

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-6204
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This technical information is proprietary and is furnished only as a service to customers.

PACKAGED VOLTAGE-TUNABLE MAGNETRON

510-910 MEGACYCLES

32-MILLIWATTS OUTPUT

The ZM-6204 voltage-tunable magnetron is a complete r-f power source package requiring only input power connections and an r-f power-output connection. The minimum CW power output across the frequency range is 32 milliwatts. This low-noise tube may be voltage tuned over a portion or all of the 510 to 910 megacycle frequency range.

A built in 10-decibel attenuator makes this tube particularly suitable for use without a circulator or isolator.

The ZM-6204 is environmentalized for airborne applications.

GENERAL

Electrical	Min.	Bogey	Max.
Cathode - Directly Heated			
Filament Voltage*	3.0	3.5	4.0 Volts
Filament Current*	1.9	2.0	2.1 Amperes
Mechanical			
Mounting Position - Any			
Net Weight			2.5 Pounds
Altitude			100,000 Feet
Thermal			
Type of Cooling - Conduction or Convection			
Ambient Air Temperature, operating			85 C

MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

Maximum Ratings, Absolute Values

Anode Voltage	2500 Volts
Anode Current	20 Milliamperes
Power Input, with Forced Air Cooling	40 Watts
Injection-Electrode Voltage	200 Volts
Injection-Electrode Current	1.0 Milliamperes
Filament Current	2.1 Amperes

Typical Operating Conditions

Operation with 60-cycle Sweep Voltage

Filament Voltage*, approximate	3.5 Volts
Filament Current*	2.0 Amperes
Tunable Range#	510-910 Megacycles per Volt
Tuning Sensitivity, average	0.44 Megacycles per Volt
Anode Voltage at 710 Megacycles	1815 Volts
Anode Current, average	10 Milliamperes
Injection-Electrode Voltage, Positive with Respect to Cathode	40-100 Volts
Injection-Electrode Current	0 Microamperes
Voltage Standing Wave Ratio of Load	1.2
Power Output†, Minimum	32 Milliwatts
Noise‡	-85 Decibels below carrier

- * Filament current should be adjusted to the value specified ± 1 percent.
- # Frequency controlled by anode voltage.
- † This power level is measured at the output of the 10-decibel integral attenuator. This VTM is also available with a 300-milliwatt output.
- ‡ This noise level is measured with respect to the carrier level over a band 59 to 61 mc from carrier.

NOTE: Since a change in anode voltage of one volt produces a frequency change of approximately 0.44 megacycles, the anode supply should have sufficiently low ripple and high regulation to prevent an excess of frequency modulation.

CAUTION: A clearance of 6 inches between ferromagnetic materials and the tube will prevent serious change of the operating characteristics.

OUTLINE ZM-6204

