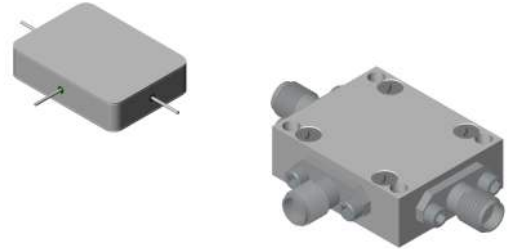


Features

- LO = 2.5 - 10.5 GHz
- RF = 4.5 - 8.5 GHz
- IF = DC - 2.0 GHz
- Low Drive: 20 dBm (nominal)
- High OIP3: 24 dBm



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.

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

Parameter	Test Conditions	Units	Typical	Guaranteed	
				+25°C	-54° to +85°C
SSB Conversion Loss (max.) & SSB Noise Figure (max.)	RF = 4.5 - 8.0 GHz, LO = 2.5 - 10.0 GHz, IF = 0.03 - 2.0 GHz	dB	5.5	7.0	7.5
	RF = 8.0 - 8.5 GHz, LO = 6.5 - 9.5 GHz, IF = 0.03 - 1.5 GHz		6.5	8.0	8.3
	RF = 8.0 - 8.5 GHz, LO = 6.0 - 10.5 GHz, IF = 0.03 - 2.0 GHz		8.0	9.5	9.8
Isolation, LO to RF (min.)	LO = 2.5 - 10.5 GHz	dB	35	22	21
Isolation, LO to IF (min.)	LO = 2.5 - 6.5 GHz	dB	22	15	14
	LO = 6.5 - 10.5 GHz		30	20	19
1 dB Conversion Comp.	LO = 20 dBm	dBm	15	—	—
Input IP3	RF1 = 6.12 GHz @ 0 dBm, RF2 = 6.18 GHz @ 0 dBm, LO = 7.2 GHz @ = 20 dBm	dBm	24	—	—

Ordering Information

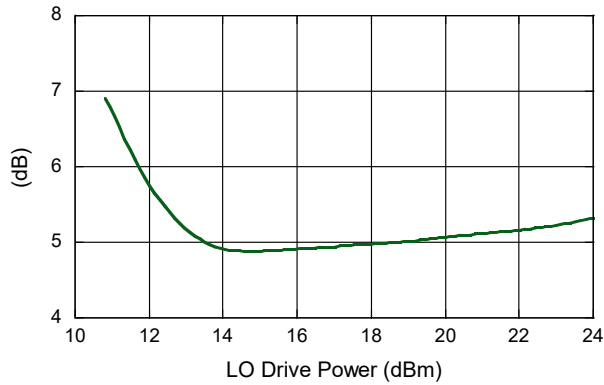
Part Number	Package
M76H	Minpac
M76HC	SMA Connectorized

Absolute Maximum Ratings

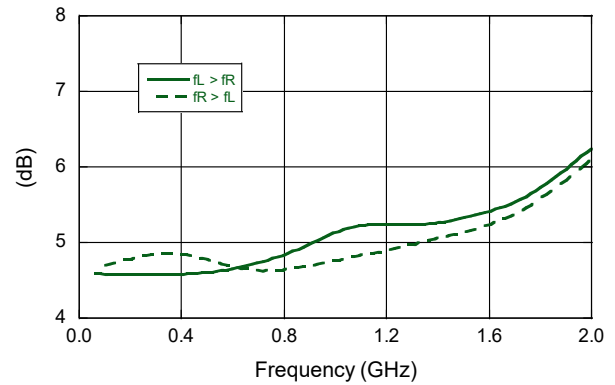
Parameter	Absolute Maximum
Peak Input Power	25 dBm @ +25°C 23 dBm @ +100°C
Peak Input Current	100 mA DC
Operating Temperature	-54°C to +100°C
Storage Temperature	-65°C to +100°C

Typical Performance Curves

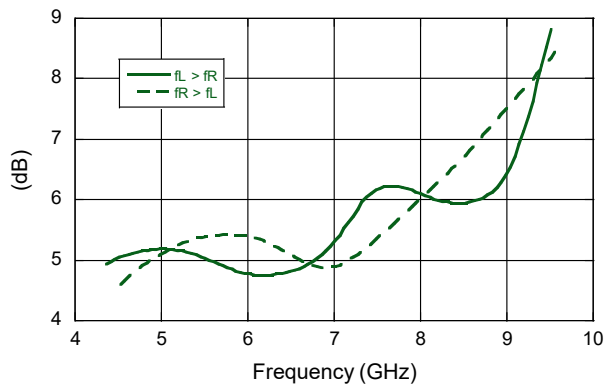
Conversion Loss vs. LO Drive Power
 RF = 5 GHz, IF = 1 GHz, LO > RF



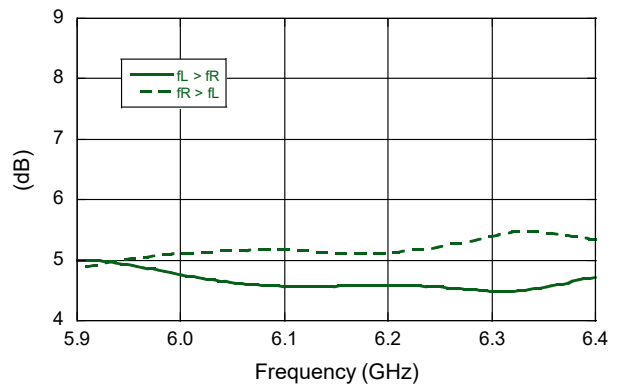
Conversion Loss vs. Frequency (Up Conversion)
 RF = 7 GHz, Input to R-Port, LO Power = 20 dBm



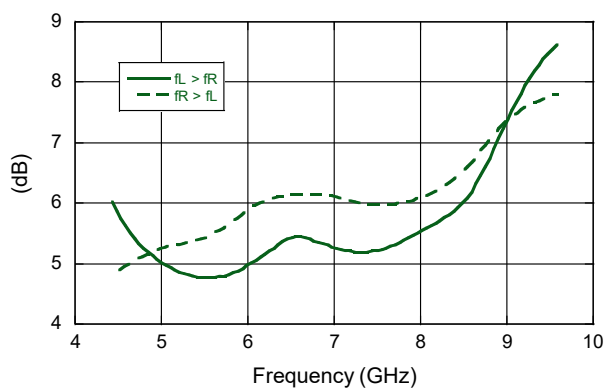
Conversion Loss vs. Frequency (Down Conversion)
 IF = 1 GHz, Output @ I-Port, LO Power = 20 dBm



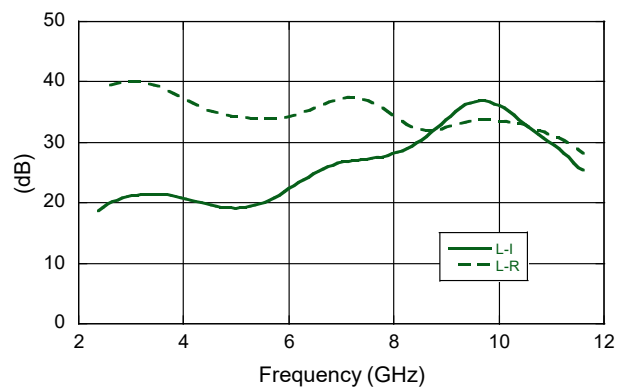
Conversion Loss vs. Frequency (Up Conversion)
 IF = 1 GHz, Input to I-Port, LO Power = 20 dBm



Conversion Loss vs. Frequency (Down Conversion)
 IF = 2 GHz, Output @ I-Port, LO Power = 20 dBm

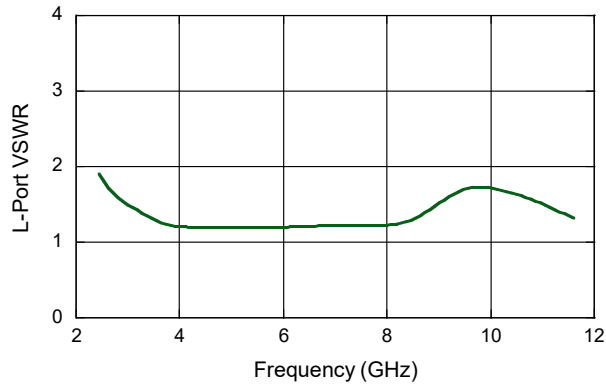


Isolation vs. Frequency
 LO Power = 20 dBm

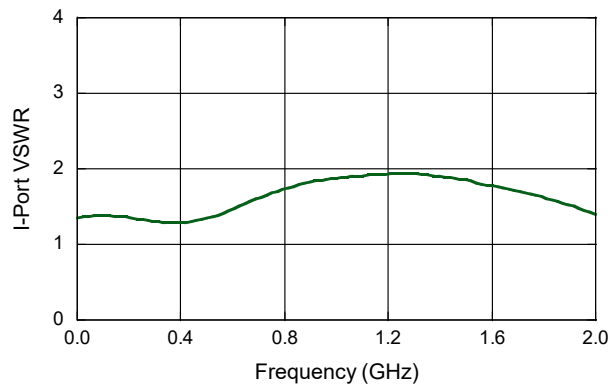


Typical Performance Curves

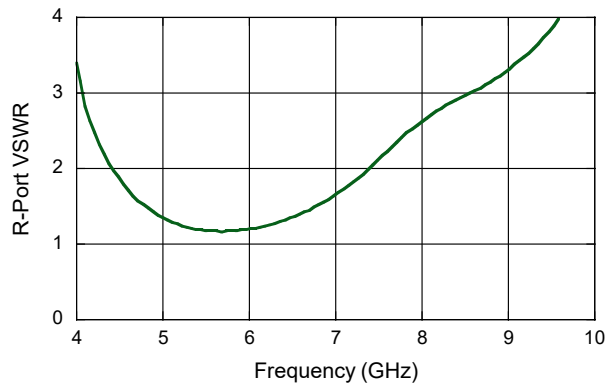
L-Port VSWR (LO = 20 dBm)



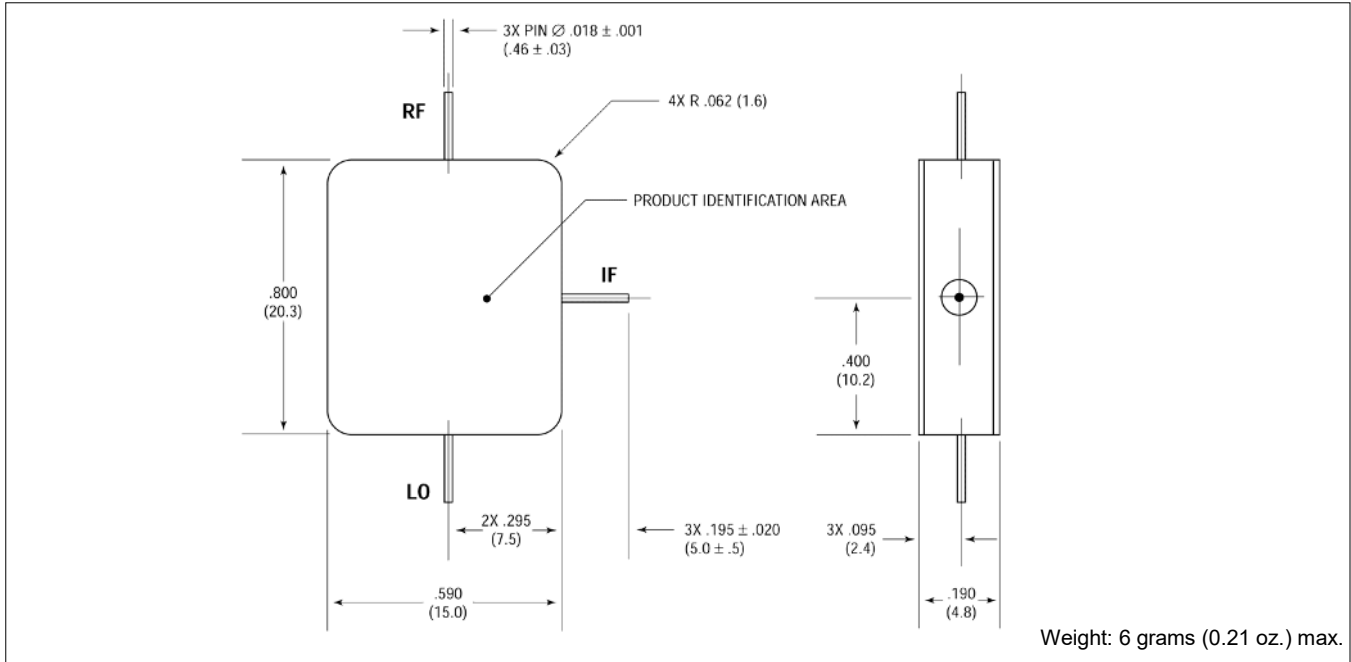
I-Port VSWR (LO = 7.2 GHz @ 20 dBm)



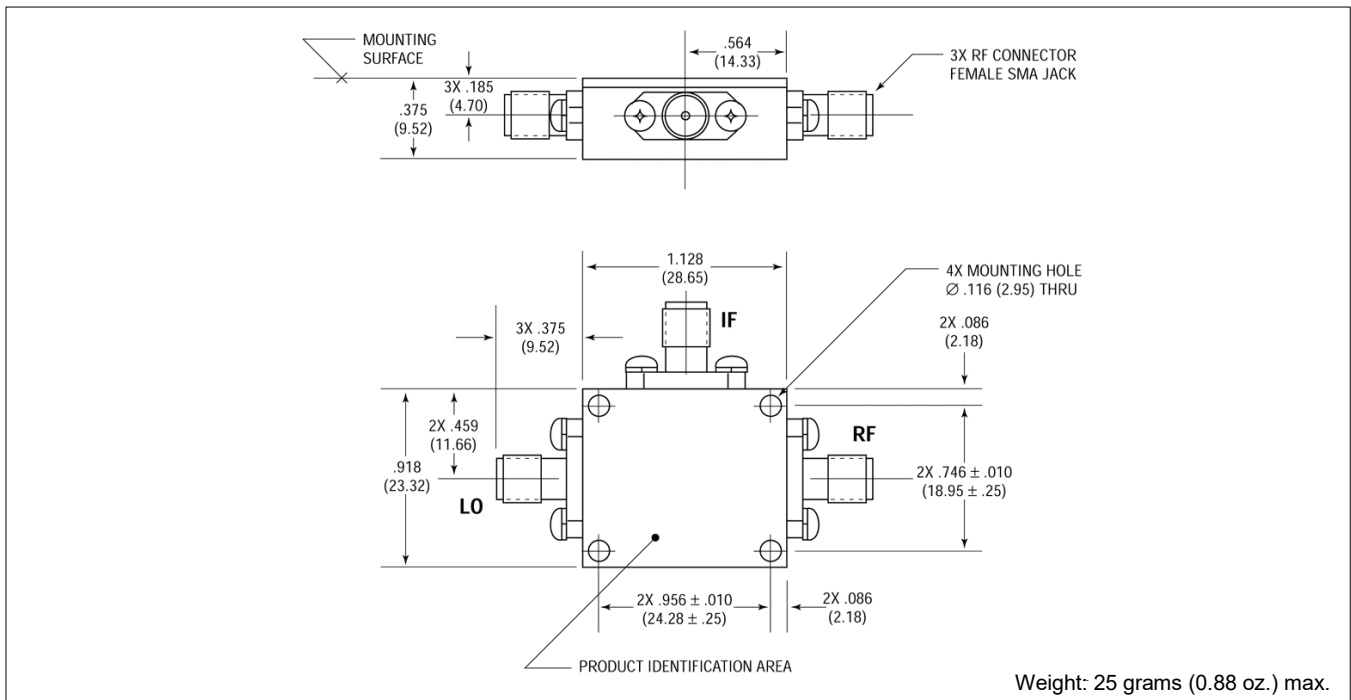
R-Port VSWR (LO = 7.2 GHz @ 20 dBm)



Outline Drawing: Minpac*



Outline Drawing: SMA Connectorized*



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

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