

MMP18444 4.0 TO 18.0 GHz COUGAR MIXERPAK DOUBLE-BALANCED MIXER

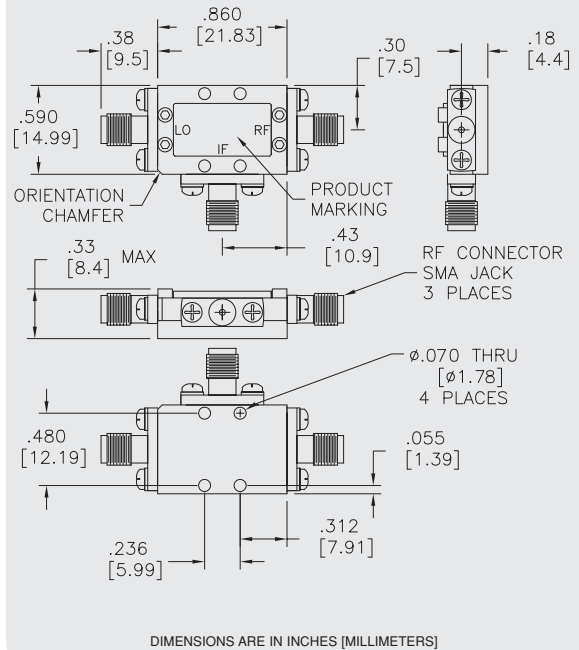
Typical Values

LO & RF	4.0 - 18.0 GHz
IF	DC - 2.0 GHz
Third Order I.P.	+22.0 dBm
Conversion Loss	5.5 dB
LO Drive (nominal)	+16.0 dBm
High Isolation (LO to RF)	35.0 dB
Cougar MixerPak - Seam Sealed Hermetic Package	

MMP18444

MMP18444

Cougar MixerPak



SPECIFICATIONS*

Guaranteed
-55 to +85 °C

Parameter	Port	Frequency (GHz)	Typ. (dB)	Max. (dB)	
SSB Conversion Loss and SSB Noise Figure	f_R	5.0 to 17.0	5.5	6.5	
	f_L	5.0 to 17.0	5.5	6.5	
	f_I	DC to 0.5	5.5	6.5	
	f_R	4.0 to 18.0	7.0	8.0	
	f_L	4.0 to 18.0	7.0	8.0	
	f_I	DC to 1.0	7.0	8.0	
	f_I	1.0 to 2.0	8.5	9.5	
Conversion Comp. Desensitization	f_R	Level = 8 dBm	-	1.0	
	f_{R2}	Level = 6 dBm	-	1.0	
Isolation			Typ. (dB)	Min. (dB)	
	f_L at R	f_L	4.0 to 10.0	35	25
	f_L at I	f_L	4.0 to 10.0 [^]	25 [^]	10 [^]
	f_R at I	f_R	4.0 to 10.0	30	15
	f_L at R	f_L	10.0 to 18.0	30	20
	f_L at I	f_L	10.0 to 18.0	28	20
f_R at I	f_R	10.0 to 18.0	45	35	
Third Order Intercept		LO = +16 dBm	+22 dBm	-	

* Measured in a 50-ohm system with nominal LO drive of +16 dBm as a downconverter.
[^] L to I Isolation degraded 3 dB below 5 GHz.

Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	96	100	97	>100	95	>100
5	95	97	94	99	97	96
4	97	95	98	86	95	84
	100	94	>100	80	87	80
3	93	98	70	69	76	95
	98	96	66	67	71	>100
2	82	50	59	47	85	72
	79	49	62	46	85	68
1	8	0	20	42	57	66
	9	0	20	43	55	64
0		-24	22	17	47	30
		-22	26	18	51	33

$F_R = 4000$ MHz @ -10 dBm $F_L = 4030$ MHz
 $F_L @ +16$ dBm $F_L @ +19$ dBm

Harmonic Intermodulation Products (single tone)

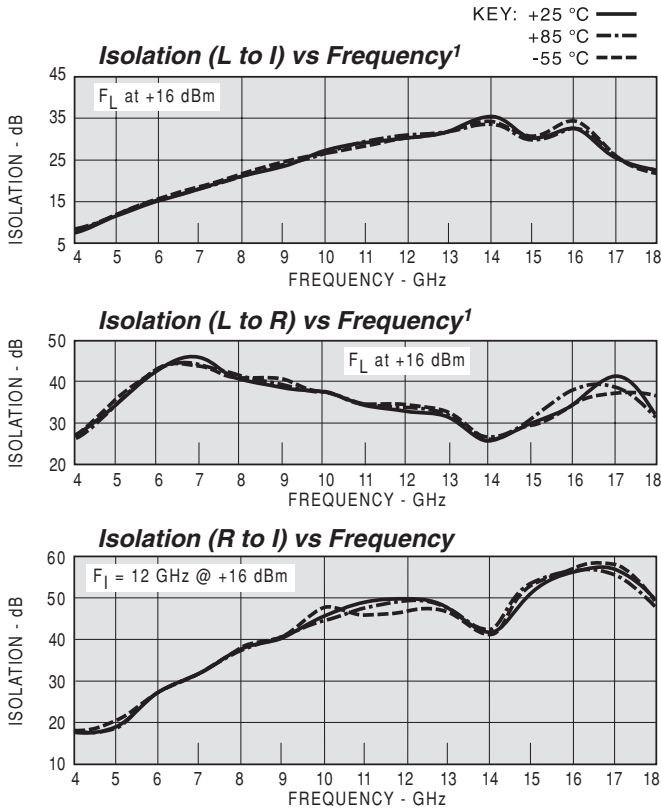
HARMONICS OF f_R	97	96	>100	>100	97	>100
5	97	97	99	100	99	>100
4	>100	96	>100	97	>100	93
	88	97	98	96	92	93
3	95	94	84	74	85	99
	>100	97	80	72	79	93
2	69	54	60	57	74	63
	66	53	61	56	74	61
1	21	0	33	50	58	30
	20	0	32	50	58	32
0		-18	96	12	35	27
		-15	44	13	38	29

$F_R = 6000$ MHz @ -10 dBm $F_L = 6030$ MHz
 $F_L @ +16$ dBm $F_L @ +19$ dBm

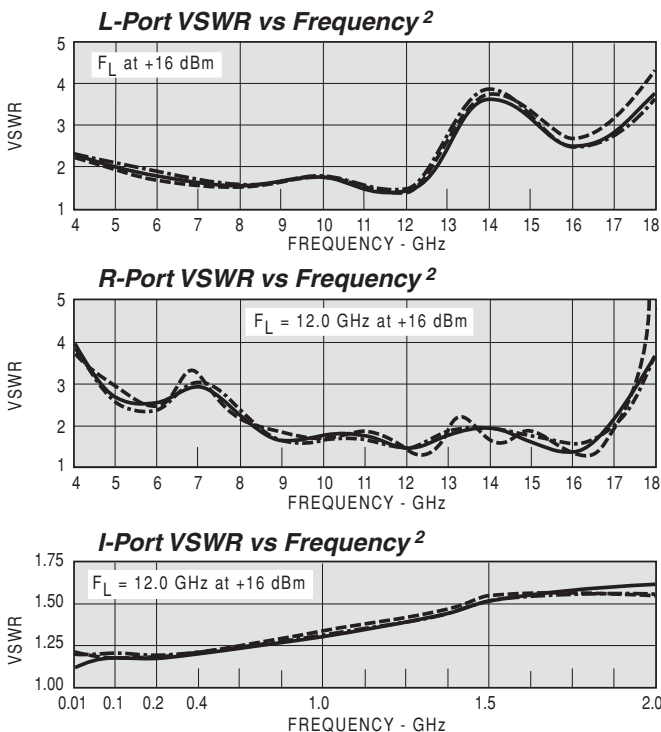
ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +150 °C
Peak RF Input Power All Ports	+24 dBm @ 25 °C derate to +17 dBm @ 100 °C

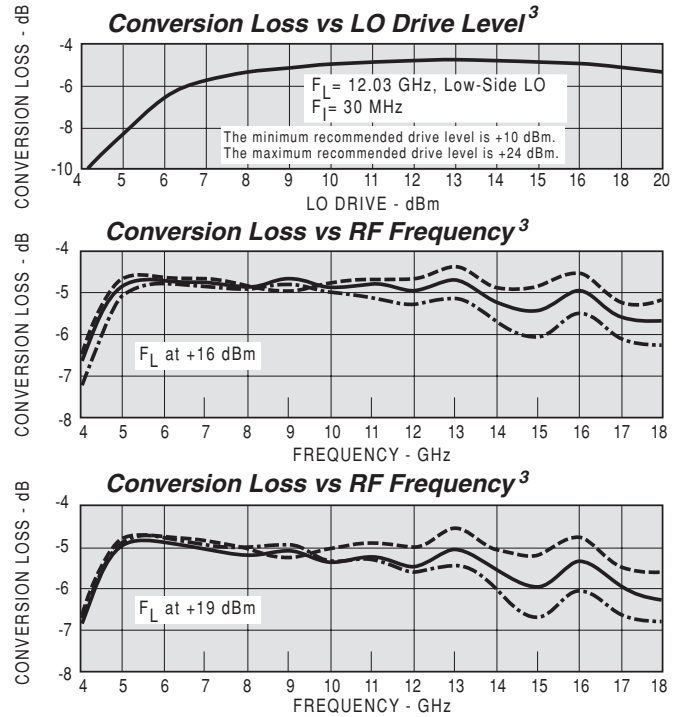
TYPICAL PERFORMANCE



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.

