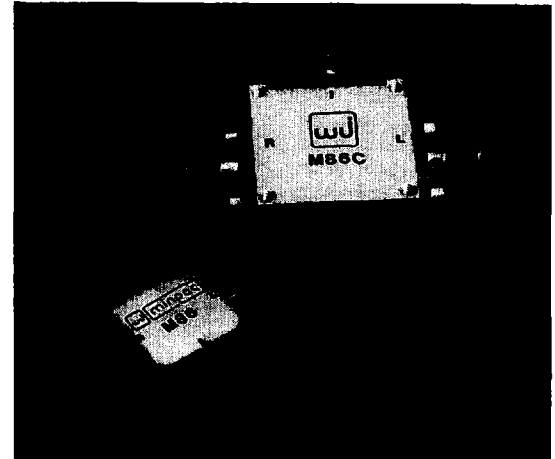




M86 / M86C

DOUBLE-BALANCED MIXER

- ◆ LO 3.5 TO 18 GHz
- ◆ RF 6 TO 18 GHz
- ◆ IF DC TO 3000 MHz
- ◆ LO DRIVE +7 dBm (NOMINAL)
- ◆ WIDE BANDWIDTH
- ◆ DC COUPLED I-PORT
- ◆ MIL-M-28837 EQUIVALENT LEVEL SCREENING AVAILABLE



Outline Drawings

Guaranteed Specifications^{1,2}

Characteristics	Typ.	+25°C	-54°C to +85°C	Test Conditions
SSB Conversion Loss and SSB Noise Figure (Max.)	6.0 dB	8.0 dB	8.5 dB	$f_R = 6$ to 16 GHz $f_L = 5$ to 17 GHz $f_I = 30$ to 1000 MHz
	7.0 dB	9.0 dB	9.5 dB	$f_R = 16$ to 18 GHz $f_L = 15$ to 18 GHz $f_I = 30$ to 1000 MHz
	7.0 dB	9.0 dB	9.5 dB	$f_R = 6$ to 18 GHz $f_L = 3.5$ to 18 GHz $f_I = 30$ to 3000 MHz
Isolation (Min.) L to R	36 dB	23 dB	21 dB	$f_L = 3.5$ to 14 GHz
	32 dB	18 dB	16 dB	$f_L = 14$ to 18 GHz
L to I	28 dB	16 dB	14 dB	$f_L = 3.5$ to 9 GHz
	38 dB	23 dB	21 dB	$f_L = 9$ to 18 GHz
Conversion Compression	1.0 dB			f_R Level +3 dBm f_L Level +7 dBm
Third-Order Input Intercept Point	+10 dBm			$f_{R1} = 13.00$ GHz at -10 dBm $f_{R2} = 13.01$ GHz at -10 dBm $f_L = 14.0$ GHz at +7 dBm

Notes:

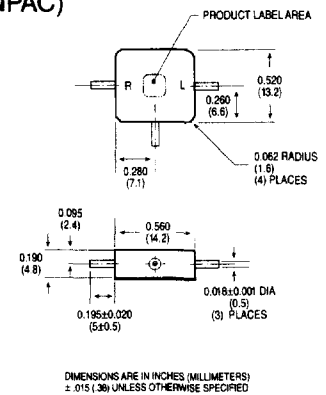
1. Measured in a 50-ohm system with nominal LO drive and downconverter application only, unless otherwise specified. The I-Port frequency range extends to DC for phase detection, pulse modulation, or attenuator applications, I-Port VSWR degrades from a 50-ohm system at low IF frequencies.
2. Typical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

Absolute Maximum Ratings

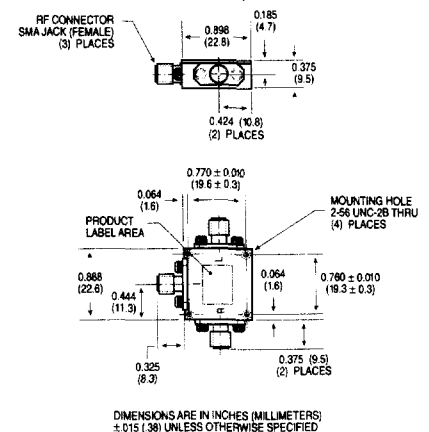
Operating Temperature-54°C to +100°C
 Storage Temperature-65°C to +100°C
 Peak Input Power+23 dBm max. at +25°C, +20 dBm max. at +100°C
 Peak Input Current at 25°C100 mA DC

Weight M86: 6 grams (0.21 oz.) max.
 M86C: 30 grams (1.06 oz.) max.

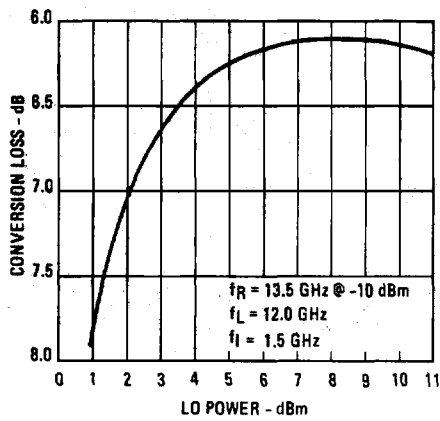
M86 (MINPAC)



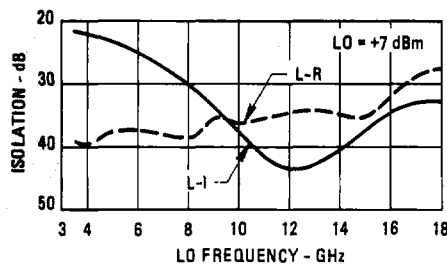
M86C (CONNECTORIZED)



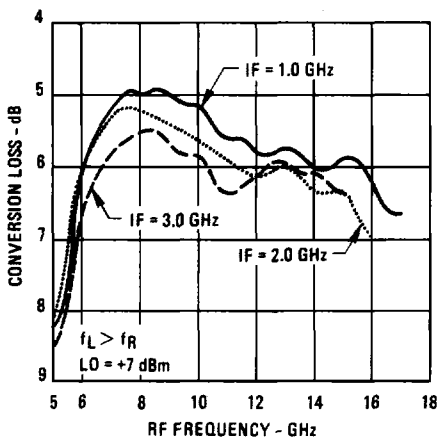
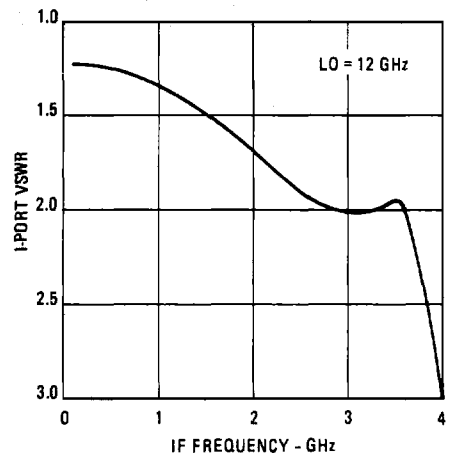
Conversion Loss vs. LO Power



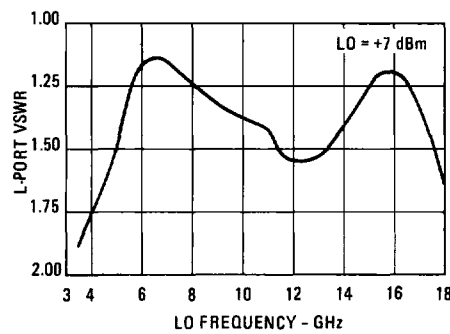
Isolation



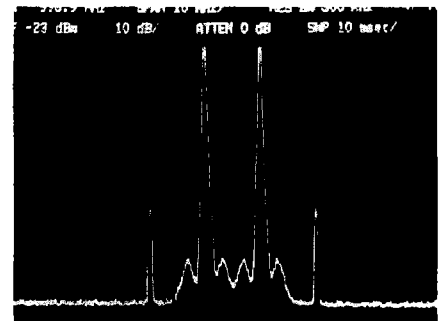
VSWR



VSWR



Typical Two-Tone Intermodulation Performance



$f_I = 1.0 \text{ GHz}$
 $f_{R1} = 13.00 \text{ GHz at } -10 \text{ dBm}$
 $f_{R2} = 13.01 \text{ GHz at } -10 \text{ dBm}$
 $f_L = 14.0 \text{ GHz at } +7 \text{ dBm}$
 Vertical Scale is 10 dB/Div.

Conversion Loss

