

These ratings represent those of current developmental samples of this type. Refer to the Objective Technical Information sheet for design-objective ratings.

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TRAVELING-WAVE TUBE

25 db Gain

Less than 10 db Noise Figure

Low-Noise

4000-8000 Megacycles
Metal and Ceramic

The Z-3028 is a ruggedized low-noise, broadband traveling-wave tube for use in the 4000- to 8000-megacycle frequency range. It provides a noise figure of less than 10 decibels across the entire band with a power output of more than one milliwatt.

The tube is of metal-and-ceramic construction and is supplied as a complete packaged assembly which includes the focusing magnets, connectors, and housing. The entire assembly weighs approximately 12.25 pounds.

The broad bandwidth, low-noise, high gain, freedom from tuning adjustments, and rugged construction make this tube particularly useful in military systems. As the input tube for radar receivers, it has the decided advantages of low noise and protection to the crystal mixer. Other applications include electronic countermeasures equipment, microwave relay systems, and radiometry.

GENERAL

Electrical

Heater Voltage*	5 to 7	Volts
Heater Current	0.2 to 0.35	Amperes
Frequency	4000 to 8000	Megacycles
Noise Figure+	Less than 10	Decibels
Saturated Power Output, minimum	1.0	Milliwatts
Small Signal Gain	25	Decibels
Variation, maximum	6	Decibels
Collector Dissipation	0.5	Watts
Impedance, coaxial		
Input	50	Ohms
Output	50	Ohms

Mechanical

Mounting Position - Any †		
DC Socket - Winchester PM6P-LS		
Helix and Collector Sockets - PM1P-LS		
RF Connections, coaxial		
Input and Output - Type N, UG-58/U		
Over-all Dimensions		
Length	9.25	Inches
Width	4.525	Inches
Height	2.914	Inches
Weight, approximate	12.25	Pounds
Shock	50	G
Vibration	15	G
Altitude	100,000	Feet, Mean Sea Level

Thermal

Type of Cooling - Convection		
Temperature, maximum	200	C

TYPICAL OPERATING CONDITIONS†

Electrode-No. 1, grid		
Voltage	-10 to -25	Volts
Current	0	Microamperes
Electrode-No. 2, anode		
Voltage	25 to 50	Volts
Current	0	Milliamperes
Electrode-No. 3 Voltage	30 to 150	Volts
Electrode-No. 4 Voltage	100 to 400	Volts
Helix Voltage	400 to 550	Volts
Helix Current, maximum	50	Microamperes
Collector Voltage	550 to 750	Volts
Beam Current	500 to 800	Microamperes
Magnetic Field Strength, approximate	600	Gausses

- * A maximum heater-voltage regulation of ± 2 percent is recommended to realize the optimum gain parameter and noise figure.
- + Less than 10 decibels noise figure over the frequency range with the same operating voltages that provide minimum gain variation.
- † For best results, the tube should be spaced at least 2 inches away from other magnetic sources.
- ‡ For helix and waveguide at ground potential.

