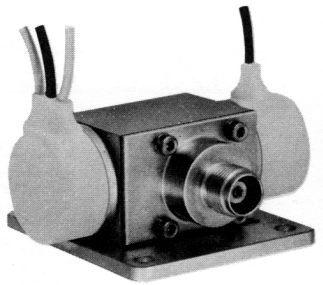
EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

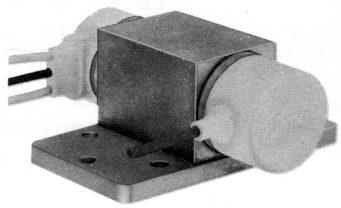
1K75CH
1K75CK

C-BAND
REFLEX KLYSTRONS

The Eimac 1K75CH and 1K75CK are low noise, ceramic and metal, ruggedized, internal cavity, reflex klystrons designed for use in altimeter applications at a fixed frequency of 4300 ± 50 megacycles. These conduction-cooled tubes are capable of delivering a minimum output power of one watt into a load VSWR of 1.15 to 1 under conditions of severe shock, vibration or acceleration extremes.



1K75CH



1K75CK

GENERAL CHARACTERISTICS

ELECTRICAL

Cathode:	Unipotential, oxide coated		
	Warm-up Time - -	60	seconds
Heater:	Voltage - -	6.3	volts
	Current - -	1.0 to 1.5	amperes
Minimum Output Power (Load VSWR=1.15:1)		1.0	watts
Operating Frequency - -		4300 ± 50	megacycles

MECHANICAL

Operating Position - - -		Any	
Mounting:			
	1K75CH - - -	Heat sink flange	
	1K75CK - -	Special waveguide flange	
R-F Output Coupling:			
	1K75CH - - -	Insulated TNC jack	
	1K75CK -	Special half-height waveguide	
Electrical Connections	- -	Flexible leads	
Cooling - - -		Convection and conduction	
Maximum Overall Dimensions:	1K75CH	1K75CK	
Depth - -	1.13	1.19	inches
Width - -	2.50	2.76	inches
Length - -	2.51	2.73	inches
Net Weight - -	8.5	8.0	ounces
Shipping Weight (Approximate)	2	2	pounds

ENVIRONMENTAL

Maximum Heat-Sink or Ambient Temperature - -	125° Centigrade
Maximum Altitude (1K75CK, and 1K75CH with TNC jack at body potential) - - - -	No Limit
Maximum Altitude (1K75CH with TNC jack at cathode potential)	40,000 Feet
Maximum Non-Operating Shock (11 ms duration) (1K75CH) -	15 g
Maximum Non-Operating Shock (11 ms duration) (1K75CK) -	30 g
Maximum Operating Vibration (20-2000 cps)* - - -	10 g

*Based on a maximum peak-to-peak frequency deviation of 100 kilocycles.

MAXIMUM RATINGS

D-C RESONATOR VOLTAGE*	850	MAX. VOLTS
D-C CATHODE CURRENT	100	MAX. MA.
RESONATOR DISSIPATION	75	MAX. WATTS
PEAK REPELLER VOLTAGE*		
POSITIVE WITH RESPECT TO CATHODE	0	MAX. VOLTS
NEGATIVE WITH RESPECT TO CATHODE	500	MAX. VOLTS
PEAK HEATER TO CATHODE VOLTAGE	±45	MAX. VOLTS

TYPICAL OPERATION (Load VSWR less than 1.15 to 1)

D-C Resonator Voltage*	550	750	volts
Mode	4-3/4	2-3/4	
Frequency	4300	4300	megacycles
D-C Cathode Current	35	60	milliamperes
D-C Repeller Voltage*	-150	-350	volts
D-C Repeller Current	1	1	microampere
Power Output	0.25	1.0	watt
Electronic Tuning (3 db bandwidth)	60	30	megacycles
Modulation Sensitivity (ΔE_r = ± 5 volts)	1600	160	Kc/volt
Residual FM	40	40	kilocycles

*All voltages referred to cathode.

APPLICATION

Cooling: At sea level, these tubes will not require forced-air cooling when operated at their maximum rated dissipation with heat-sink and ambient temperatures less than 125° Centigrade. The mounting flange or waveguide flange will normally provide the heat sink connection required for conduction cooling.

If an insulator is used between the tube and waveguide or chassis, forced-air cooling may be required to maintain the ceramic-to-metal seal temperatures below the maximum rating of 175° Centigrade.

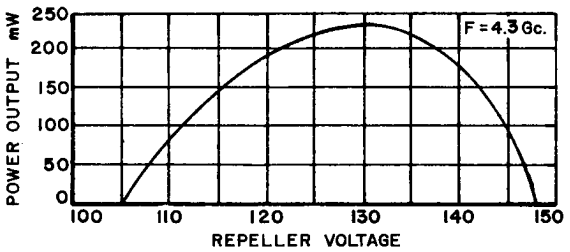
Resonator: The resonator of the 1K75C series tubes is integral with the body of the tube. For this reason, it is often convenient to operate the resonator at chassis potential, with the repeller and cathode at appropriate negative potentials.

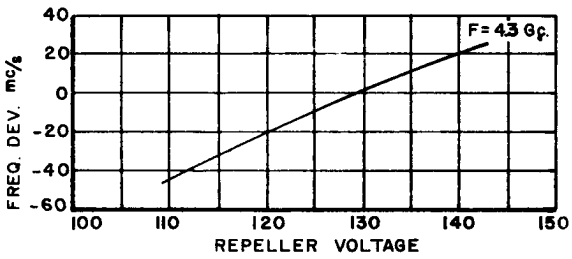
Cathode: The heater voltage should be maintained within ± 5% of the rated value of 6.3 volts if variations in performance are to be minimized and best tube life obtained.

The heater and cathode of these tubes are not internally connected and the heater-to-cathode voltage should not exceed ± 45 volts. When the resonator of this tube is operated at chassis potential, the heater transformer must be insulated for the cathode-to-resonator voltage.

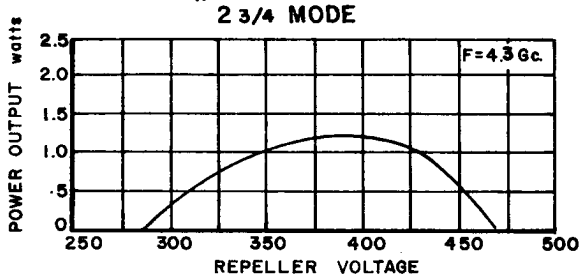
IK75CH/CK TYPICAL OPERATING CHARACTERISTICS

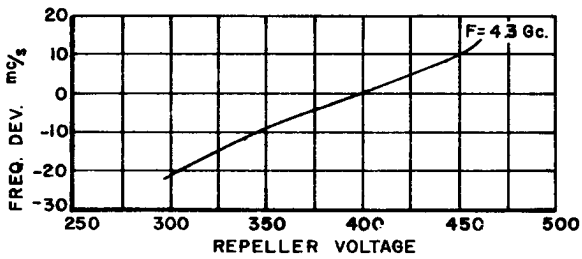
E_{RS} = 500 Vdc
I_K = 35 mAdc
4 3/4 MODE



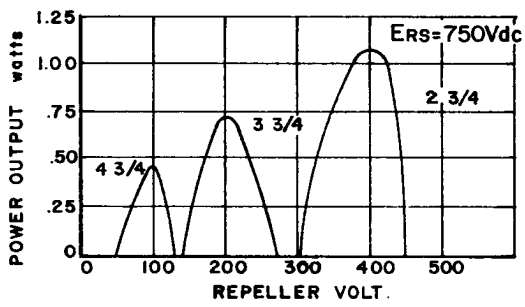


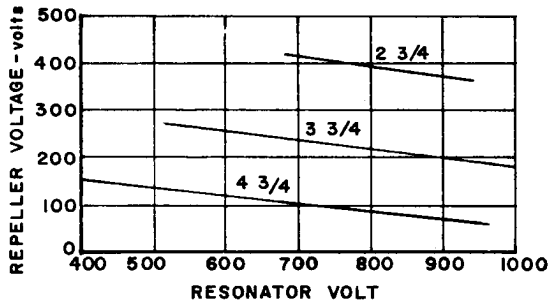
E_{RS} = 750 Vdc
I_K = 60 mAdc
2 3/4 MODE



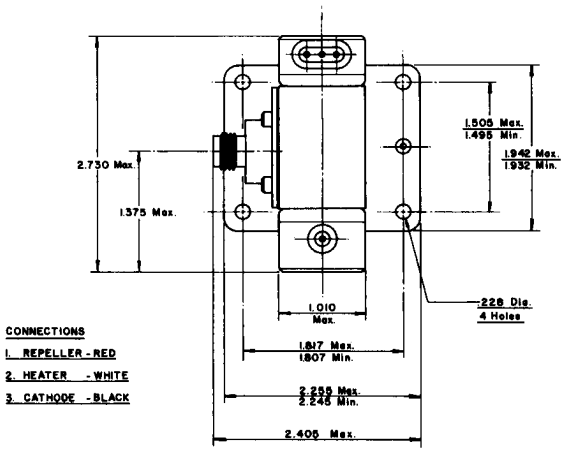


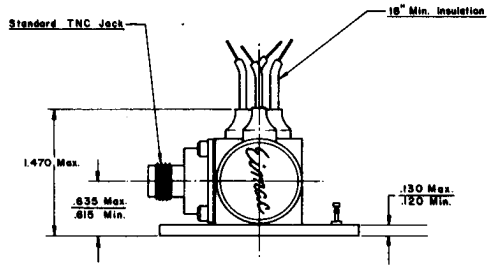
MODE CHARACTERISTICS





IK75 CH





IK75 CK