## **Double-Balanced Mixer**



Rev. V2

#### Features

- LO & RF: 0.5 TO 500 MHz
- IF: DC TO 500 MHz
- LO DRIVE: +17 dBm (NOMINAL)
- HIGH INTERCEPT: +25 dB (TYP.)
- HIGH ISOLATION: 50 dB (TYP.)

#### Description

The M9BC is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband 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. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

### **Ordering Information**

Part Number	Package
M9BC	Relay Can

### Electrical Specifications: $Z_0 = 50\Omega$ Lo = +17 dBm (Downconverter Application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter	Test Conditions		25⁰C	0º to 50ºC	-54º to +85ºC
SSB Conversion Loss & SSB Noise Figure (max)	fR=0.0005 to 0.03 GHz, fL=0.0005 to 0.03 GHz, fl=0.0004 to 0.03GHz fR=0.03 to 0.1 GHz, fL=0.03 to 0.1 GHz, fl=0.0004 to 0.1GHz fR=0.1 to 0.5 GHz, fL=0.1 to 0.5 GHz, fl=0.0004 to 0.5GHz	dB dB dB	6.0 7.0 8.0	7.0 7.5 9.0	7.3 7.8 9.3
Isolation, L to R (min)	fL = 0.0005 to 0.03 GHz fL = 0.03 to 0.1 GHz fL = 0.1 to 0.5 GHz	dB dB dB	60 55 40	55 45 35	54 44 34
Isolation, L to I (min)	fL = 0.0005 to 0.03 GHz fL = 0.03 to 0.1 GHz fL = 0.1 to 0.5 GHz	dB dB dB	55 45 30	45 35 25	44 34 24
Isolation, R to I (min)	fL = 0.0005 to 0.5 GHz	dB	20		
1 dB Conversion Compression	fL @ +17 dBm	dBm	+8		
Input IP3		dBm	+23		

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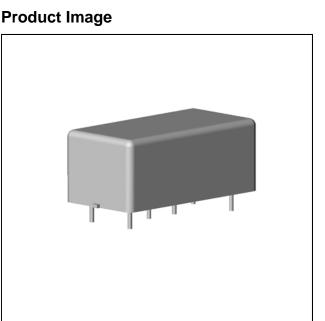
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#### **Absolute Maximum Ratings**

Outline Drav	wing: Re	lay Can
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Parameter	Absolute Maximum		
Operating Temperature	-54 C to +100°C		
Storage Temperature	-65ºC to +100ºC		
Peak Input Power	+23 dBm max @ +25°C		
Peak Input Current	100 mA DC		

