

Double-Balanced Mixer

Rev. V3

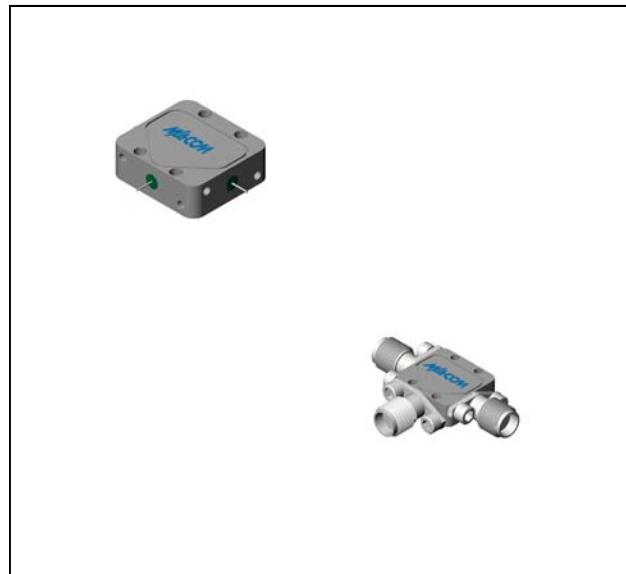
Features

- LO 5 to 18 GHz
- RF 6 to 18 GHz
- IF DC to 3 GHz
- LO Drive +20 dBm (nominal)
- Wide Bandwidth
- High Intercept Point +21 dBm (typ)
- Available with Field Replaceable Connectors

Description

The MZ7420 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.

Product Image



Ordering Information

Part Number	Package
MZ7420	Versapac
MZ7420C	SMA Connectorized

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)	$f_R = 7$ to 15 GHz, $f_L = 6$ to 15 GHz, $f_I = 0.03$ to 1 GHz $f_R = 6$ to 16 GHz, $f_L = 5$ to 18 GHz, $f_I = 0.03$ to 2 GHz $f_R = 6$ to 16 GHz, $f_L = 5$ to 18 GHz, $f_I = 0.03$ to 3 GHz $f_R = 16$ to 18 GHz, $f_L = 13$ to 18 GHz, $f_I = 0.03$ to 3 GHz	dB	6.5 7.0 7.5 8.5	8.0 8.5 9.5 10.0	8.3 8.8 9.8 10.3
SSB Noise Figure (max)	Within 1 dB of conversion loss	dB	—	—	—
Isolation, L to R (min)	$f_L = 5$ to 15 GHz $f_L = 14$ to 18 GHz	dB	35 30	23 18	22 17
Isolation, L to I (min)	$f_L = 5$ to 9 GHz $f_L = 9$ to 18 GHz	dB	27 35	17 23	16 22
1 dB Conversion Comp.	$f_L = +20$ dBm	dBm	+15		
Input IP3	$f_R1 = 13$ GHz at -6 dBm, $f_R2 = 13.01$ GHz at -6 dBm, $f_L = 14$ GHz at $+20$ dBm	dBm	+21		

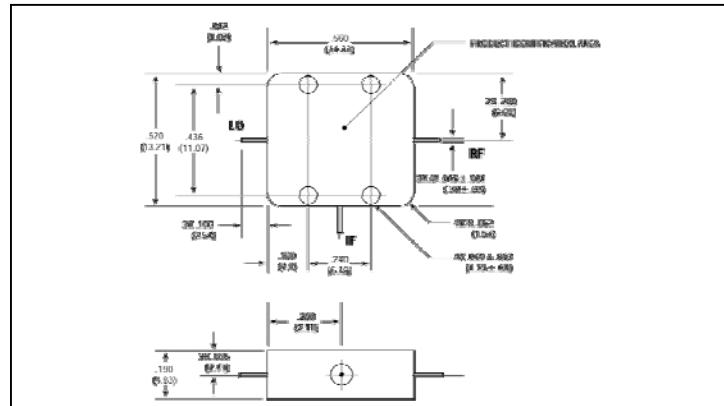
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Absolute Maximum Ratings

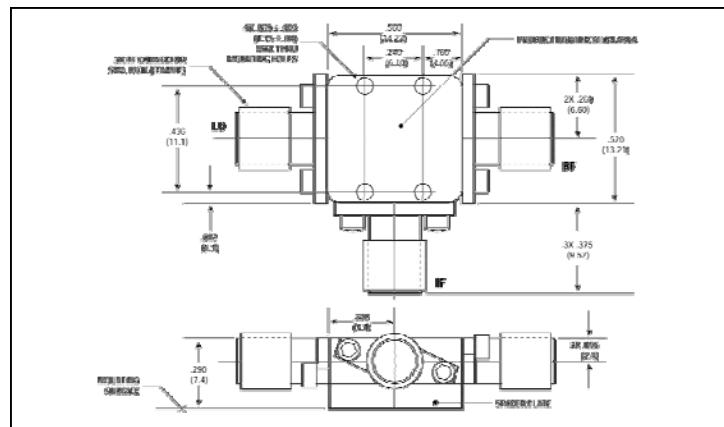
Parameter	Absolute Maximum
Operating Temperature	-54° C to +100° C
Storage Temperature	-65° C to +100° C
Peak Input Power	+25 dBm max @ +25°C +21 dBm max @ +100°C
Peak Input Current	mA DC

Outline Drawing: Versapac *



Weight: 4 grams (0.14 oz.) max

Outline Drawing: SMA Connectorized *



Weight: 13 grams (0.46 oz.) max

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