MY87 / MY87C

Triple-Balanced Mixer

Rev. V2

Features
- LO 0.5 TO 19 GHz
- RF 0.5 TO 19 GHz
- IF 0.03 TO 5 GHz
- LO DRIVE +13 dBm (nominal)
- VERY WIDE BANDWIDTH

Description
MY87 is a triple balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric baluns to attain excellent performance. The use of high temperature solder assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202 or MIL-DTL-28837, consult factory.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MY87</td>
<td>Versapac</td>
</tr>
<tr>
<td>MY87C</td>
<td>SMA Connectorized</td>
</tr>
</tbody>
</table>

Electrical Specifications: \( Z_0 = 50\,\Omega \)  \( Lo = +13 \,\text{dBm} \) (Downconverter Application only)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Typical</th>
<th>Guaranteed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>+25°C</td>
<td>-54° to +85°C</td>
</tr>
</tbody>
</table>

SSB Conversion Loss (max) & SSB Noise Figure (max)
- \( f_R = 1 \,\text{to} \, 18 \,\text{GHz}, f_L = 0.5 \,\text{to} \, 18 \,\text{GHz}, f_I = 0.03 \,\text{to} \, 3 \,\text{GHz} \)
- \( f_R = 0.5 \,\text{to} \, 18 \,\text{GHz}, f_L = 0.5 \,\text{to} \, 18 \,\text{GHz}, f_I = 0.03 \,\text{to} \, 4 \,\text{GHz} \)
- \( f_R = 0.7 \,\text{to} \, 19 \,\text{GHz}, f_L = 3 \,\text{to} \, 19 \,\text{GHz}, f_I = 0.03 \,\text{to} \, 5 \,\text{GHz} \)
- dB 7.5 10.5 11.0
- dB 8.5 11.0 11.5
- dB 10.5 12.0 12.5

Isolation, L to R (min)
- \( f_L = 0.5 \,\text{to} \, 3 \,\text{GHz} \)
- dB 17 10 8
- dB 30 20 18

Isolation, L to I (min)
- \( f_L = 0.5 \,\text{to} \, 5 \,\text{GHz} \)
- dB 32 22 20

1 dB Conversion Comp.
- \( f_L = +13 \,\text{dBm} \)
- dBm +8

Input IP3
- \( f_R1 = 5 \,\text{GHz} \) at −6 dBm, \( f_R2 = 6.01 \,\text{GHz} \) at −6 dBm, \( f_L = 7 \,\text{GHz} \) at +13 dBm
- \( f_R1 = 15 \,\text{GHz} \) at −6 dBm, \( f_R2 = 15.01 \,\text{GHz} \) at −6 dBm, \( f_L = 18 \,\text{GHz} \) at +13 dBm
- dBm +16.5
- dBm +18

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Typical Performance Curves

**Conversion Loss vs. LO Drive Power**

**Conversion Loss vs. Frequency LO @ +13 dBm**

**R-Port VSWR vs. Frequency**

**Isolation vs. Frequency**

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## Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-54°C to +100°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +100°C</td>
</tr>
<tr>
<td>Peak Input Power</td>
<td>+26 dBm max @ +25°C</td>
</tr>
<tr>
<td></td>
<td>+23 dBm max @ +100°C</td>
</tr>
<tr>
<td>Peak Input Current</td>
<td>100 mA DC</td>
</tr>
</tbody>
</table>

### L-Port VSWR vs. Frequency

- **Parameter:** L-Port VSWR vs. Frequency
- **Graph:**

### Outline Drawing: Versapac

- **Graph:**

### Weight

- **6 grams (0.21 oz.) max**
- **12 grams (0.42 oz.) max**

*Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.*
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