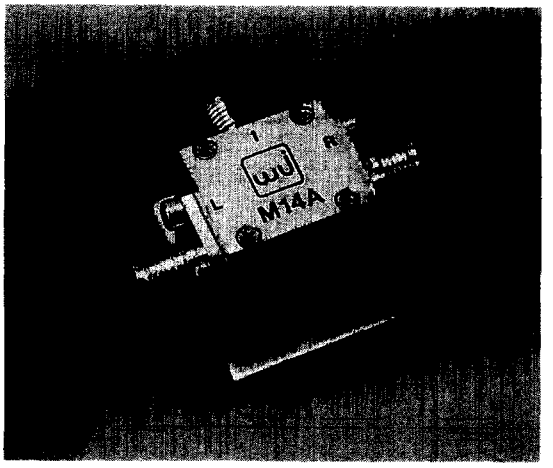
M14A

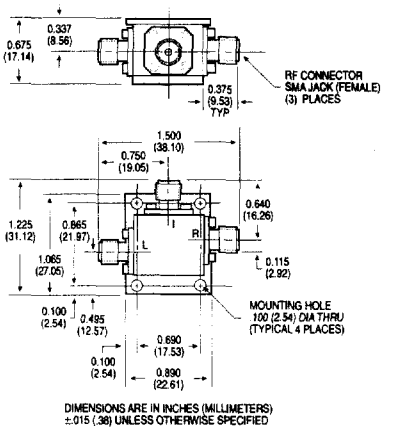
DOUBLE-BALANCED MIXER



- LO 4 TO 16 GHz
- RF 6 TO 14 GHz
- IF DC to 2 GHz
- LO DRIVE +7 dBm (NOMINAL)
- HIGH ISOLATION: 35 dB (TYP.)
- LOW VSWR: < 2.0:1 (TYP.)
- LOW NOISE FIGURE: < 6.0 dB (TYP.)
- MIL–M–28837 EQUIVALENT LEVEL SCREENING AVAILABLE

Outline Drawings

M14A



Guaranteed Specifications[1,2]

Characteristics	Typ.	+25°C	-54°C to +85°C	Test Conditions
SSB Conversion Loss and SSB Noise Figure (Max.)	5.5 dB	8.0 dB	8.5 dB	f_R 6 to 9 GHz f_L 5 to 10 GHz f_I 0.05 to 1 GHz
	7.5 dB	9.0 dB	9.5 dB	f_R 6 to 14 GHz f_L 4 to 16 GHz f_I 0.05 to 2 GHz
Isolation (Min.)				
f_L at R	35 dB	20 dB	18 dB	f_L 4 to 12 GHz
f_L at I	17 dB	12 dB	10 dB	f_L 4 to 6 GHz
	35 dB	23 dB	21 dB	f_L 6 to 12 GHz
f_L at R	28 dB	15 dB	13 dB	f_L 12 to 16 GHz
f_L at I	40 dB	28 dB	26 dB	f_L 12 to 16 GHz
Conversion Compression	1.0 dB			f_R Level = +2 dBm f_L Level = +7 dBm

Notes:
1. Measured in a 50-ohm system with nominal LO drive and downconverter application only, unless otherwise specified. The I-Port frequency range extends to DC for phase detection, pulse modulation, or attenuator applications, I-Port VSWR degrades from a 50-ohm system at low IF frequencies.
2. Typical values are measured at +25°C and are not guaranteed.

Absolute Maximum Ratings

Operating Temperature .....-54°C to +100°C
Storage Temperature .....-65°C to +100°C
Peak Input Power.....+23 dBm max. at +25°C, +20 dBm max at +100°C
Peak Input Current at 25°C.....100 mA DC

Weight M14A: 42.5 grams (1.5 oz.) max.
Connectors SMA Female

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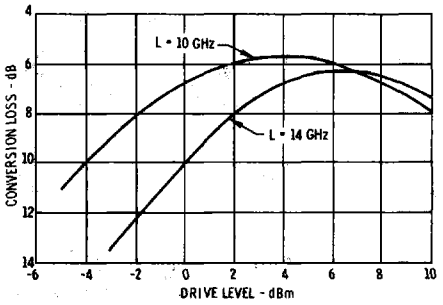
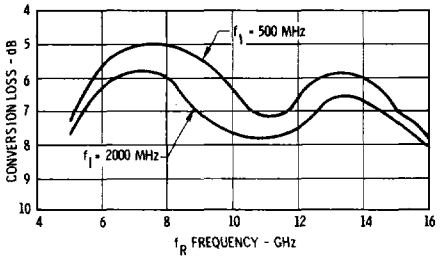
Conversion Loss

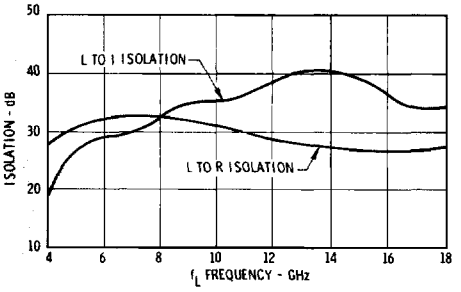


Conversion Loss vs. Drive Level: The minimum recommended drive level is +4 dBm. The maximum recommended drive level is +10 dBm.



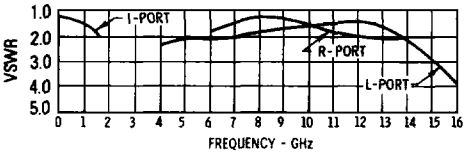
Conversion Loss vs. Input Frequency: Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port (f_R). Data plotted with an f_L level of +7 dBm.

Isolation



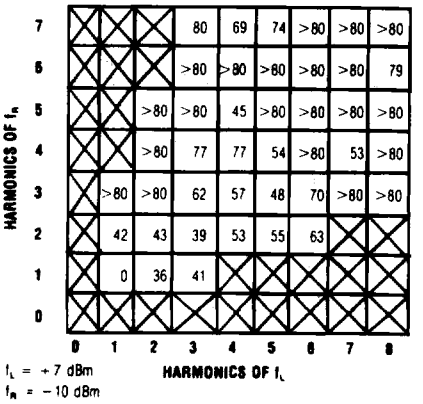
Isolation vs. Frequency: Level of the f_L signal fed through to the R- and I-ports with respect to the level of the f_L signal at the L-port.

VSWR



VSWR vs. Frequency: VSWR of the L-, I- and R-ports in a 50-ohm system with f_L at +7 dBm. Only a small variation in the R-port VSWR will occur as a function of the L-port frequency.

Typical Harmonic IM Signals (dB Below Designed Output)



7				80	69	74	>80	>80	>80
6				>80	>80	>80	>80	>80	79
5			>80	>80	45	>80	>80	>80	>80
4			>80	77	77	54	>80	53	>80
3		>80	>80	62	57	48	70	>80	>80
2		42	43	39	53	55	63		
1		0	36	41					
0									
	0	1	2	3	4	5	6	7	8

Harmonic Intermodulation Products: Intermodulation signals which result from the mixing of mixer generated harmonics of the input signals are shown. Mixing product suppresion is indicated by the number of dB below the desired output level.

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