

Traveling-Wave Tubes

Technical Information

- LOW NOISE
- C-& X-BAND
- SRPM FOCUSING
- INTEGRAL POWER SUPPLY

RF PERFORMANCE

TUBE TYPE			Frequency Range (Gc)	Maximum Noise Figure (db)	Minimum Small Signal Gain (db)	Minimum Saturation Power Output (mw)
28 vdc Power Supply	115 v 400 cps Power Supply	115 v 60 cps Power Supply				
ZM-3291	ZM-3292	ZM-3293	4.0 - 8.0	8	25	5
ZM-3294	ZM-3295	ZM-3296	7.0 - 11.0	8	25	5
ZM-3306	ZM-3307	ZM-3308	7.0 - 11.0	9	25	5
ZM-3309	ZM-3310	ZM-3311	8.0 - 12.0	8	25	5
ZM-3297	ZM-3298	ZM-3299	8.0 - 12.0	9	25	5

FEATURES

low noise
 broad bandwidth
 single-reversal permanent-magnet focusing†
 metal-ceramic construction
 military environment
 light weight
 crystal mixer protection
 integral power supply
 solid state
 line surge protection
 long term stability

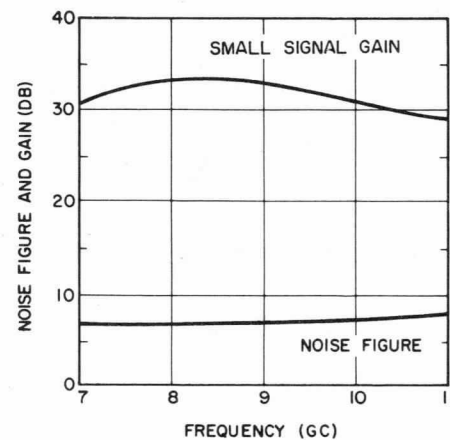
APPLICATIONS

radar
 ecm
 instrumentation
 communications
 radiometry

MECHANICAL AND MISCELLANEOUS

VSWR, max
 Input 2.5
 Output 2.5
 Mounting position Any
 Weight, lb. 15.5
 Overall length, in. 13.85
 Cooling Convection
 Connectors
 RF input Type N, female
 RF output Type N, female
 Power Deutsch DM9601-3P (or equiv.)

TYPICAL CHARACTERISTICS



POWER SUPPLY REQUIREMENTS

Nominal Rating	115 v 60 cps	115 v 400 cps	28 vdc
Voltage range	100-135 vac	100-135 vac	24-29 vdc
Voltage transients	*	*	**
Freq. range	48-75 cps	380-420 cps	—
Power, max.	30 w	30 w	30 w

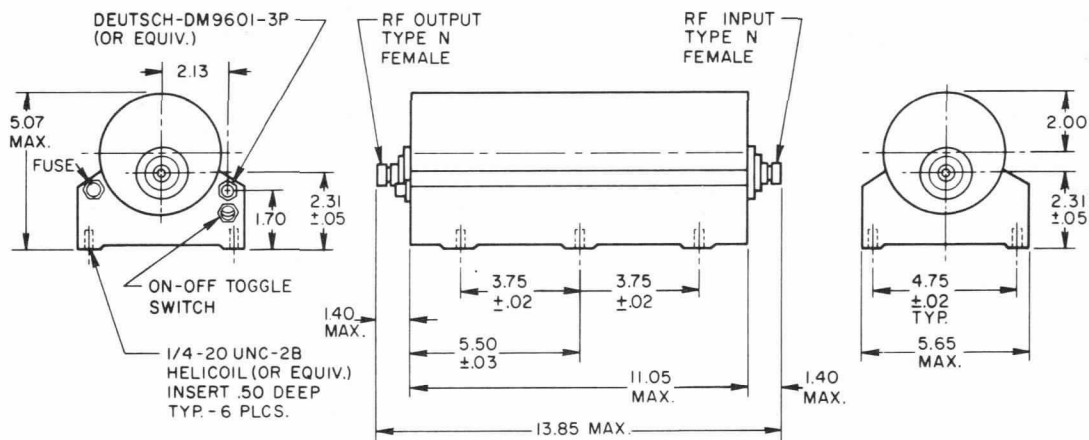
* Transients per MIL-STD-704 par. 5.1.4.2. If voltage exceeds 175 volts for 3 sec, the fuse will blow.

** Transients per MIL-STD-704 par. 5.2.3.2.

ENVIRONMENTAL

Shock	30 G, 11 ms, (energized) 3 axes
Vibration	15 G, 90 to (operating) 2000 cps
Temp. Ambient . .	-54 to +71 C # (operating)
Altitude	100,000 ft (operating)
Acoustic Noise . .	150 db, 25 to (operating) 12,000 cps

OUTLINE



DIMENSIONS ARE IN INCHES; THOSE WITHOUT TOLERANCES ARE APPROXIMATE.

PIN CONNECTIONS

	115V, 60 CPS POWER SUPPLY	115V, 400 CPS POWER SUPPLY	28 VDC POWER SUPPLY
PIN 1	115V LINE	115V LINE	28VDC LINE
PIN 2	CHASSIS GND.	CHASSIS GND.	GND. (CHASSIS & CIRCUIT)
PIN 3	115V LINE	115V LINE	GND. (CHASSIS & CIRCUIT)

NOTES

- † Since these tubes are single-reversal permanent-magnet focused and magnetically shielded, they are well suited for applications requiring close physical spacing with other tubes or magnetic materials.
- + Narrowband versions of these tubes with improved noise figure and gain ratings are available, e. g., since these tubes correspond to the ZM-3203 and ZM-3235 except for the integral power supplies, corresponding narrowband ratings are applicable.
- # This tube is capable of operating to +85 C with approximately 0.5 db degradation in noise figure.

These data are subject to change without notice.