



**ELECTRONIC  
INNOVATIONS  
IN ACTION**

**MICROWAVE DEVICES**

**GE14501**

## Planar Triode

The GE14501 is a high- $\mu$  triode of ceramic-and-metal planar construction intended for use as an oscillator or radio-frequency power amplifier in the ultra-high- frequency range. This tube is especially suited for use where unfavorable conditions of mechanical shock, mechanical vibration, and high temperature are encountered. The outline of this device is ideally suited for coaxial type circuitry.

### CHARACTERISTICS AND TYPICAL OPERATION

#### AVERAGE CHARACTERISTICS

|                                      | Minimum | Bogey | Maximum | Units        | Test Conditions |         |          |         |            |
|--------------------------------------|---------|-------|---------|--------------|-----------------|---------|----------|---------|------------|
|                                      |         |       |         |              | Ef<br>V         | Eb<br>V | Ib<br>Ma | Eg<br>V | Rk<br>Ohms |
| Heater Voltage, AC or DC *           | 6.0     | 6.3   | 6.6     | Volts        |                 |         |          |         |            |
| Heater Current                       | 222     | 240   | 258     | Milliamperes | 6.3             | ---     | ---      | ---     | ---        |
| Plate Current                        | 6.0     | 9.5   | 13      | Milliamperes | 6.3             | 150     | ---      | ---     | 82         |
| Amplification Factor                 | 65      | 90    | 115     |              | 6.3             | 150     | ---      | ---     | 82         |
| Transconductance                     | 9000    | 12500 | ---     | Micromhos    | 6.3             | 100     | ---      | 0       | ---        |
| Grid Voltage, Cutoff                 | ---     | -2.8  | -5.1    | Volts        | 6.3             | 150     | 0.1      | ---     | ---        |
| Direct Interelectrode Capacitances • |         |       |         |              |                 |         |          |         |            |
| Grid to Plate: (g to p)              | 1.10    | 1.25  | 1.40    | pf           |                 |         |          |         |            |
| Input: g to (h+k)                    | 1.40    | 1.75  | 2.10    | pf           |                 |         |          |         |            |
| Output: p to (h+k)                   | 0.004   | 0.01  | 0.16    | pf           |                 |         |          |         |            |
| Cathode Heating Time                 | 60      | ---   | ---     | Seconds      |                 |         |          |         |            |

#### UHF OSCILLATOR SERVICE

|                  |      |      |              |
|------------------|------|------|--------------|
| Frequency        | 450  | 450  | Megahertz    |
| DC Plate Voltage | 150  | 250  | Volts        |
| Grid Resistor    | 1000 | 1000 | Ohms         |
| Plate Current    | 10   | 15   | Milliamperes |
| Grid Current     | 5.0  | 6.0  | Milliamperes |
| Power Output     | 0.85 | 2.3  | Watts        |

### NOTES

- \* 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.
- Measured at 450 KHz using a grounded adapter that provides shielding between external terminals of tube.

## ABSOLUTE-MAXIMUM RATINGS

|  |       |              |
|--|-------|--------------|
| Plate Voltage .....  | 250   | Volts        |
| Positive DC Grid Voltage .....                                   | 0     | Volts        |
| Negative DC Grid Voltage .....                                   | 50    | Volts        |
| Plate Dissipation .....  | 2.0   | Watts        |
| DC Grid Current .....  | 6.0   | Milliamperes |
| DC Cathode Current .....   | 21    | Milliamperes |
| Peak Cathode Current .....                                       | 80    | Milliamperes |
| Heater-Cathode Voltage   |       |              |
| Heater Positive with Respect to Cathode .....                    | 50    | Volts        |
| Heater Negative with Respect to Cathode .....                    | 50    | Volts        |
| Grid Circuit Resistance .....                                    | 10000 | Ohms         |
| Envelope Temperature at Hottest Point ♦ .....                    | 250   | °C           |
| Temperature Differential Between Two Adjacent Electrodes ▲ ..... | 75    | °C           |
| Mechanical Vibration (20-2000 Hz Sinusoidal) .....               | 10    | G Peak       |

Absolute-Maximum ratings are limiting values of operating and environmental conditions applicable to any electron device of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The device manufacturer chooses these values to provide acceptable serviceability of the device, making no allowance for equipment variations, environmental variations, and the effects of changes in operating conditions due to variations in the characteristics of the device 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 device 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 device under consideration and of all other electron devices in the equipment.

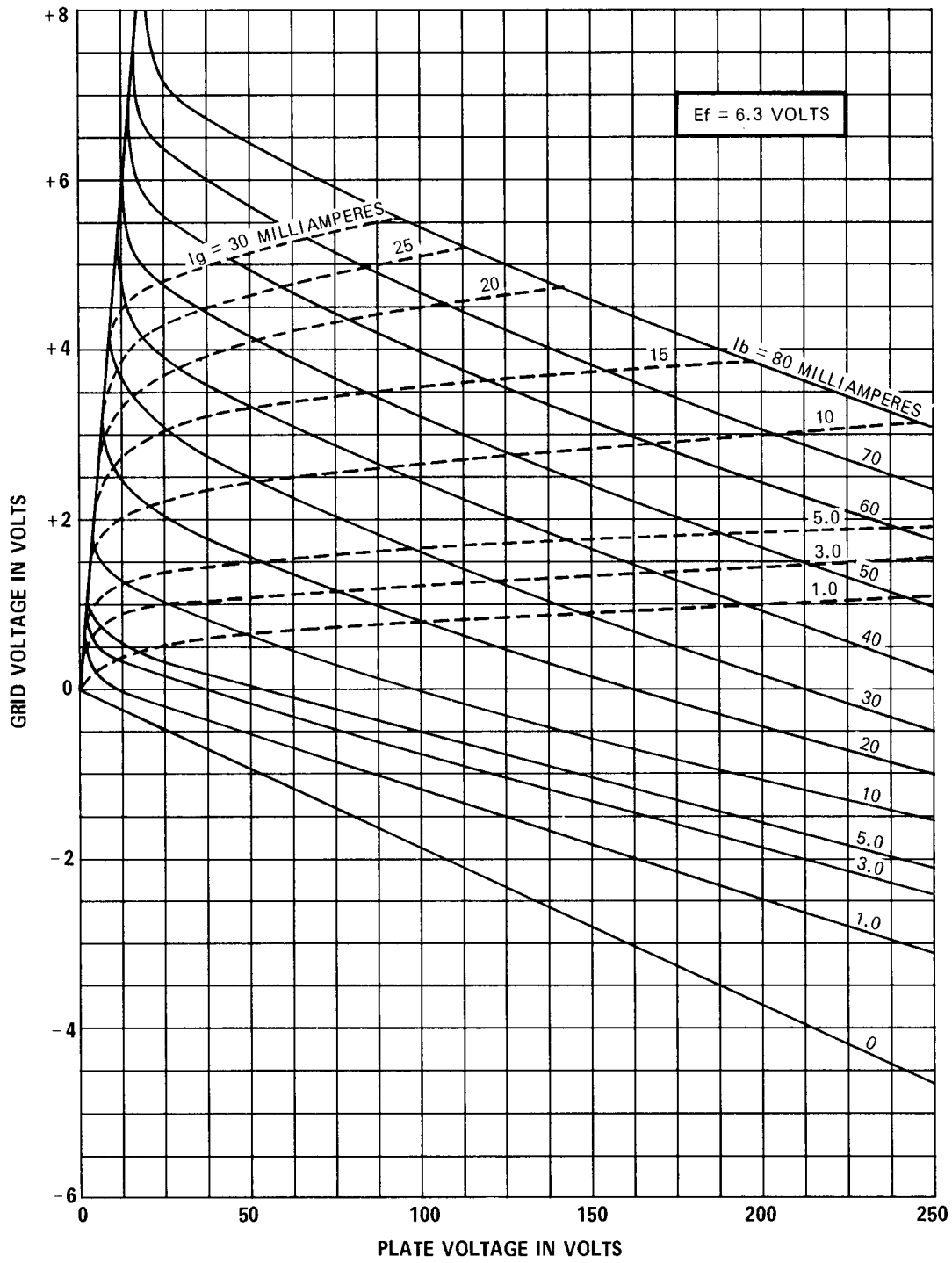
## NOTES

- ♦ For specific recommendations concerning higher temperature operation, contact your General Electric sales representative.
- ▲ This assumes no thermal heat sinking to any insulator.

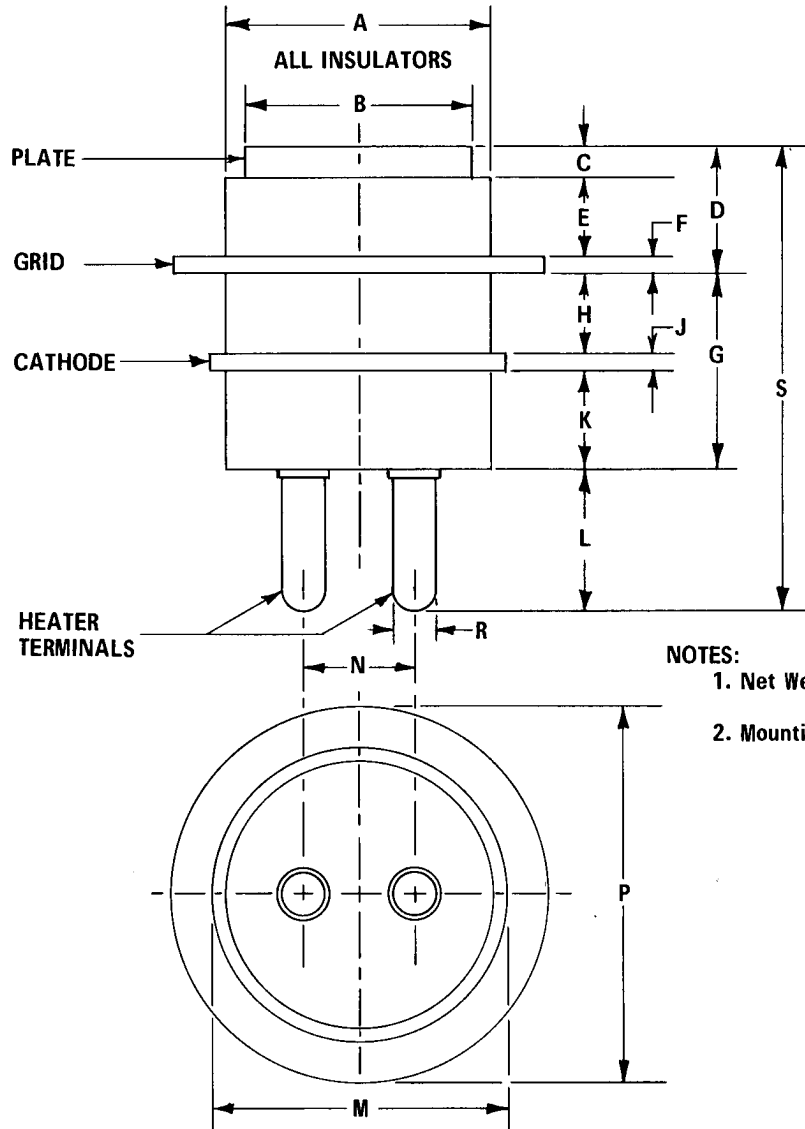
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### AVERAGE CONSTANT-CURRENT CHARACTERISTICS



## PHYSICAL DIMENSIONS



**NOTES:**

1. Net Weight - 0.06 Ounces  
- 1.71 Grams
2. Mounting Position - Any

| Ref. | INCHES |       |       | MILLIMETERS |       |       |
|------|--------|-------|-------|-------------|-------|-------|
|      | Min.   | Nom.  | Max.  | Min.        | Nom.  | Max.  |
| A    | ---    | ---   | 0.328 | ---         | ---   | 8.331 |
| B    | 0.272  | 0.275 | 0.278 | 6.909       | 6.985 | 7.061 |
| C    | 0.035  | 0.040 | 0.045 | 0.889       | 1.016 | 1.143 |
| D    | 0.156  | 0.165 | 0.174 | 3.962       | 4.191 | 4.420 |
| E    | 0.095  | 0.099 | 0.103 | 2.413       | 2.515 | 2.616 |
| F    | 0.024  | 0.027 | 0.030 | 0.610       | 0.686 | 0.762 |
| G    | 0.242  | 0.250 | 0.258 | 6.147       | 6.350 | 6.553 |
| H    | 0.096  | 0.100 | 0.104 | 2.438       | 2.540 | 2.642 |
| J    | 0.024  | 0.027 | 0.030 | 0.610       | 0.686 | 0.762 |
| K    | 0.120  | 0.125 | 0.130 | 3.048       | 3.175 | 3.302 |
| L    | 0.165  | 0.175 | 0.185 | 4.191       | 4.445 | 4.699 |
| M    | 0.357  | 0.360 | 0.363 | 9.068       | 9.144 | 9.220 |
| N    | 0.130  | 0.136 | 0.142 | 3.302       | 3.454 | 3.607 |
| P    | 0.477  | 0.480 | 0.483 | 12.12       | 12.19 | 12.27 |
| R    | 0.048  | 0.051 | 0.054 | 1.219       | 1.295 | 1.372 |
| S    | 0.563  | 0.590 | 0.617 | 14.30       | 14.99 | 15.67 |

TUBE PRODUCTS DEPARTMENT

GENERAL  ELECTRIC

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