

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)	Data Group
ZM-3441	7.0 - 8.5	11	37	50	1
ZM-3197	7.0 - 11.0	13	37	30	1
ZM-3186	7.0 - 11.0	18	37	30	2
ZM-3326	7.0 - 12.0	15	37	30	1
ZM-3199	7.0 - 12.0	20	37	30	2
ZM-3209	8.0 - 12.0	13	33	30	1
ZM-3198	8.0 - 12.0	18	33	30	2
ZM-3442	8.5 - 9.6	11	37	50	1

- LOW NOISE
- X-BAND
- PPM FOCUSING

FEATURES

low noise
broad bandwidth
periodic permanent magnet focusing
metal-ceramic construction
military environments
light weight
crystal mixer protection

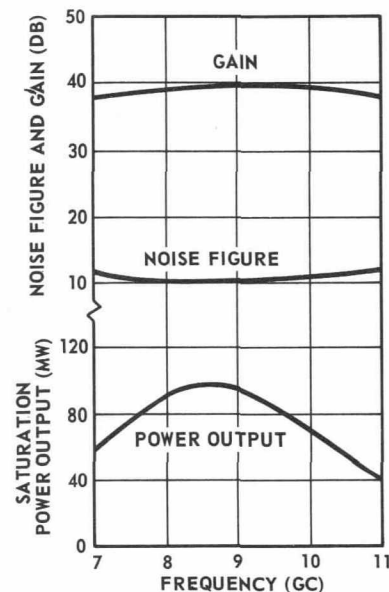
APPLICATIONS

radar
ecm
instrumentation
communications
radiometry

MECHANICAL & MISCELLANEOUS

Data Group	1	2
VSWR, max		
Input.....	2.5	2.5
Output.....	2.5	2.5
Mounting Position	Any	Any
Weight, lb.....	4.5	4.0
Overall Length, in....	14.6	14.6
Cooling.....	Conv.	Conv.
RF Connectors.....	Type N	Type N
DC Connector.....	Winch'r M12P or equiv.	Winch'r M12P or equiv.
Collector Connector	--	--

TYPICAL CHARACTERISTICS



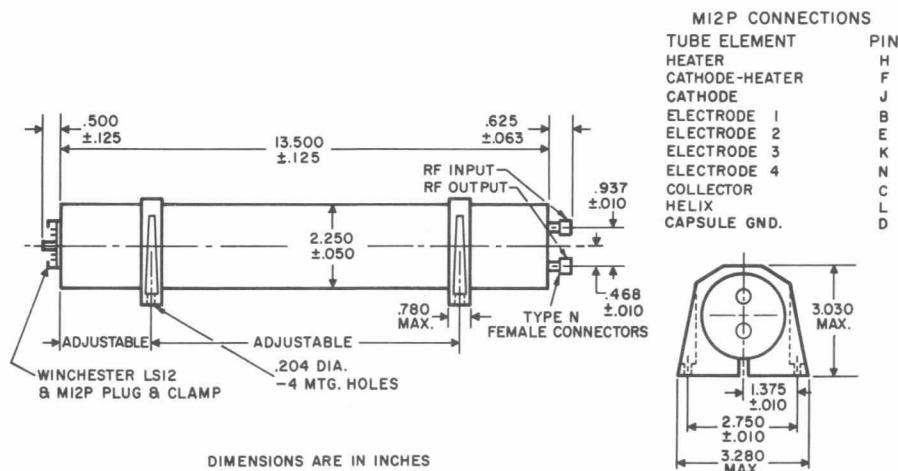
OPERATING CONDITIONS†

Data Group	All
Htr, vac or vdc.....	6.3
Htr, amp (max).....	0.26
Elect. 1, vdc.....	-50 to 0
Elect. 2, vdc.....	0 to 150
Elect. 3, vdc.....	70 to 300
Elect. 4, vdc.....	300 to 800
Helix, vdc	1100 to 1300
Helix, μ a (max).....	500
Collector, vdc.....	1100 to 1500
Cathode, μ a (max)	1500

ENVIRONMENTAL

Shock.....	30G, 11 ms, (energized)	3 axes
Vibration.....	15G, 55 to (operating)	2000 cps
Temp, Ambient ...	-65 C to (operating)	+100 C
Acoustic Noise	150 db, 25 to (operating)	12,000 cps
Altitude.....	100,000 ft. (operating)	

OUTLINE



NOTES

* Increased gain and power ratings are possible when these tubes are optimized for a narrow frequency band. If requirements exist for such increased ratings over a narrow band, consult the nearest Tube Department sales office.

† 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. These values will be within the ranges given above.

These data are subject to change without notice.