EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

TENTATIVE DATA

1K75CS

C-BAND REFLEX KLYSTRON

The Eimac 1K75CS is intended to ease the system designers' logistics and performance problems by providing a ruggedized, load-insensitive reflex klystron/isolator package for the 4200-4400 Mc. radio-altimeter band. Combining these two components into one integral package allows them to be matched for optimum performance. Operating in the 4-3/4 mode, the 1K75CS provides more than 300 mW and 100 Mc. electronic tuning range into a load VSWR of 2:1 with only 8 Mc. maximum frequency pulling. Alternately, this tube can be factory pre-set to provide approximately 1 watt and 30 Mc. electronic tuning range.

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 (4-3/4 mode)		0.3	watts
Operating Frequency (Fixed)		4300 ± 50	megacycles

MECHANICAL

Operating Position	Any	
Mounting	Heat Sink Flange	
RF Output Coupling	Special Half-Height Waveguide	
Electrical Connections	Flexible Leads	
Maximum Overall Dimensions:		
Depth	4.16	Inches
Width	2.81	Inches
Length	2.76	Inches
Net Weight	1.5 Pounds Max.	
Shipping Weight (Approximate)	3	Pounds

ENVIRONMENTAL

Maximum Heat-Sink Temperature	125	°C
Maximum Non-Operating Shock (11 ms Duration)	15	g
Maximum Operating Vibration (20 - 1500 cps)*	10	g

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

(Effective 8-10-62)

MAXIMUM RATINGS

DC RESONATOR VOLTAGE	900 MAX.	VOLTS
DC CATHODE CURRENT	85 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

TYPICAL OPERATION

Mode	4-3/4	
Frequency	4300	megacycles
DC Resonator Voltage*	700	volts
DC Cathode Current	55	milliamperes
DC Repeller Voltage	-85	
DC Repeller Current	1	microampere
Output Power	325	milliwatts
Electronic Tuning (3 db bandwidth)	110	megacycles
Modulation Sensitivity	3	Mc/volt
Residual FM	40	kilocycles
Temperature Coefficient (-55 to +125 C)	±75	Kc/°C

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

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.

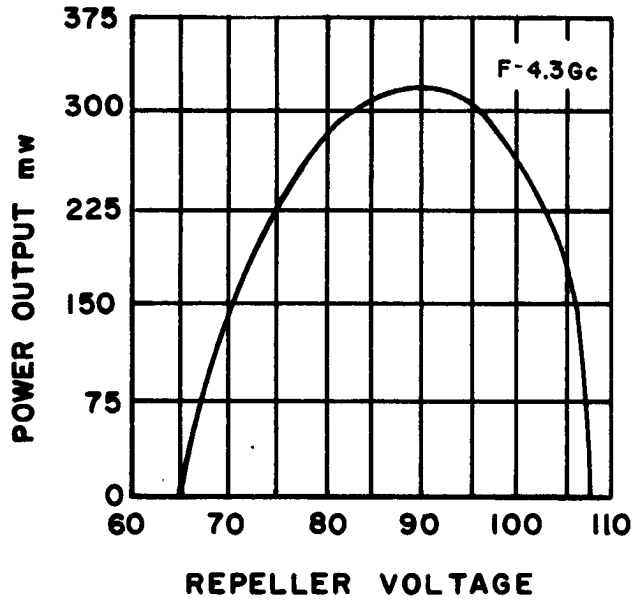
Resonator: The resonator of the 1K75CS is integral with the body of the tube. For this reason, it is convenient to operate the resonator at chassis potential, with the repeller and cathode at appropriate negative potentials.

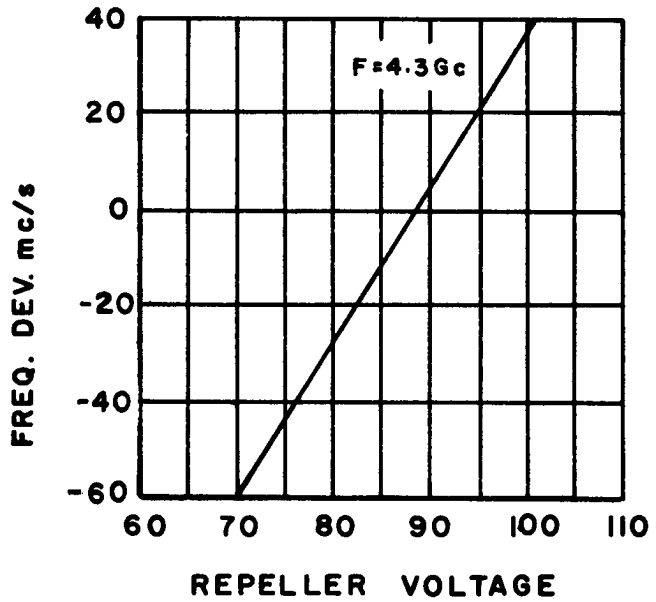
Cathode: The heater voltage should be maintained within ±5% of the rated value of 6.3 volts if variations in performance are to be minimized and best tube life obtained.

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.

1K75CS TYPICAL OPERATING CHARACTERISTICS

Ers = 700 Vdc
Ik = 55 mAdc
4 3/4 MODE





MODE CHARACTERISTICS