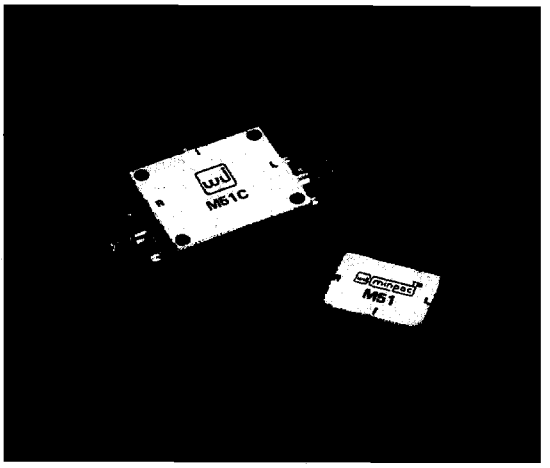
M51 / M51C
MY51 / MY51C

TRIPLE-BALANCED MIXER



- LO 2.0 TO 24.0 GHz
- RF 2.0 TO 24.0 GHz
- IF 1.0 TO 15.0 GHz
- LO DRIVE +10 dBm (NOMINAL)
- VERY WIDE BANDWIDTH
- HIGH COMPRESSION POINT
- MIL–M–28837 EQUIVALENT LEVEL SCREENING AVAILABLE

Guaranteed Specifications[1,2]

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	10.0 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	11.0 dB	f_R 2.0 to 18.0 GHz f_L 2.0 to 24.0 GHz fI 1.0 to 12.0 GHz
	9.0 dB	11.5 dB	12.0 dB	fR 2.0 to 24.0 GHz fL 2.0 to 24.0 GHz fI 1.0 to 12.0 GHz fI 1.0 to 15.0 GHz $f_L < f_R$
ISOLATION (Min.)				
L to R	20 dB	15 dB	13 dB	f_L 2.0 to 3.0 GHz
	30 dB	20 dB	18 dB	f_L 3.0 to 24.0 GHz
L to I	30 dB	20 dB	18 dB	f_L 7.0 to 24.0 GHz
	22 dB	15 dB	13 dB	f_L 2.0 to 7.0 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			f_{R1} =5.00 GHz at -6 dBm f_{R2} = 5.01 GHz at -6 dBm f_L = 8.0 GHz at +10.0 dBm
	+15 dBm			f_{R1} = 16.00 GHz at -6 dBm f_{R2}= 16.01 GHz at -6 dBm f_L = 18.0 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.

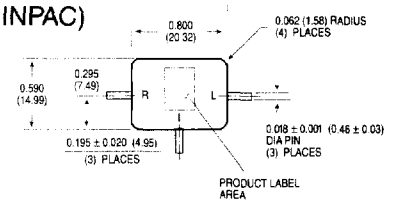
Absolute Maximum Ratings

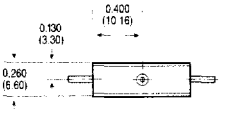
Operating Temperature ..... -54°C to +100°C
Storage Temperature ..... -65°C to +100°C
Peak Input Power .....+26 dBm max. at +25°C, +22 dBm max. at +100°C

Weight M51: 12 grams (0.42 oz.) max. MY51: 12 grams (0.42 oz.) max.
M51C: 40 grams (1.41 oz.) max. MY51C: 18 grams (0.63 oz.) max.

Outline Drawings

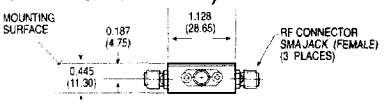
M51
(MINPAC)

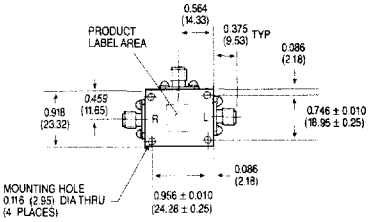




DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.015 (.38) UNLESS OTHERWISE SPECIFIED

M51C
(CONNECTORIZED)





DIMENSIONS ARE IN INCHES (MILLIMETERS)
±.015 (.38) UNLESS OTHERWISE SPECIFIED

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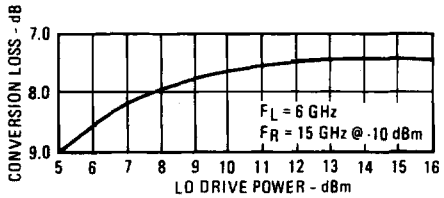
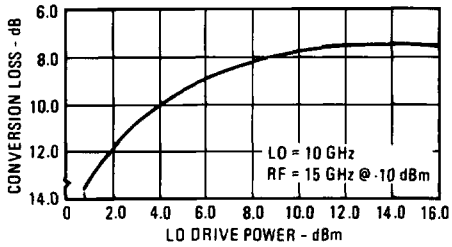
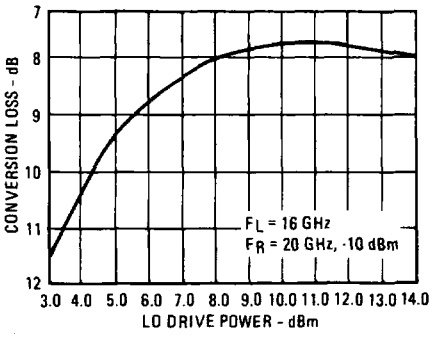
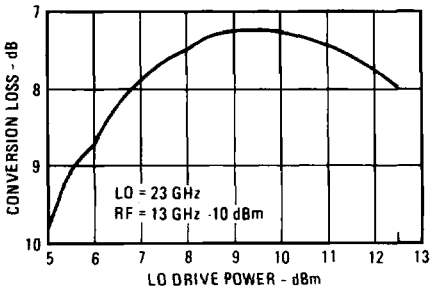
Drive Level



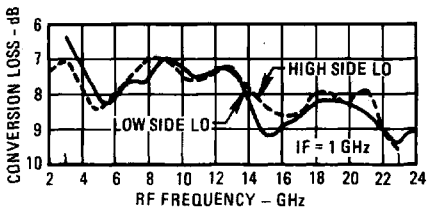


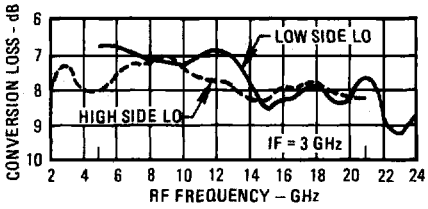


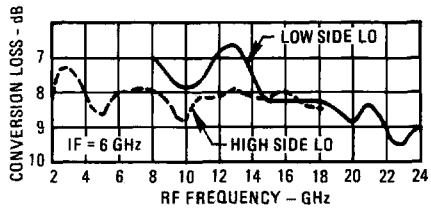


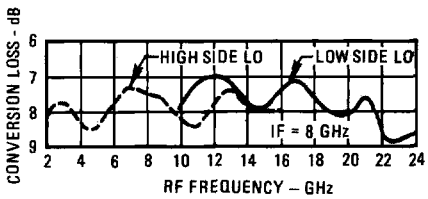
Drive Level: The maximum recommended drive level is +17 dBm.

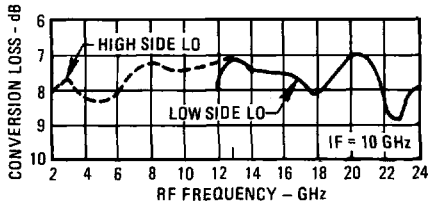
Conversion Loss vs. Frequency LO @ +10 dBm



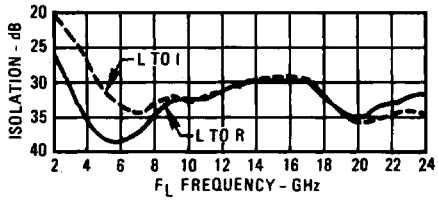


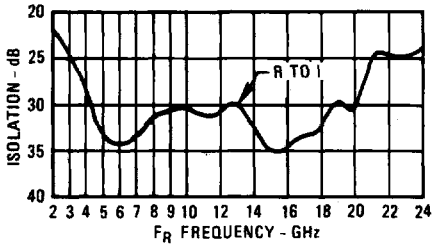




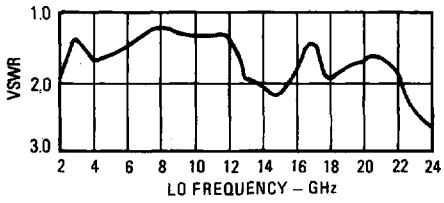


Isolation vs. Frequency

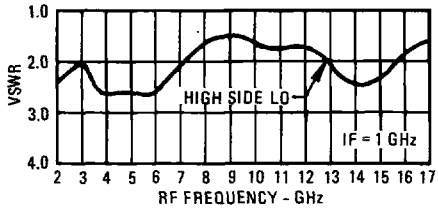


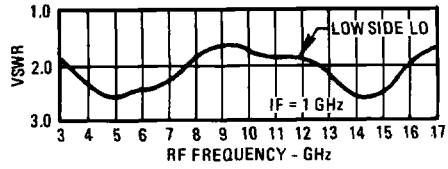


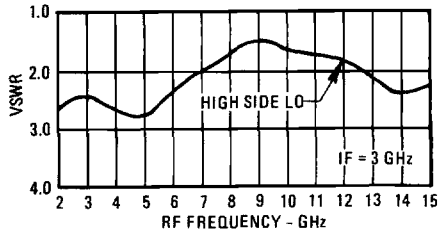
L-Port VSWR



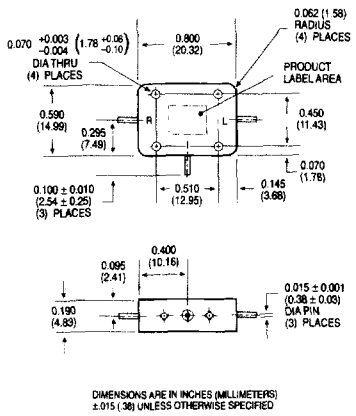
R-Port VSWR LO @ +10 dBm



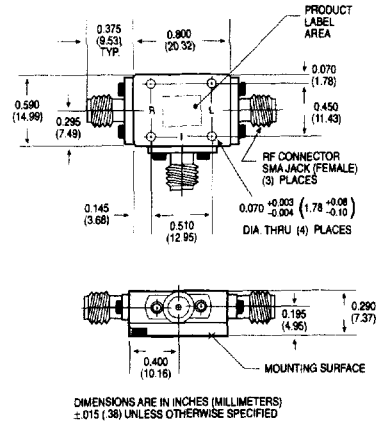




MY51 (VERSAPAC)

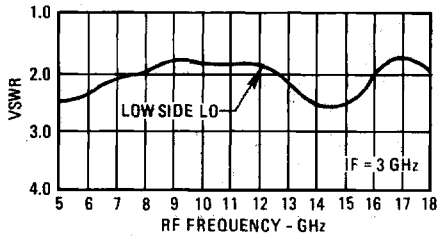


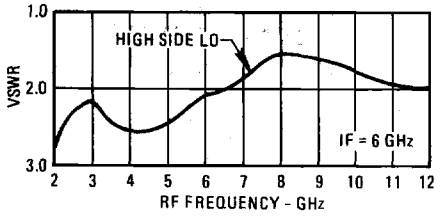
MY51C (CONNECTORIZED

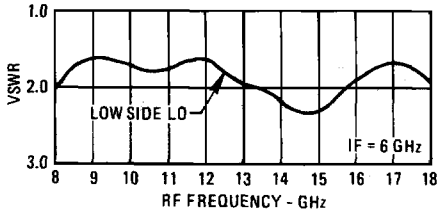


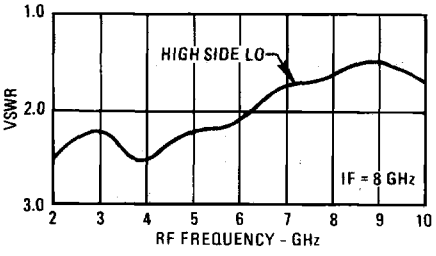
*Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® models.

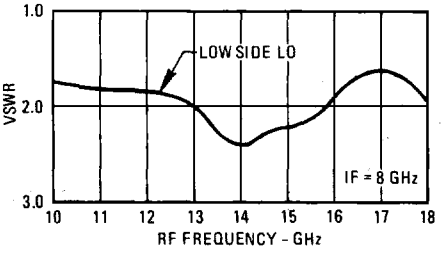
R-Port VSWR



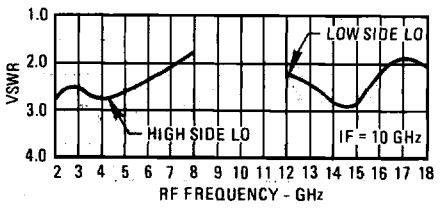


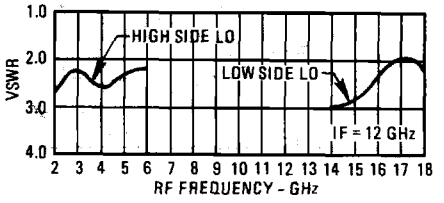


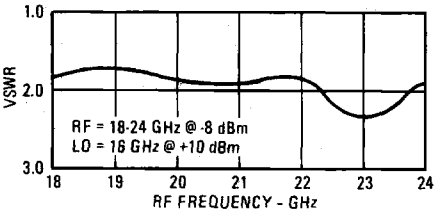


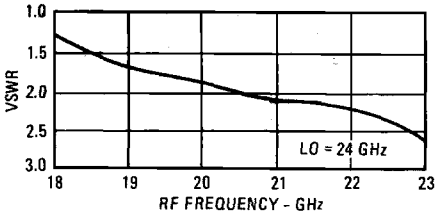


R-Port VSWR

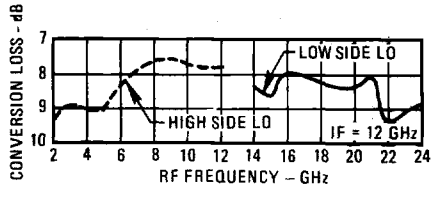


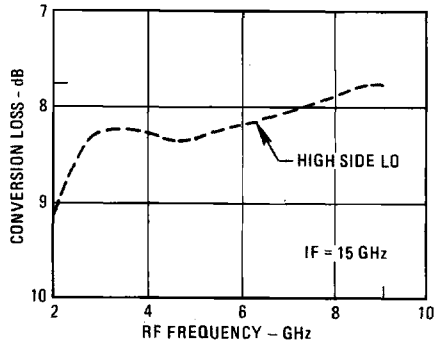




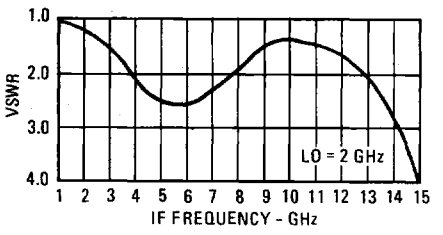


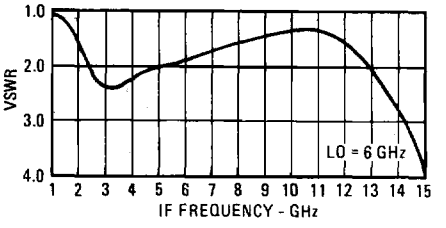
Conversion Loss vs. Frequency
LO @ +10 dBm

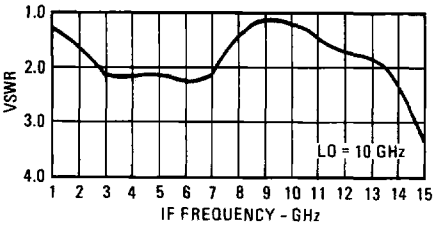


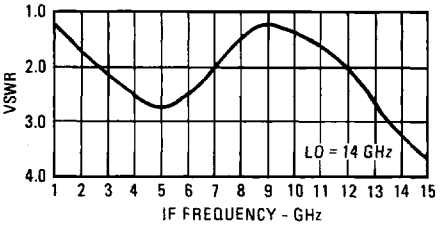


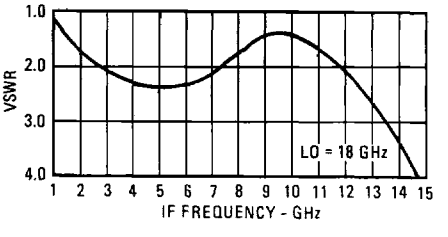
I-Port VSWR

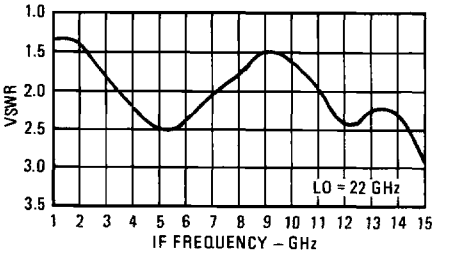












*Typical performance applies to the MINPAC™ model and does not necessarily reflect the performance of the VERSAPAC® models.

Typical Performance at 25°C*

Harmonics of f_L	R - Port	I . Port	Test Conditions
f_L	-16 dBm	-l0 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		
1 x 1	0 dB	f_L = 2 GHz at +10 dBm
I x 2	44 dB	f_R = 3.25 GHz at -10 dBm
I 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		
1 x 1	0 dB	f_L = 4.1 GHz at +10 dBm
1 x 2	55 dB	f_R = 6.0 GHz at -10 dBm
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.