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.

Product Image



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	
			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, fI=0.001 to 0.2 GHz	dB	6.0	6.5	7.0
	fR = 0.0004 to 0.5 GHz, fL = 0.0004 to 0.5 GHz, fI = 0.0004 to 0.5 GHz	dB	7.0	7.5	8.0
Isolation, L to R (min)	fL = 0.0004 to 0.06 GHz	dB	55	45	43
	fL = 0.06 to 0.5 GHz	dB	40	30	28
Isolation, L to I (min)	fL = 0.0004 to 0.06 GHz	dB	45	30	28
	fL = 0.06 to 0.5 GHz	dB	30	20	18
1 dB Conversion Compression	fL @ +7 dBm	dBm	+0		

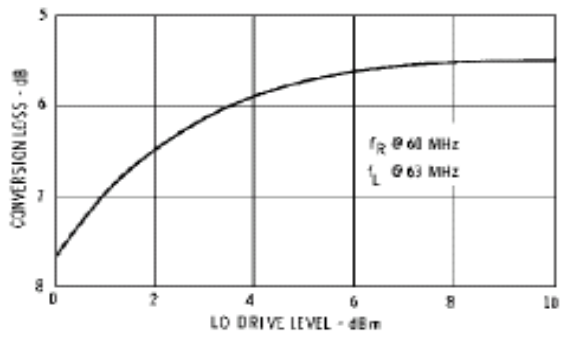
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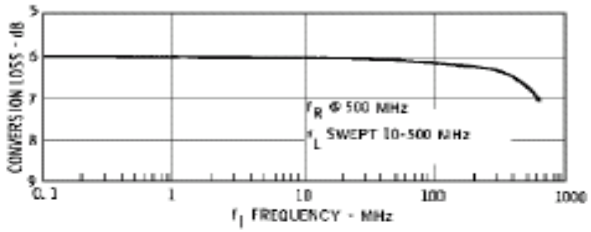
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Typical Performance Curves

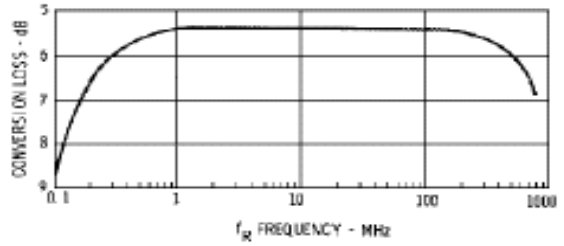
Conversion Loss



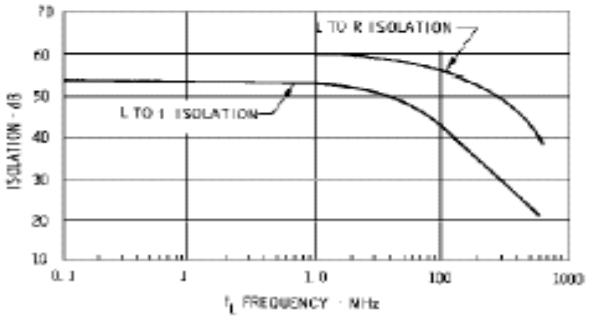
Conversion Loss



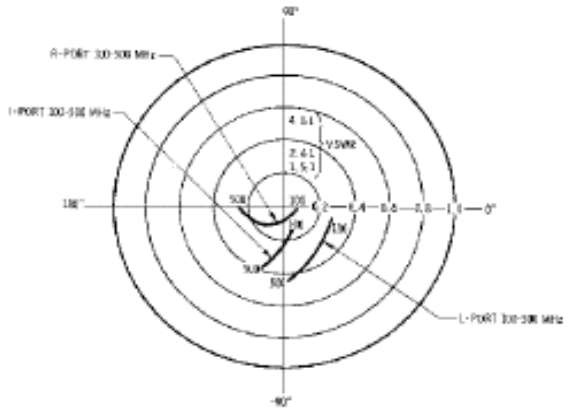
Conversion Loss vs. Input Frequency



Isolation



VSWR



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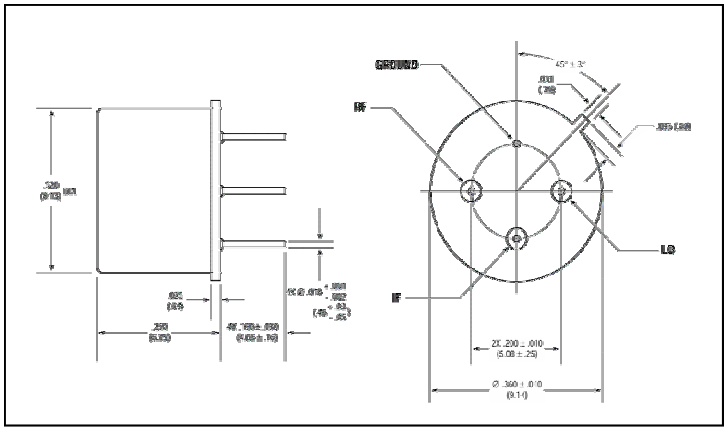
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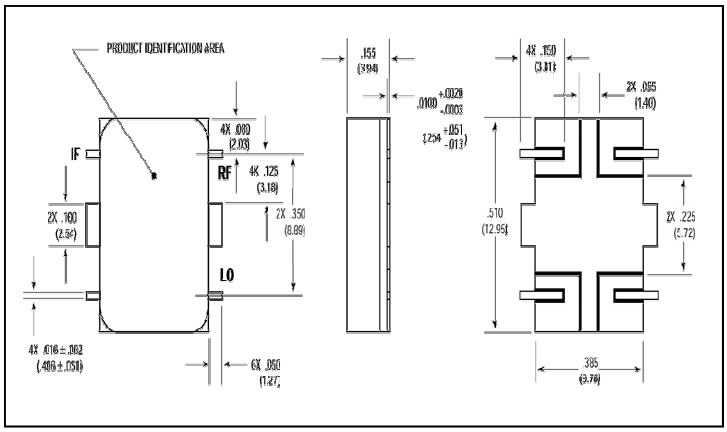
Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54 C to +100ºC
Storage Temperature	-65ºC to +100ºC
Peak Input Power	23 dBm max @ +25ºC 17 dBm max @ +100ºC
Peak Input Current	50 mA DC

Outline Drawing: TO-5



Outline Drawing: Surface Mount



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