

MMP18641 6.0 TO 18.0 GHz COUGAR MIXERPAK DOUBLE-BALANCED MIXER

Typical Values

LO & RF	MMP18641
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)	+7.0 dBm
Cougar MixerPak - Seam Sealed Hermetic Package	40.0 dB

SPECIFICATIONS*

**Guaranteed
-55 to +85 °C**

Parameter	Port	Frequency (GHz)	Typ. (dB)	Max. (dB)
SSB Conversion Loss and SSB Noise Figure	f_R	8.0 to 11.0	4.0	5.5
	f_L	8.0 to 11.0	4.0	5.5
	f_I	DC to 1.0	4.0	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	7.0	7.0
	f_L	6.0 to 18.0	7.0	7.0
	f_I	DC to 1.0	7.0	7.0
	f_I	DC to 4.0	8.0	9.0
Conversion Comp. Desensitization	f_R	Level = +7 dBm	-	1.0
	f_{R2}	Level = +5 dBm	-	1.0
Isolation	f_L at R	6.0 to 7.0	38	32
	f_L at I	10.0 to 15.0	35	26
	f_R at I	6.0 to 12.0	30	12
	f_L at R	8.0 to 18.0	42	32
	f_L at I	6.0 to 18.0	25	15
	f_R at I	12.0 to 18.0	42	35
Third Order Intercept		LO = +7 dBm	+12 dBm	-

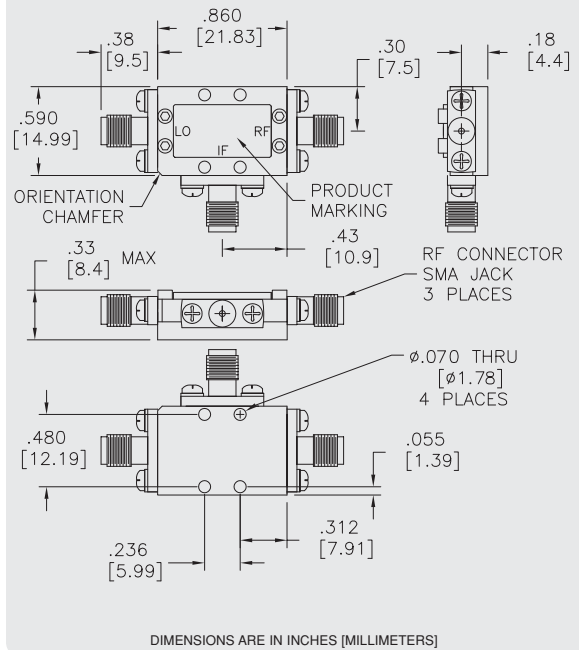
* Measured in a 50-ohm system with nominal LO drive of +7 dBm as a downconverter.

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

MMP18641

Cougar MixerPak



Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L				HARMONICS OF f_L	
	0	1	2	3	4	5
5	85	91	>100	>100	84	79
4	95	>100	>100	>100	90	73
3	93	89	98	60	74	60
2	96	86	98	57	70	58
1	83	90	62	46	72	81
0	82	87	55	44	60	79
	81	36	48	32	84	57
	74	33	45	31	83	56
	11	0	28	56	56	49
	11	0	30	57	56	51
		-6	42	21	62	34
		-5	96	23	88	41

$F_R = 6000 \text{ MHz @ } -10 \text{ dBm}$
 $F_L \text{ @ } +7 \text{ dBm}$

$F_L = 6030 \text{ MHz}$
 $F_L \text{ @ } +10 \text{ dBm}$

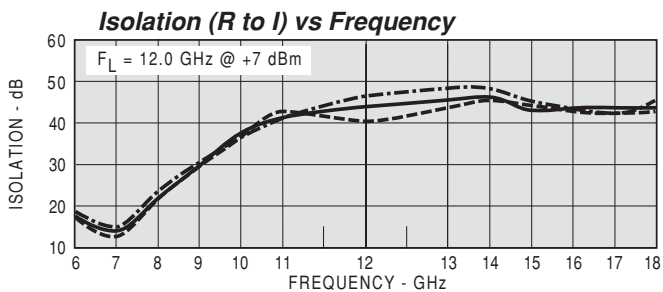
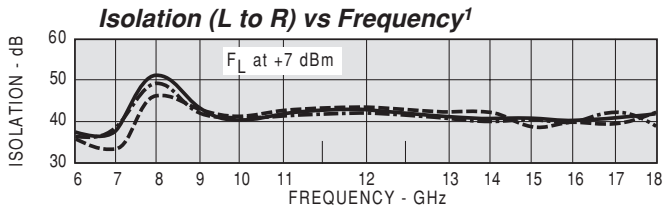
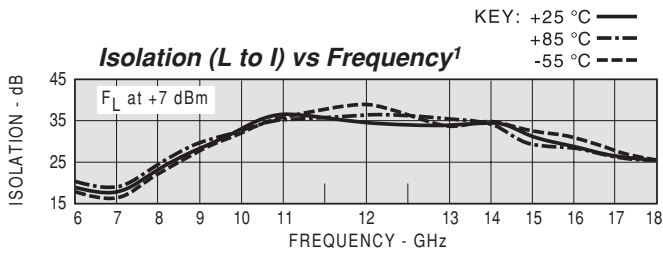
Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L				HARMONICS OF f_L	
	0	1	2	3	4	5
5	86	99	93	>100	99	80
4	86	99	99	>100	92	76
3	88	93	90	98	81	98
2	88	100	87	96	76	88
1	90	89	62	52	63	92
0	87	87	58	49	59	87
	61	56	60	58	71	59
	58	56	58	55	68	58
	19	0	31	60	62	1
	17	0	29	59	62	58
		0	48	26	55	39
		1	51	28	87	43

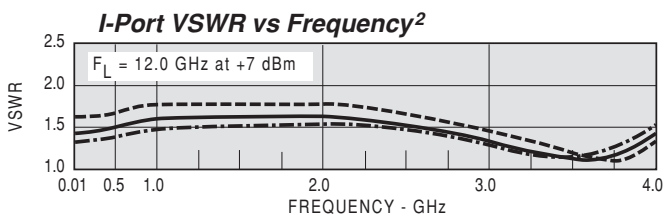
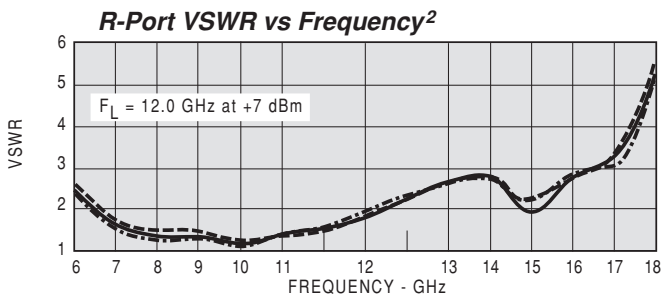
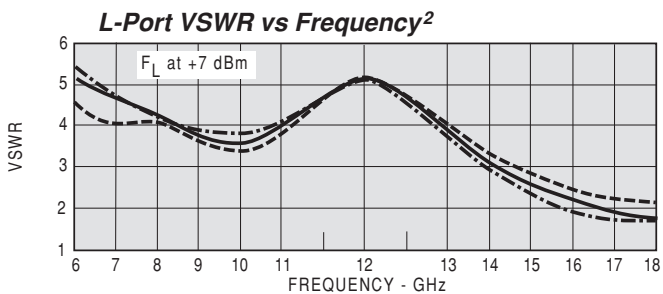
$F_R = 8000 \text{ MHz @ } -10 \text{ dBm}$
 $F_L \text{ @ } +7 \text{ dBm}$

$F_L = 8030 \text{ MHz}$
 $F_L \text{ @ } +10 \text{ dBm}$

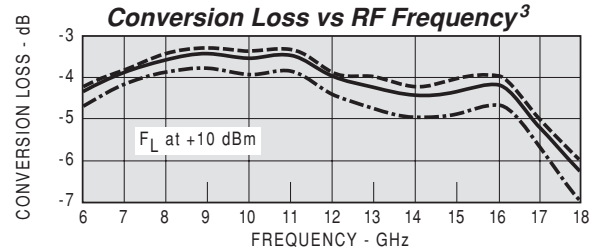
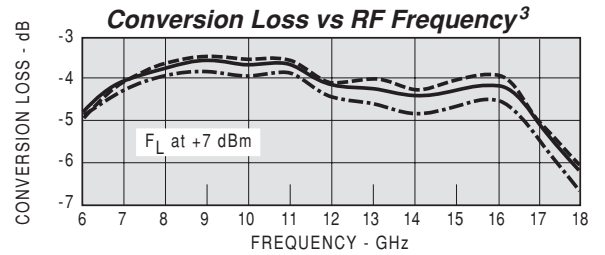
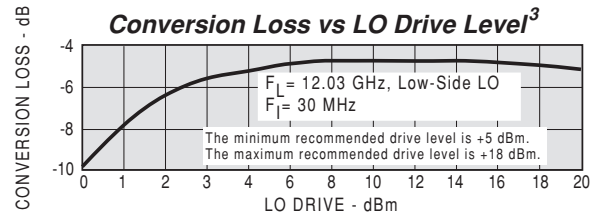
TYPICAL PERFORMANCE



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.

