EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

EM-1114

X-BAND
REFLEX KLYSTRON

TYPICAL PERFORMANCE

ELECTRICAL PERFORMANCE

Frequency Setting	13.90 Gc
Mechanically Trimmable	±20 Mc
Power Output	200 mW
Electronic Tuning Range (3 db bandwidth)	25 Mc min
Resonator Voltage	400 Vdc
Cathode Current	40 mA
Repeller Voltage	−280 Vdc
Modulation Sensitivity	0.8 Mc/v max
Heater Voltage	6.3 V(ac or dc)±5%
Heater Current	1.3 A max
Mode	3-3/4
VSWR of Load	1.10:1
Temperature Coefficient	−150 Kc/°C
Warm-up Time	30 seconds
[redacted]	[redacted]

MAXIMUM RATINGS

Resonator Voltage	500 Vdc
Cathode Current	55 mA
Repeller Voltage (negative with respect to the cathode)	(-50 to -500) Vdc

Note: Damage to the tube may occur if the maximum ratings are exceeded.

MECHANICAL

Operating Position	Any
Electrical Connections	Flexible Lead
RF Output Coupling	RG-91/U waveguide
Cooling Required	Conduction
Net Weight	6 ounces
Shipping Weight (approximate)	4 pounds

ENVIRONMENTAL PERFORMANCE

Temperature Range (Max Ambient)	150° C
Altitude	100,000 ft. max
Vibration	10 G, (20-2000 cps)
Shock	40 G, (11 ms)

OUTLINE DIMENSIONS

Height	1.40 inches
Width	1.50 inches
Length	2.10 inches

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APPLICATION NOTES

COOLING: At sea level this tube will not require forced air cooling when operated at less than 20 watts resonator dissipation and an ambient temperature of less than 150° C. The waveguide flange connection will normally provide the required heat - sink for conduction cooling. If the tube is operated at a resonator dissipation of greater than 20 watts or if an insulator is used between the tube and waveguide for DC isolation, forced air cooling will be required to maintain the body temperature below the maximum rating of 175° Centigrade.

RESONATOR: The resonator of the EM-1114 is integral with the body of the klystron. For this reason it is often convenient to operate the resonator at chassis potential, with the repeller and cathode at appropriate negative potentials.

CATHODE: The heater voltage should be maintained within ±5% of the rated value of 6.3 volts if variations in performance are to be minimized and best tube life obtained.

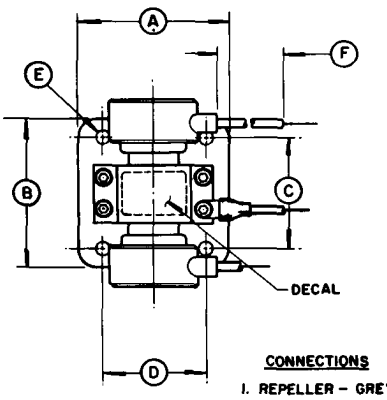
The heater and cathode of the EM-1114 are internally connected. When the resonator of this tube is operated at chassis potential, the heater transformer must be insulated for the cathode-to-resonator voltage.

MECHANICAL TRIMMING: The EM-1114 is fitted with a locking tuner that allows ±20 mc trimming. The center frequency is factory pre-set to your specification.

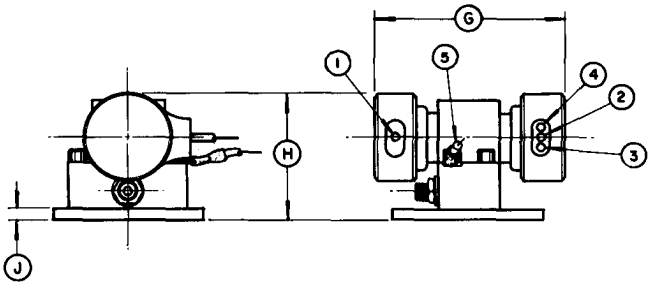
SHOCK AND VIBRATION: This klystron is specifically designed for use in applications encountering vibration and shock extremes. This tube is capable of delivering its rated power output when subjected to vibration levels of 10g (20-2,000 cps) or shock of up to 40g (11 milliseconds duration).

With a vibration level of 10g in any reference plane, the peak-to-peak FM deviation will be less than 200 kilocycles.

SPECIAL APPLICATIONS: For additional information regarding any specific application, write to Microwave Division, Eitel-McCullough, Inc., San Carlos, California, telephone Lytell 1-1451, Cable EIMAC.



DIMENSIONS IN INCHES			
DIMENSIONAL DATA			
REF.	MIN.	MAX.	NOM.
A			1.500
B			1.500
C	1.118	1.126	
D	1.036	1.044	
E	.143 D.	.148 D.	
F	12±1 TYP LEAD LENGTH		
G		2.100	
H		1.400	
J			.125

CONNECTIONS

1. REPELLER - GREY
2. HEATER - YELLOW
3. CATHODE - GREEN
4. HEATER CATHODE - WHITE
5. GROUND - BROWN