# **Double-Balanced Mixer**



Rev. V3

#### Features

- LO 0.05 TO 200 MHz
- RF 0.05 TO 200 MHz
- IF 0 TO 200 MHz
- LO DRIVE: +7 dBm (NOMINAL)
- HIGH ISOLATION: 45 dB (TYP.)

#### Description

The M6D-50 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 available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

# **Ordering Information**

Part Number	Package
M6D-50	Relay Header

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

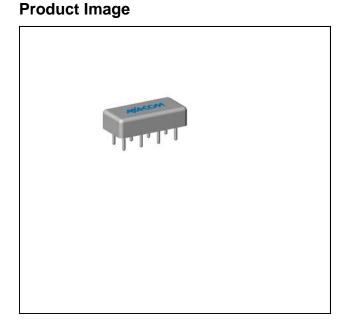
Parameter	Test Conditions	Units	Typical	Guaranteed	
Falameter	Test Conditions			+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR=0.0002 to 0.05 GHz , fL=0.0002 to 0.05 GHz, fl=0 to 0.05 GHz fR = 0.05 to 0.2 GHz , fL = 0.05 to 0.2 GHz, fl = 0.05 to 0.2 GHz fR = 0.00005 to 0.0002 GHz, fL = 0.00005 to 0.0002 GHz, fl = 0.00005 to 0.0002	dB dB dB	5.5 7.5 8.0	6.5 8.0 8.5	7.0 8.5 9.0
Isolation, L to R (min)	fL = 0.00005 to 0.03 GHz fL = 0.03 to 0.2 GHz	dB dB	55 45	40 35	38 33
Isolation, L to I (min)	fL = 0.00005 to 0.03 GHz fL = 0.03 to 0.2 GHz	dB dB	50 35	35 30	33 28

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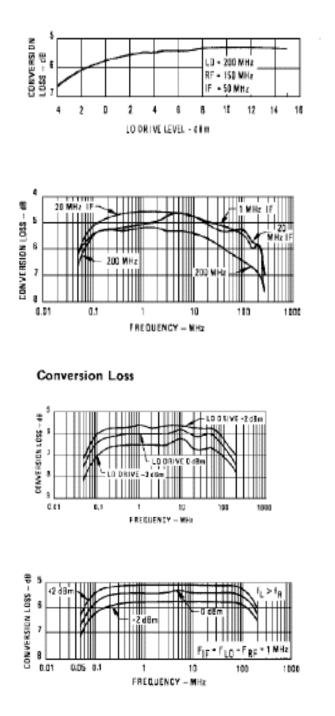
# M6D-50



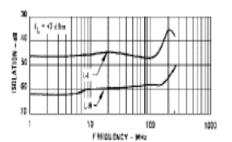
Rev. V3

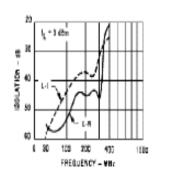
### **Typical Performance Curves**

# Conversion Loss



#### Isolation





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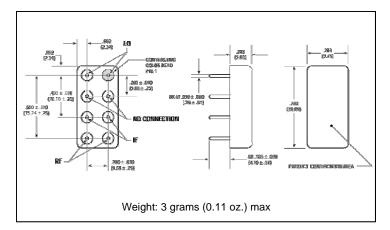


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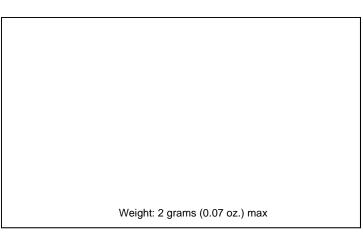
#### **Absolute Maximum Ratings**

Parameter	Absolute Maximum			
Operating Temperature	-54ºC to +100ºC			
Storage Temperature	-65°C to +100°C			
Peak Input Power	+17 dBm max @ +25ºC dBm max @ +100ºC			
Peak Input Current	50 mA DC			

# Outline Drawing: Relay Header



#### **Outline Drawing:**



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

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