# M79 / M79C

# **Double-Balanced Mixer**



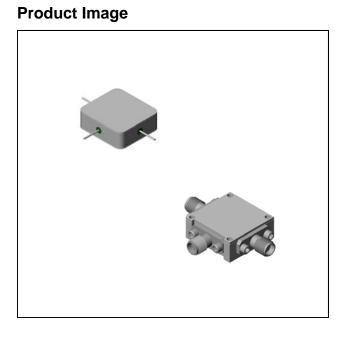
Rev. V3

## Features

- LO 5 TO 18 GHz
- RF 7 TO 18 GHz
- IF DC TO 3000 MHz •
- LO DRIVE: +10 dBm (NOMINAL)
- WIDE BANDWIDTH
- LOW NOISE FIGURE

## Description

The M79 is a double balanced mixer, designed for use in military, commercial and test equipment applications. This mixer can also be used as a phase detector or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening available to MIL-STD-202, and MIL-DTL-28837, consult factory.



## **Ordering Information**

Part Number	Package
M79	Minpac
M79C	SMA Connectorized

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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter Test Conditions		Units		+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	$\label{eq:result} \begin{array}{l} fR = 7 \mbox{ to } 16 \mbox{ GHz}, \mbox{ fL} = 6 \mbox{ to } 17 \mbox{ GHz}, \mbox{ fI} = 30 \mbox{ to } 1000 \mbox{ MHz} \\ fR = 7 \mbox{ to } 16 \mbox{ GHz}, \mbox{ fL} = 5 \mbox{ to } 18 \mbox{ GHz}, \mbox{ fI} = 30 \mbox{ to } 2000 \mbox{ MHz} \\ fR = 8 \mbox{ to } 16 \mbox{ GHz}, \mbox{ fL} = 5 \mbox{ to } 16 \mbox{ GHz}, \mbox{ fI} = 30 \mbox{ to } 3000 \mbox{ MHz} \\ fR = 16 \mbox{ to } 18 \mbox{ GHz}, \mbox{ fL} = 13 \mbox{ to } 18 \mbox{ GHz}, \mbox{ fI} = 30 \mbox{ to } 3000 \mbox{ MHz} \\ \end{array}$	dB dB dB dB	5.7 6.0 6.0 7.0	7.5 8.0 8.0 9.0	8.0 8.5 8.5 9.5
Isolation, L to R (min)	fL = 5 to 14 GHz fL = 14 to 18 GHz	dB dB	35 33	22 15	20 13
Isolation, L to I (min)	fL = 5 to 8 GHz fL = 8 to 18 GHz	dB dB	34 24	22 12	20 10
1 dB Conversion Comp. fL = +10 dBm		dBm	+4		
Input IP3	fR1=13 GHz at -6 dBm,fR2=13.01GHz at -6 dBm, fL = 14 GHz at = 10 dBm	dBm	+14		

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

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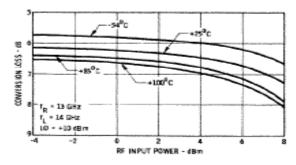
## Rev. V3

## **Absolute Maximum Ratings**

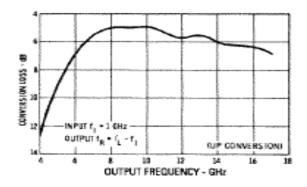
Parameter	Absolute Maximum		
Operating Temperature	-54ºC to +100ºC		
Storage Temperature	-65°C to +100°C		
Peak Input Power	+23 dBm max @ +25°C +20 dBm max @ +85°C		
Peak Input Current	100 mA DC		

## **Typical Performance Curves**

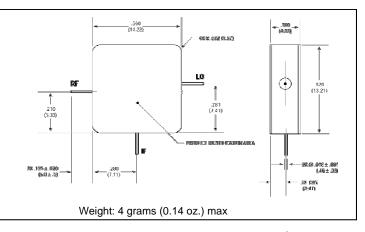
### Conversion Loss vs. Input Power and Temperature



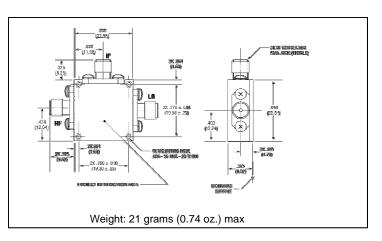
## Conversion Loss vs. Frequency



## Outline Drawing: Minpac \*

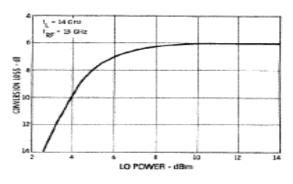


## Outline Drawing: SMA Connectorized



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

#### Conversion Loss vs. LO Drive Power.



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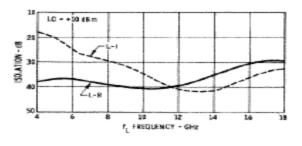
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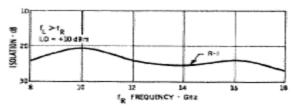


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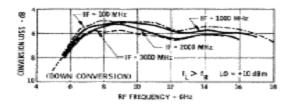
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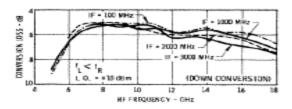
### Isolation

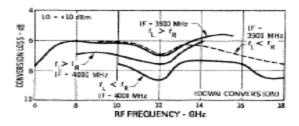




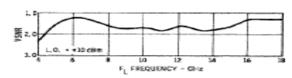
### Conversion Loss vs. Frequency.



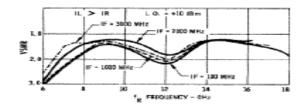


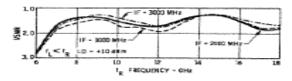


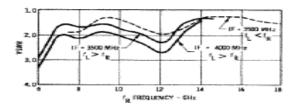




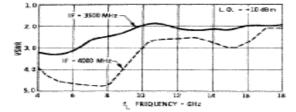
R-Port VSWR

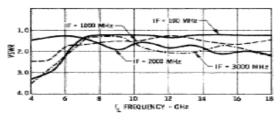






I-Port VSWR





3

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