# MY77 / MY77C

## **Double-Balanced Mixer**



Rev. V3

#### Features

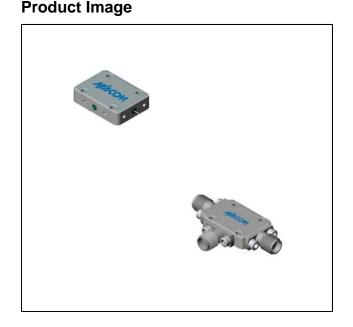
- LO 7.0 to 15.0 GHz
- RF 8.0 to 12.5 GHz
- IF DC to 2500 MHz •
- LO Drive +10 dBm (nominal)
- Low Noise Figure

#### 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		



### 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)	$\label{eq:R} \begin{array}{l} fR = 8 \text{ to } 12.5 \text{ GHz}, fL = 7 \text{ to } 13.5 \text{ GHz}, fI = 30 \text{ to } 1000 \text{ MHz} \\ fR = 8 \text{ to } 12.5 \text{ GHz}, fL = 7 \text{ to } 14.5 \text{ GHz}, fI = 1000 \text{ to } 2000 \text{ MHz} \\ fR = 8 \text{ to } 12.5 \text{ GHz}, fL = 7 \text{ to } 15.0 \text{ GHz}, fI = 2000 \text{ to } 2500 \text{ MHz} \end{array}$	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		
fL fR   2 x 2   2 x 3   Single Tone IM   3 x 2   Suppression   3 x 4   4 x 3   4 x 4		dB	60 70 37 59 >70 >70 >70 >70		

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,

• 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.

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.

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.

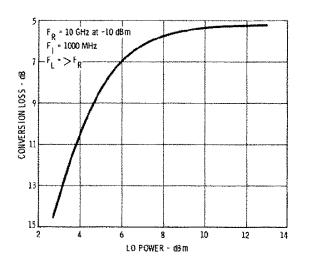
1

# MY77 / MY77C

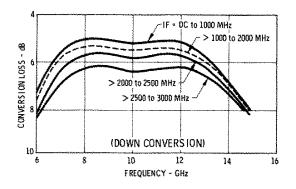


### **Typical Performance Curves**

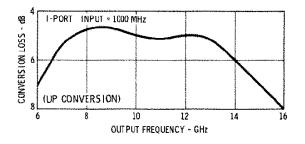
#### Conversion Loss Vs. LO Drive



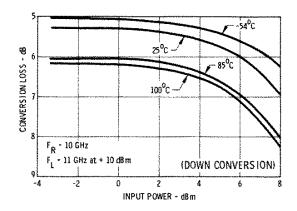
## **Conversion Loss vs. Frequency**



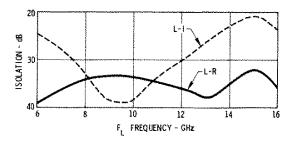
#### **Conversion Loss vs. Output Frequency**



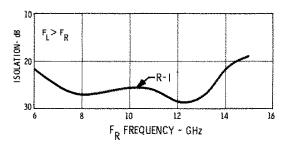
#### **Conversion Loss vs. RF Input Power**



Isolation vs. Frequency



**Isolation vs. Frequency** 



2

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.

# MY77 / MY77C



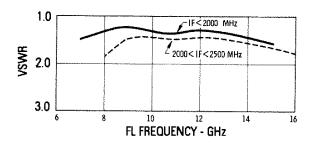


Rev. V3

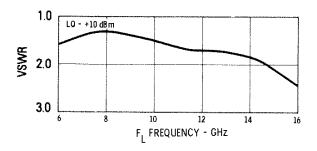
#### **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Operating Temperature	-54ºC to +100ºC	
Storage Temperature	-65°C to +100°C	
Peak Input Power	+23 dBm max @ +25⁰C +20 dBm max @ +100⁰C	
Peak Input Current	100 mA DC	

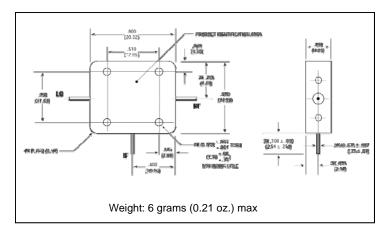
#### I-Port VSWR vs. f



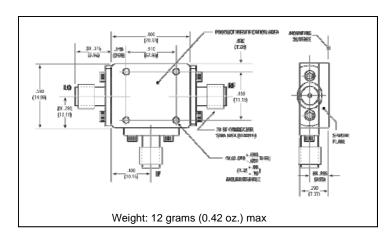
## L-Port VSWR vs. Frequency



## Outline Drawing: Versapac

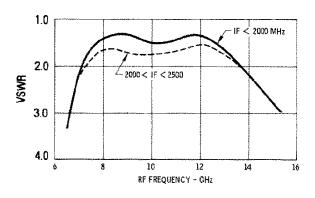


## Outline Drawing: SMA Connectorized \*



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

#### **R-Port VSWR vs. Frequency**



<sup>3</sup> 

- 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.

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.