



**ELECTRONIC  
INNOVATIONS**  
IN ACTION

**MICROWAVE DEVICES**

PRELIMINARY

# — PRODUCT INFORMATION —

Page 1 12-70

**Y-1124**

Development Type \*

## Planar Triode

The Y-1124 is a triode of ceramic and metal planar construction primarily intended for use as a grid-pulsed oscillator at frequencies up to 6000 megahertz. The Y-1124 features a bonded-heater construction resulting in usefulness in fast warm-up and extreme environment applications.

### CHARACTERISTICS AND TYPICAL OPERATION

#### AVERAGE CHARACTERISTICS

|                                      | Minimum | Bogey | Maximum | Units        | Test Conditions |         |          |            |            |
|--------------------------------------|---------|-------|---------|--------------|-----------------|---------|----------|------------|------------|
|                                      |         |       |         |              | Ef<br>V         | Eb<br>V | Ib<br>Ma | RL<br>Ohms | Rk<br>Ohms |
| Heater Voltage, AC or DC •           | 6.0     | 6.3   | 6.6     | Volts        | 6.3             | ---     | ---      | ---        | ---        |
| Heater Current                       | ---     | 215   | ---     | Milliamperes | 6.3             | ---     | ---      | ---        | ---        |
| Plate Current                        | ---     | 12.5  | ---     | Milliamperes | 6.3             | 125     | ---      | ---        | 82         |
| Amplification Factor                 | ---     | 75    | ---     |              | 6.3             | 125     | ---      | ---        | 82         |
| Transconductance                     | ---     | 16000 | ---     | Micromhos    | 6.3             | 125     | ---      | ---        | 82         |
| Grid Voltage, Cutoff                 | ---     | -3.5  | ---     | Volts        | 6.3             | 125     | 0.1      | ---        | ---        |
| Direct Interelectrode Capacitances † |         |       |         |              |                 |         |          |            |            |
| Grid to Plate: (g to p)              | ---     | 1.05  | ---     | pf           |                 |         |          |            |            |
| Input: g to (h+k)                    | ---     | 2.1   | ---     | pf           |                 |         |          |            |            |
| Output: p to (h+k)                   | ---     | 0.018 | ---     | pf           |                 |         |          |            |            |
| Cathode Warm-up Time §               | ---     | ---   | 3       | Seconds      |                 |         |          |            |            |

#### GRID-PULSED OSCILLATOR SERVICE

|                                     |       |                   |
|-------------------------------------|-------|-------------------|
| Frequency                           | 5700  | Megahertz         |
| Duty Factor                         | 0.016 |                   |
| Pulse Duration                      | 1.0   | Microseconds      |
| Pulse Repetition Rate               | 16000 | Pulses Per Second |
| Plate Supply Voltage                | 400   | Volts             |
| Plate Current: Average During Pulse | 0.6   | Amperes           |
| Grid Current: Average During Pulse  | 0.3   | Amperes           |
| Power Output: Average During Pulse  | 40    | Watts             |

### NOTES

- ★ Both electrical and mechanical characteristics of development types are subject to change; therefore, it is recommended that designers consult their General Electric field representative before designing equipment around developmental types.
- 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. In some applications, longer tube life may be obtained at reduced heater voltage. For specific recommendations, contact your General Electric sales representative.
- ♦ Measured at 450 KHz using a grounded adapter that provides shielding between external terminals of tube.
- § Time required for plate current to reach 80 percent of its steady-state value.

**GENERAL ELECTRIC**

Supersedes PI Sheet dated 8-67

**ABSOLUTE-MAXIMUM RATINGS****GRID-PULSED OSCILLATOR SERVICE**

|                                                                |       |              |
|----------------------------------------------------------------|-------|--------------|
| Plate Supply Voltage.....                                      | 400   | Volts        |
| Pulse Duration.....                                            | 2     | Microseconds |
| Duty Factor.....                                               | 0.016 |              |
| Plate Current: Average During Pulse⊕.....                      | 0.6   | Amperes      |
| Negative DC Grid Voltage.....                                  | 50    | Volts        |
| Grid Current: Average During Pulse.....                        | 0.3   | Amperes      |
| Plate Dissipation.....                                         | 3.5   | Watts        |
| Peak Heater-Cathode Voltage                                    |       |              |
| Heater Positive with Respect to Cathode.....                   | 50    | Volts        |
| Heater Negative with Respect to Cathode.....                   | 50    | Volts        |
| Envelope Temperature at Hottest Point▲.....                    | 250   | °C           |
| Temperature Differential Between Two Adjacent Electrodes□..... | 75    | °C           |
| Mechanical Vibration (20-2000 Hz Sinusoidal).....              | 30    | 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.

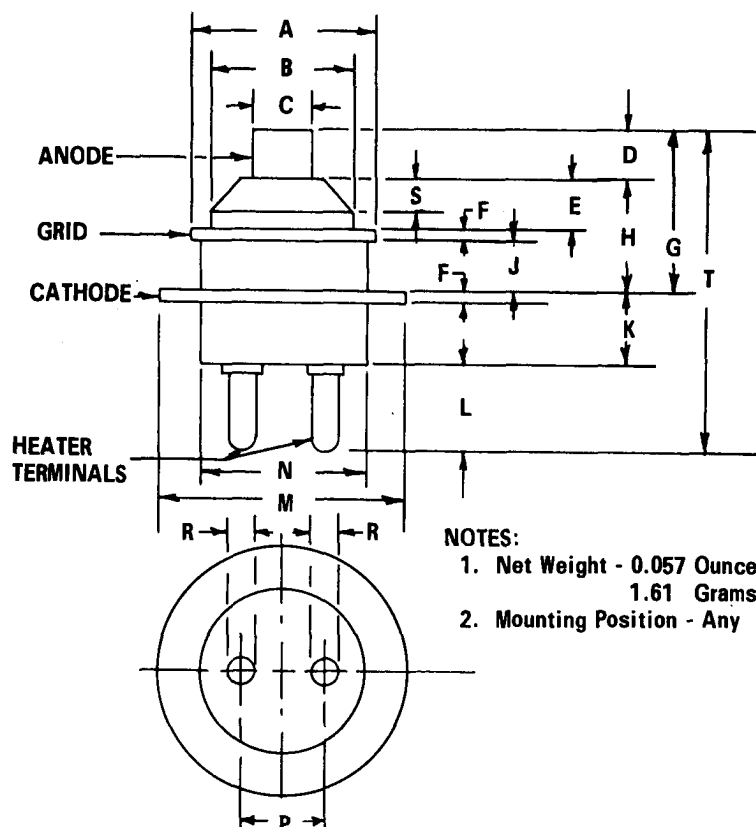
**NOTES**

- ⊕ The regulation and/or series plate supply impedance must be such as to limit the peak current, with the tube considered a short circuit, to a maximum of 10 times the maximum plate current rating.
- ▲ 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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## PHYSICAL DIMENSIONS



| Ref. | INCHES |       |       | MILLIMETERS |       |       |
|------|--------|-------|-------|-------------|-------|-------|
|      | Min.   | Nom.  | Max.  | Min.        | Nom.  | Max.  |
| A    | 0.357  | 0.360 | 0.363 | 9.068       | 9.144 | 9.220 |
| B    | ---    | ---   | 0.285 | ---         | ---   | 7.239 |
| C    | 0.108  | 0.110 | 0.112 | 2.743       | 2.794 | 2.845 |
| D    | 0.095  | 0.100 | 0.105 | 2.413       | 2.540 | 2.667 |
| E    | 0.095  | 0.100 | 0.105 | 2.413       | 2.540 | 2.667 |
| F    | 0.025  | 0.028 | 0.031 | 0.635       | 0.711 | 0.787 |
| G    | 0.315  | 0.325 | 0.335 | 8.001       | 8.225 | 8.509 |
| H    | 0.216  | 0.224 | 0.232 | 5.486       | 5.690 | 5.893 |
| J    | 0.094  | 0.098 | 0.102 | 2.388       | 2.489 | 2.591 |
| K    | 0.143  | 0.150 | 0.157 | 3.632       | 3.810 | 3.988 |
| L    | 0.165  | 0.175 | 0.185 | 4.191       | 4.445 | 4.699 |
| M    | 0.476  | 0.480 | 0.484 | 12.09       | 12.19 | 12.29 |
| N    | ---    | ---   | 0.330 | ---         | ---   | 8.458 |
| P    | 0.130  | 0.136 | 0.142 | 3.302       | 3.454 | 3.607 |
| R    | 0.048  | 0.051 | 0.054 | 1.219       | 1.295 | 1.372 |
| S    | ---    | 0.060 | ---   | ---         | 1.524 | ---   |
| T    | 0.623  | 0.650 | 0.677 | 15.82       | 16.51 | 17.20 |

**Y-1124**

Page 4  
12-70

**TUBE PRODUCTS DEPARTMENT**

**GENERAL  ELECTRIC**

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