

MMP18644 6.0 TO 18.0 GHz COUGAR MIXERPAK DOUBLE-BALANCED MIXER

Typical Values

LO & RF	MMP18644
IF	6.0 - 18.0 GHz
Third Order I.P.	DC - 4.0 GHz
Conversion Loss	+12.0 dBm
LO Drive (nominal)	5.0 dB
High Isolation (LO to RF)	+16.0 dBm
Cougar MixerPak - Seam Sealed Hermetic Package	50.0 dB

SPECIFICATIONS*

Guaranteed
-55 to +85 °C
Max. (dB)

Parameter	Port	Frequency (GHz)	Typ. (dB)	Max. (dB)
SSB Conversion Loss and SSB Noise Figure	f_R	8.0 to 11.0	4.5	5.5
	f_L	8.0 to 11.0	4.5	5.5
	f_I	DC to 1.0	4.5	5.5
	f_R	6.0 to 16.0	5.0	7.0
	f_L	6.0 to 16.0	5.0	7.0
	f_I	DC to 1.0	5.0	7.0
	f_R	6.0 to 18.0	6.0	8.0
	f_L	6.0 to 18.0	6.0	8.0
Isolation	f_L at R	6.0 to 10.0	38	32
	f_L at I	6.0 to 10.0	15	10
	f_R at I	6.0 to 10.0	30	12
	f_L at R	10.0 to 18.0	50	40
f_L at I	f_L	10.0 to 18.0	22	15
	f_R	10.0 to 18.0	40	25
Third Order Intercept		LO = +16 dBm	+20 dBm	—

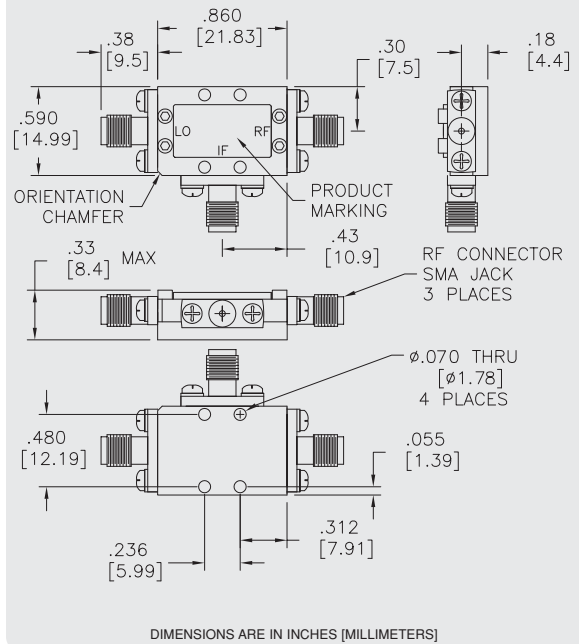
* Measured in a 50-ohm system with nominal LO drive of +16 dBm as a downconverter.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Peak RF Input Power All Ports	+22 dBm @ 25 °C
	derate to +17 dBm @ 100 °C

MMP18644

Cougar MixerPak



Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L				
	0	1	2	3	4
5	92	85	>100	91	90
4	88	93	98	>100	87
3	86	96	96	74	82
2	91	95	94	65	85
1	98	83	74	58	74
0	99	81	75	54	68
	71	37	50	35	72
	66	32	50	30	74
	13	0	28	41	72
	12	0	29	45	69
		-17	20	33	44
		-17	23	37	48

$F_R = 6000 \text{ MHz @ } -10 \text{ dBm}$
 $F_L @ +16 \text{ dBm}$

$F_L = 6030 \text{ MHz}$
 $F_L @ +19 \text{ dBm}$

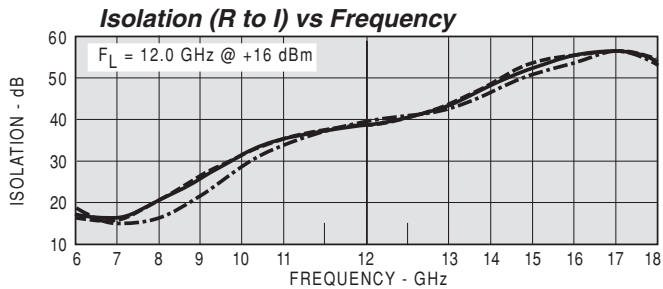
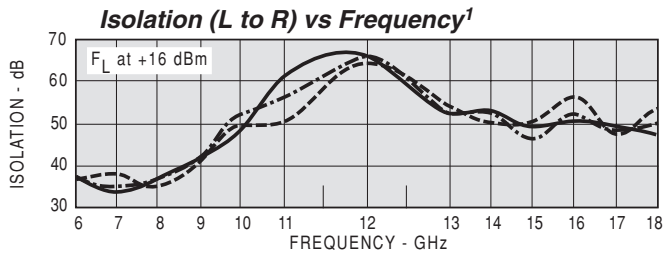
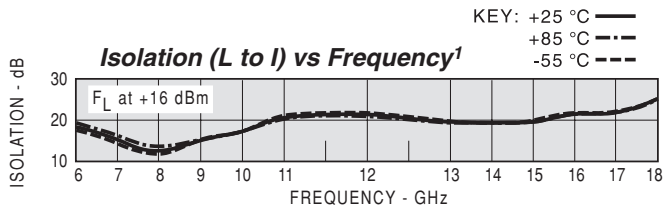
Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L				
	0	1	2	3	4
5	88	96	>100	>100	>100
4	87	86	97	95	98
3	87	91	>100	96	97
2	87	97	95	83	89
1	98	97	78	66	78
0	97	93	77	63	73
	80	50	70	54	86
	78	46	65	47	79
	14	0	28	47	57
	14	0	28	47	57
		-22	38	35	59
		-19	42	36	64

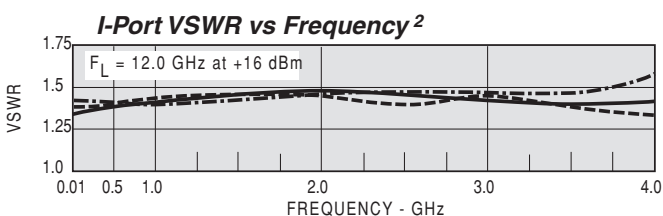
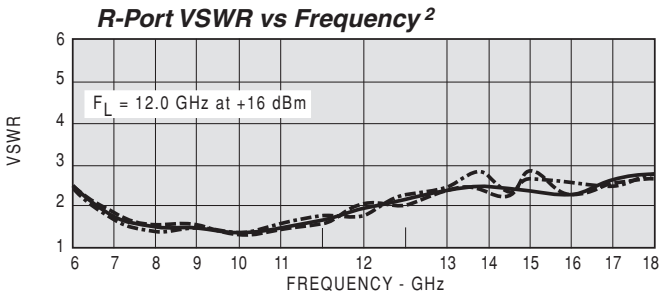
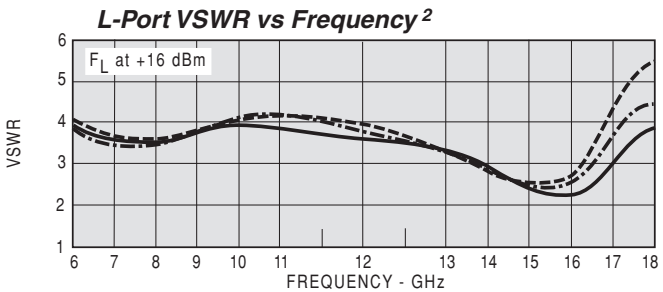
$F_R = 8000 \text{ MHz @ } -10 \text{ dBm}$
 $F_L @ +16 \text{ dBm}$

$F_L = 8030 \text{ MHz}$
 $F_L @ +19 \text{ dBm}$

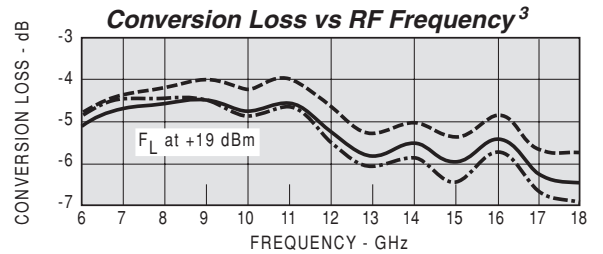
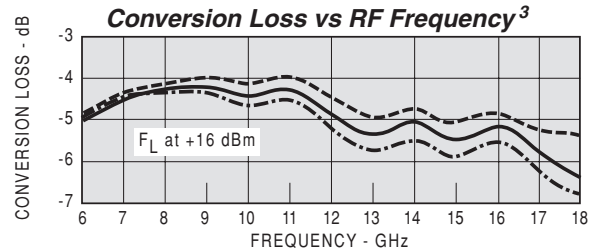
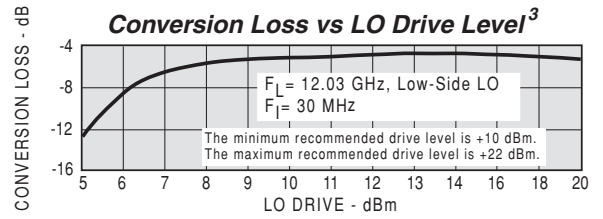
TYPICAL PERFORMANCE



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.



² VSWR 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.

