

MMP12244 2.0 TO 12.0 GHz COUGAR MIXERPAK DOUBLE-BALANCED MIXER

Typical Values

LO & RF	MMP12244
IF	2.0 - 13.0 GHz
Third Order I.P.	DC - 2.0 GHz
Conversion Loss	+19.0 dBm
LO Drive (nominal)	5.5 dB
High Isolation (LO to RF)	+16.0 dBm
Cougar MixerPak - Seam Sealed Hermetic Package	35.0 dB

SPECIFICATIONS*

**Guaranteed
-55 to +85 °C**

Parameter	Port	Frequency (GHz)	Typ. (dB)	Max. (dB)	
SSB Conversion Loss and SSB Noise Figure	f_R	3.0 to 12.0	6.0	7.0	
	f_L	3.0 to 12.0	6.0	7.0	
	f_I	DC to 1.0	6.0	7.0	
	f_R	2.0 to 12.0	7.0	9.0	
	f_L	2.0 to 12.0	7.0	9.0	
	f_I	DC to 1.0	7.0	9.0	
	f_I	1.0 to 2.0	8.5	10.0	
Conversion Comp. Desensitization	f_R	Level = +7 dBm	-	1.0	
	f_{R2}	Level = +5 dBm	-	1.0	
Isolation			Typ. (dB)	Min. (dB)	
	f_L at R	f_L	2.0 to 6.0	40	30
	f_L at I	f_L	2.0 to 6.0	22	15
	f_R at I	f_R	2.0 to 6.0	28	22
	f_L at R	f_L	6.0 to 12.0	35	25
	f_L at I	f_L	6.0 to 12.0	18	13
f_R at I	f_R	2.0 to 12.0	25	17	
Third Order Intercept		LO = +16 dBm	+19 dBm	-	

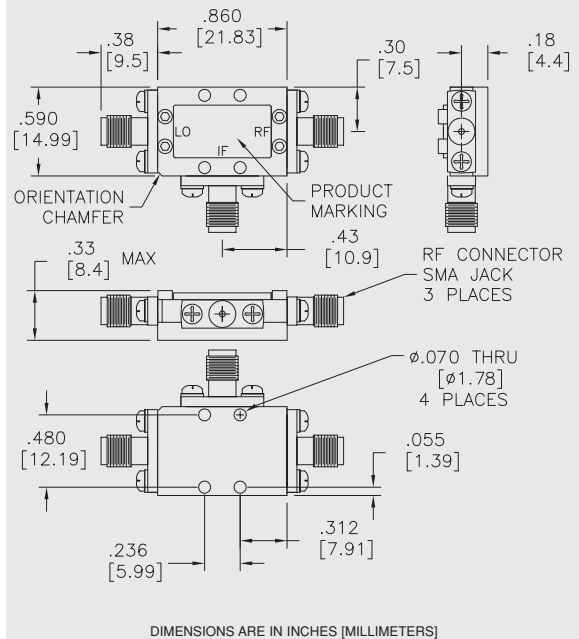
* Measured in a 50-ohm system with nominal LO drive of +16 dBm as a downconverter.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Peak RF Input Power All Ports	+24 dBm @ 25 °C
	derate to +19 dBm @ 100 °C

MMP12244

Cougar MixerPak



Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	5	99	>100	>100	>100	100	96
	4	>100	100	>100	>100	>100	>100
	3	>100	>100	>100	78	84	81
	2	>100	>100	99	73	77	75
	1	85	85	71	58	71	86
	0	84	82	66	56	67	83
HARMONICS OF f_L	5	69	53	58	50	77	57
	4	66	48	52	45	71	59
	3	22	0	27	39	49	41
	2	21	0	26	45	44	37
	1		-16	24	3	32	4
	0		-15	27	4	35	7

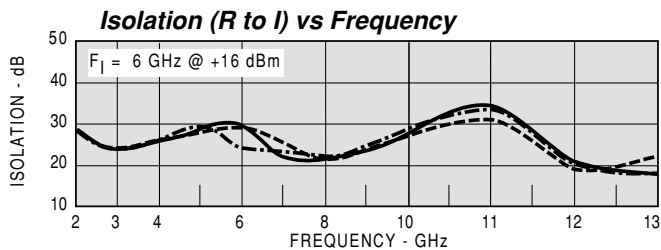
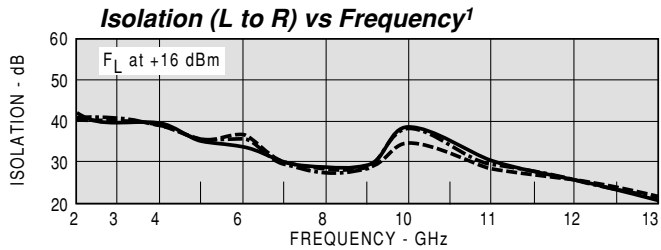
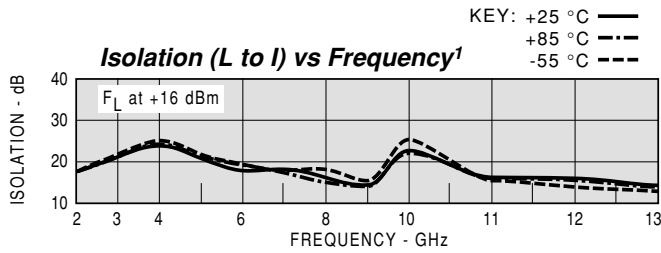
$F_R = 2000 \text{ MHz @ } -10 \text{ dBm}$ $F_L = 2030 \text{ MHz}$
 $F_L @ +13 \text{ dBm}$ $F_L @ +16 \text{ dBm}$

Harmonic Intermodulation Products (single tone)

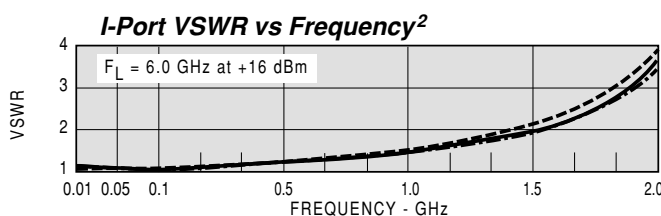
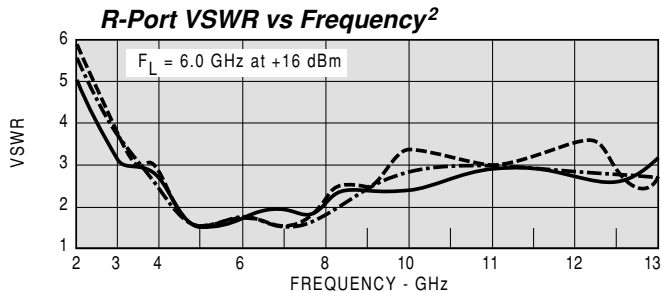
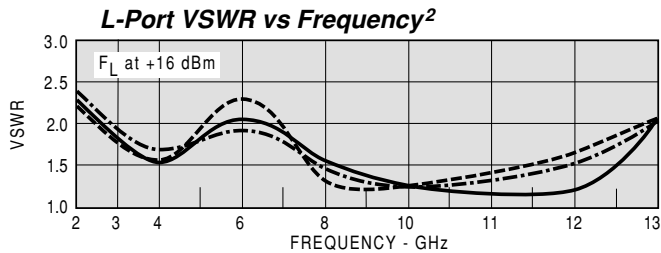
HARMONICS OF f_R	5	>100	97	>100	99	>100	95
	4	>100	>100	97	>100	>100	94
	3	90	85	97	>100	>100	98
	2	84	84	88	98	96	94
	1	81	86	85	65	89	87
	0	84	77	75	57	83	78
HARMONICS OF f_L	5	62	58	69	58	66	46
	4	57	54	62	54	61	44
	3	19	0	42	43	45	34
	2	17	0	36	45	47	46
	1		-7	32	-5	30	7
	0		-5	30	-4	35	10

$F_R = 4000 \text{ MHz @ } -10 \text{ dBm}$ $F_L = 4030 \text{ MHz}$
 $F_L @ +13 \text{ dBm}$ $F_L @ +16 \text{ dBm}$

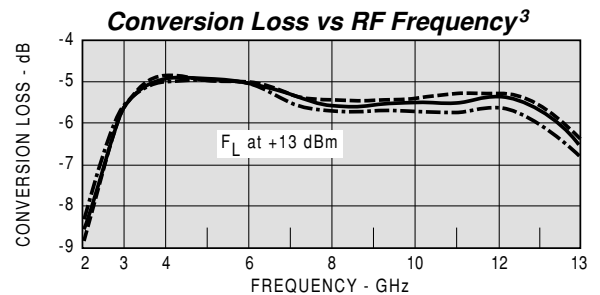
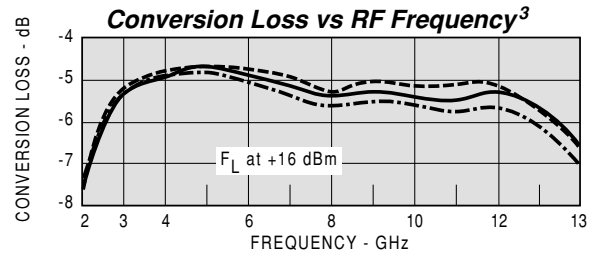
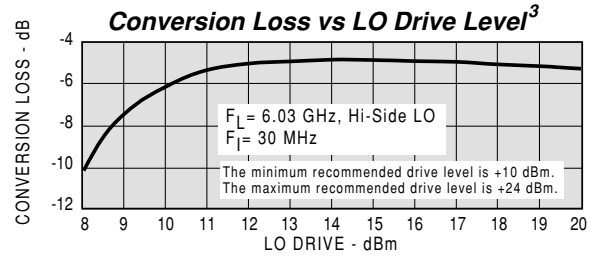
TYPICAL PERFORMANCE



¹Level 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.



²VSWR of the I- and R-ports in a 50-ohm system. Some variation in the R-port VSWR will occur as a function of the L-port frequency as shown above.



³Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port (f_R) with f_I at 30 MHz.

