

PRELIMINARY TECHNICAL INFORMATION

These ratings represent those of current samples of this type. Refer to the Objective Technical Information sheet for design-objective ratings.

DEVELOPMENTAL
TYPE

ZM-6032
PTI-73B
Page 1
4-15-63

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ZM-6032

PACKAGED VOLTAGE-TUNABLE MAGNETRON

2175-2425 Megacycles

7.5 Watts CW Output

The ZM-6032 is a voltage-tunable magnetron for operation in missile environment in the 2300-megacycle frequency area. A complete r-f power-source package requiring only input power connections and an r-f power output connection, it has a minimum CW power output of 7.5 watts at 2300 megacycles. The tube may be voltage tuned over a portion or all of the frequency range for which it is designed. The use of specially designed leads to prevent corona discharge at high altitude makes this tube particularly suited for high impedance power supplies.

GENERAL

Electrical

Cathode - Directly Heated		
Filament Voltage*	2.0	Volts
Filament Current*	2.1	Amperes

Mechanical

Mounting Position - Any		
Net Weight	1.5	Pounds
Altitude	200,000	Feet

Thermal

Type of Cooling - Conduction or Convection		
Ambient Air Temperature, maximum		
Operating	120	C
Non-operating	140	C

MAXIMUM RATINGS

Absolute Values

Filament Current	2.4	Amperes
Anode Voltage	1500	Volts
Anode Current	25	Milliamperes
Power Input	35	Watts
Injection Electrode Voltage	300	Volts
Injection Electrode Current, maximum	10	Microamperes

TYPICAL OPERATING CONDITIONS

Operation with 60-cycle Sweep Voltage

Tunable Range†	2175-2425	Megacycles
Tuning Sensitivity	1.65 ± 0.2	Megacycles per Volt
Filament Voltage, *, approximate	2.0	Volts
Filament Current	2.1	Amperes
Anode Voltage at 2300 megacycles	1050 ± 5.0	Volts
Anode Current	18	Milliamperes
Injection Electrode Voltage	240	Volts
Voltage Standing Wave Ratio of Load‡		
Efficiency at 2300 Megacycles, minimum	35	Percent
Frequency Change Due to Temperature, -55 to +120 C	8	Megacycles
Power Output, minimum**, at 2300 Megacycles	7.5	Watts
Power Variation, maximum	-3	Decibels

*Filament current should be adjusted to 2.1 amperes.

†Frequency controlled by anode voltage.

‡Best operation is obtained by using a 30-decibel isolator as close as possible to the output.

**Noise level 60 decibels below carrier over 2285-2315 megacycles, 30 megacycles from carrier, using a 2-megacycle strip and a single-ended mixer.

NOTE: Since a change in anode voltage of one volt produces a frequency change of approximately 1.5 megacycles, it is necessary to maintain the ripple voltage of the anode supply small enough not to cause an excess of undesirable frequency modulation.

CAUTION: A clearance of 3 inches between ferromagnetic materials and the tube will prevent any serious change of the operating characteristics.

