M76H / M76HC



Double-Balanced Mixer

Rev. V4

Features

- LO 2.5 TO 10.5 GHz
- RF 4.5 TO 8.5 GHz
- IF DC TO 2.0 GHz
- LO DRIVE: +20 dBm (NOMINAL)
- HIGH THIRD ORDER IP: +24 dBm (TYP.)

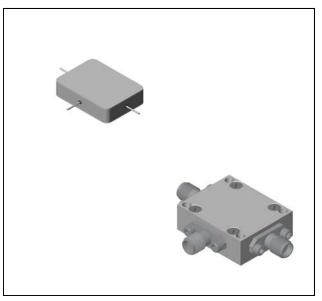
Description

The M76H is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and 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. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package	
M76H	Minpac	
M76HC	SMA Connectorized	

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ Lo = +20 dBm (Downconverter application only)

Parameter	Test Conditions	Units	Typical	Guaranteed	
r al allietei	rest conditions			+25°C	-54º to +85ºC
SSB Conversion Loss (max) & SSB Noise Figure (max)	$fR = 4.5 \text{ to } 8 \text{ GHz}, fL = 2.5 \text{ to } 10 \text{ GHz}, fl = 0.03 \text{ to } 2 \text{ GHz} \\ fR = 8 \text{ to } 8.5 \text{ GHz}, fL = 6.5 \text{ to } 9.5 \text{ GHz}, fl = 0.03 \text{ to } 1.5 \text{ GHz} \\ fR = 8 \text{ to } 8.5 \text{ GHz}, fL = 6 \text{ to } 10.5 \text{ GHz}, fl = 0.03 \text{ to } 2 \text{ GHz} \\ \end{cases}$	dB dB dB	5.5 6.5 8.0	7.0 8.0 9.5	7.5 8.3 9.8
Isolation, L to R (min)	fL = 2.5 to 10.5 GHz	dB	35	22	21
Isolation, L to I (min)	fL = 2.5 to 6.5 GHz fL = 6.5 to 10.5 GHz	dB dB	22 30	15 20	14 19
1 dB Conversion Comp. fL = +20 dBm		dBm	+15		
Input IP3	fR1=6.12 GHz at 0 dBm,fR2=6.18 GHz at 0 dBm, fL = 7.2 GHz at = +20 dBm	dBm	+24		

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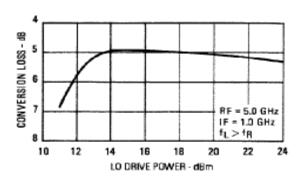


Double-Balanced Mixer

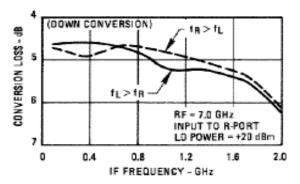
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Typical Performance Curves

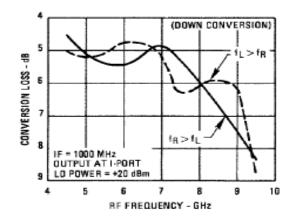
Conversion Loss vs. LO Drive Power

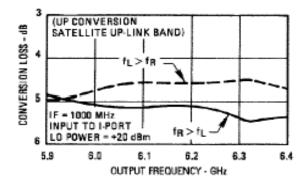


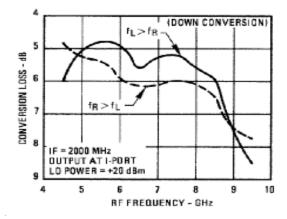
Conversion Loss



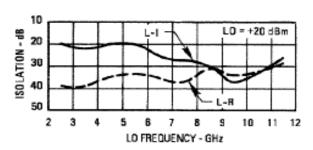
Conversion Loss







Isolation



2

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples

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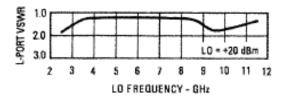
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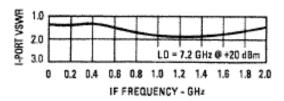
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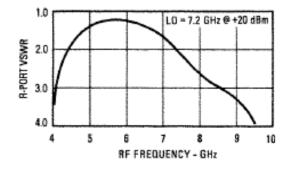
Absolute Maximum Ratings

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

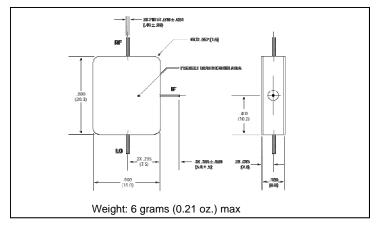
VSWR



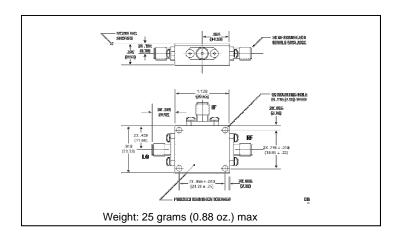




Outline Drawing: Minpac *



Outline Drawing: SMA Connectorized *



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

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