



5817
REFLEX KLYSTRON

GENERAL CHARACTERISTICS

The 5817 klystron oscillator is a velocity modulation tube of the reflex type, designed especially for use as a microwave radio-relay transmitting tube. A special feature of the tube is the uniformity of the reflector voltage modulation sensitivity obtained when the tube is operated as shown under "Typical Operation". The resonant cavity and the tuner are both integral parts of the tube. The electron gun is electrostatically focused and requires no external focusing field.

The output power of the tube is fed through an iris coupling into a section of waveguide attached to the tube. This section of waveguide and a 3-5/8" diameter flange are an integral part of the tube, and they are designed to fit the choke joints used on standard RG-49/U (2" x 1") waveguide. The integral plunger-type tuning mechanism covers the full frequency range of the tube with single shaft control. The published tuning range of the tube is covered with approximately ten complete revolutions of the tuner shaft. The operating frequency of the tube is increased by counterclockwise rotation of the tuner shaft, and conversely, the operating frequency is decreased by clockwise rotation of the tuner shaft.

For operation at the maximum ratings of the tube, air cooling of at least 50 cubic feet per minute is recommended. In any case, sufficient air cooling should be provided to keep the envelope temperature below 100°C. The temperature of the base and reflector electrode insulator should not exceed 75°C.

ELECTRICAL DATA

Heater Voltage (a-c or d-c)	6.3 volts
Heater Current	1.5 amperes
Maximum Frequency	5000 mc/sec
Minimum Frequency	4800 mc/sec

MAXIMUM RATINGS

Beam Voltage	1000 volts
Beam Current	125 milliamperes
Beam Power Input	125 watts
Reflector Voltage	0 to -1000 volts
Reflector Current	2 milliamperes
Heater-Cathode Voltage (Peak)	±45 volts



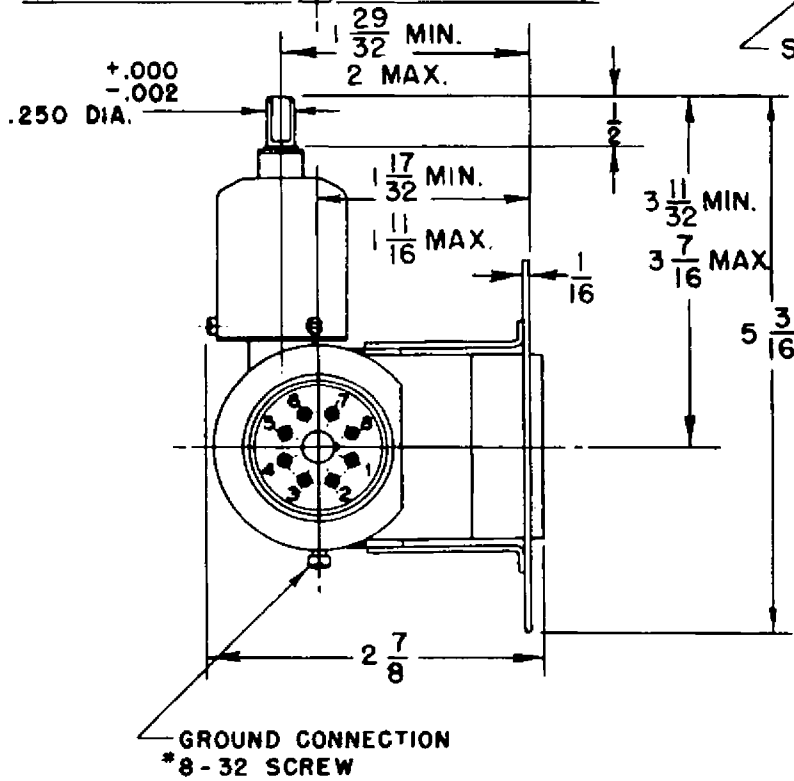
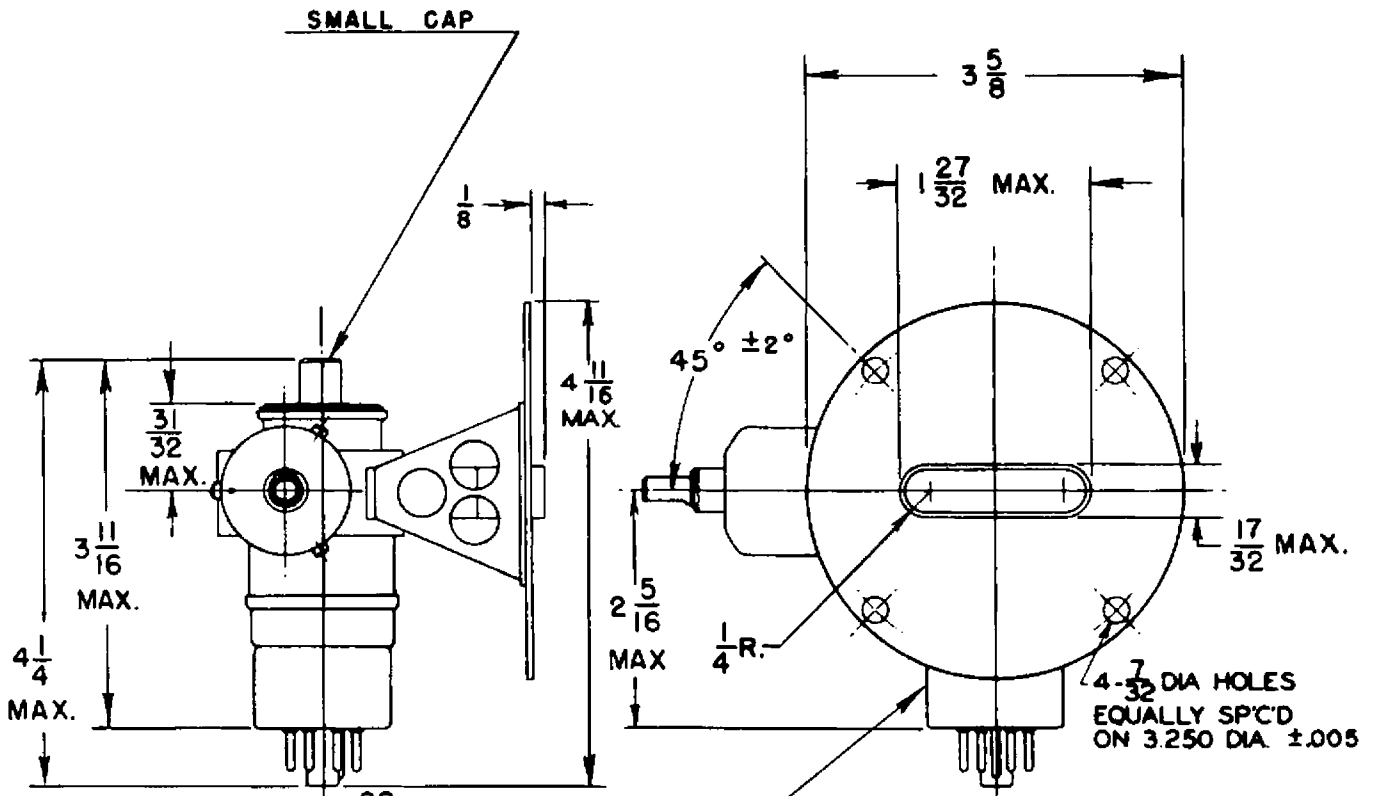
MECHANICAL INFORMATION

Type of Cathode Base	Coated, unipotential Shortened medium shell, octal, 8-pin
Physical Specifications	(See outline drawing)
Base Connections	(See outline drawing)
Mounting Position	Any
Weight	18 ounces
Cap	Small, C1-1
R-f Output	For use with waveguide RG-49/U (2"x1") output, mates with Choke Flange UG-148A/U or Cover Flange UG-149A/U
Temperature Coefficient	±50 kc/°C
Tuner	Integral part of the tube
Ground Connection	8-32 Machine screw on the side of the tube body

TYPICAL OPERATION (C-W OPERATION) MATCHED LOAD*

Frequency	4800	4900	5000	megacycles
Heater Voltage	6.3	6.3	6.3	volts
Heater Current	1.5	1.5	1.5	amperes
Beam Voltage	750	750	750	volts
Beam Current	65	65	65	milliamperes
Reflector Voltage (adjusted for max. output power)	-280	-305	-330	volts
Output Power	1.6	1.5	1.6	watts
Bandwidth (between 3 db power points)	38	37	35	megacycles
Modulation Sensitivity	.30	.29	.28	megacycles per volt

* VSWR of load = 1.06 max.



SHORTENED MEDIUM SHELL OCTAL

TYPE 5817

BASE CONNECTIONS

- 1 INTERNAL CONN. (I.C.)
- 2 HEATER
- 3 I.C.
- 4 I.C.
- 5 I.C.
- 6 I.C.
- 7 HEATER
- 8 CATHODE

SHELL-BEAM ELECTRODE
CAP-REFLECTOR

ALL DIMENSIONS IN INCHES NOMINAL
UNLESS OTHERWISE NOTED.