

## Double-Balanced Mixer

Rev. V3

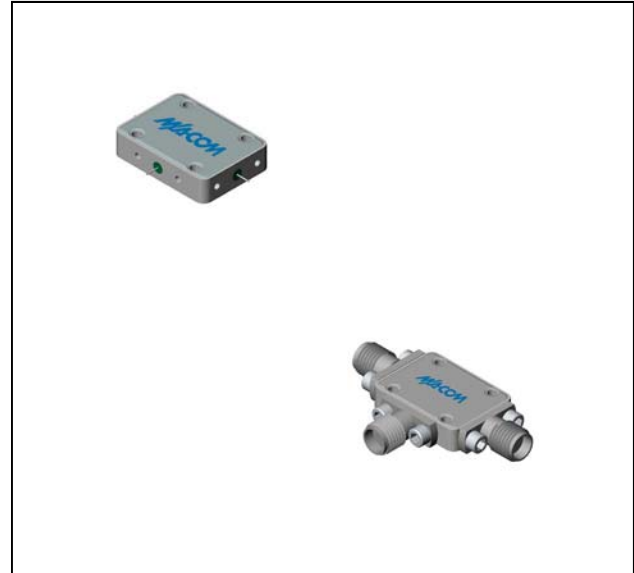
### Features

- 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.

### Product Image



### Ordering Information

Part Number	Package
MY77	Versapac
MY77C	SMA Connectorized

### 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	dB	5.0	7.0	7.5
	fR = 8 to 12.5 GHz, fL = 7 to 14.5 GHz, fI = 1000 to 2000 MHz		5.5	8.0	
	fR = 8 to 12.5 GHz, fL = 7 to 15.0 GHz, fI = 2000 to 2500 MHz		6.0	8.5	
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB	—	—	—
Isolation, L to R (min)	fL = 7 to 15 GHz	dB	35	20	18
	fL = 8 to 12 GHz		35	20	18
Isolation, L to I (min)	fL = 7 to 14 GHz	dB	30	15	13
	fL = 14 to 15 GHz		20	10	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	dB	60		
	2 x 2		70		
	2 x 3		37		
	3 x 2		59		
	3 x 3		>70		
	3 x 4		>70		
	4 x 3		>70		
4 x 4	>70				

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**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.

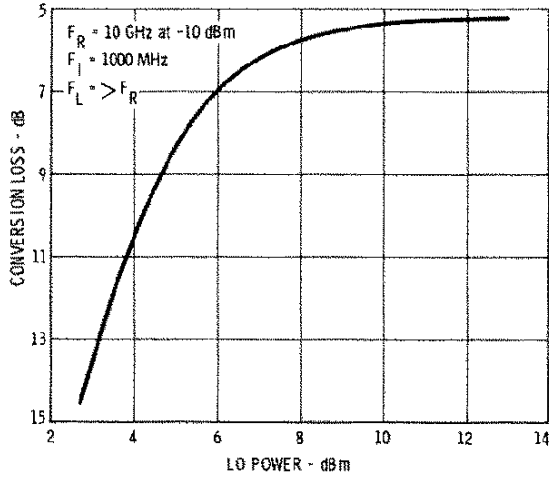
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Visit [www.macomtech.com](http://www.macomtech.com) for additional data sheets and product information.

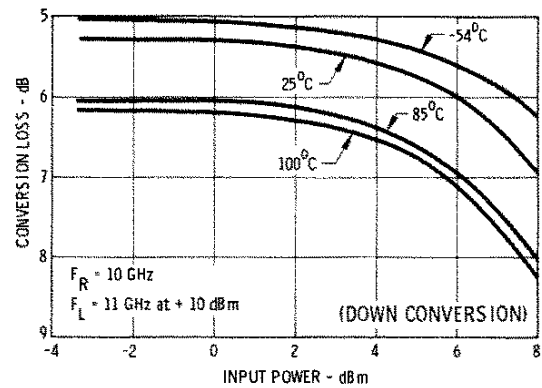
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### Typical Performance Curves

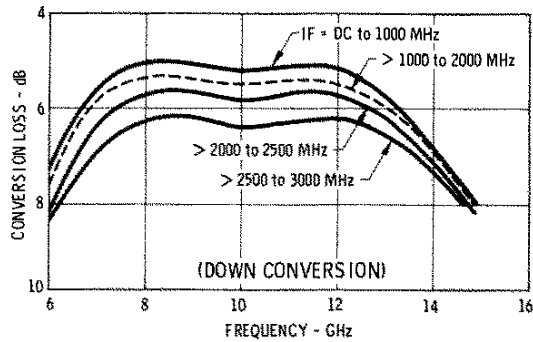
#### Conversion Loss Vs. LO Drive



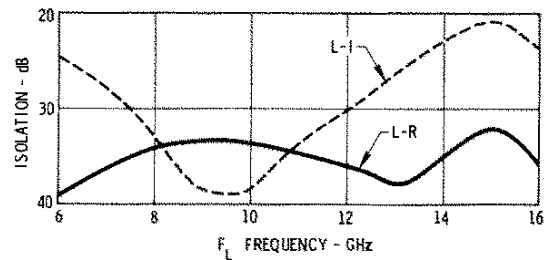
#### Conversion Loss vs. RF Input Power



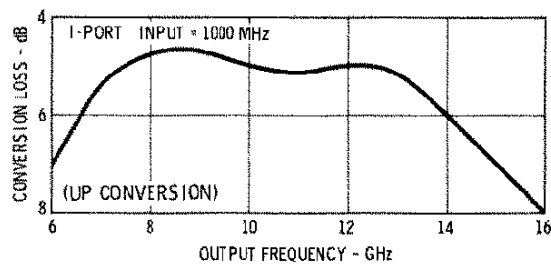
#### Conversion Loss vs. Frequency



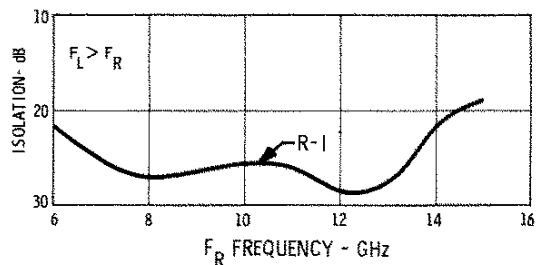
#### Isolation vs. Frequency



#### Conversion Loss vs. Output Frequency



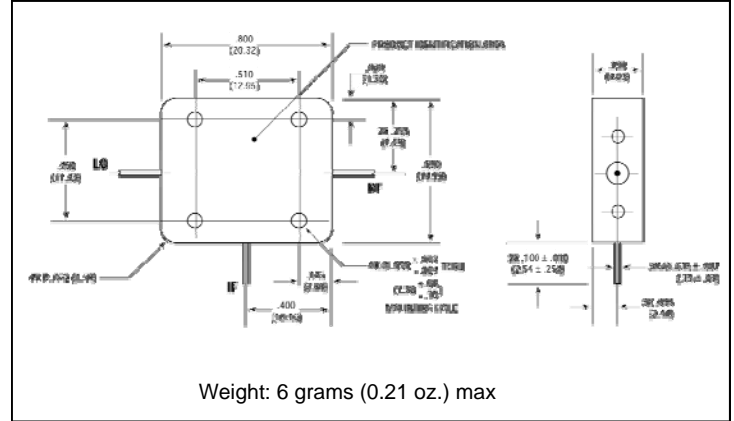
#### Isolation vs. Frequency



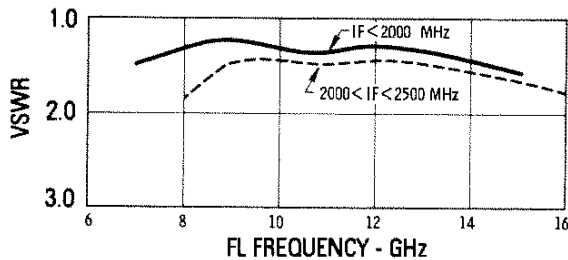
### Absolute Maximum Ratings

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

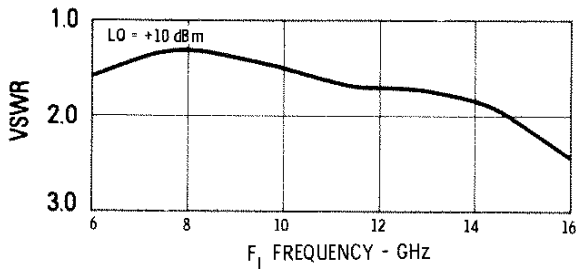
### Outline Drawing: Versapac \*



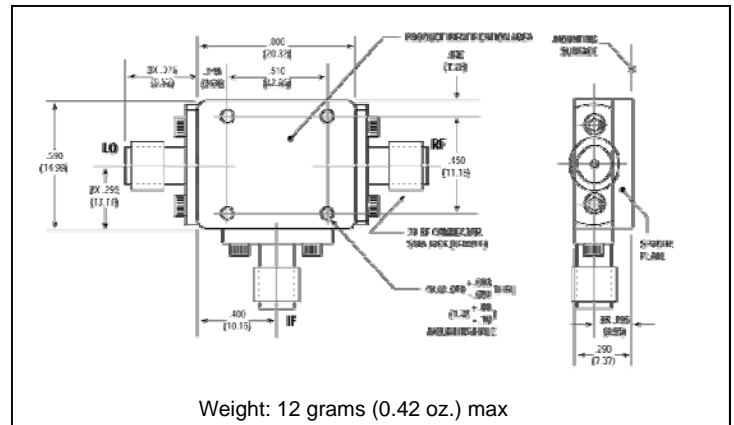
### I-Port VSWR vs. $f_L$



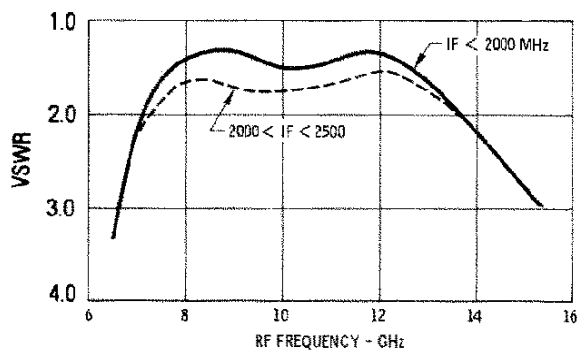
### L-Port VSWR vs. Frequency



### Outline Drawing: SMA Connectorized \*



### R-Port VSWR vs. Frequency



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