

**VT114 MPD Magnetron Product Information**

The VT114 is an 8.5 kW 9.345 GHz "negative pulse" coaxial magnetron for use in various OEM airborne radars. The VT114 is a fixed frequency, integral magnet, forced air cooled magnetron. It is designed to work up to 65,000 feet in altitude and between -55 °C and +91 °C. The VT114 is tested to work in waveguide/antenna systems with a VSWR of 1.3:1 or less. The VT114 typically operates at 4.7 kilovolts and 4.8 Amps peak providing 10 kW peak RF output power.

The VT114 cross-references to OEM P/N 3718389-1 and P/N 3718389-3. The main difference in the specification between the "-1" and the "-3", is the warranty period. The 3718389-3 is provided with a 5,000 hour warranty and the 3718389-1 is provided with a 2,000 hour warranty. Our life testing shows the VT114 will last over 10,000 hours! The VT114 can be used in several different OEM airborne radars.

**Performance Characteristics**

Characteristic	Limit
Peak Power Output	8,571 Watts Minimum 10,538 Watts Maximum
Frequency (25°C Ambient)	9,345 ±20 MHz
Pulling Factor (1.3:1 VSWR)	5.0 MHz Maximum
Pushing Figure ( $\pm 10\% I_B$ )	0.5 MHz/Amp
Missing Pulses	0.25% Maximum
Minor Lobes	8.0 dB Minimum
Bandwidth	2.5/Tp MHz Maximum
Anode Temperature Coefficient	0.25 MHz/°C

**Operating Conditions**

Characteristic	Condition
Heater Voltage (1.9-8.0 kHz Sq. Wave)	12.6 Volts Peak to Peak
Heater Current	3.1 ±0.3 Amps P-P
Preheat Time (@12.0 V P-P)	45 Seconds minimum
Pulse Width "A"	3.5 ±0.25µSecond
Pulse Width "B"	1.0 +0.2/-0.1µSecond
Pulse Voltage	4.0 to 4.7 kV
Pulse Current	5.0 Amps maximum
Duty Cycle/3.5 ±0.25µSecond	0.00093 ±15%
Duty Cycle/3.5 ±0.25µSecond	0.00042 ±8%
Duty Cycle/1.0 +0.2/-0.1µSecond	0.000126 ±15%
Voltage Pulse Rise Time (TSRV)	0.10 to 0.18 µSecond

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