

MA2849H MPD Magnetron Product Information

The MA2849H is a 1.3 kW 9.345 GHz "positive pulse" magnetron for use in OEM airborne radars requiring pulse widths up to 20 μ Seconds. The MA2849H is designed to work up to 55,000 feet in altitude and between -55 °C and +90 °C. The MA2849H is tested to work in waveguide/antenna systems with a VSWR of 1.5:1 or less.

The MA2849H magnetron cross-references to OEMI P/N 3718621-6 and P/N 3718621-7 and is intended for use in radars. Like the MA2849, the MA2849H can also be used in several other OEM radars, *provided the Q2206 transistor has been upgraded to 3718367-804 (2N6678)*. This modification to the radar raises the peak anode voltage applied to the magnetron from 1.6 kV to 2.2 kV. If this modification has NOT been made, use our MA2841 magnetron, (cross-referencing to OEM P/N 3718621-4).

The main difference between the MA2849 and the MA2849H is that the MA2849 is only guaranteed work up to the 12 μ Second pulse width, where the MA2849H is guaranteed to meet the requirements at the multiple pulse widths and duties up to and including the 18 μ Second / 0.432% duty. The MA2849 has a wider allowable RF output frequency range 9.305 - 9.385 GHz, compared with the MA2849H range of 9.320 - 9.370 GHz. The MA2849 also has a wider allowable peak anode voltage range from 1.6 to 2.3 kV, compared with the MA2849H range of 1.8 to 2.2 kV.

Input Requirements - Table 1

| Characteristic | Minimum | Nominal | Maximum | Units |
|---------------------|---------|---------|---------|-------|
| Heater Voltage | 11.9 | 12.6 | 13.3 | VDC |
| Anode Pulse Current | 2.1 | 2.2 | 2.3 | Amps |
| MA2849H Duty Factor | 0.047 | - | 0.432 | % |

Performance Requirements - Table 2

| Characteristic | Minimum | Nominal | Maximum | Units |
|---------------------------------------|---------|---------|---------|------------|
| Heater Current | 0.25 | | 0.35 | ADC |
| Anode Pulse Voltage | 1.8 | - | 2.2 | kV |
| Anode Capacitance | - | - | 55.0 | pF |
| Peak Output Power | 1.3 | - | - | kW |
| MA2849 Output Frequency | 9.320 | 9.345 | 9.370 | GHz |
| Pulse Duration | 0.50 | - | 18.0 | μ Sec. |
| 1st Minor Side Lobe Levels | 8.0 | - | - | dBc |
| 5th Minor Side Lobe Levels | 20.0 | - | - | dBc |
| Bad or Missing Pulses | - | - | 0.25 | % |
| Frequency Modulation (Pulse to Pulse) | - | - | 0.20 | MHz |
| Leakage Radiation | - | - | 2.0 | mW |
| Thermal Coefficient of Frequency | -0.25 | - | 0.0 | MHz/°C |
| Heater Surge Current | - | - | 3.0 | Amps |

Absolute Limits - Table 3

| Characteristic | Minimum | Maximum | Units |
|----------------------|---------|---------|----------------|
| Heater Input Voltage | 11.9 | 13.3 | VDC |
| Heater Warm-up Time | 40.0 | - | Seconds |
| Anode Pulse Voltage | - | 2.3 | kV |
| Anode Pulse Current | - | 2.5 | Amps |
| Pulse Duration | - | 20.0 | μ Sec. |
| Duty Factor | - | 0.432 | % |
| Average Input Power | - | 20.0 | Watts |
| Voltage Rate of Rise | - | 12.5 | kV/ μ Sec. |

| | | | |
|--------------------|--------|--------|------|
| VSWR | - | 1.5 | - |
| Pressure Altitude | -1,000 | 60,000 | feet |
| Flange Temperature | -55 | +90 | °C |

Life Requirements - Table 4

| Characteristic | Minimum | Maximum | Units |
|-----------------------------------|----------------|----------------|--------------|
| Life Duration | 500 | - | Hours |
| End of Life Peak Power Output | 1.0 | - | kW |
| End of Life First Minor Lobes | 5 | - | dBc |
| End of Life Bad or Missing Pulses | - | 1.0 | % |
| End of Life Output Frequency | 9.30 | 9.39 | GHz |

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