

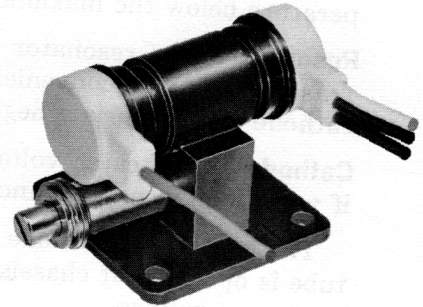
EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA
1K20XF-B
X BAND
REFLEX KLYSTRON

TYPICAL PERFORMANCE

ELECTRICAL PERFORMANCE

Frequency range	10.061 to 10.452 Gc
Mechanically tunable	391 Mc
Power output	40 mW min.
Electronic tuning range (3 db bandwidth)	40 Mc min.
Resonator voltage	300 Vdc
Cathode current	25 mA
Repeller voltage	-80 to -120 Vdc
Modulation sensitivity	3.0 Mc/V
Heater voltage	6.3 V (ac or dc) $\pm 5\%$
Heater current	0.7 A max.
Mode	5%
VSWR of load	1.1:1
Temperature coefficient	-200 + 100 Kc/ $^{\circ}$ C
Warm-up time	30 sec.



MAXIMUM RATINGS

Resonator voltage	400 Vdc
Cathode current	50 mA
Repeller voltage:	
Negative with respect to cathode	-25 to -500 Vdc

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

MECHANICAL

Operating position	any
Electrical connections	flexible leads
RF output coupling	RG-52U wave-guide flange
Cooling required	conduction
Net weight	5 oz. max.
Shipping weight (approximate)	4 lbs.

ENVIRONMENTAL PERFORMANCE

Temperature range	-50 to +100 $^{\circ}$ C
Altitude	100,000 ft.
Vibration*	10G, 20 to 2000 cps
Shock*	40G, 11 ms

*As required

OUTLINE DIMENSIONS

Height	1.400 in.
Width	1.625 in.
Length	2.570 in.

(EFFECTIVE 4-1-64)

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1K20XF-B

APPLICATION

NOTE: All voltages are referred to the cathode.

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 1K20XF-B 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 $\pm 5\%$ 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 1K20XF-B 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.

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.

