## Load Insensitive Mixer



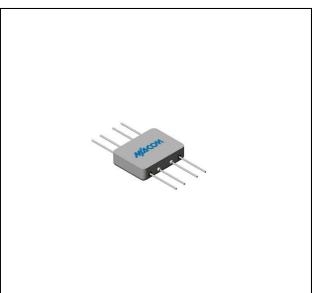
Rev. V3

### Product Image

- Features
- LO 1 TO 3400 MHz
- RF 1 TO 3400 MHz
- IF 1 TO 2000 MHz
- LO DRIVE: +23 dBm (NOMINAL)
- INSENSITIVE TO SYSTEM MISMATCH
- HIGH INTERCEPT: +29 dBm (TYP.)
- AVAILABLE IN SURFACE MOUNT

### Description

The M4TH is a termination insensitive mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky bridge quad diodes, broadband ferrite baluns and internal loads to provide excellent performance without degradation due to external VSWR mismatches. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in semi-automated and automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.



### **Ordering Information**

Part Number	Package
M4TH	Flatpack

### Electrical Specifications: $Z_0 = 50\Omega$ Lo = +23 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
Parameter				+25⁰C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	fR = 0.005 to 2.0 GHz, fL = 0.005 to 2.0 GHz, fI = 0.001 to 0.5 GHz fR = 0.001 to 3.4 GHz, fL = 0.001 to 3.4 GHz , fI = 0.001 to 2.0 GHz	dB dB	7.0 9.0	8.0 10.5	8.3 10.8
Isolation, L to R (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB dB	35 35	30 22	29 21
Isolation, L to I (min)	fL = 0.01 to 1.5 GHz fL = 0.01 to 3.4 GHz	dB dB	40 35	30 25	29 24
Isolation, R to I (min)	fR = 0.001 to 3.4 GHz	dB	21		
1 dB Conversion Comp.	fL= +23 dBm	dBm	+17		
Input IP3	fR1 = 2 GHz at 0 dBm, fR2 = 2.01 GHz at 0 dBm, fL = 1.9 GHz at +23 dBm	dBm	+29		

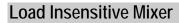
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# M4TH

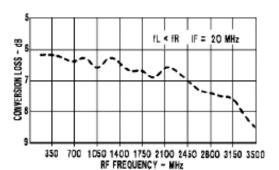


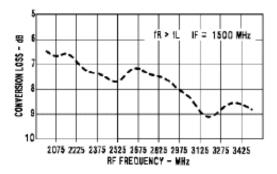


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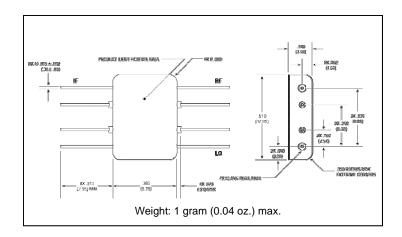
### **Typical Performance Curves**

#### Conversion Loss vs. Frequency





# Outline Drawing: Flatpack \*



### **Absolute Maximum Ratings**

Parameter	Absolute Maximum	
Operating Temperature	-54°C to +100°C	
Storage Temperature	-65°C to +100°C	
Peak Input Power	+27 dBm max @ +25⁰C +23 dBm max @ +100⁰C	
Peak Input Current	50 mA DC	

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