

# Traveling-Wave Tubes

## Technical Information

### RF PERFORMANCE

| Tube Type | Frequency Range (Gc) | Maximum Noise Figure (db) | Minimum SS Gain (db) | Minimum Saturation Power Output (mw) |
|-----------|----------------------|---------------------------|----------------------|--------------------------------------|
| ZM-3245   | 4.0 - 8.0            | 11                        | 30                   | 10                                   |
| ZM-3246   | 4.3 - 7.35           | 10                        | 30                   | 10                                   |
| ZM-3247   | 5.0 - 7.0            | 10                        | 33                   | 10                                   |
| ZM-3248   | 5.0 - 6.0            | 9                         | 33                   | 10                                   |
| ZM-3249   | 4.4 - 5.0            | 9.5                       | 33                   | 10                                   |

- LOW NOISE
- C-BAND
- PPM FOCUSED

### FEATURES

lowest noise  
broadband  
periodic permanent magnet focusing  
metal ceramic construction  
military environments  
lightweight  
crystal mixer protection

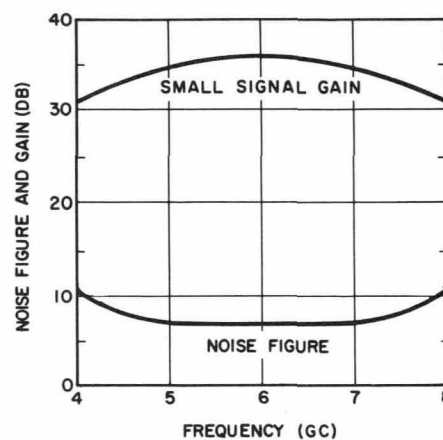
### APPLICATIONS

radar  
ecm  
instrumentation  
communications  
radiometry

### MECHANICAL & MISCELLANEOUS

VSWR,<sup>†</sup> max  
Input ..... 2.0  
Output ..... 2.0  
Mounting Position ..... Any  
Weight, lb ..... 2.3  
Overall Length, in ..... 9.3  
Cooling ..... Convection  
RF Connectors ..... Type TNC  
Power Connection ..... Flying Leads  
Collector Connection ..... Flying Lead

### TYPICAL CHARACTERISTICS



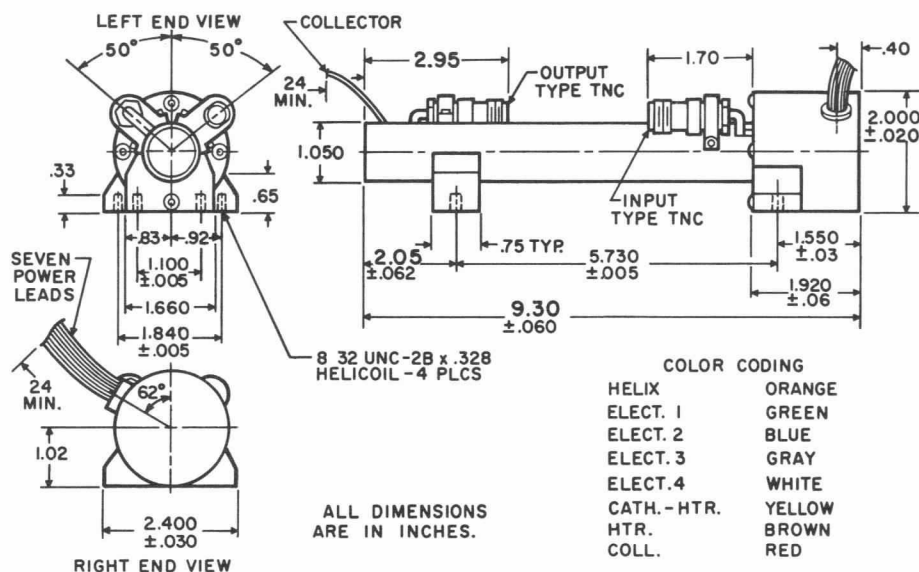
# OPERATING CONDITIONS\*

|                            |                 |     |
|----------------------------|-----------------|-----|
| Htr, #                     | vac or vdc..... | 6.3 |
| Htr, amp (max.).....       | 0.35            |     |
| Elect. 1, vdc.....         | -30 to 0        |     |
| Elect. 2, vdc.....         | 20 to 75        |     |
| Elect. 3, vdc.....         | 50 to 200       |     |
| Elect. 4, vdc.....         | 100 to 400      |     |
| Helix, vdc.....            | 600 to 700      |     |
| Helix, $\mu$ a (max.)..... | 100             |     |
| Collector, vdc.....        | 750 to 1000     |     |
| Beam, $\mu$ a (max.).....  | 1000            |     |

# ENVIRONMENTAL

|                     |               |  |
|---------------------|---------------|--|
| Shock.....          | 50 G, 12 ms,  |  |
| (energized)         | 3 axes        |  |
| Vibration.....      | 15 G, 55 to   |  |
| (operating)         | 3000 cps      |  |
| Temp, Ambient ....  | -55 C to      |  |
| (operating)         | +85 C         |  |
| Altitude.....       | 100,000 ft.   |  |
| (operating)         |               |  |
| Acoustic Noise..... | 135 db, 25 to |  |
| (operating)         | 12,000 cps    |  |

# OUTLINE



# NOTES

- \* All voltages may be isolated from ground; i.e., it is not necessary to operate the cathode, helix, collector, or any other electrode at ground potential. Voltages shown are measured with respect to cathode. For minimum noise and optimum gain characteristics, voltages should be adjusted to values specified by instructions accompanying each tube.
  - † Max. VSWR of ZM-3245 is 2.5.
  - # A 6-sec fast warmup heater is available at increased cost.
- These data are subject to change without notice.