# M6V / SM6V

# **Double-Balanced Mixer**



Rev. V2

#### Features

- LO 0.4 TO 500 MHz
- RF 0.4 TO 500 MHz
- IF DC TO 500 MHz
- LO DRIVE +7 dBm (nominal)
- HIGH ISOLATION 50 dB (TYP.)

#### Description

The M6V 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	
M6V	TO-5	
SM6V	Surface Mount	

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

Parameter	Test Conditions	Units	Typical	Guaranteed	
Farameter			25ºC	0º to 50ºC	-54º to +85ºC
SSB Conversion Loss & SSB Noise Figure (max)	fR=0.001 to 0.2 GHz, fL=0.001 to 0.2 GHz, fl=0.001 to 0.2 GHz fR = 0.0004 to 0.5 GHz, fL = 0.0004 to 0.5 GHz, fI = 0.0004 to 0.5 GHz	dB dB	6.0 7.0	6.5 7.5	7.0 8.0
Isolation, L to R (min)	fL = 0.0004 to 0.06 GHz fL = 0.06 to 0.5 GHz	dB dB	55 40	45 30	43 28
Isolation, L to I (min)	fL = 0.0004 to 0.06 GHz fL = 0.06 to 0.5 GHz	dB dB	45 30	30 20	28 18
1 dB Conversion Compression	fL @ +7 dBm	dBm	+0		

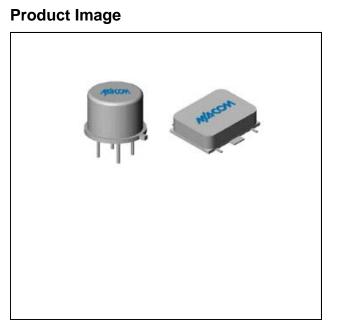
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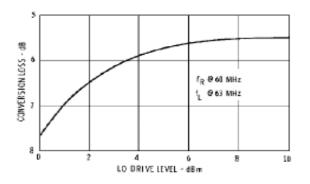
# M6V / SM6V



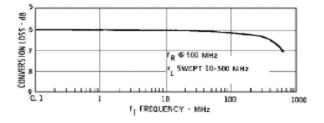
Rev. V2

#### **Typical Performance Curves**

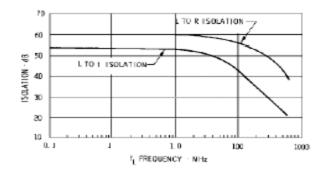
#### Conversion Loss



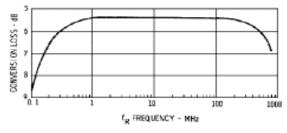
#### Conversion Loss



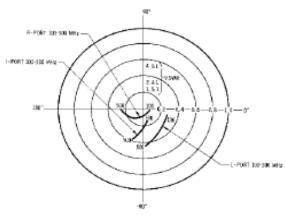
Isolation



Conversion Loss vs. Input Frequency



VSWR



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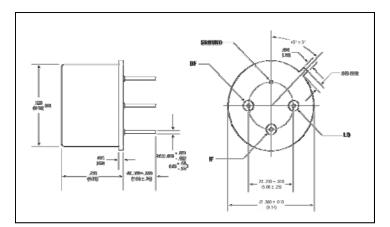


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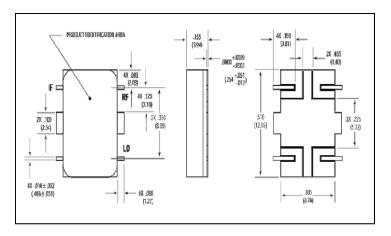
### **Absolute Maximum Ratings**

Parameter	Absolute Maximum		
Operating Temperature	-54 C to +100°C		
Storage Temperature	-65°C to +100°C		
Peak Input Power	23 dBm max @ +25⁰C 17 dBm max @ +100⁰C		
Peak Input Current	50 mA DC		

### **Outline Drawing: TO-5**



### **Outline Drawing: Surface Mount**



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