PLANAR MONOLITHICS INDUSTRIES MODEL NUMBER
LM-18G40G-SMT-1 IS A SURFACE MOUNT, HIGH POWER LIMITER THAT
OPERATES FROM 18.0 GHz TO 40 GHz AND HANDLES 20 WATT CW
POWER. THE LEAKAGE POWER IS +14dBm TYPICAL.

July 7, 2015
DESIGNED BY:
SEBASTIAN PALACIO

TESTED & REPORTED BY:
HUGO GONZALES &
KEVIN MASON
Typical Characteristics on
LM-18G40G-SMT-1

Product Feature

**DESCRIPTION:**
LM-18G40G-SMT-1 is a high power limiter capable of withstanding an input power level of 20 watts, 440 to 870 MHz, pulse width, 1 ms and to 800 ms, 20% duty cycle. This model operates in the 18 GHz to 40 GHz frequency range. The insertion loss is 3.0 dB maximum, VSWR of 2.0:1 and 250 ohm. The device is supplied on a surface mount, drop-in cartridge.

**SPECIFICATIONS:**
- **Frequency:** 18 GHz to 40 GHz
- **Insertion Loss:** 4.0 dB max.
- **Peak Power:** 20 WATTS (43 dBm)
- **Pulse Width:** 460 to 670 ns
- **PRF:** 600 to 900 kHz
- **Duty Cycle:** 40%
- **Leakage Power:** 14 dBm typ.
- **Jitter Recovery Time:** 250 ns max.
- **VSWR:** 2.0:1
- **Size:** (L) 0.370 X (W) 0.198 X (D) 0.016

**ENVIRONMENTAL RATINGS:**
- **Temperature:** -40 °C to +80 °C (operating)
- **Humidity:** MIL-STD-202F, METHOD 105B, COND. B
- **Shock:** MIL-STD-202F, METHOD 107F, COND. B
- **Vibration:** MIL-STD-202F, METHOD 204F, COND. B
- **Altitude:** MIL-STD-202F, METHOD 100B, COND. B
- **Temperature Cycle:** MIL-STD-202F, METHOD 107D, COND. A

**NOTES:**
- The above specifications are subject to change or revision.

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## Summary Data

<table>
<thead>
<tr>
<th>Test Item No</th>
<th>Parameters</th>
<th>Specified Value</th>
<th>Test Results</th>
<th>QA QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency Range:</td>
<td>18 GHz to 40 GHz</td>
<td>18 GHz to 40 GHz</td>
<td></td>
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<tr>
<td>2</td>
<td>Insertion Loss:</td>
<td>4.0 dB Max.</td>
<td>2.94 dB</td>
<td></td>
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<tr>
<td>3</td>
<td>Peak Power:</td>
<td>20 Watts (43 dBm)</td>
<td>20 Watts</td>
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<tr>
<td>4</td>
<td>Pulse Width:</td>
<td>440 to 670 ns</td>
<td>440 to 670 ns</td>
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<tr>
<td>5</td>
<td>PRF:</td>
<td>600 to 900 kHz</td>
<td>600 to 900 kHz</td>
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<tr>
<td>6</td>
<td>Duty Cycle:</td>
<td>40%</td>
<td>40%</td>
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<tr>
<td>7</td>
<td>Leakage Power:</td>
<td>+14 dBm Typ.</td>
<td>14 dBm</td>
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<tr>
<td>8</td>
<td>1 dB Recovery Time:</td>
<td>250 ns Max.</td>
<td>&lt; 250 ns</td>
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<tr>
<td>9</td>
<td>VSWR:</td>
<td>2.0:1</td>
<td>1.85:1 (Input) 1.87:1 (Output)</td>
<td></td>
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</tbody>
</table>
## Insertion Loss & Return Loss (In/Out)

<table>
<thead>
<tr>
<th>Channel 1</th>
<th>Start Frequency</th>
<th>18.000000000 GHz</th>
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<tbody>
<tr>
<td>Tr 1</td>
<td>S21 LogM 10.00dB/ 0.00dB</td>
<td>Tr 2 S11 LogM 5.000dB/ 0.00dB</td>
</tr>
<tr>
<td>Tr 3</td>
<td>S22 LogM 5.000dB/ 0.00dB</td>
<td>&gt; 1: 39.815 GHz -2.94 dB</td>
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<tr>
<td></td>
<td></td>
<td>2: 19.375 GHz -0.82 dB</td>
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<tr>
<td></td>
<td></td>
<td>1: 27.900 GHz -10.47 dB</td>
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<tr>
<td></td>
<td></td>
<td>1: 25.813 GHz -10.35 dB</td>
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</tbody>
</table>
Power Input vs. Power Output

LIMITER RESPONSE WITH FREQUENCY

OUTPUT POWER (dBm)

RF INPUT POWER (dBm)
Recovery Time