

### **Double-Balanced Mixer**

Rev. V2

#### **Features**

LO 4 TO 16 GHz

RF 6 TO 14 GHz

IF DC TO 2 GHz

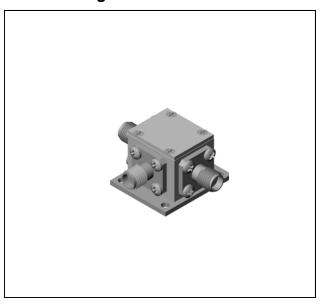
LO DRIVE: +7 dBm (nominal) HIGH ISOLATION: 35 dB (TYP.) LOW VSWR: < 2.0:1 (TYP.)

LOW NOISE FIGURE: < 6.0 dB (TYP.)

### **Description**

The M14A 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
M14A	SMA Connectorized

# Electrical Specifications: $Z_0 = 50\Omega$ Lo = +7 dBm (Downconverter Application only)

Doromotor	Parameter Test Conditions		Typical	Guaranteed	
Parameter Test Conditions		Units	25°C	0º to 50ºC	-54º to +85ºC
SSB Conversion Loss & SSB Noise Figure (max)	$fR=6\ to\ 9\ GHz\ ,\ fL=5\ to\ 10\ GHz\ ,\ fI=0.05\ to\ 1\ GHz$ $fR=6\ to\ 14\ GHz,\ fL=4\ to\ 16\ GHz,\ fI=0.05\ to\ 2\ GHz$	dB dB	5.5 7.5	8.0 9.0	8.5 9.5
Isolation, L to R (min)	fL = 4 to 12 GHz fL = 12 to 16 GHz	dB dB	35 28	20 15	18 13
Isolation, L to I (min)	fL = 4 to 6 GHz fL = 6 to 12 GHz fL = 12 to 16 GHz	dB dB dB	17 35 40	12 23 28	10 21 26
1 dB Conversion Compression	fL @ +7 dBm	dBm	+2		
Input IP3					

Commitment to produce in volume is not guaranteed.

<sup>•</sup> North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400 • India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588

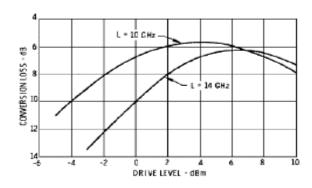


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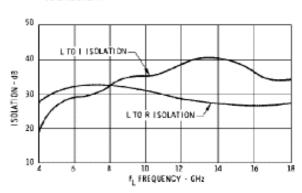
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## **Typical Performance Curves**

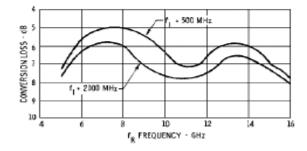
#### Conversion Loss



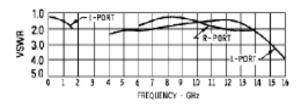
#### Isolation



#### Conversion Loss vs. Input Frequency



### VSWR



**M14A** 



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## **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: SMA Connectorized**

