

IQM2811

1.4 TO 2.8 GHz IQ MIXER MODULATOR/DEMODULATOR

Typical Values	IQM2811
LO & RF	1.4 - 2.8 GHz
IF	DC - 0.5 GHz
Third Order I.P.	+13.0 dBm
Conversion Loss	-9.0 dB
LO Drive (nominal)	+13.0 dBm
High Isolation (LO to RF)	42.0 dB
Standard Mixer Carrier	

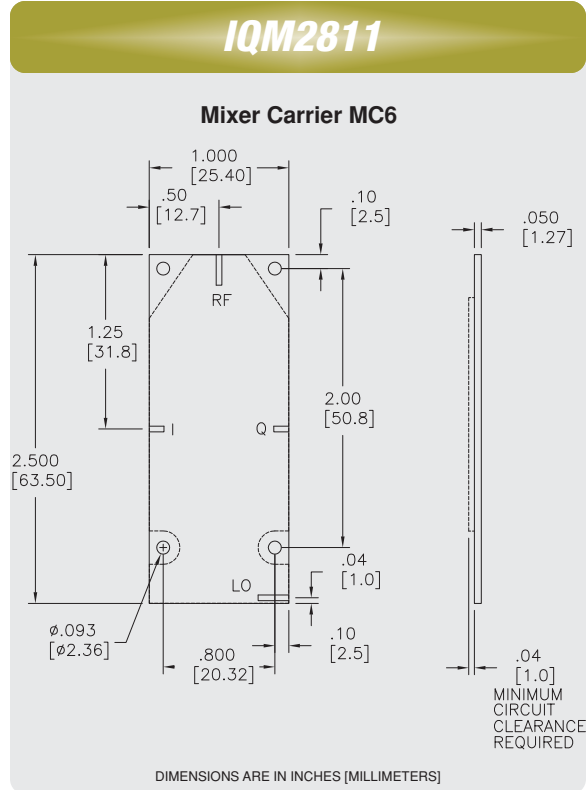
SPECIFICATIONS*

Parameter	Port	Frequency (GHz)	Guaranteed -55 to +85 °C	
			Typ. (dB)	Max. (dB)
SSB Conversion Loss and SSB Noise Figure	f_R	1.6 to 2.8	8.5	9.5
	f_L	1.6 to 2.8	8.5	9.5
	f_I	DC to 0.5	8.5	9.5
	f_R	1.4 to 2.8	10.5	11.5
	f_L	1.4 to 2.8	10.5	11.5
Conversion Comp. Desensitization	f_R	Level = +5 dBm	—	1.0
	f_{R2}	Level = +2 dBm	—	1.0
Isolation	f_L at R	1.4 to 2.0	Typ. 42	Min. 35
	f_L at I, Q	1.4 to 2.0	40	30
	f_R at I, Q	1.4 to 2.0	32	25
	f_L at R	2.0 to 2.8	46	36
Third Order Intercept		LO = +13 dBm	+15 dBm	—
		LO = +16 dBm	+16 dBm	—
Image Rejection Side Band Suppression		RF = 1.4 to 2.8 GHz	25 dB	20 dB
		IF = 0.5 GHz		
Amplitude Match		RF = 1.4 to 1.8 GHz	0.5 dB	1.0 dB
		RF = 1.8 to 2.8 GHz	0.15 dB	0.25 dB
Phase Match (Demodulation)		RF = 1.4 to 2.8 GHz	4.0°	6.0°
Phase Match (Modulation)		RF = 1.4 to 1.8 GHz	±25.0°	±30.0°
		RF = 1.8 to 2.8 GHz	±15.0°	±22.0°
Conversion Loss (Modulation)		RF = 1.4 to 1.8 GHz	-9.5 dB	-11.0 dB
		RF = 1.8 to 2.8 GHz	-7.0 dB	-8.5 dB

* Measured in a 50-ohm system with nominal LO drive of +13 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



Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L					
	0	1	2	3	4	5
5	94	93	95	94	96	96
4	93	93	94	95	96	94
3	93	95	94	96	95	97
2	93	91	95	96	90	96
1	78	95	95	64	94	95
0	74	95	96	56	94	95
	83	78	61	81	88	56
	83	82	59	78	82	55
	27	0	65	53	35	36
	27	0	59	53	36	39
	9	35	7	26	40	
	15	37	9	31	40	

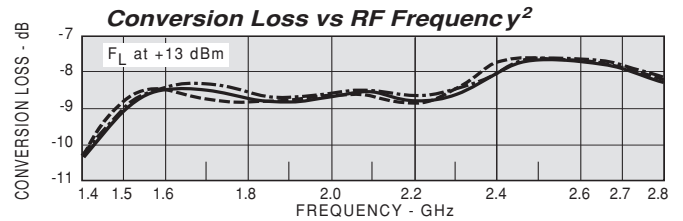
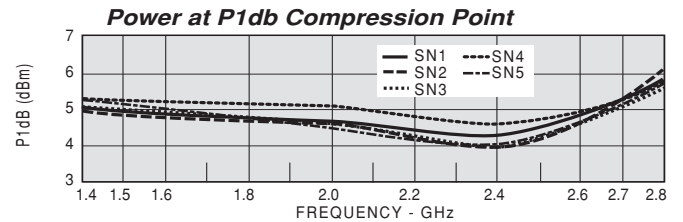
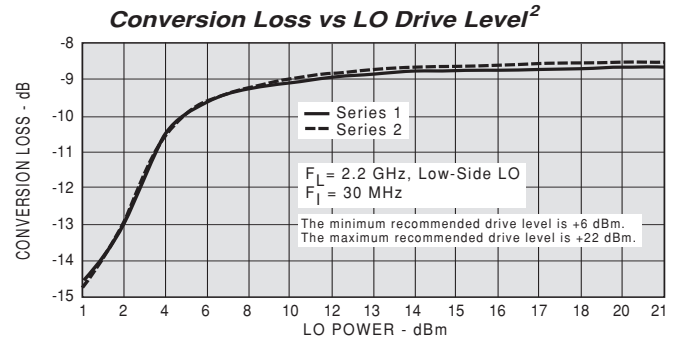
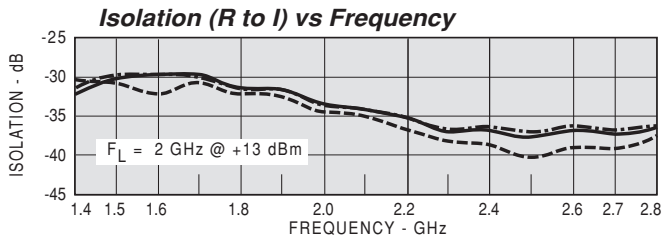
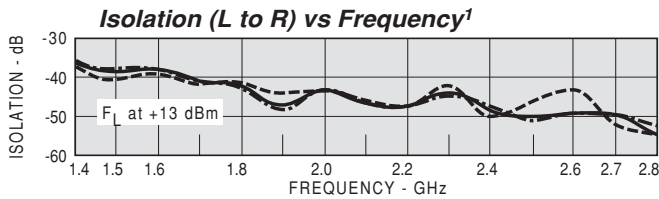
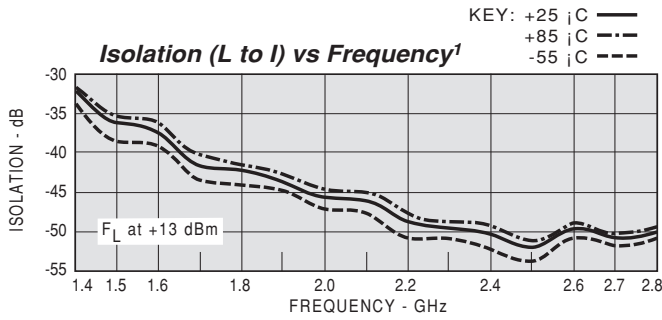
$F_R = 2000$ MHz @ -10 dBm $F_L = 2030$ MHz
 $F_L @ +13$ dBm $F_L @ +16$ dBm

Harmonic Intermodulation Products (single tone)

HARMONICS OF f_R	HARMONICS OF f_L					
	0	1	2	3	4	5
5	88	92	93	95	96	98
4	90	93	93	96	96	98
3	92	94	96	96	97	96
2	92	94	95	96	95	95
1	93	92	94	61	96	80
0	93	89	93	59	95	74
	67	82	65	81	76	76
	65	82	67	82	79	74
	30	0	48	31	50	53
	30	0	52	33	49	59
	13	12	31	33	30	
	19	16	31	37	31	

$F_R = 2800$ MHz @ -10 dBm $F_L = 2830$ MHz
 $F_L @ +13$ dBm $F_L @ +16$ 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.

²Conversion 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.

