# Triple Balanced Mixer

**MY50_MY50C**
**Rev. V3**

## Features

- LO: 2 to 26 GHz
- RF: 2 to 26 GHz
- IF: 1 to 15 GHz
- LO Drive +10 dBm (nominal)
- High Compression Point
- Very Wide Bandwidth





## Applications

- Aerospace & Defense
- ISM

## Description

MY50 is a triple balanced mixer, that 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.

## Electrical Specifications: $Z_0 = 50\ \Omega$ Lo = +10 dBm (Downconverter Application only)

| Parameter | Test Conditions | Units | Typical | Guaranteed | |
|---|---|---|---|---|---|
| | | | | +25ºC | -54º to +85ºC |
| SSB Conversion Loss (max.) | fR = 2.5 to 18 GHz, fL = 2 to 18 GHz, fI = 2 to 10 GHz<br>fR = 2.0 to 18 GHz, fL = 2 to 26 GHz, fI = 2 to 12 GHz<br>fR = 2.0 to 26 GHz, fL = 2 to 26 GHz, fI = 1 to 15 GHz | dB | 7.5<br>8.0<br>9.0 | 9.5<br>10.5<br>11.5 | 10.0<br>11.0<br>12.0 |
| SSB Noise Figure (max.) | — | dB | ±1 dB of conversion loss | | |
| Isolation, L to R (min.) | fL = 2 to 3 GHz<br>fL = 3 to 26 GHz | dB | 30<br>22 | 15<br>20 | 13<br>18 |
| Isolation, L to I (min.) | fL = 2 to 7 GHz<br>fL = 7 to 26 GHz | dB | 30<br>22 | 15<br>20 | 13<br>20 |
| 1 dB Conversion Comp. | fL = +10 dBm | dBm | 5 | — | — |
| Input IP3 | fR1 = 5 GHz at -6 dBm, fR2 = 5.01 GHz at -6 dBm, fL = 8 GHz at +10 dBm<br>fR1 = 25 GHz at -6 dBm, fR2 = 25.01 GHz at -6 dBm, fL = 15 GHz at +10 dBm | dBm | 15<br>15 | — | — |

## Ordering Information

| Part Number | Package |
|---|---|
| MY50 | Versapac |
| MY50C | SMA Connectorized |

## Absolute Maximum Ratings

| Parameter | Absolute Maximum |
|---|---|
| Peak Input Power | 26 dBm @ +25ºC<br>22 dBm @ +100ºC |
| Peak Input Current | 100 mA DC |
| Operating Temperature | -54ºC to +100ºC |
| Storage Temperature | -65ºC to +100ºC |

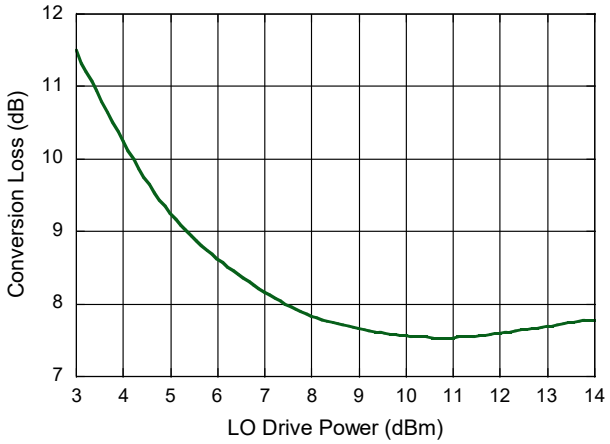


*MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.*
Visit www.macom.com for additional data sheets and product information.

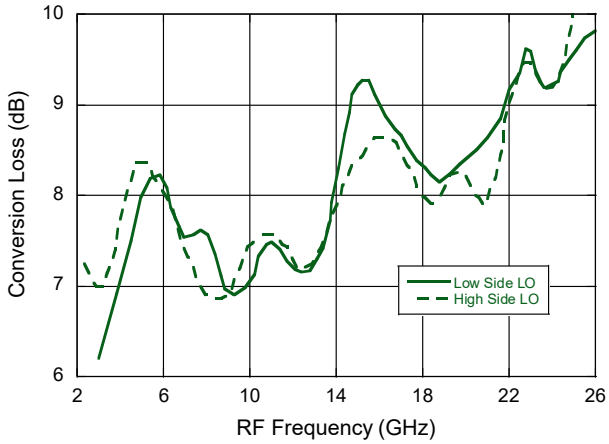
*For further information and support please visit:*
*https://www.macom.com/support*

## Typical Performance Curves

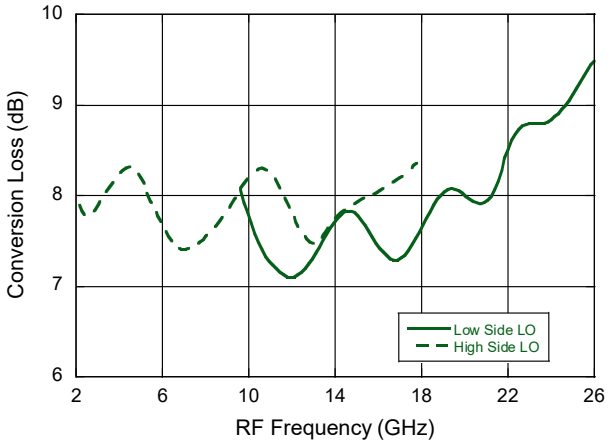
***Conversion Loss vs. Low Drive Level***
***FL = 16 GHz, FR = 20 GHz @ -10 dBm***



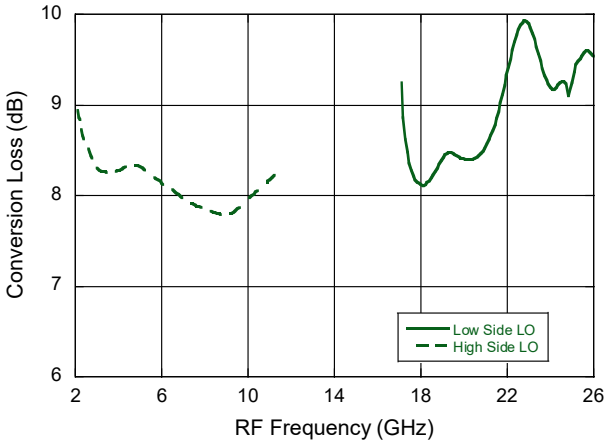

***Conversion Loss vs. Frequency***
***IF = I GHz***




***Conversion Loss vs. Frequency***
***IF = 8 GHz***




***Conversion Loss vs. Frequency***
***IF = 15 GHz***



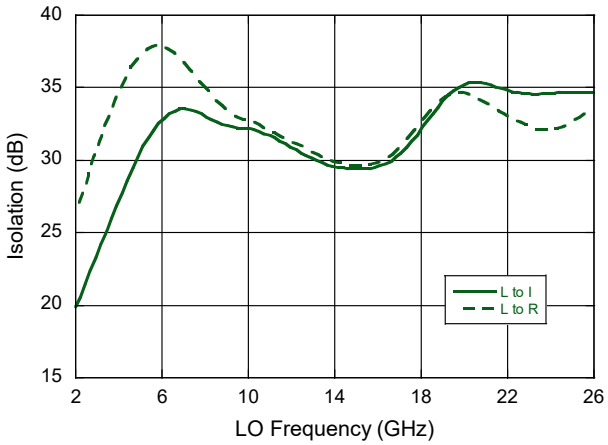



*MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.*
Visit www.macom.com for additional data sheets and product information.

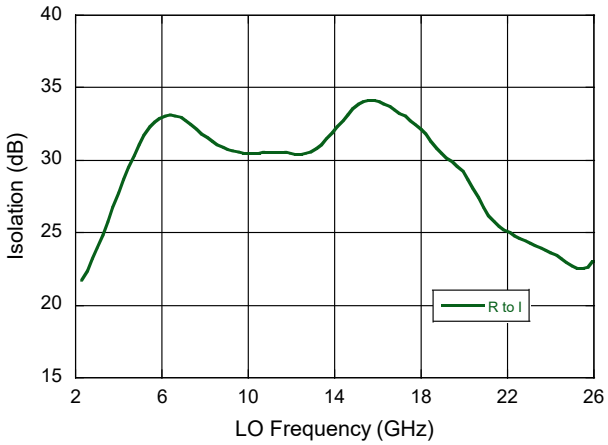
*For further information and support please visit:*
***https://www.macom.com/support***

## Typical Performance Curves

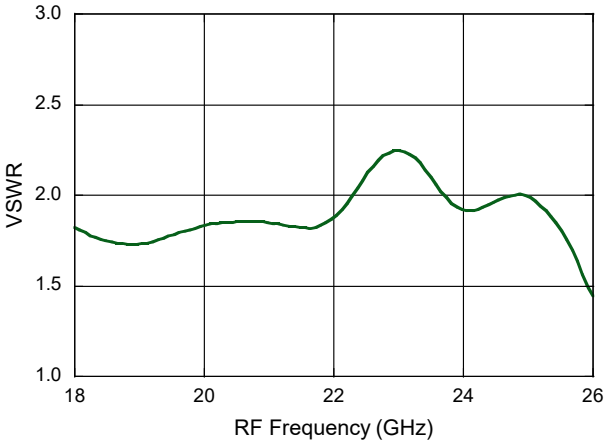
***Isolation vs. LO Frequency***



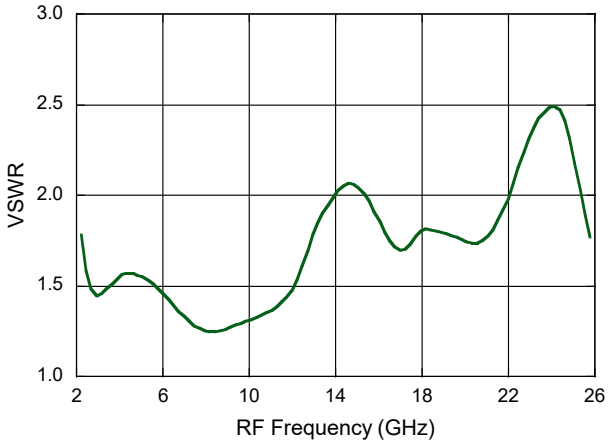

***Isolation vs. RF Frequency***



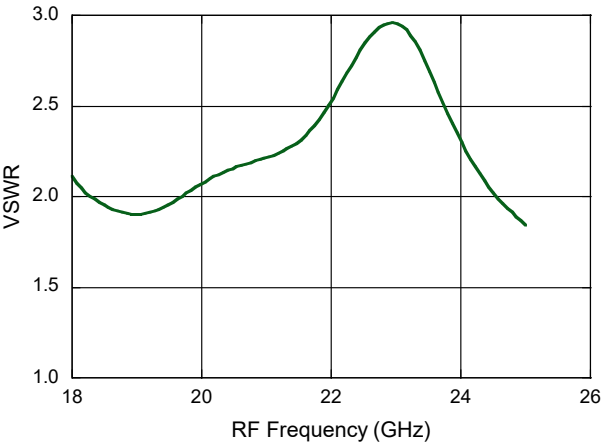

***VSWR (R-Port)***
***RF = 18.26 GHz @ -8 dBm***
***LO = 16.00 GHz @ +10 dBm***




***VSWR (L-Port)***




***VSWR (R-Port)***
***LO = 26 GHz***



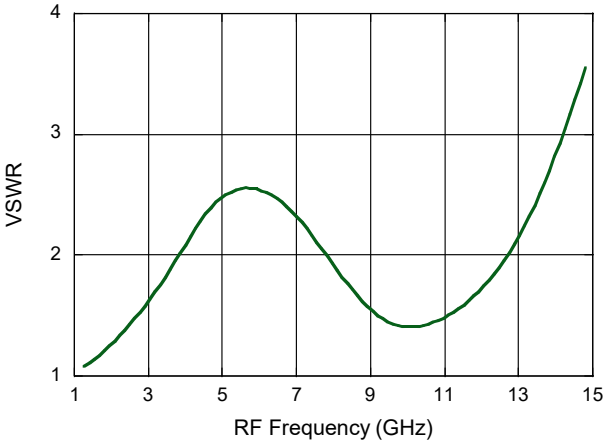



*MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.*
Visit www.macom.com for additional data sheets and product information.

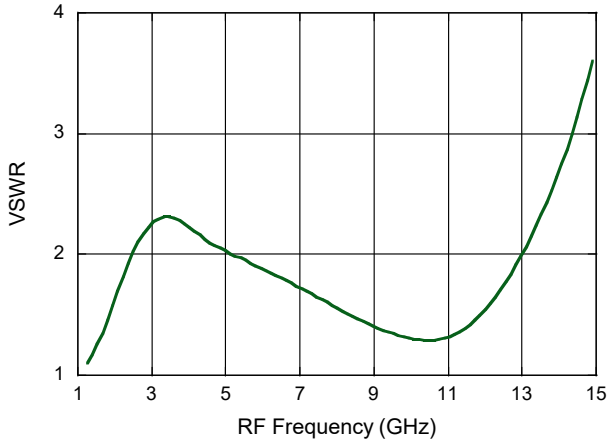
*For further information and support please visit:*
***https://www.macom.com/support***

## Typical Performance Curves

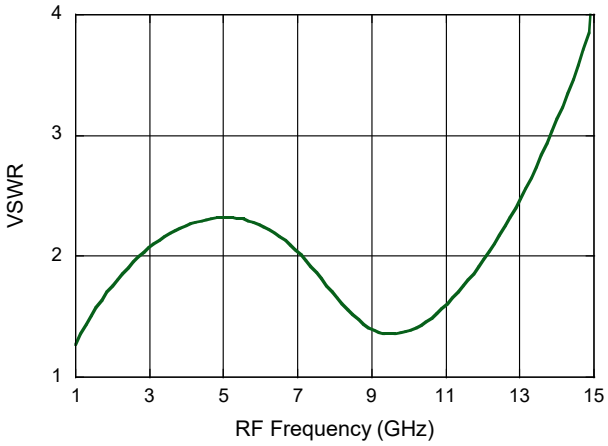
***VSWR (I-Port)***
***LO = 2 GHz***



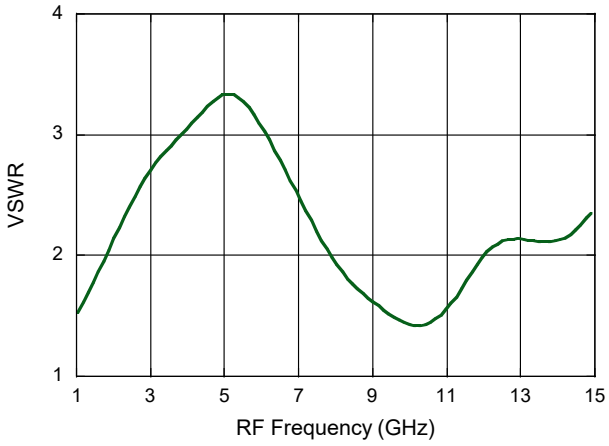

***VSWR (I-Port)***
***LO = 6 GHz***




***VSWR (I-Port)***
***LO = 18 GHz***




***VSWR (I-Port)***
***LO = 26 GHz***

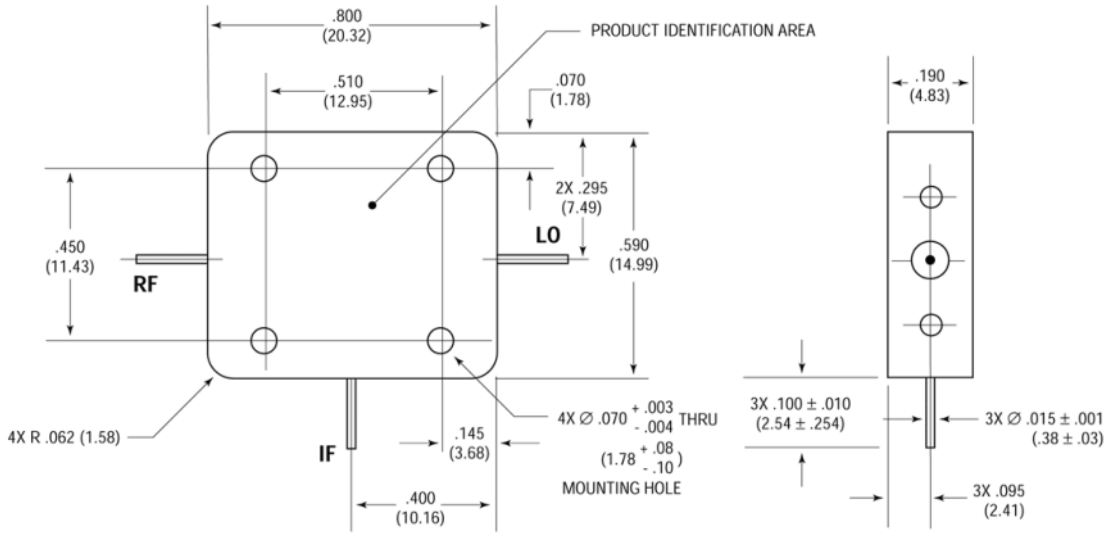





*MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.*
Visit www.macom.com for additional data sheets and product information.

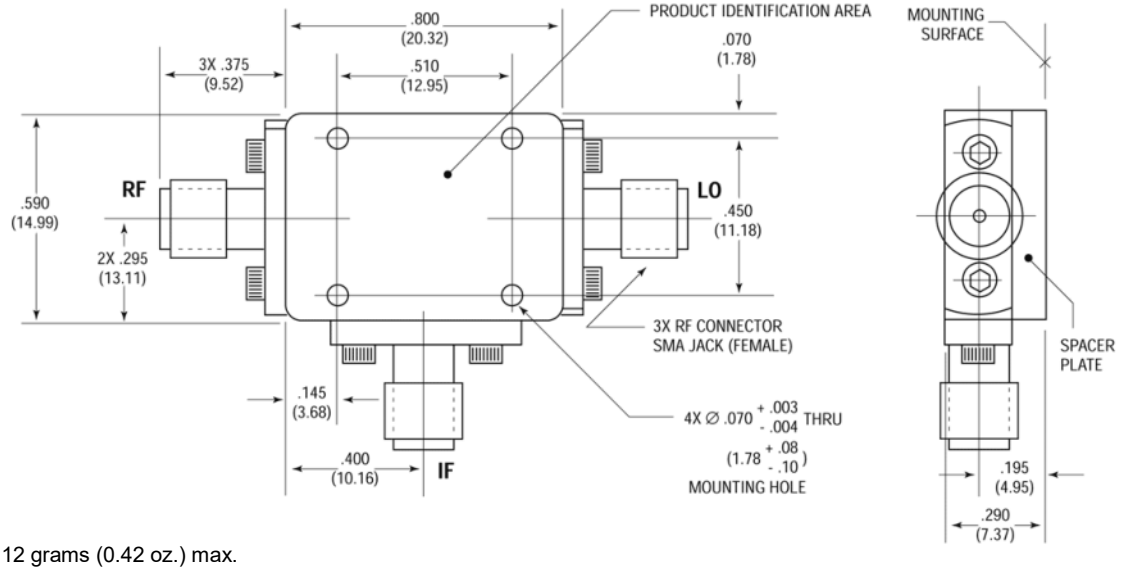
*For further information and support please visit:*
***https://www.macom.com/support***

## 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.



*MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.*
Visit www.macom.com for additional data sheets and product information.

*For further information and support please visit:*
***https://www.macom.com/support***

MACOM Technology Solutions Inc. (“MACOM”). All rights reserved.
These materials are provided in connection with MACOM’s products as a service to its customers and may be used for informational purposes only. Except as provided in its Terms and Conditions of Sale or any separate agreement, MACOM assumes no liability or responsibility whatsoever, including for (i) errors or omissions in these materials; (ii) failure to update these materials; or (iii) conflicts or incompatibilities arising from future changes to specifications and product descriptions, which MACOM may make at any time, without notice. These materials grant no license, express or implied, to any intellectual property rights.

THESE MATERIALS ARE PROVIDED "AS IS" WITH NO WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHT, ACCURACY OR COMPLETENESS, OR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.