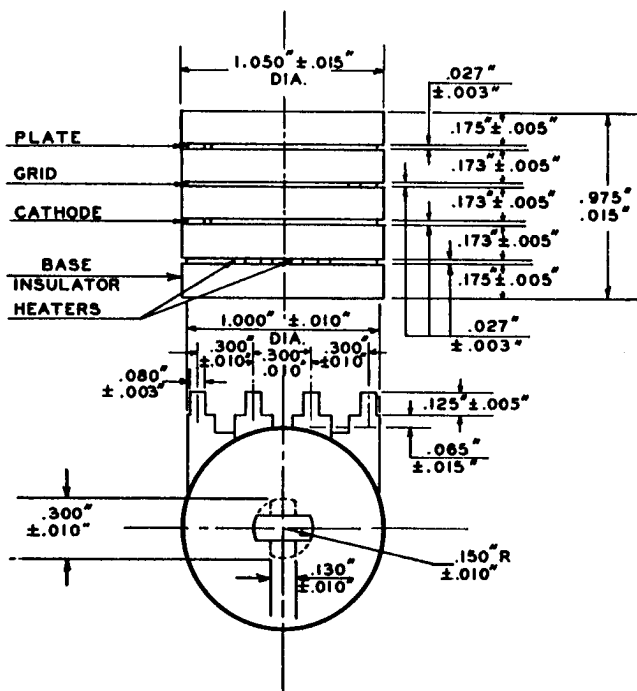
Electrical

Cathode - Coated Unipotential

Heater Voltage, AC or DC+	6.3±0.3	Volts
Heater Current‡	0.85	Amperes
Direct Interelectrode Capacitances§		
Grid to Plate: (g to p)	Ø	pf
Input: g to (h + k)	Ø	pf
Output: p to (h + k)	Ø	pf

Mechanical

Operating Position - Any
Outline Drawing



MAXIMUM RATINGS

Absolute-Maximum Values

Plate Voltage	330	Volts
Positive DC Grid Voltage	0	Volts
Negative DC Grid Voltage	100	Volts
Plate Dissipation	12	Watts
DC Cathode Current	100	Milliamperes
Heater-Cathode		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid Circuit Resistance		
With Fixed Bias	0.25	Megohms
With Cathode Bias	1.0	Megohms
Envelope Temperature at Hottest Point	400	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	250	Volts
Cathode-Bias Resistor	330	Ohms
Amplification Factor	8.0	
→ Plate Resistance, approximate	1330	Ohms
→ Transconductance	6000	Micromhos
→ Plate Current	60	Milliamperes
Grid Voltage, approximate		
I _b = 100 Microamperes	-52	Volts

SPECIAL TESTS AND RATINGS**Stability Life Test**

Statistical sample operated for twenty hours to evaluate and control initial variations in transconductance.

Survival Rate Life Test

Statistical sample operated for one hundred hours to evaluate and control early-life electrical and mechanical inoperatives.

Heater-Cycling Life Test

Statistical sample operated for 2000 cycles to evaluate and control heater-cathode defects. Conditions of test include $E_f = 7.5$ volts cycled for one minute on and one minute off, $E_b = E_c = 0$ volts, and $E_{hk} = 135$ volts with heater positive with respect to cathode.

Shock Rating - 600 G

Statistical sample subjected to five impact accelerations of 600 G in each of four different positions. The accelerating forces are applied by the Navy-type, High Impact (flyweight) Shock Machine for Electronic Devices or its equivalent.

Fatigue Rating - 10 G

Statistical sample subjected to vibrational acceleration of 10 G for 48 hours minimum in each of two different positions. The sinusoidal vibration is applied at a fixed frequency between 25 and 60 cycles per second.

Altitude Rating - 100000 Feet

Statistical sample subjected to pressure of 8.0 millimeters of mercury to evaluate and control arcing and corona.

Note: The conditions for some of the indicated tests have deliberately been selected to aggravate tube failures for test and evaluation purposes. In no sense should these conditions be interpreted as suitable circuit operating conditions.

- * Publication of these data does not obligate the General Electric Company to manufacture a tube with these characteristics.
- + The equipment designer should design the equipment so that the 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 $E_f = 6.3$ volts.
- § Without external shield.
- ∅ To be determined.

RECEIVING TUBE DEPARTMENT

GENERAL  **ELECTRIC**

Owensboro, Kentucky