



E I M A C
 Division of Varian
 SAN CARLOS
 CALIFORNIA

EM-778A
 TRAVELING WAVE TUBE
 5.0-11.0 GHz
 1 W C.W. Min.
 60 dB Min. S.S.G.

The EM778A is one of a family of ruggedized ceramic and metal traveling wave tubes designed to work under severe environmental extremes of shock, vibration, altitude, and temperature. These tubes are focussed by a fully temperature compensated periodic permanent magnet array. Typical applications are as ECM drivers or radar augmenters, and in airborne radar, communications, and special test equipment.

FEATURES

- Small Size
- Light Weight
- Metal-Ceramic Construction
- PPM Focusing
- High Gain
- High Efficiency
- Broadband Operation
- Versatile Operation
- Conduction Cooling



GENERAL CHARACTERISTICS

PERFORMANCE

Frequency Range	5.0-11.0 GHz
Saturated Power Output (Min)	1 W
(Typical).....	2 W
Small Signal Gain (Min).....	60 dB
(Typical).....	65 dB
Saturated Gain (Min)	55 dB
(Typical).....	60 dB
Output VSWR (Max)	3.5 : 1
Input VSWR (Max).....	3.0 : 1
Impedance (Nominal).....	50Ω
Noise Figure (Max)	34 dB
(Typical).....	30 dB

NOTE: These data may be used for prototype design purposes. Before establishing production design specifications, contact the nearest Varian Sales Office or Microwave Product Manager, EIMAC Division of Varian, 301 Industrial Way, San Carlos, Calif. 94070



ELECTRICAL

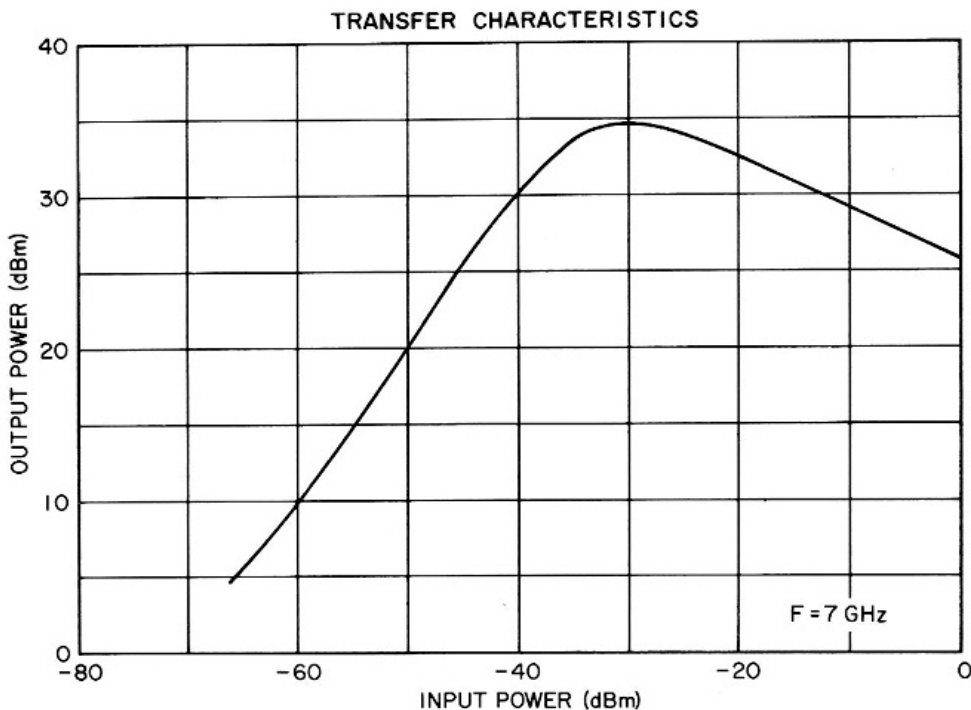
	<i>Min.</i>	<i>Max.</i>	<i>Units</i>
Cathode Voltage	-2700	-3000	V
Cathode Current		30	mA
Focus Electrode Voltage.....	-50	0	V (Ref to Cath)
Focus Electrode Current		0	
Helix Voltage		GND	ground
Collector Voltage.....		GND	ground
Heater Voltage (Nominal).....		6.3	V
Heater Current (Nominal).....		0.6	A

ENVIRONMENT

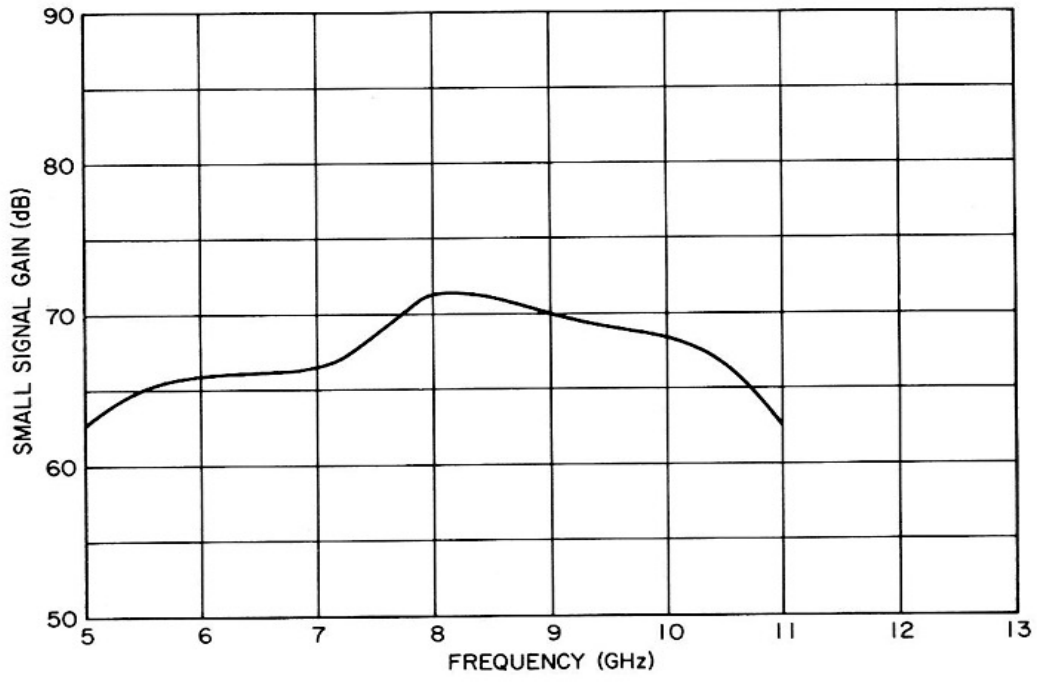
Vibration	10G, to 2000 cps
Shock	25G, 11 ms
Acceleration	25G, sustained
Temperature.....	-54°C to 85°C
Altitude (unpressurized).....	to 70,000 ft

MECHANICAL

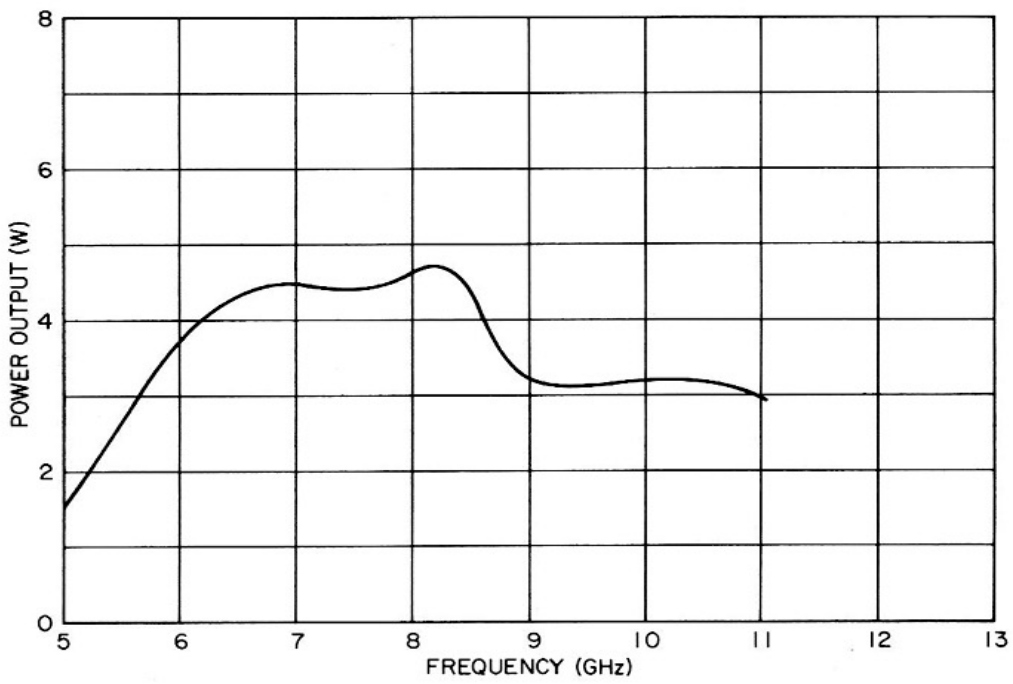
Length	16-5/16 in.
Width	1.830 in.
Height (excluding RF connectors).....	2.156 in.
Weight	4-1/2 lb
Cooling	Conduction
D.C. Connections	Flying Leads
RF Connectors	Type "N" Female
Mounting Position	Any



GAIN CHARACTERISTICS

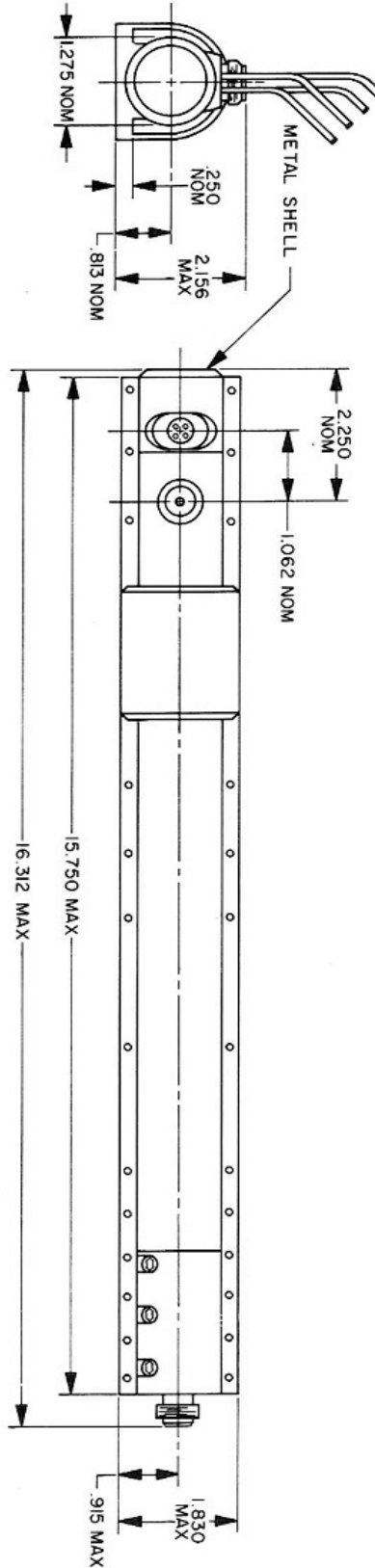


POWER OUTPUT CHARACTERISTICS





EM-778A



LEAD	ELEMENT
BROWN	HEATER
YELLOW	HEATER CATHODE
GREEN	FOCUS ELECTRODE
BLACK	BODY GROUND