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 fR = 2.0 to 18 GHz, fL = 2 to 26 GHz, fI = 2 to 12 GHz fR = 2.0 to 26 GHz, fL = 2 to 26 GHz, fI = 1 to 15 GHz	dB	7.5 8.0 9.0	9.5 10.5 11.5	10.0 11.0 12.0
SSB Noise Figure (max.)	—	dB	±1 dB of conversion loss		
Isolation, L to R (min.)	fL = 2 to 3 GHz fL = 3 to 26 GHz	dB	30 22	15 20	13 18
Isolation, L to I (min.)	fL = 2 to 7 GHz fL = 7 to 26 GHz	dB	30 22	15 20	13 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 fR1 = 25 GHz at -6 dBm, fR2 = 25.01 GHz at -6 dBm, fL = 15 GHz at +10 dBm	dBm	15 15	—	—

Ordering Information

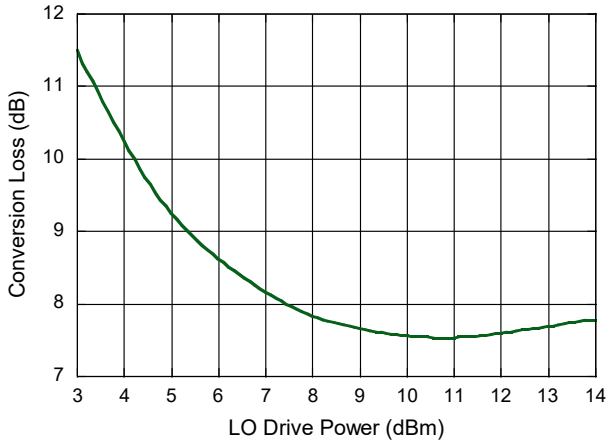
Part Number	Package
MY50	Versapac
MY50C	SMA Connectorized

Absolute Maximum Ratings

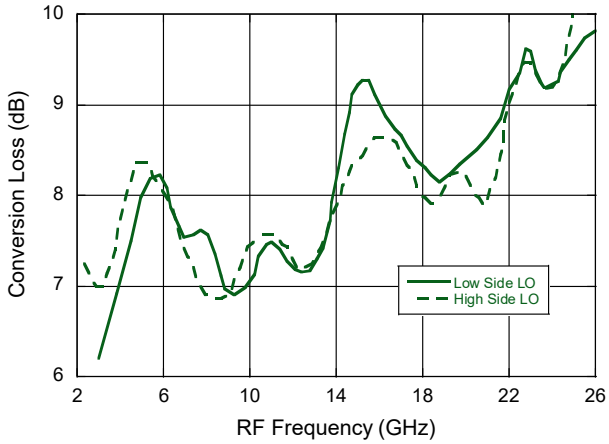
Parameter	Absolute Maximum
Peak Input Power	26 dBm @ +25ºC 22 dBm @ +100ºC
Peak Input Current	100 mA DC
Operating Temperature	-54ºC to +100ºC
Storage Temperature	-65ºC to +100ºC

Typical Performance Curves

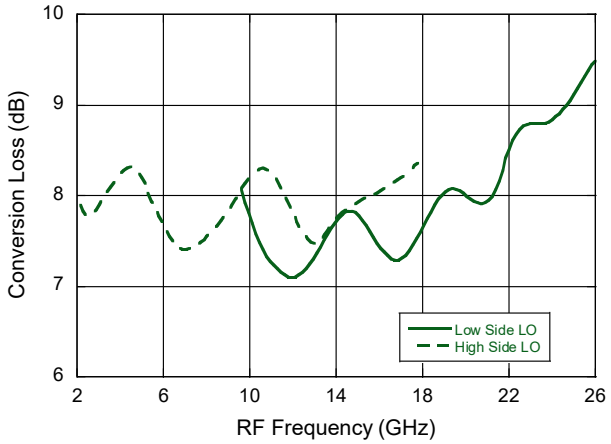
Conversion Loss vs. Low Drive Level
FL = 16 GHz, FR = 20 GHz @ -10 dBm



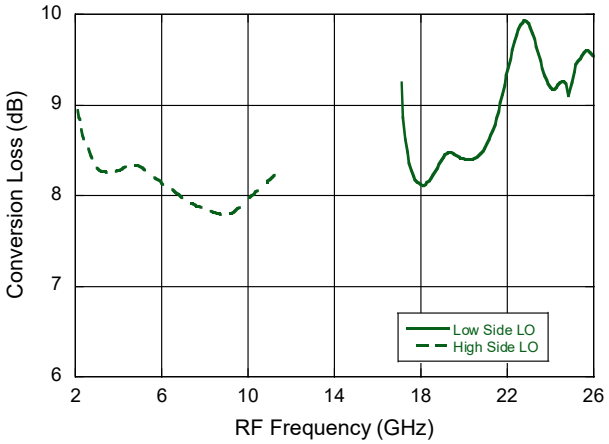
Conversion Loss vs. Frequency
IF = I GHz



Conversion Loss vs. Frequency
IF = 8 GHz

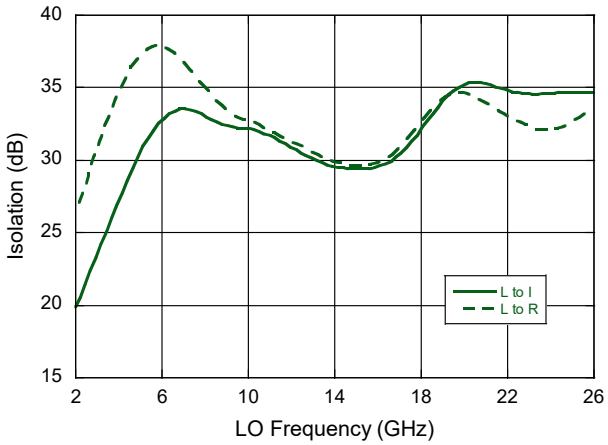


Conversion Loss vs. Frequency
IF = 15 GHz

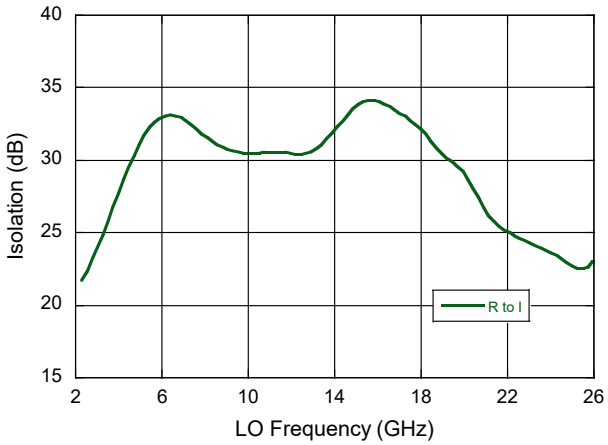


Typical Performance Curves

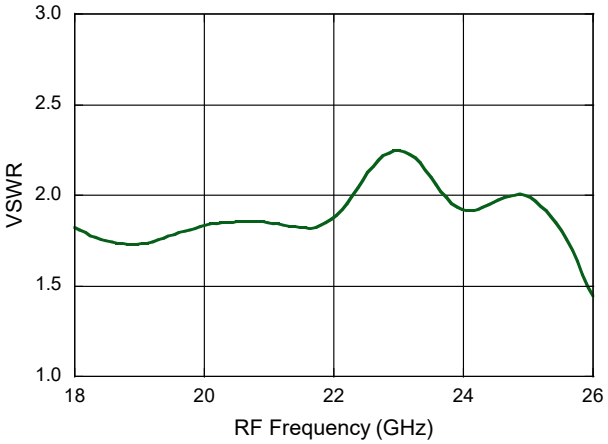
Isolation vs. LO Frequency



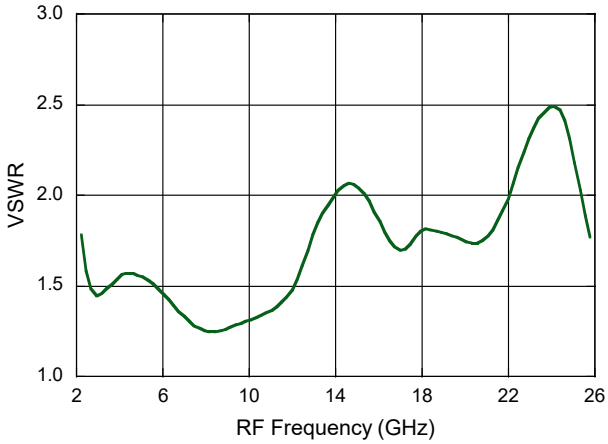
Isolation vs. RF Frequency



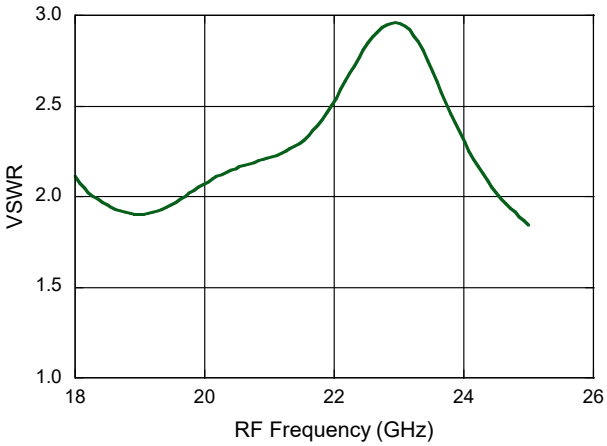
VSWR (R-Port)
RF = 18.26 GHz @ -8 dBm
LO = 16.00 GHz @ +10 dBm



VSWR (L-Port)

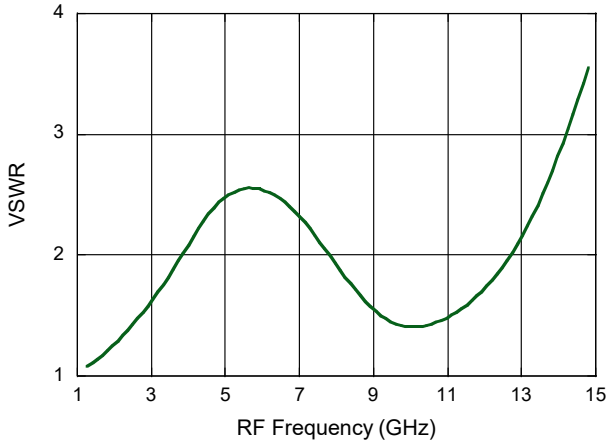


VSWR (R-Port)
LO = 26 GHz

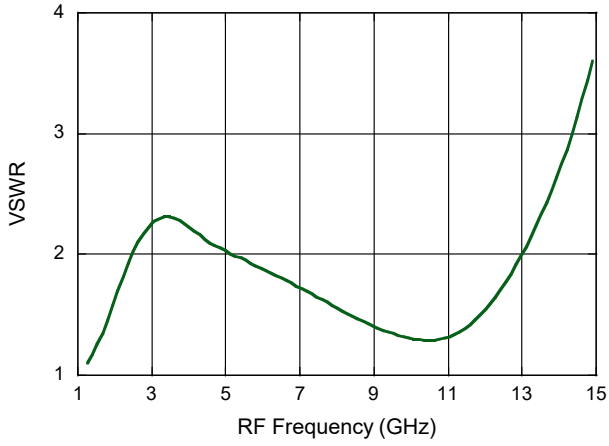


Typical Performance Curves

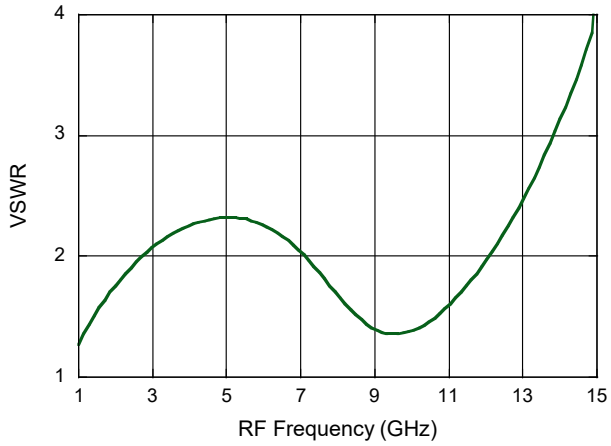
VSWR (I-Port)
LO = 2 GHz



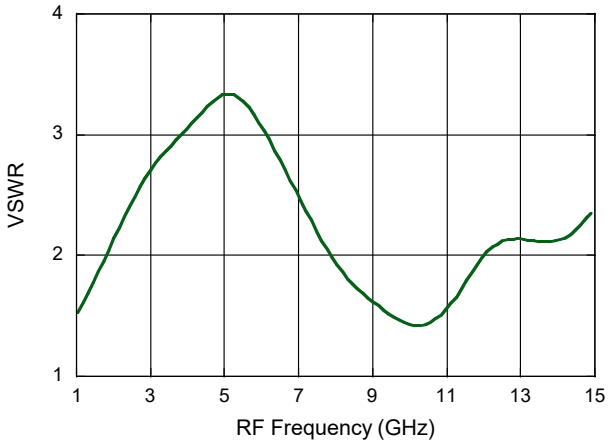
VSWR (I-Port)
LO = 6 GHz



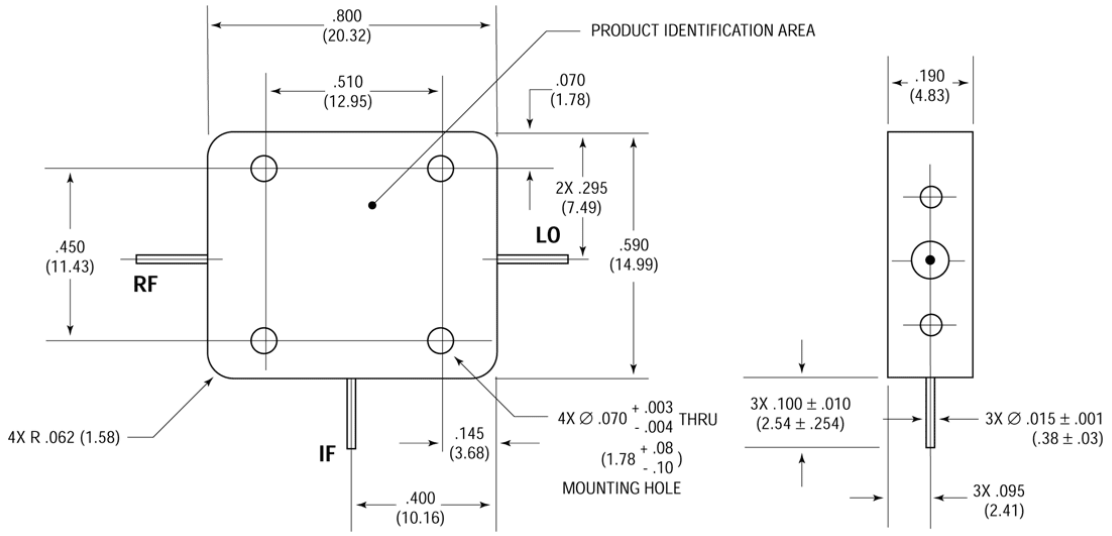
VSWR (I-Port)
LO = 18 GHz



VSWR (I-Port)
LO = 26 GHz

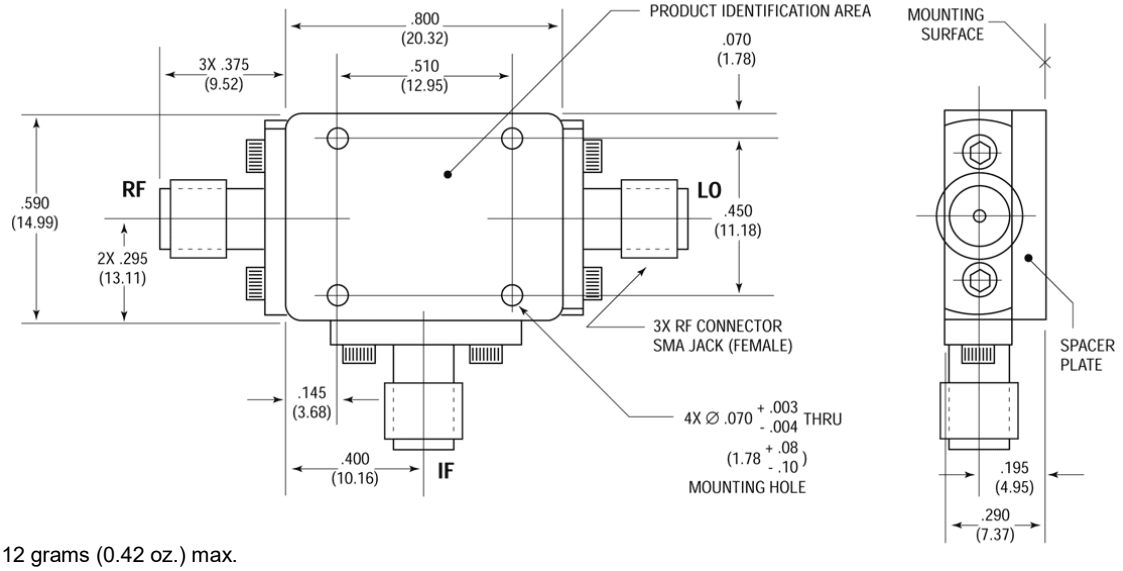


Outline Drawing: Versapac*



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.