CPI Electron Device Business - Microwave Power Module

The PTX8808/PTX8811 microwave power module (MPM) integrates a high-power Ka-Band helix mini traveling wave tube (TWT) with a matched high-density switch-mode power supply.

The MPM integrates a TWT and a power supply capable of providing 60 W to 115 W for the PTX8088 model or 115 W to 160 W for the PTX8811 model. It is factory adjusted to optimize TWT performance. The units features ultra-compact "drop-in" microwave amplifier blocks with pulsed or CW Operation.

The MPM can be configured to incorporate a variety of TWT models, allowing users to specify different duty, frequency duty, frequency and peak power parameters to best suit their unique needs. It is suitable in high performance electronic warfare and radar systems where size and weight are critical.

To learn more about CPI EDB's MPM capabilities, contact CPI EDB at ElectronDevices@cpi-edb.com or call +44 (0)20 8573 5555

The PTX8808/PTX8811 MPM integrates a high-power Ka-Band helix mini traveling wave tube (TWT)

FEATURES:

- Frequency: 30.0 GHz - 40.0 GHz
- Duty cycle: 100% max
- Typical weight: 18.7 lbs (8.5 kgs) max
- Prime power: 270 V

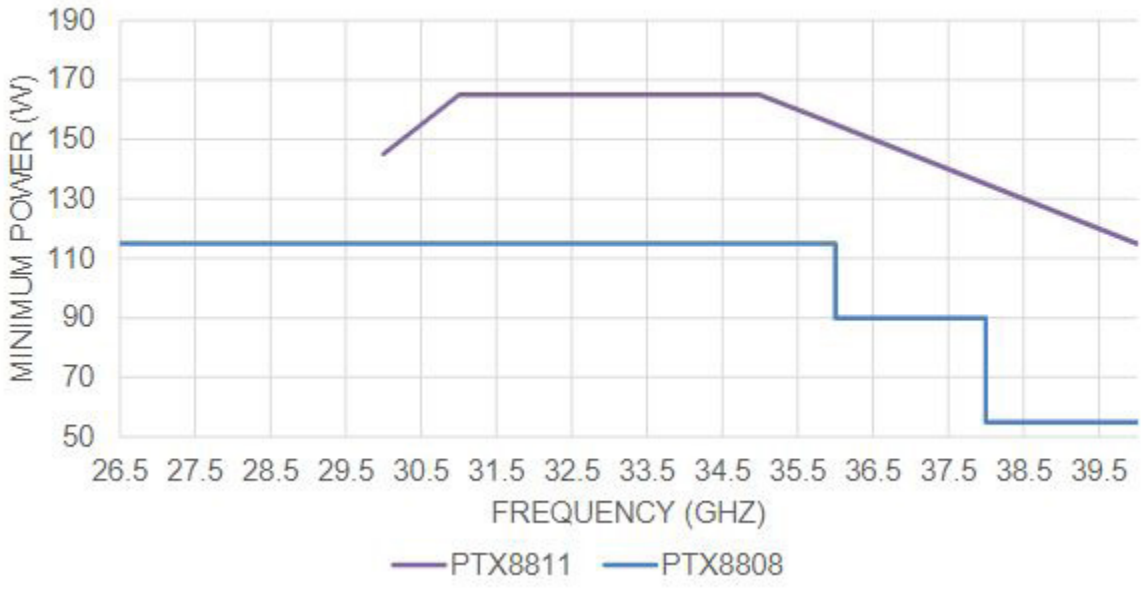
BENEFITS:

- Operates at high altitudes and high humidity
- High voltage selection
- Excellent thermal management
- Compact and reliability

APPLICATIONS:

- Radar
- Electronic Warfare

Typical Specification



RF Characteristics

Frequency range and saturated output power	See graph
Input drive for power	0 ± 1 dBm
Noise power density (Beam on)	-20 dBm/MHz (typical) -40 dBm/MHz (max)
Noise power density (Beam off)	- 90 dBm/MHz
Second harmonic	≤ -8 dBc
Duty cycle	100% maximum
Pulse width	1.0 to ∞µs
Pulse repetition frequency	20 kHz maximum
Delay from leading edge of grid window pulse to full RF out	500 ns maximum
Delay from trailing edge of grid window pulse to full RF cutoff	500 ns maximum
Maximum spurious FM measured in a 100 Hz band-width	-40 dBc spurious *
Input VSWR	2.0:1 maximum
Output VSWR	2.5:1 maximum
Max rated RF input power	+2dBm

Prime Power Requirement

Prime power	270 V
Power consumption	1,000 W maximum
RF efficiency	25% typical

*(typical, measured under CW conditions)

Connectors

Primary power input connector	D38999 to MIL-DTL-38999 (series 3)
Control and monitoring connector	D38999 to MIL-DTL-38999 (series 3)
RF input connector	2.92 mm Precision coaxial
RF reverse power connector	2.92 mm Precision coaxial
RF output connector	WR28

Grid Window Input Pulse

Input level to hold TWT ON	+3.5 V to +15 V into 150 Ohms
Input to hold TWT OFF	<0.8 V into 150 Ohms
Pulse width:	Minimum 500 ns Maximum CW

Control and Monitoring

Control inputs (<0.8 V Low, + 5 V to +15 V)	Standby (low)/ Operate (high)
Status outputs	Warm up (low = true) HV On (high = true) Fault (low = true)

Beam and Body (Helix) Current Monitors

Cathode Voltage Monitor

Fault Protection

Peak and average beam and helix trips, prime power fault protection, TWT and power supply thermal protection. Duty cycle and pulse width limiting available for pulsed units.

The TWT is protected against power supply faults and operation is inhibited if the correct electrode voltages are not present.

Automatic restart	Auto-reset after fault
Warm-up time	180 to 195 seconds

Mechanical

Mechanical outline	450 x 224 x 59.5 mm
Weight	18.7 lbs max (8.5 kgs)
Orientation	Any
Finish	Electroless nickel
Markings/Labels	Type number Model number Serial number Connector indent Hazard warning
Cooling	Conduction

Environmental

Operating temperature (hotspot)	-40 °C to + 60 °C
Altitude (operating)	0 - 5,000 ft (Higher altitudes available on request)
Vibration (operating - 3 axes)	5 g rms, 5 - 2000 Hz
Shock (3 axes)	6 g, 11 ms half sine
Humidity (non condensing)	95%
Storage temperature	-40 °C to + 71 °C

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