MY51 / MY51C

Triple-Balanced Mixer

Rev. V3

Features
- LO 2.0 TO 24 GHz
- RF 2.0 TO 24 GHz
- IF 1.0 TO 15 GHz
- LO DRIVE: +10 dBm (NOMINAL)
- HIGH COMPRESSION POINT

Description
MY51 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>MY51</td>
<td>Versapac</td>
</tr>
<tr>
<td>MY51C</td>
<td>SMA Connectorized</td>
</tr>
</tbody>
</table>

Electrical Specifications:  $Z_0 = 50\Omega$  $Lo = +10$ 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>+25ºC</td>
<td>-54º to +85ºC</td>
</tr>
</tbody>
</table>
| SSB Conversion Loss (max) & SSB Noise Figure (max) | $f_R = 2.5$ to $18$ GHz, $f_L = 2$ to $18$ GHz, $f_I = 2$ to $10$ GHz  
$f_R = 2$ to $18$ GHz, $f_L = 2$ to $24$ GHz, $f_I = 1$ to $12$ GHz  
$f_R = 2$ to $24$ GHz, $f_L = 2$ to $24$ GHz, $f_I = 1$ to $15$ GHz | dB dB dB | 7.5 dB | 9.5 dB | 10.0 dB |
| Isolation, L to R (min)          | $f_L = 2$ to $3$ GHz  
$f_L = 3$ to $24$ GHz | dB dB | 20 dB | 15 dB | 13 dB |
| Isolation, L to I (min)          | $f_L = 2$ to $7$ GHz  
$f_L = 7$ to $24$ GHz | dB dB | 22 dB | 15 dB | 13 dB |
| 1 dB Conversion Comp.            | $f_L = +10$ dBm | dBm | +5 dBm | +15 dBm | +15 dBm |
| Input IP3                        | $f_R1 = 5$ GHz at $-6$ dBm, $f_R2 = 5.01$ GHz at $-6$ dBm, $f_L = 8$ GHz at $+10$ dBm  
$f_R1 = 16$ GHz at $-6$ dBm, $f_R2 = 16.01$ GHz at $-6$ dBm, $f_L = 18$ GHz at $+10$ dBm | dBm dBm | +15 dBm | +15 dBm | +15 dBm |
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Typical Performance Curves

Conversion Loss vs. Frequency
LO @ +10 dBm

L-Port VSWR

R-Port VSWR

I-Port VSWR

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**Triple-Balanced Mixer**

### Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-54ºC to +100ºC</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65ºC to +100ºC</td>
</tr>
<tr>
<td>Peak Input Power</td>
<td>+26 dBm max @ +25ºC</td>
</tr>
<tr>
<td></td>
<td>+22 dBm max @ +100ºC</td>
</tr>
</tbody>
</table>

**Outline Drawing: Versapac**

- Weight: 6 grams (0.21 oz.) max

**Outline Drawing: SMA Connectorized**

- Weight: 12 grams (0.42 oz.) max

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

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