Coaxial Limiters
1 - 18 GHz

Features
- Broadband Frequency Ranges
- Environmentally Sealed
- Feedback Leveling
- Small Size
- Reduced VSWR

Applications
- Aerospace & Defense
- ISM

Description
The 2690 Series standard limiter is a line of completely passive solid state receiver protectors. They exhibit octave and multi-octave performance using a unique construction technique involving PIN diodes in broadband microstrip circuits. Careful diode selection allows a variety of device performance, trading off peak and average power handling, spike leakage and recovery time.

Electrical Specifications\(^{1,2,3,4}\): \(T_A = +25^\circ C\)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Frequency Range (GHz)</th>
<th>Insertion Loss (dB)</th>
<th>VSWR</th>
<th>Average Power (W)</th>
<th>Peak Power (W)</th>
<th>Recovery Time (ns)</th>
<th>Leakage Power (mW)</th>
<th>Outline Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2690-1001</td>
<td>1 - 2</td>
<td>0.7</td>
<td>1.5:1</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>2690-1003</td>
<td>2 - 8</td>
<td>0.9</td>
<td>1.5:1</td>
<td>3</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>2690-1005</td>
<td>2 - 8</td>
<td>1.1</td>
<td>1.6:1</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>2690-1007</td>
<td>8 - 18</td>
<td>1.3</td>
<td>1.6:1</td>
<td>3</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>2690-1010</td>
<td>8 - 18</td>
<td>1.8</td>
<td>2.0:1</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td>50</td>
<td>1</td>
</tr>
<tr>
<td>2690-1011</td>
<td>2 - 18</td>
<td>2.3</td>
<td>2.0:1</td>
<td>3</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
<tr>
<td>2690-1012</td>
<td>2 - 18</td>
<td>2.2</td>
<td>2.0:1</td>
<td>2</td>
<td>500</td>
<td>250</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>2690-1015</td>
<td>2 - 15 15 - 18</td>
<td>2.3 3.0</td>
<td>2.0:1</td>
<td>3</td>
<td>1000</td>
<td>1000</td>
<td>100</td>
<td>2</td>
</tr>
</tbody>
</table>

1. Insertion Loss and VSWR measured at 0 dBm input power.
2. Peak input power rated at 1 µs pulse width, 1% duty into 1.5:1 source VSWR and 1.15 load VSWR.
3. Spike leakage energy: 0.5 ergs max.
4. 1 dB compression: 7 dBm min.

Absolute Maximum Ratings\(^5\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +125°C</td>
</tr>
</tbody>
</table>

5. Operation of this device above any one of these parameters may cause permanent damage.
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Environmental

<table>
<thead>
<tr>
<th>Test</th>
<th>MIL-STD</th>
<th>Method</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Destructive Bond Pull</td>
<td>883</td>
<td>2023</td>
<td>—</td>
</tr>
<tr>
<td>Internal Visual</td>
<td>883</td>
<td>2017</td>
<td>—</td>
</tr>
<tr>
<td>Stabilization Bake</td>
<td>883</td>
<td>1008</td>
<td>B</td>
</tr>
<tr>
<td>Thermal Cycle</td>
<td>883</td>
<td>1010</td>
<td>B</td>
</tr>
<tr>
<td>Constant Acceleration</td>
<td>883</td>
<td>2001</td>
<td>A (Y1 Axis)</td>
</tr>
<tr>
<td>Burn-In</td>
<td>883</td>
<td>1015</td>
<td>125°C</td>
</tr>
<tr>
<td>Seal</td>
<td>883</td>
<td>883</td>
<td>A1</td>
</tr>
<tr>
<td>Fine</td>
<td>883</td>
<td>1014</td>
<td>C1</td>
</tr>
<tr>
<td>Gross</td>
<td>883</td>
<td>1014</td>
<td>—</td>
</tr>
<tr>
<td>External Visual</td>
<td>883</td>
<td>2009</td>
<td>—</td>
</tr>
</tbody>
</table>

Devices are designed to meet the above screening conditions.

Typical Performance Curves

**Insertion Loss**

![Insertion Loss Graph](image)

**VSWR**

![VSWR Graph](image)

**Leakage Power @ 100 mW**

![Leakage Power Graph](image)
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