

Double-Balanced Mixer

Rev. V3

Features

- LO 7.0 to 15.0 GHz
- RF 8.0 to 12.5 GHz
- IF DC to 2500 MHz
- LO Drive +10 dBm (nominal)
- Low Noise Figure

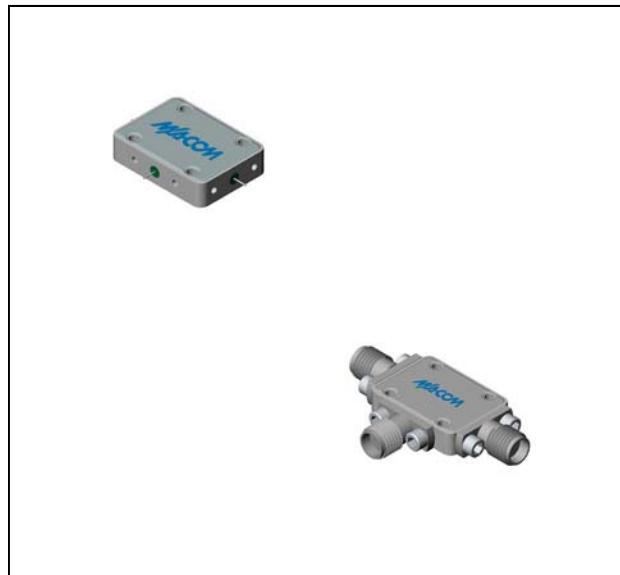
Description

The MY77 is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. The use of high temperature solder and welded 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

Part Number	Package
MY77	Versapac
MY77C	SMA Connectorized

Product Image



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

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max)	fR = 8 to 12.5 GHz, fL = 7 to 13.5 GHz, fI = 30 to 1000 MHz fR = 8 to 12.5 GHz, fL = 7 to 14.5 GHz, fI = 1000 to 2000 MHz fR = 8 to 12.5 GHz, fL = 7 to 15.0 GHz, fI = 2000 to 2500 MHz	dB	5.0 5.5 6.0	7.0 7.5 8.0	7.5 8.0 8.5
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB	—	—	—
Isolation, L to R (min)	fL = 7 to 15 GHz fL = 8 to 12 GHz	dB	35 35	20 20	18 18
Isolation, L to I (min)	fL = 7 to 14 GHz fL = 14 to 15 GHz	dB	30 20	15 10	13 8
1 dB Conversion Comp.	fL = +10 dBm	dBm	+4		
Input IP3	fR1 = 10.0 GHz at -6 dBm, fR2 = 10.01 GHz at -6 dBm, fL = 11.0 GHz at +10 dBm	dBm	+15		
Single Tone IM Suppression	fL fR 2 x 2 2 x 3 3 x 2 3 x 3 3 x 4 4 x 3 4 x 4	dB	60 70 37 59 >70 >70 >70 >70		

1

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

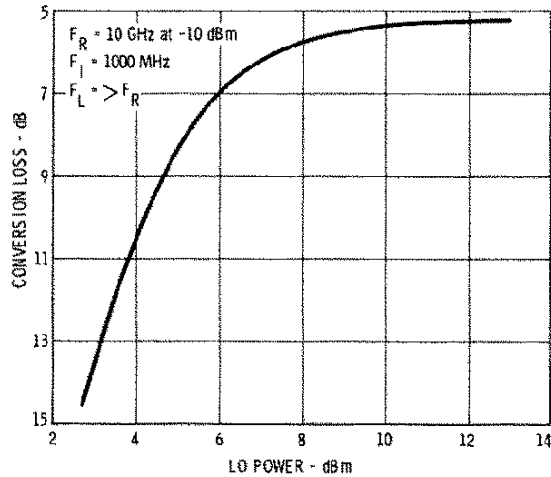
• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.4155721 • **China** Tel: +86.21.2407.1588

Visit www.macomtech.com for additional data sheets and product information.

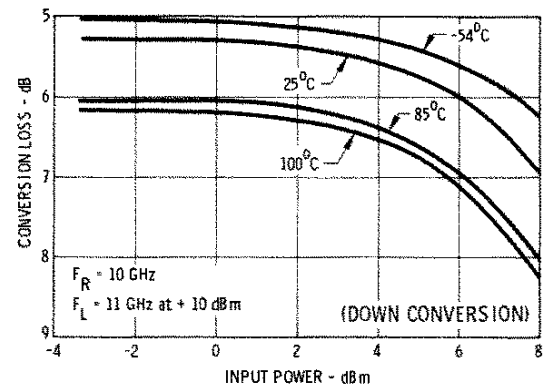
M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Typical Performance Curves

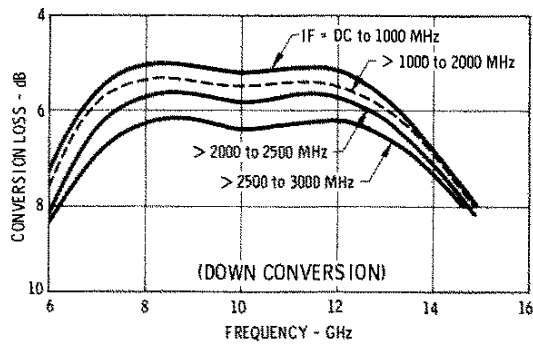
Conversion Loss Vs. LO Drive



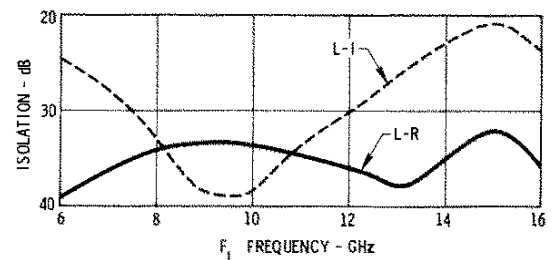
Conversion Loss vs. RF Input Power



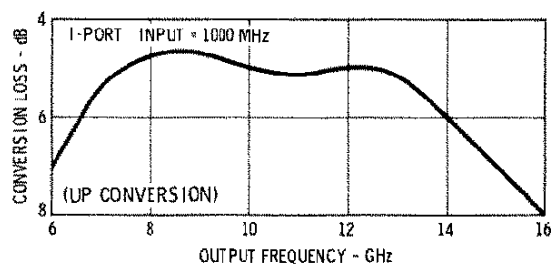
Conversion Loss vs. Frequency



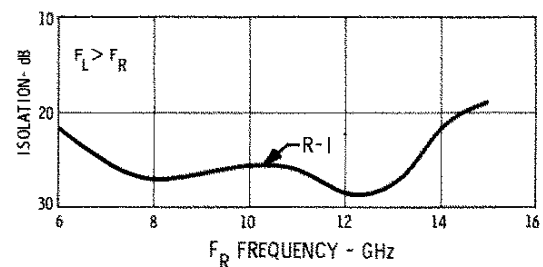
Isolation vs. Frequency



Conversion Loss vs. Output Frequency



Isolation vs. Frequency



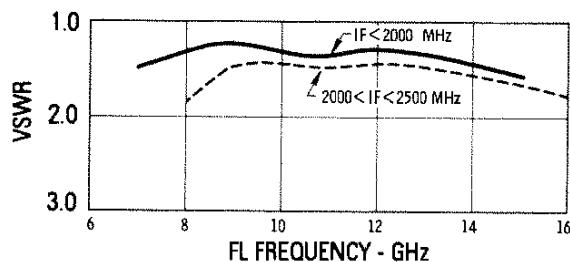
Double-Balanced Mixer

Rev. V3

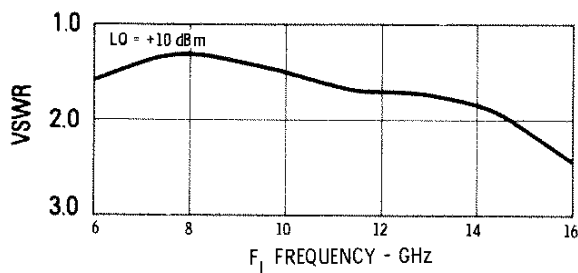
Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+23 dBm max @ +25°C +20 dBm max @ +100°C
Peak Input Current	100 mA DC

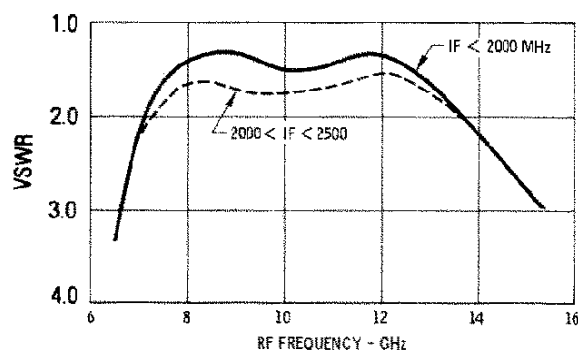
I-Port VSWR vs. f_L



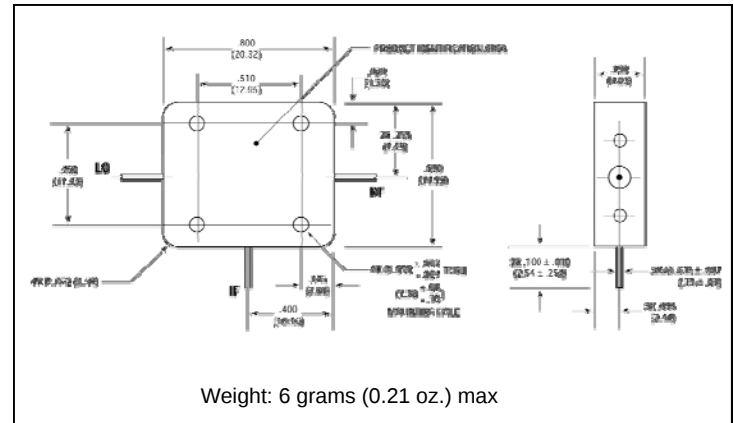
L-Port VSWR vs. Frequency



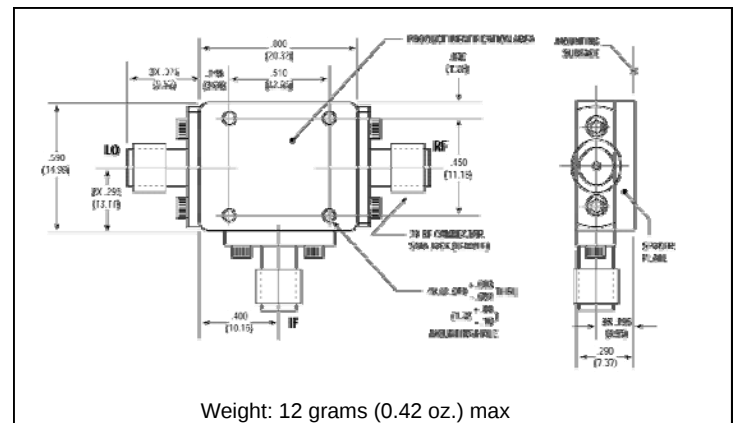
R-Port VSWR vs. Frequency



Outline Drawing: Versapac *



Outline Drawing: SMA Connectorized *



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