# MY76 / MY76C

## **Double-Balanced Mixer**



Rev. V3

#### Features

- LO 2.5 TO 11.5 GHz
- RF 4.5 TO 9.5 GHz
- IF DC TO 2.0 GHz
- LO DRIVE: +10 dBm (NOMINAL)
- LOW NOISE FIGURE 5.5 dB (TYP.)

#### Description

The MY76 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	
MY76	Versapac	
MY76C	SMA Connectorized	

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

Parameter	Test Conditions	Unito	Typical	Guaranteed	
		Units		+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 6 to 8 GHz, fL = 4 to 9 GHz, fI = 0.03 to 2 GHz fR = 5 to 9 GHz, fL = 4 to 9 GHz, fI = 0.03 to 1 GHz fR = 4.5 to 9.5 GHz, fL = 2.5 to 11.5 GHz, fI = 0.03 to 2 GHz	dB dB dB	5.5 5.5 6.0	7.0 7.0 8.0	7.5 7.5 8.5
Isolation, L to R (min)	fL = 2.5 to 9 GHz fL = 9 to 11.5 GHz	dB dB	40 30	25 20	23 18
Isolation, L to I (min)	fL = 4 to 11.5 GHz fL = 2.5 to 4 GHz	dB dB	25 20	15 10	13 8
1 dB Conversion Comp. fL = +10 dBm		dBm	+3		
Input IP3	fR1 = 7 GHz at −6 dBm, fR2 = 7.01 GHz at −6 dBm, fL = 8 GHz at +10 dBm	dBm	+13		

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

**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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## **Double-Balanced Mixer**



-54°C

+25°C

50

Rev. V3

### **Typical Performance Curves**

#### Conversion Loss Vs. LO Drive



#### Conversion Loss vs. Frequency



Ð

1<sub>R</sub> - 2.0 GHz

f • 8.0 GHz AT +10 #8m

-2

뜅

CONVERSION LCG5 -

8





Conversion Loss vs. RF Input Power

+85<sup>0</sup>C

+100<sup>0</sup>0

(DOWN CONVERSION)

RF INPUT POWER - dBm

4

2



2

卷

SOLVER IOI LOSS

+10 dB m + 1000 N

LD

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(UP CONVERSION

Conversion Loss vs. Output Frequency

OUT PUT FREQUENCY LCH

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## **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		

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



## Outline Drawing: Versapac



## Outline Drawing: SMA Connectorized \*



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

#### I-Port VSWR vs. fL



## L-Port VSWR vs. Frequency



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