



# M50 / M50C MY50 / MY50C

## TRIPLE-BALANCED MIXER

- ◆ LO } 2.0 TO 26.0 GHz
- RF }
- ◆ IF 1.0 TO 15.0 GHz
- ◆ LO DRIVE +10 dBm (NOMINAL)
- ◆ HIGH COMPRESSION POINT
- ◆ VERY WIDE BANDWIDTH
- ◆ MIL-M-28837 EQUIVALENT LEVEL SCREENING AVAILABLE

### Guaranteed Specifications<sup>1,2</sup>

Characteristics	Typ.	+25°C	-54°C to +85°C	Test Conditions
SSB Conversion Loss and SSB Noise Figure (Max.)	7.5 dB	9.5 dB	9.5 dB	$f_R$ 2.5 to 18.0 GHz $f_L$ 2.0 to 18.0 GHz $f_I$ 2.0 to 10.0 GHz
	8.0 dB	10.5 dB	10.5 dB	$f_R$ 2.0 to 18.0 GHz $f_L$ 2.0 to 26.0 GHz $f_I$ 2.0 to 12.0 GHz
	9.0 dB	11.5 dB	11.5 dB	$f_R$ 2.0 to 26.0 GHz $f_L$ 2.0 to 26.0 GHz $f_I$ 1.0 to 12.0 GHz 1.0 to 15.0 GHz $f_L < f_R$
Isolation (Min.) L to R	30 dB	20 dB	18 dB	$f_L$ 2.0 to 3.0 GHz
	22 dB	15 dB	13 dB	$f_L$ 3.0 to 26.0 GHz
L to I	30 dB	20 dB	18 dB	$f_L$ 2.0 to 7.0 GHz
	22 dB	15 dB	13 dB	$f_L$ 7.0 to 26.0 GHz
Conversion Compression	1.0 dB			$f_R$ level +5.0 dBm $f_L$ level +10.0 dBm
Third-Order Input Intercept Point	+15 dBm  +15 dBm			$f_{RI} = 5.00$ GHz at -6 dBm $f_{R2} = 5.01$ GHz at -6 dBm $f_L = 8.0$ GHz at +10.0 dBm $f_{RI} = 25.00$ GHz at -6 dBm $f_{R2} = 25.01$ GHz at -6 dBm $f_L = 15.0$ GHz at +10.0 dBm

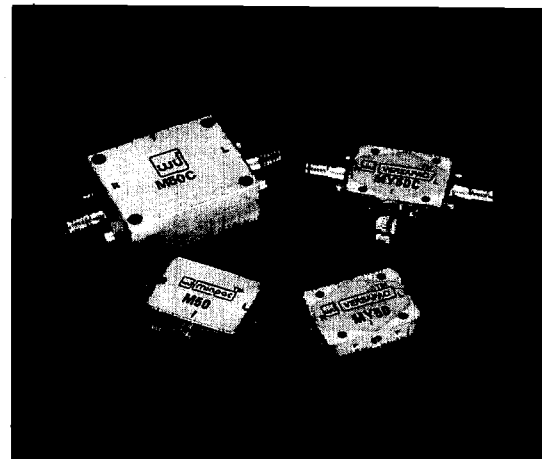
#### Notes:

1. Measured in a 50-ohm system with nominal LO drive and downconverter application only unless otherwise specified.
2. Typical values are measured at 25°C and are not guaranteed. Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® model.

### Absolute Maximum Ratings

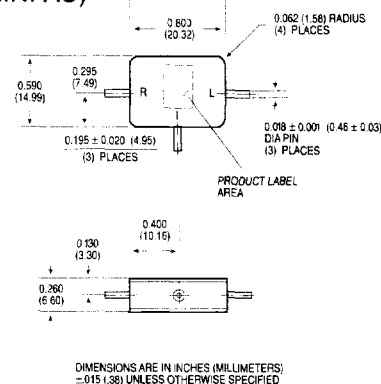
Operating Temperature ..... -54°C to +100°C  
 Storage Temperature ..... -65°C to +100°C  
 Peak Input Power ..... +26 dBm at +25°C, +22 dBm at +100°C

Weight      M50:    12 grams (0.42 oz.) max.      M50C:  40 grams (1.41 oz.) max.  
               MY50:  12 grams (0.42 oz.) max.      MY50C: 18 grams (0.63 oz.) max.

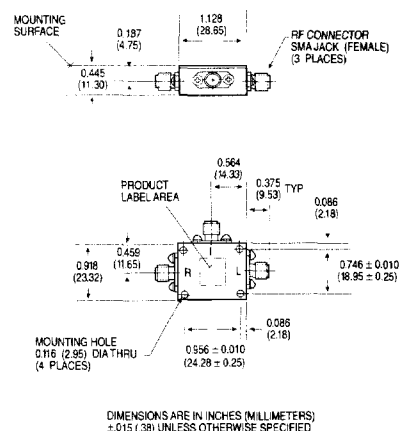


### Outline Drawings

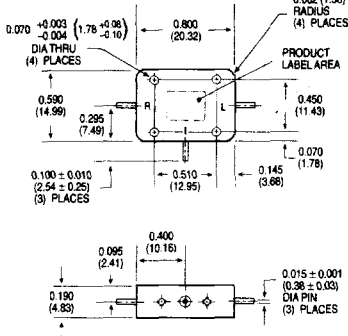
M50  
(MINPAC)



M50C  
(CONNECTORIZED)

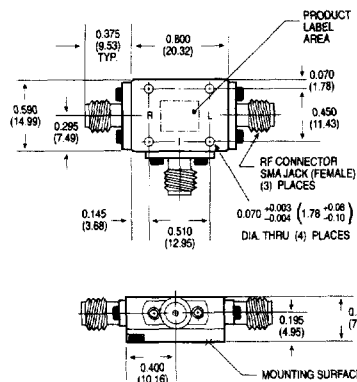


**MY50  
(VERSAPAC)**



DIMENSIONS ARE IN INCHES (MILLIMETERS)  
± 0.15 (38) UNLESS OTHERWISE SPECIFIED

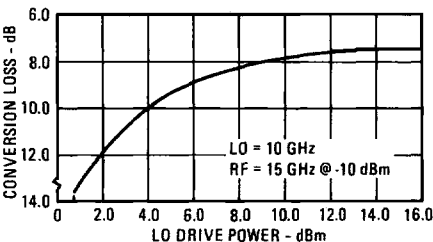
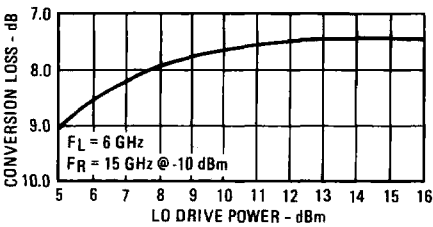
**MY50C  
(CONNECTORIZED)**



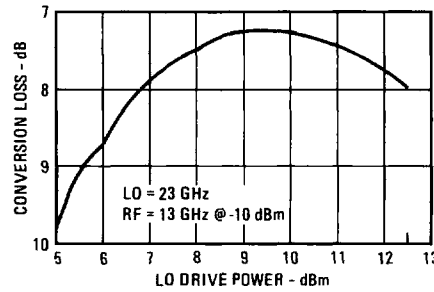
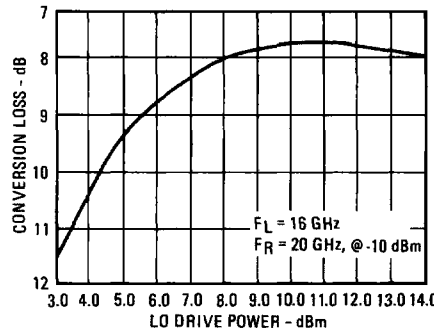
DIMENSIONS ARE IN INCHES (MILLIMETERS)  
± 0.15 (38) UNLESS OTHERWISE SPECIFIED

Typical Performance at 25°C\*

**Conversion Loss vs. LO Drive Level**

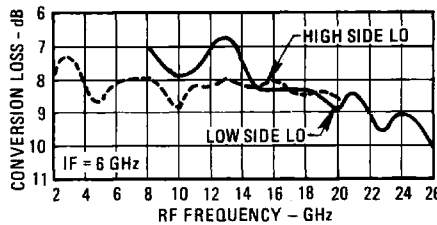
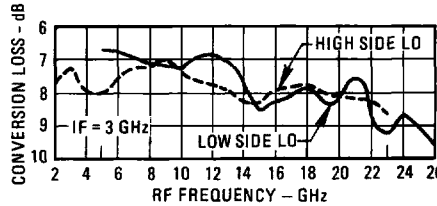
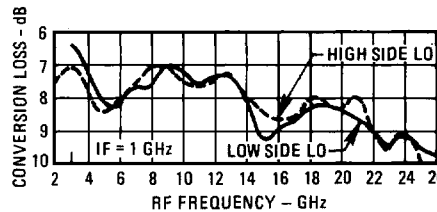


**Conversion Loss vs. LO Drive Level**

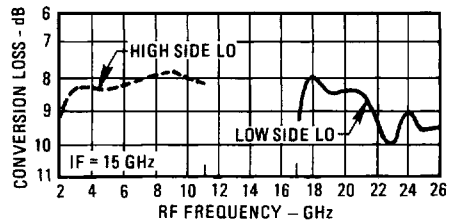
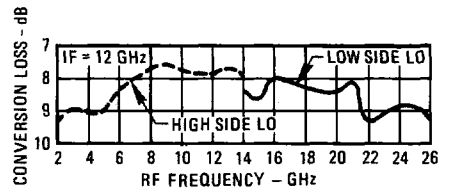
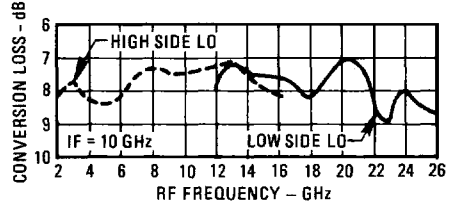
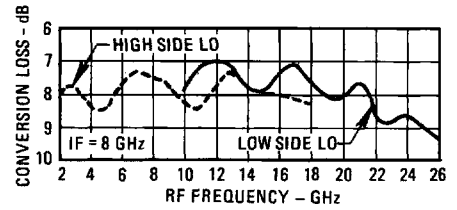


**Drive Level:** The maximum recommended drive level is +17 dBm.

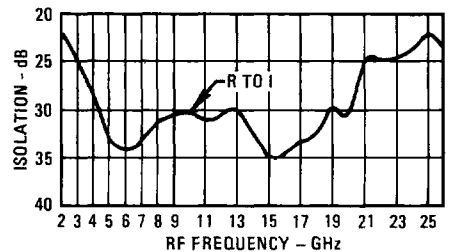
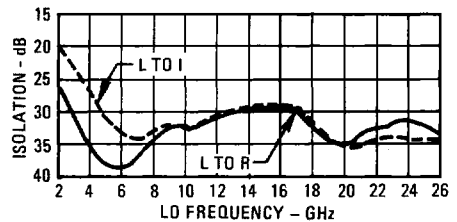
**Conversion Loss vs. Frequency**



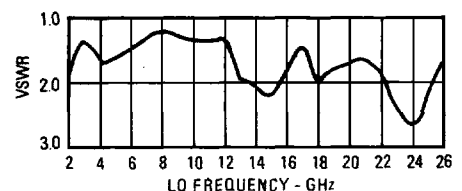
**Conversion Loss vs. Frequency**



**Isolation vs. Frequency**



**L-Port VSWR**



\*Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® model.

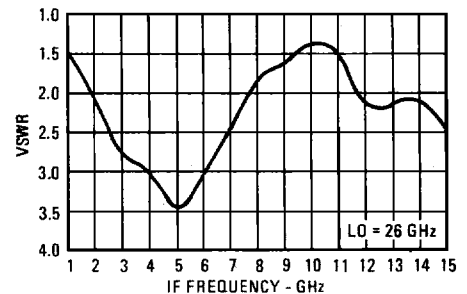
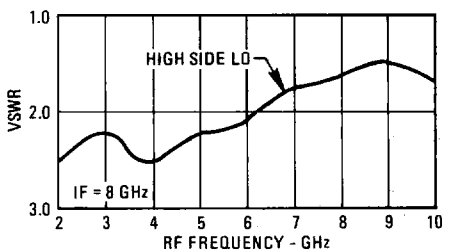
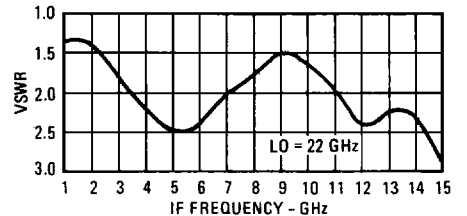
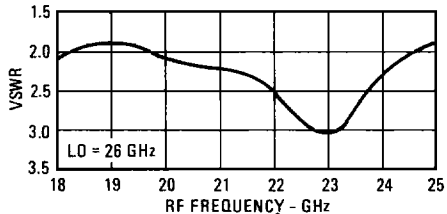
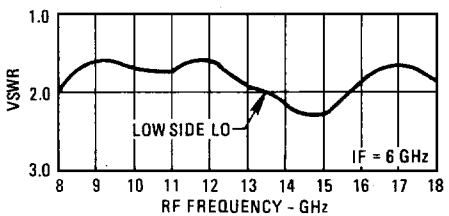
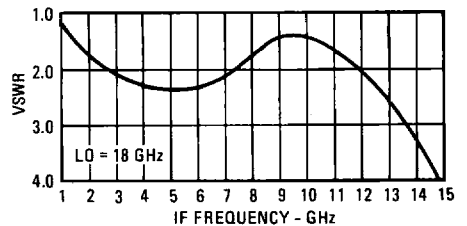
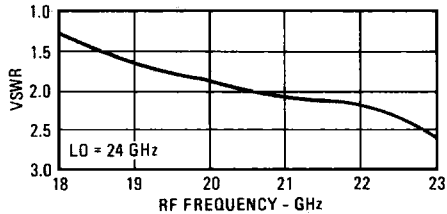
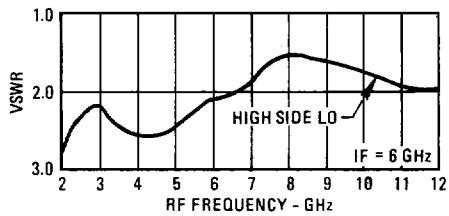
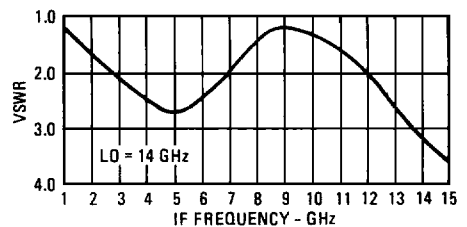
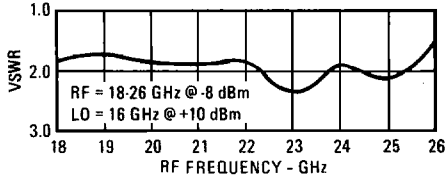
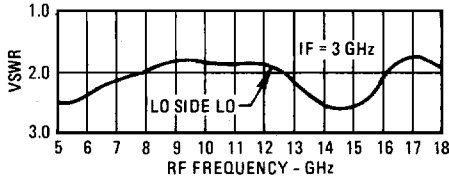
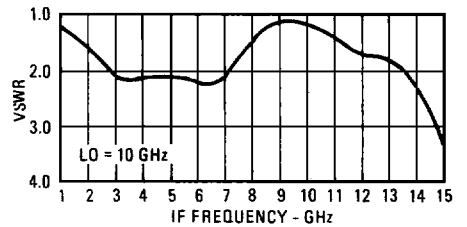
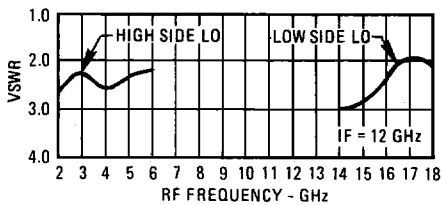
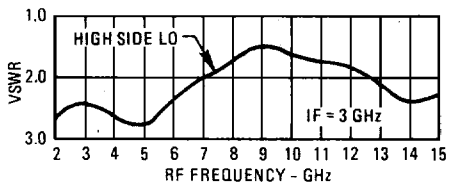
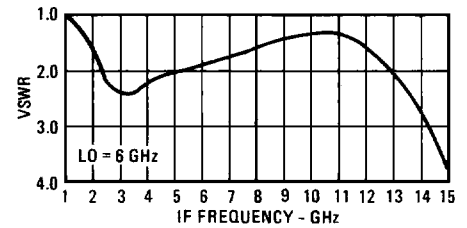
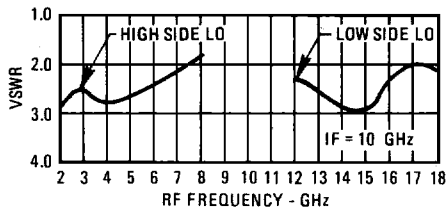
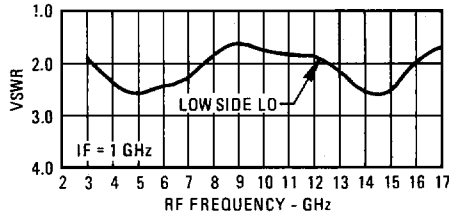
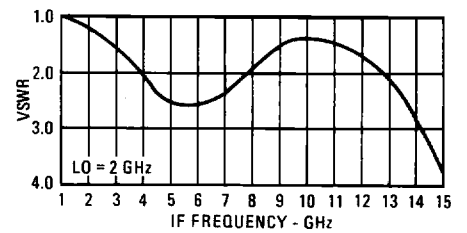
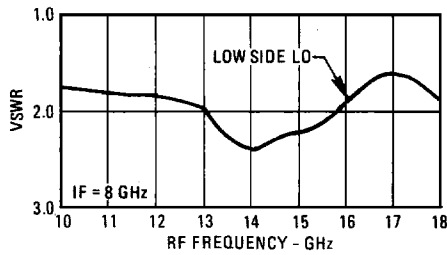
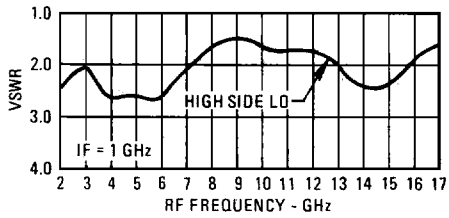
# Typical Performance at 25°C \*

WJ-M50/M50C/MY50/MY50C

## R-Port VSWR

## R-Port VSWR

## I-Port VSWR



\*Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® model.

Typical Performance at 25°C\*

WJ-M50/M50C/MY50/MY50C

Harmonics of $f_L$	R - Port	I . Port	Test Conditions
$f_L$	-16 dBm	-10 dBm	$f_L = 2$ GHz at +10 dBm
$2 f_L$	-15 dBm	-23 dBm	
$3 f_L$	-24.5 dBm	-23 dBm	
$4 f_L$	-33 dBm	-41 dBm	
$5 f_L$	-33 dBm	-34 dBm	
$6 f_L$	-46 dBm	-45 dBm	
$7 f_L$	-41 dBm	-41 dBm	
$8 f_L$	-42 dBm	-48 dBm	
$9 f_L$	-47.2 dBm	-50 dBm	
$10 f_L$	-46 dBm	-51 dBm	
$11 f_L$	-49 dBm	-51 dBm	
$f_L$	-30 dBm	-24 dBm	$f_L = 6$ GHz at +10 dBm
$2 f_L$	-24 dBm	-34 dBm	
$3 f_L$	-30 dBm	-40 dBm	
$f_L$	-22 dBm	-23 dBm	$f_L = 11$ GHz at +10 dBm
$2 f_L$	-31 dBm	-28 dBm	

Single Tone IM	Typ	Test Conditions
$f_L f_R$		$f_L = 2$ GHz at +10 dBm $f_R = 3.25$ GHz at -10 dBm
1 x 1	0 dB	
1 x 2	44 dB	
1 x 3	> 65 dB	
2 x 1	36 dB	
2 x 2	50 dB	
3 x 1	14 dB	
3 x 2	48 dB	
3 x 3	67 dB	
4 x 1	35 dB	
4 x 2	55 dB	
5 x 1	28 dB	
5 x 3	—	
6 x 1	—	
6 x 2	60 dB	
7 x 1	33 dB	
7 x 3	> 65 dB	
$f_L f_R$		$f_L = 4.1$ GHz at +10 dBm $f_R = 6.0$ GHz at -10 dBm
1 x 1	0 dB	
1 x 2	55 dB	
1 x 3	> 60 dB	
2 x 1	35 dB	
2 x 2	60 dB	
3 x 1	19 dB	
3 x 2	> 58 dB	
3 x 3	63 dB	
4 x 1	41 dB	
4 x 2	> 62 dB	
5 x 1	30 dB	
5 x 3	—	
6 x 1	45 dB	
6 x 2	62 dB	
7 x 1	—	
7 x 3	> 60 dB	

\*Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® models.