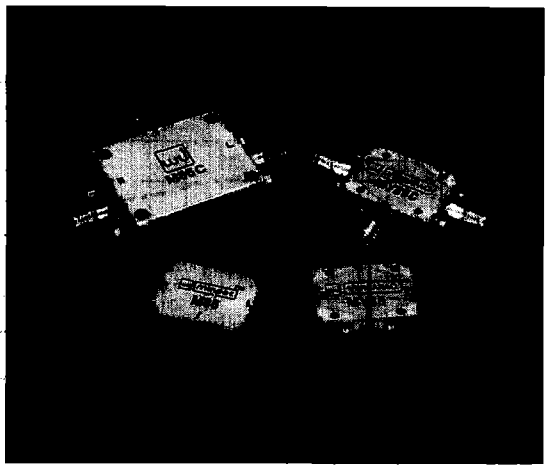
M85 / M85C
MY85 / MY85C

DOUBLE-BALANCED MIXER

- LO / RF } 2 TO 18 GHz
- IF DC TO 1000 MHz
- LO DRIVE +7 dBm (NOMINAL)
- DC COUPLED I-PORT
- WIDE BANDWIDTH
- 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.)	7.0 dB	9.0 dB	9.5 dB	f_R 4 to 14 GHz f_L 3 to 15 GHz f_I DC to 1000 MHz
	8.5 dB	10.5 dB	11.0 dB	f_R 2 to 18 GHz f_L 2 to 18 GHz f_I DC to 1000 MHz
Isolation (Min.)				
L to R	35 dB	22 dB	20 dB	f_L 2 - 18 GHz
L to I	20 dB	15 dB	13 dB	f_L 2 - 18 GHz
R to I	20 dB			f_R 2 - 18 GHz
Conversion Compression				
f_R at 5 GHz	1.0 dB			f_R level +1 dBm f_L level +7 dBm
f_R at 15 GHz	1.0 dB			f_R level +3 dBm f_L level +7 dBm
Third-Order Input Intercept Point	+10 dBm			f_{R_1} 5.00 GHz at -10 dBm f_{R_2} 5.01 GHz at -10 dBm f_L 5.5 GHz at +7 dBm
	+10 dBm			f_{R_1} 15.00 GHz at -10 dBm f_{R_2} 15.01 GHz at -10 dBm f_L 14.5 GHz at + 7 dBm

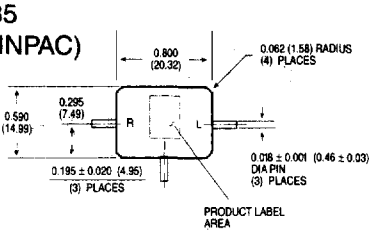
Notes:
1. Measured in a 50-ohm system with nominal LO drive and downconverter application only, unless otherwise specified. The I -Port frequency range extends to DC for phase detection, pulse modulation, or attenuator applications, I-Port VSWR degrades from a 50-ohm system at low IF frequencies.
2. Typical values are measured at 25°C and are not guaranteed. Typical performance applies to the MINPCA™ 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 ..... +23 dBm max. at +25°C, +20 dBm max. at +100°C
Peak Input Current at 25°C ..... 100 mA DC

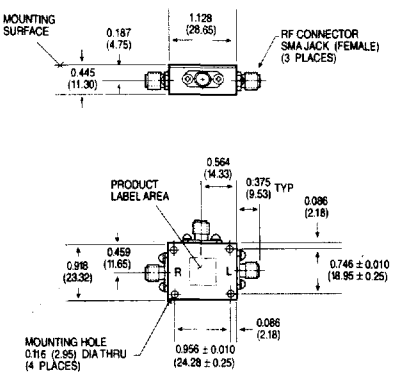
Outline Drawings

M85
(MINPAC)



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

M85C
(CONNECTORIZED)



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

Weight
M85: 12 grams (0.42 oz.) max.
M85C: 40 grams (1.41 oz.) max.
MY85: 7.9 grams (0.28 oz.) max.
MY85C: 20.0 grams (0.70 oz.) max.

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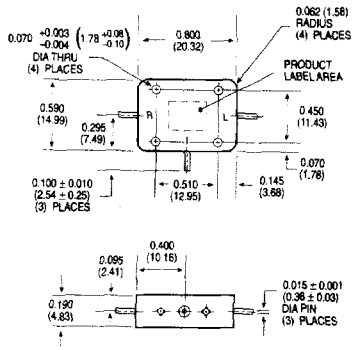
MY85 (VERSAPAC)



DIMENSIONS ARE IN INCHES (MILLIMETERS)
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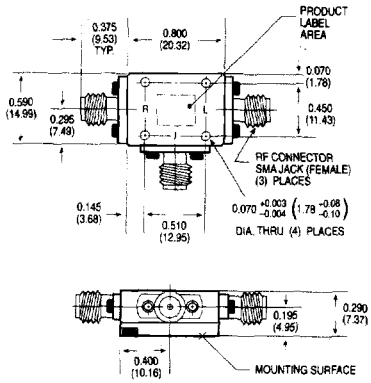
MY85C (CONNECTORIZED)



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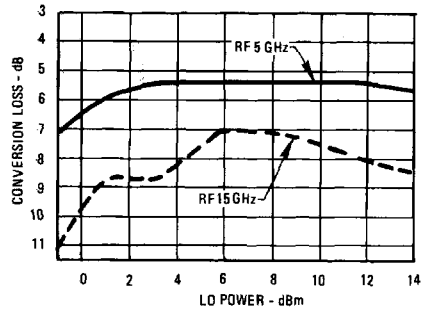
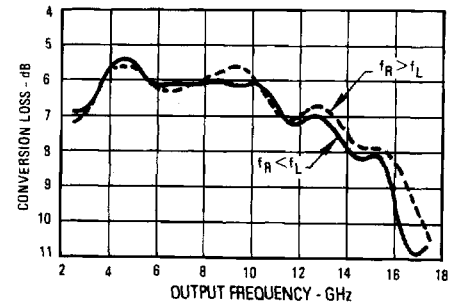
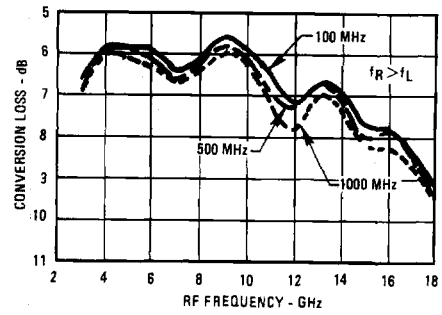
Conversion Loss vs LO Power Level

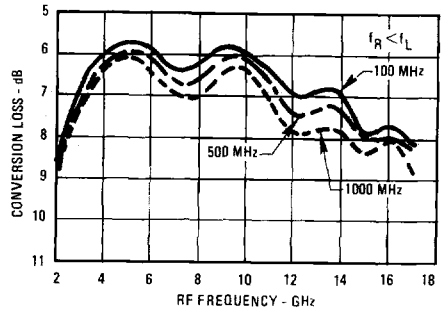


Up Conversion Loss

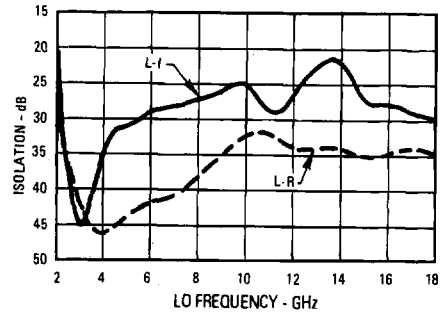


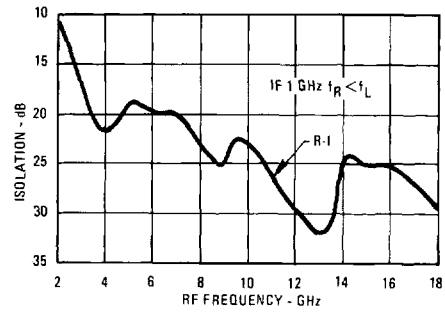
Conversion Loss



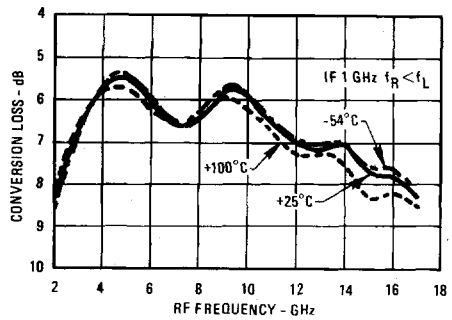


Isolation

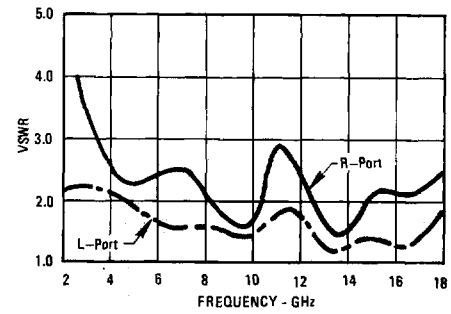


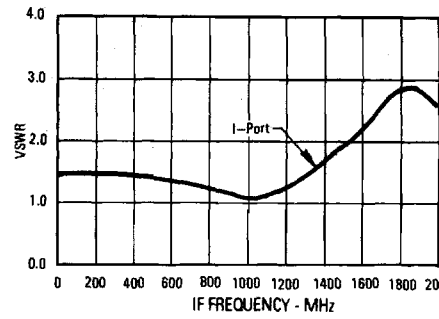


Conversion Loss over Temperature



VSWR





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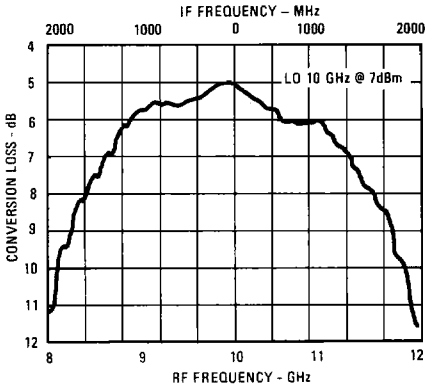
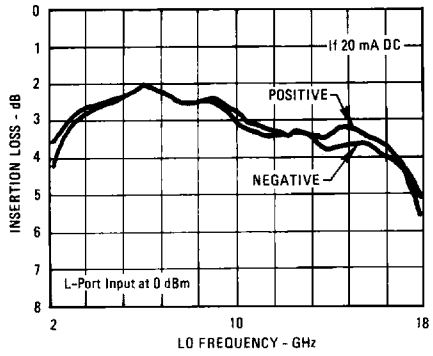
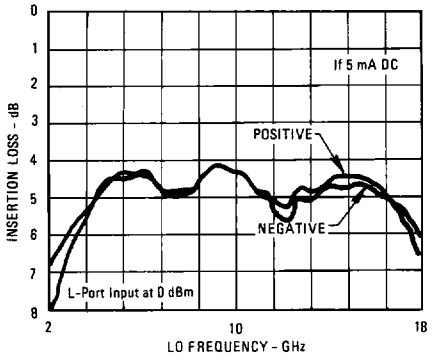
I Port Bandwidth

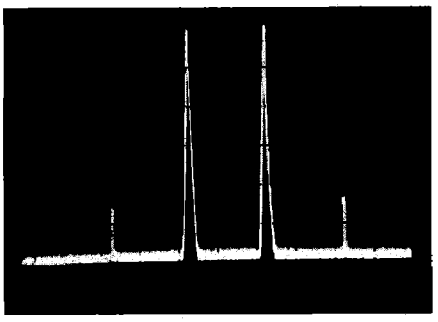


Insertion Loss with DC Driven I-Port





Third-Order Intercept Input



f_{R1} 15.00 GHz at -10 dBm
f_{R2} 15.02 GHz at -10 dBm
LO 14.5 GHz at +7 dBm
Vertical Scale is 10 dB/Div.

Characteristic	Suppression (dBc)			Test Condition
Single Tone IM	**Input** 0 dBm	**Input** -5 dBm	**Input** -10 dBm	
f_R f_L				
1 x 1	0	0	0	f_R 2.0 GHz -10 dBm
2 x 1	24	27	31	
2 x 2	41	43	45	f_L 2.6 GHz + 7 dBm
3 x 2	38	45	55	
3 x 3	32	41	51	
4 x 3	41	52	>60	
5 x 4	53	>65	>60	
6 x 3	59	>65	>60	
6 x 5	51	>65	>60	
1 x 1	0	0	0	
1 x 2	32	32	31	f_R 2.6 GHz -10 dBm
2 x 2	49	57	>65	
2 x 3	28	28	33	f_L 2.0 GHz + 7 dBm
3 x 3	>65	>65	>65	
3 x 4	48	56	>65	
4 x 5	41	52	>65	
4 x 6	53	63	>65	
5 x 6	50	65	>65	

Characteristic Harmonics of f_L	Output Power R-Port	Output Power I-Port	Test Conditions
f_L	- 21 dBm	- 12 dBm	
2 f_L	- 8.5 dBm	- 26 dBm	
3 f_L	- 45 dBm	<-60 dBm	
4 f_L	- 24 dBm	- 45 dBm	f_L 2 GHz @ +7 dBm
5 f_L	- 47 dBm	- 39 dBm	
6 f_L	- 38 dBm	<-60 dBm	
7 f_L	<-60 dBm	- 43 dBm	
8 f_L	- 38 dBm	<-60 dBm	
9 f_L	<-60 dBm	<-60 dBm	
f_L	- 38 dBm	- 27 dBm	
2 f_L	- 18 dBm	- 39 dBm	f_L 4 GHz @+7dBm
3 f_L	- 46 dBm	- 29 dBm	
4 f_L	- 33 dBm	<-60 dBm	
f_L	- 29 dBm	- 20 dBm	
2 f_L	- 35 dBm	<-60 dBm	f_L 9 GHz @+7 dBm

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