

MMP20294 2.0 TO 20.0 GHz COUGAR MIXERPAK TRIPLE-BALANCED MIXER

Typical Values

LO & RF	MMP20294 2.0 - 20.0 GHz
IF	0.001 - 12.0 GHz
Third Order I.P.	+18.0 dBm
Conversion Loss	8.0 dB
LO Drive (nominal)	+19.0 dBm
Cougar MixerPak - Seam Sealed Hermetic Package	

SPECIFICATIONS*

Parameter	Port	Frequency (GHz)	Guaranteed -55 to +85 °C		
			Typ. (dB)	Max. (dB)	
SSB Conversion Loss and SSB Noise Figure	f_R	2.0 to 10.0	8.0	10.0	
	f_L	2.0 to 10.0	8.0	10.0	
	f_I	0.001 to 7.0	8.0	10.0	
	f_R	10.0 to 20.0	9.5	11.0	
	f_L	10.0 to 20.0	9.5	11.0	
	f_I	0.001 to 7.0	9.5	11.0	
Conversion Comp. Desensitization	f_R	Level = +2 dBm	-	1.0	
	f_{R2}	Level = 0 dBm	-	1.0	
Isolation	f_L at R	f_L	2.0 to 10.0	20	15
		f_L	2.0 to 10.0	22	19
		f_R	2.0 to 10.0	30	19
	f_L at I	f_L	10.0 to 20.0	25	19
		f_L	10.0 to 20.0	25	19
		f_R	10.0 to 20.0	30	20
Third Order Intercept		LO = +19 dBm	+18 dBm	-	
		LO = +21 dBm	+18 dBm	-	

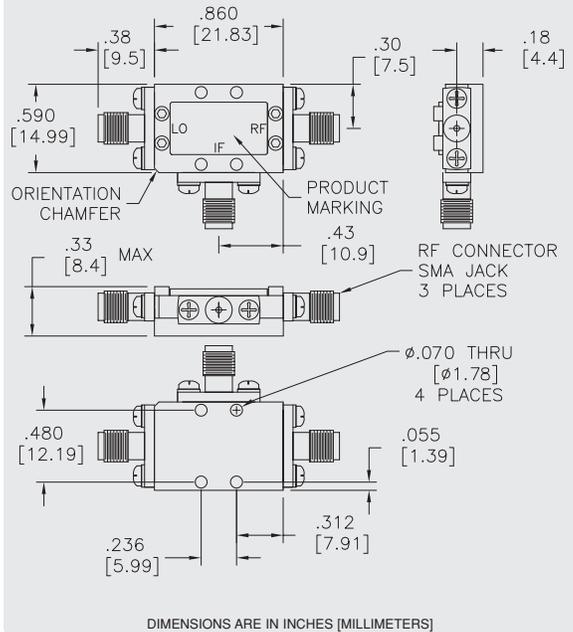
* Measured in a 50-ohm system with nominal LO drive of +19 dBm as a downconverter.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Peak RF Input Power All Ports	+27 dBm @ 25 °C derate to +18 dBm @ 100 °C

MMP20294

Cougar MixerPak



Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L					
	0	1	2	3	4	5
5	95	94	95	95	96	98
4	94	94	95	95	97	98
3	93	94	93	96	97	96
2	92	94	91	96	97	94
1	72	87	70	82	73	95
0	71	83	68	82	71	95
	49	54	72	54	54	54
	48	54	63	54	54	54
	18	0	37	12	47	34
	18	0	36	13	46	35
		-12	-11	5	9	5
		-12	-11	6	10	6

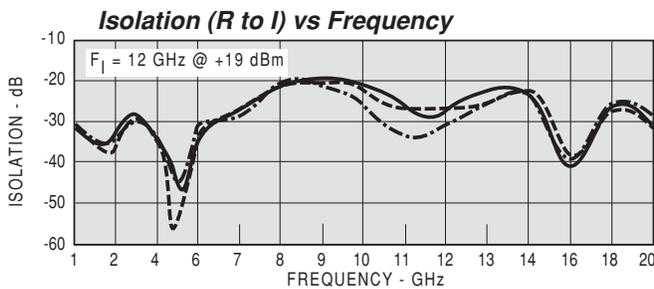
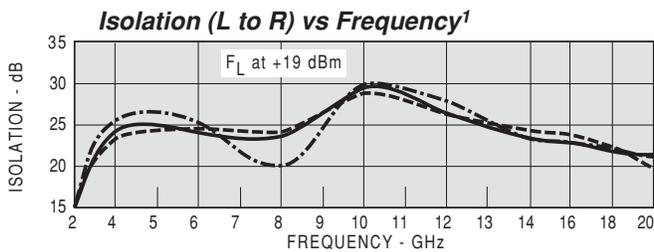
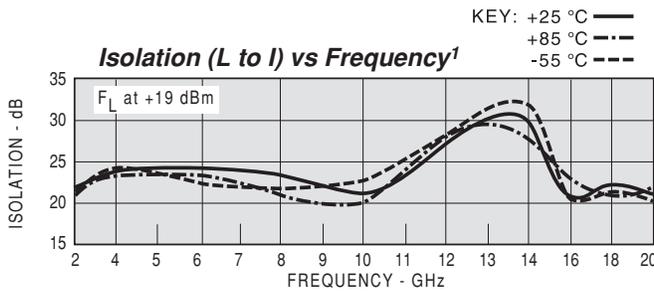
$F_R = 2000 \text{ MHz @ -10 dBm}$ $F_L = 2030 \text{ MHz}$
 $F_L @ +19 \text{ dBm}$ $F_L @ +22 \text{ dBm}$

Harmonic Intermodulation Products (single tone)

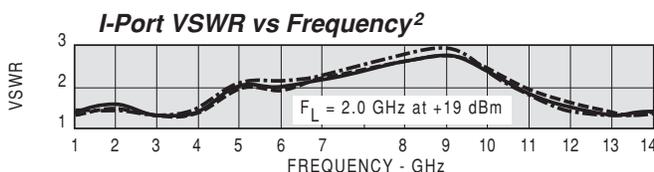
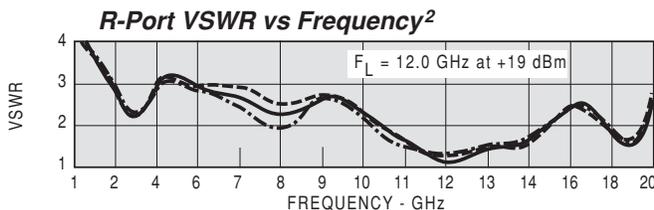
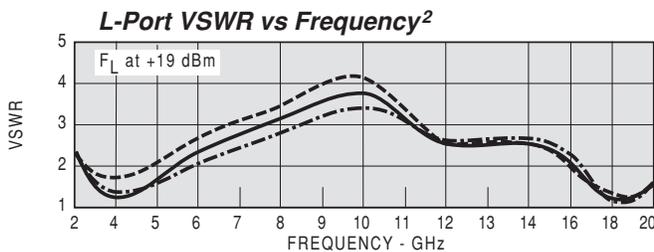
HARMONICS OF f_R	HARMONICS OF f_L					
	0	1	2	3	4	5
5	90	91	93	92	95	98
4	90	91	93	93	96	98
3	90	92	93	93	98	94
2	90	92	92	93	98	94
1	84	77	86	83	93	80
0	85	77	87	89	83	82
	55	58	57	57	57	58
	59	56	59	57	66	55
	22	0	35	13	32	19
	22	0	33	16	32	23
		-15	-7	0	0	0
		-12	0	3	6	2

$F_R = 4000 \text{ MHz @ -10 dBm}$ $F_L = 4030 \text{ MHz}$
 $F_L @ +19 \text{ dBm}$ $F_L @ +22 \text{ dBm}$

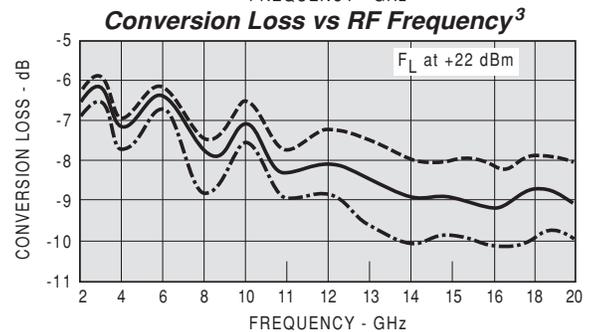
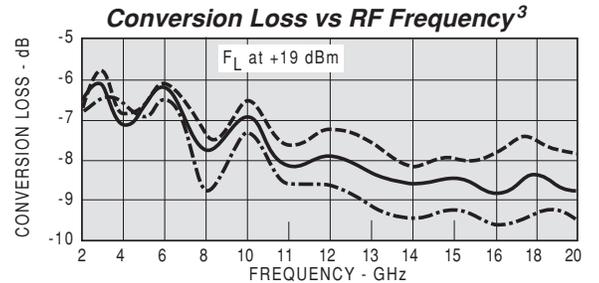
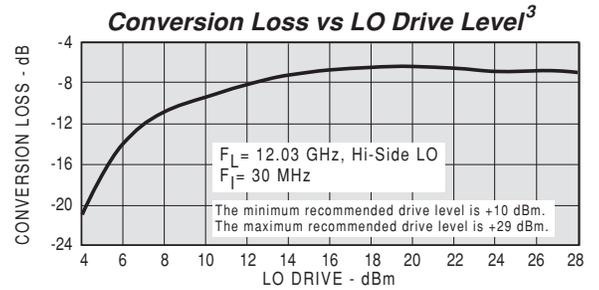
TYPICAL PERFORMANCE



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.

