



communications

Electron Devices

M1040

Millimeter Wave Power Module

Features:

- **26 to 40 GHz**
- **20 Watts Minimum**
- **240 Cubic Inches**

Performance Characteristics

| | |
|-----------------------------------|-----------------|
| Frequency..... | 26 to 40 GHz |
| RF Output Power..... | 20 Watts (min) |
| RF Input Power..... | 20 dBm (max) |
| Small Signal Gain..... | 30 dB (min) |
| PRF..... | Up to 10 KHz |
| Pulse Width..... | 100 nsec (min) |
| Duty Cycle..... | 0% to 100% (CW) |
| Noise Power Density Beam On..... | -20dBm/MHz |
| Beam Off..... | -90dBm/MHz |
| Intermodulation 7 dB backoff..... | -21 dBc (max) |
| AM/PM Conversion..... | .6°/dB (max) |
| Harmonics..... | -15 dBc (max) |
| Spurious..... | -40 dBc (max) |
| Spectral Purity..... | -40 dBc (max) |

Environment

| | |
|-----------------------------|--|
| Temperature, baseplate..... | -30 to +55° C |
| Cooling..... | Conduction |
| Altitude..... | 15,000 ft |
| Humidity..... | Up to 95% with condensation |
| Shock..... | 10g, 11 msec |
| Acceleration..... | 10 g's |
| Vibration..... | 0.1g ² /Hz from 5 to 20 Hz 0.02g ² /Hz from 20 to 2 KHz |

Interface

| | |
|-------------------------|---|
| Prime Power..... | 90–260 VAC 50/60 Hz, single phase, 350 Watts (max) |
| Controls..... | Standby/Operate/RF On |
| Indicators..... | Warm-up Complete Operate Fault |
| Monitor..... | Helix Current |
| Low Voltage Output..... | +5 V, 75 mA |

Mechanical Description

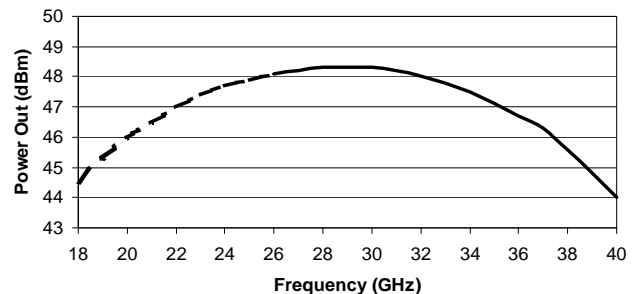
| | |
|--------------------------|-------------------------|
| Dimensions..... | 12.0" x 10.0" x 2.0" |
| Weight..... | 12.0 lbs/5.3 kgs. (max) |
| RF Input Connector..... | 2.9mm |
| RF Output Connector..... | WRD-180 |
| Control Input..... | 15-Pin D-Subminiature |



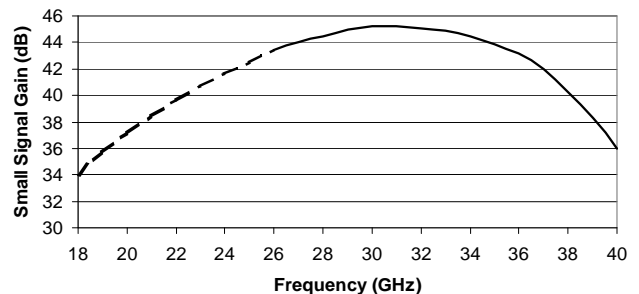
The M1040 represents the state of the art in low noise, compact, high efficiency, millimeter wave amplifiers for a variety of applications including instrumentation and simulators. This MPM contains a TWT and power supply within a single conduction-cooled package for a variety of platforms. An integral SSA which reduces the RF Input Power to 0 dBm maximum is available. DS10400806

Typical Performance

Saturated Power vs. Frequency



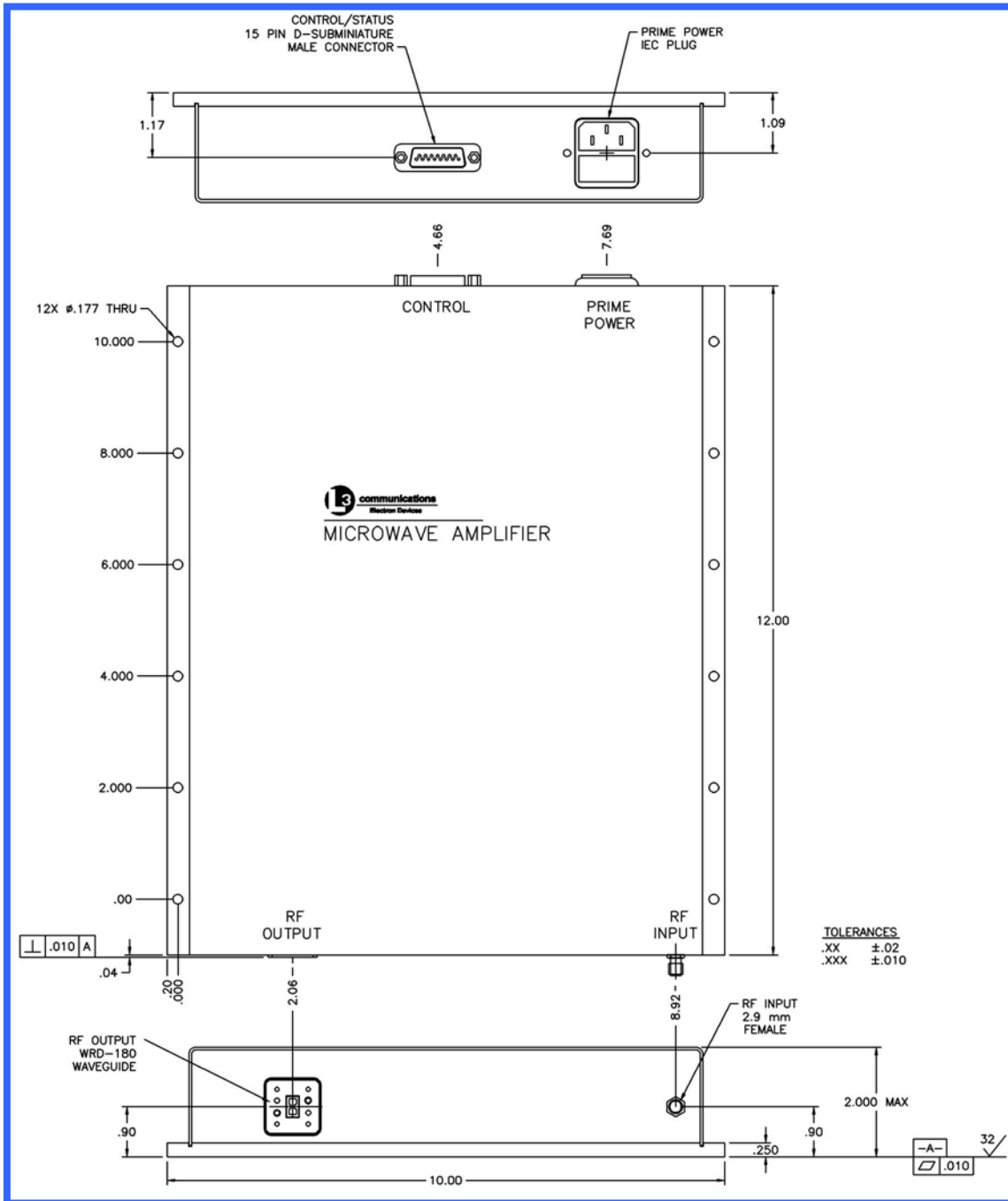
Small Signal Gain vs Frequency



Note: Dashed line reflects projected performance

Cleared by DoD/DFOISR for public release under 07-S-0889

M1040 Outline Drawing



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