

ELECTRON TUBE, TRAVELING WAVE AMPLIFIER

HUGGINS LABORATORIES, INC.

TYPE 8225

DESCRIPTION: 10 MILLIWATT, SOLENOID FOCUSED, TRAVELING WAVE TUBE (FORWARD WAVE), CW AMPLIFIER FOR OPERATION FROM 2000 TO 4000 MEGACYCLES.

| ELEMENT OR TEST | LIMITS | | UNITS |
|--|--------|------|------------------|
| | MIN. | MAX. | |
| <u>ELECTRICAL SPECIFICATIONS</u> | | | |
| HEATER VOLTAGE | 6.17 | 6.34 | Vrms |
| HEATER CURRENT | 0.7 | 1.0 | AMPS |
| CATHODE CURRENT | 2.0 | 3.5 | mA _{DC} |
| HELIX VOLTAGE | 400 | 500 | V _{DC} |
| HELIX CURRENT | -- | 0.2 | mA _{DC} |
| ANODE VOLTAGE | 0 | 350 | V _{DC} |
| ANODE CURRENT | -- | 0.1 | mA _{DC} |
| COLLECTOR VOLTAGE * | 570 | 630 | V _{DC} |
| COLLECTOR CURRENT | 2.0 | 3.5 | mA _{DC} |
| VOLTAGES ARE REFERENCED TO THE CATHODE | | | |
| <u>R.F. SPECIFICATIONS</u> | | | |
| SMALL SIGNAL GAIN | 30 | -- | DB |
| SATURATED POWER OUTPUT | 10 | -- | DBM |
| SATURATED GAIN | 20 | -- | DB |
| NOISE FIGURE | -- | 25 | DB |
| V.S.W.R (INPUT/OUTPUT) | -- | 2:1 | -- |
| R.F. LEAKAGE BELOW OUTPUT SIGNAL | 50 | -- | DB |
| CATHODE PRE-HEATING TIME | 60 | -- | Sec. |
| DUTY CYCLE | -- | 1.0 | -- |

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE (OPERATING) - -10°C TO +52°C.
 RELATIVE HUMIDITY (OPERATING) - UP TO 80%.
 BAROMETRIC PRESSURE (OPERATING) - FROM 28 TO 20.4 INCHES OF MERCURY, (0 TO 10,000 FT).
 TEMPERATURE (STORAGE) - -54°C TO +71°C.
 RELATIVE HUMIDITY (NON-OPR) - UP TO 80%.
 BAROMETRIC PRESSURE (NON-OPR) - FROM 28 TO 7.0 INCHES OF MERCURY, (0 TO 35,000 FT).
 SHOCK (NON-OPR) - FORCE OF 5G WITH A TIME DURATION OF 11 ±1 MILLISECONDS.
 VIBRATION (NON-OPR) - 2G, 10 TO 500 CPS. 0.04 INCHES DA, 5 TO 10 CPS.

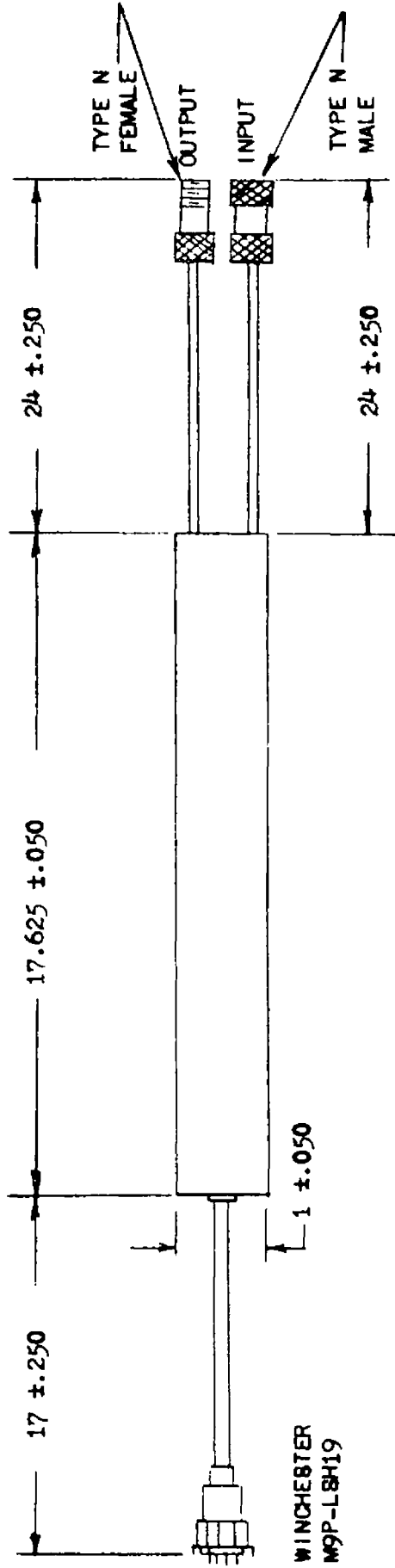
MECHANICAL DATA, GENERAL

PHYSICAL DIMENSIONS - SEE FIGURE 1
 MOUNTING POSITION - ANY
 COOLING - NOT REQUIRED
 INPUT/OUTPUT IMPEDANCE (RF) - 50 OHMS
 RF CONNECTORS - TYPE N FEMALE
 WEIGHT (APPROX.) - 1 POUND

* THE COLLECTOR IS INSULATED; HENCE, ANY ELECTRODE MAY BE OPERATED AT SYSTEM GROUND POTENTIAL.

FIGURE 1

8225



WINCHESTER
M9P-LSH19

POWER CONNECTIONS

- PIN A - COLLECTOR
- C - CAPSULE-GROUND
- D - HELIX
- E - HEATER
- F - HEATER
- H - CATHODE

GRID CONNECTED INTERNALLY
TO CATHODE

MATERIALS AND FINISHES

- CAPSULE --- BLACK ANODIZED ALUMINUM
- END CAPS -- BLACK ANODIZED ALUMINUM

MARKING

- HEATER VOLTAGE, HELIX VOLTAGE, AND CATHODE CURRENT PERMANENTLY MARKED ON THE TUBE CAPSULE.
- IN AND OUT PERMANENTLY MARKED ON RF END CAP.
- MANUFACTURERS NAME, TRADEMARK OR CODE SYMBOL, AND PART NUMBER.