

JEDEC TYPE DESIGNATION
REGISTRATION FOR PULSED MAGNETRON

GENERAL CHARACTERISTICS

The 8079 is a pulsed magnetron oscillator tube which operates at a tunable frequency of 17400 to 19500 Mc. The peak power output is approximately 135 kilowatts and the tube is forced-air cooled. The tube uses an integral magnet. Special vibration resistant design features minimized vibration induced frequency modulation.

GENERAL ELECTRICAL DATA

Pre-heat Heater Voltage	12.6 $\pm$ 5% volts
Pre-heat Heater Current at 12.6 Volts	3.25 $\pm$ 0.25 amperes
Minimum Pre-heat Time	270 seconds
Heater Cold Resistance (approx.)	0.4 ohm
Anode-Cathode Capacitance (nominal)	14 μ f

RATINGS, ABSOLUTE SYSTEM

Heater Voltage (max.)	13.9 volts
Heater Current (max.)	3.5 amperes
Heater Surge Current (max.)	13.6 amperes
Peak Anode Current {max.}	20 amperes
{min.}	5 amperes
Peak Anode Voltage (max.)	20 kilovolts
Average Power Input (max.)	350 watts
Duty Cycle (max.)	0.001
Pulse Duration {max.}	3.3 microseconds
{min.}	0.20 microseconds
Rate of Rise of Anode Voltage	
Above 50% Point {max.}	120 KV/ μ sec
{min.}	60 KV/ μ sec
Output and Input Circuit	
Pressurization {max.}	60 psia
{min.}	15 psia
Maximum Altitude without Pressurization:	
Output Circuit	sea level
Input Terminals	sea level
Body Temperature (max.)	150°C
Cathode Stem Temperature (max.)	300°C
VSWR (Magnetron Load) (max.)	1.5:1
Tuner Torque (max.)	50 in. oz.

TYPICAL OPERATING VALUES

Frequency	17400 to 19500 Mc
Peak Anode Voltage at 19.5 kmc	17.5 kv
Pulling Figure (VSWR 1.5:1)	6 Mc

Current Pulse Duration	Duty Factor	Peak Anode Current	Stability	Peak Power Output	Voltage Pulse Rate-of-Rise	RF Band Width at 1/4 po pts.	Heater Voltage
μsec		Amperes	% Missing Pulses	Kilo-watts	KV per μsec (above 50 % point)	$\sigma'=1.5:1$ worst phase Mc	Volts $\pm 5\%$
0.25	0.0007	19	0.01%	135	100	4.5 Mc	8.6
3	0.001	19	0.01%	135	100	0.45 Mc	6.8

GENERAL MECHANICAL CHARACTERISTICS

Mounting Position any
 Mounting Support See 4 hole
 Mounting Plate in
 outline drawing
 Weight 14 lbs. Max.

Coupling between Tube and Load:

Waveguide (WR51) per outline drawing. The mating flange may be WR51 cover flange or a modified (clearance holes instead of tapped 6-32) WR51 choke flange.

Cooling Data

To limit rise in body temperature to 100°C for a dissipation of 200 watts - 10 cfm, min.

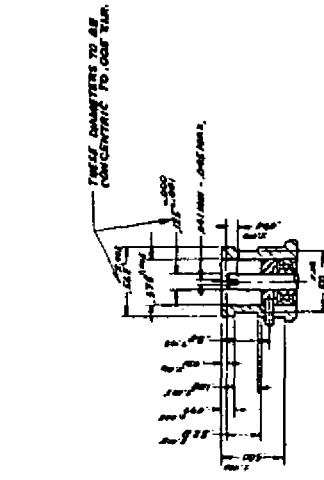
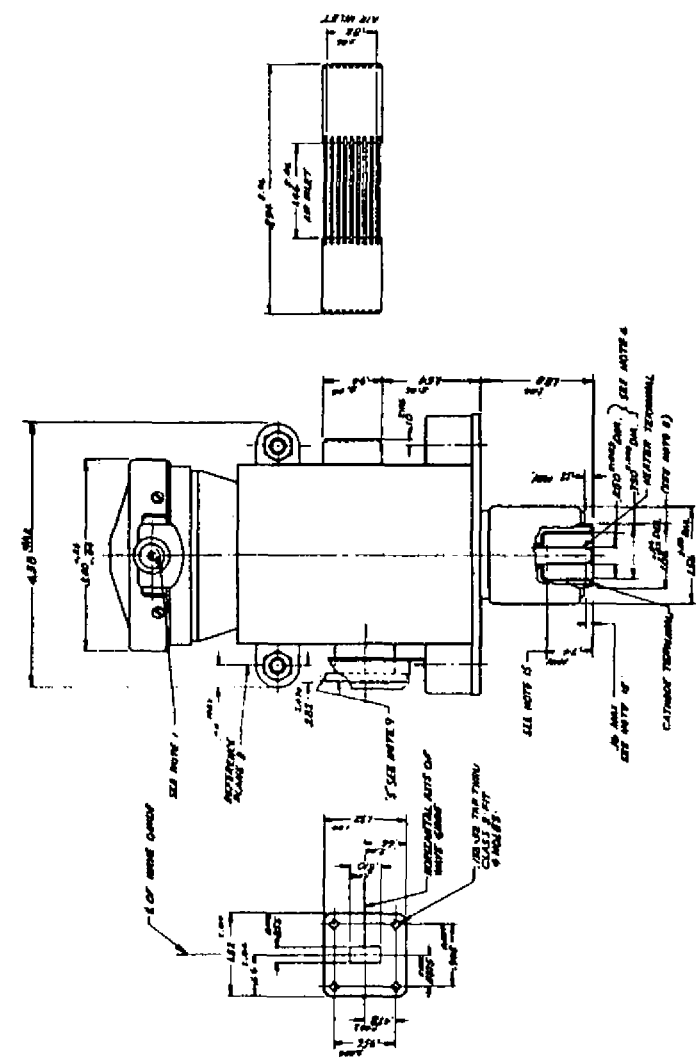
Recommended cathode stem temperature 225°C $\pm$ 25°C.

Pressurization of Output Circuit:

The need for pressurization depends on the particular components used in the output circuit and on the pulse width. In general, it is recommended that the output circuit be pressurized for peak anode currents greater than 15 amperes.

[illegible]

1. PROTECTING COVER OVER PUMPING MECH MUST BE REMOVED BEFORE TURN IS USED.
2. THE SEAL FORMED BY CLAMPING THE MAIN DRIVE OUTPUT FLANGE TO THE MAIN DRIVE SHAFT MUST BE REMOVED BY THE FOLLOWING METHOD: ON TURNED WHEELS 6-18", USE GASOLINE TO SOFTEN RUBBER MUST NOT USE MOLTEN 6-18", IS HERMETICALLY TIGHT FOR 1 MIN. WITH THE SPECIFIED AIR PRESSURE APPLIED INTERNALLY TO THE INNER GUNING.
3. THE SEAL FORMED BY CLAMPING THE BASE PLATE AGAINST THE SEAL CIRCUMFERENCE OF THE GUNNOON ON EQUIVALENT USING RIGHT GUNNET CIRCUMFERENCE OF 1.5 INCHES MUST BE REMOVED BY THE FOLLOWING METHOD: ON TURNED WHEELS 6-18", USE GASOLINE TO SOFTEN RUBBER MUST NOT USE MOLTEN 6-18", IS HERMETICALLY TIGHT FOR 1 MIN. WITH THE SPECIFIED AIR PRESSURE APPLIED TO AS TO SURROUNDING THE ENTIRE HUB ALLOW THE BASE PLATE.
4. THERE IS PROVIDED WITH INTERNAL SDO FOR IMPACT CAUSED BY UNRESTRAINED TURNER DRIVE MOTION FOR A MAX. OF 50 MINS.
5. THE INNER LAMINATION OF COILS HAS ARE NOT ADAPTED, HOWEVER, THERE MAY BE A SLIGHT OVR SPRAY OF THE CHANNEL.
6. THESE DIMENSIONS DEFINE FITTINGS OF CYLINDRICAL SECTION GIVEN BY .850 X .750 DIMENSIONS.
7. ANODIC COATING MIL-A-8685, DYED, COLOR NO. M1010 (GREEN)



DETAILS OF TURNING
DRIVE SHAFT