



## High Performance IQ Modulators and Image Reject Mixers

Typical and Guaranteed Specifications—50 Ω System

Model	Frequency Range			LO Power dBm Nominal	Conversion Loss		Isolation dB				Image Reject	
	RF	GHz LO	IF		dB Typ.	dB Max.	L to R		L to I/Q		dB Typ.	dB Min.
Available in Standard Cougar Mixer Carriers												
IQM2811	1.4-2.8	1.4-2.8	DC-500	13	6.0	8.0	42	34	40	20	22	18
IQM4221	2.0-4.2	2.0-4.2	DC-500	13	5.5	7.0	42	34	30	15	32	20
IQM11621	6.2-10.8	6.2-10.8	DC-500	13	5.0	6.5	31	25	40	25	32	18
IRM11623	6.2-10.8	6.2-10.8	DC-500	13	5.0	6.0	31	25	40	25	23	16
IQM15101	10.5-14.5	10.5-14.5	DC-500	10	6.3	8.0	25	20	28	22	23	18
IQM15103	10.5-14.5	10.5-14.5	DC-500	13	6.3	8.0	25	20	28	22	23	18
IQM17131	13.2-16.8	13.2-16.8	DC-500	10	6.5	8.0	25	20	30	23	23	18
IQM17133	13.2-16.8	13.2-16.8	DC-500	13	6.5	8.0	25	20	30	23	23	18

## High Performance IQ (Quadrature) Modulators

Typical and Guaranteed Specifications—50 Ω System

Model	Frequency Range			Carrier Input Power dBm Nominal	Data Signal Levels L to R		Insertion Loss Input to Output		Carrier Isolation Input to Output		Phase Accuracy		Amplitude Balance		VSWR Max
	Carrier Center Freq. (fo)	Carrier Bandwidth	I/QData Port Bandwidth <sup>1</sup>		Low mA	High mA Nom.	dB Typ.	dB Max.	dB Typ.	dB Max.	Deg Typ.	Deg Max.	dB Typ.	dB Max.	
Available in Cougar Flatpack															
IQF034	30	10 % of fo	DC to 50 Min.	0	-20	20	4	6	55	45	± 2	± 4	0.25	0.5	1.5:1
IQF124	120	10 % of fo	DC to 50 Min.	0	-20	20	4	6	50	40	± 2	± 4	0.25	0.5	1.5:1
IQF504	500	10 % of fo	DC to 50 Min.	0	-20	20	7	9	40	30	± 2	± 5	0.5	1.0	1.5:1
IQF1004	1000	10 % of fo	DC to 50 Min.	0	-20	20	7	9	30	20	± 2	± 5	0.5	1.0	1.5:1



**High Performance IQ Demodulators**  
Typical and Guaranteed Specifications—50 Ω System

Model	Frequency Range MHz			LO Power dBm Nominal	Conversion Loss		Isolation				I to Q Balance				VSWR Max
	RF/LO <sup>1</sup> Center Freq. (fo)	LO Bandwidth	I/Q Bandwidth <sup>1</sup>		dB Typ.	dB Max.	L to R		L to I/Q		Phase Deg		Amplitude dB		
							dB Typ.	dB Max.	dB Typ.	dB Max.	dB Typ.	dB Max.	dB Typ.	dB Max.	
<b>Available in Cougar Flatpack</b>															
IQF030	30	10 % of fo	DC to 50 Min.	+10	9	11	55	45	55	45	90 ± 3	90 ± 5	0.10	0.50	1.5:1
IQF031	30	10 % of fo	DC to 50 Min.	+10	9	11	55	45	55	45	90 ± 1	90 ± 2	0.1	0.2	1.5:1
IQF120	120	10 % of fo	DC to 50 Min.	+10	9	11	50	45	55	45	90 ± 3	90 ± 5	0.15	0.50	1.5:1
IQF121	120	10 % of fo	DC to 50 Min.	+10	9	11	50	40	55	45	90 ± 1	90 ± 2	0.1	0.2	1.5:1
IQF500	500	10 % of fo	DC to 50 Min.	+10	9	11	40	30	40	30	90 ± 3	90 ± 5	0.25	0.75	1.5:1
IQF501	500	10 % of fo	DC to 50 Min.	+10	9	11	40	30	40	30	90 ± 1	90 ± 2	0.1	0.2	1.5:1
IQF1000	1000	10 % of fo	DC to 50 Min.	+10	10	12	40	30	30	20	90 ± 3	90 ± 5	0.35	1.0	1.5:1
IQF1001	1000	10 % of fo	DC to 50 Min.	+10	10	12	40	30	30	20	90 ± 1	90 ± 2	0.1	0.2	1.5:1
IQF1500	1500	10 % of fo	DC to 50 Min.	+10	10	12	30	20	20	15	90 ± 3	90 ± 5	0.5	1.0	1.5:1
IQF1501	1500	10 % of fo	DC to 50 Min.	+10	10	12	30	20	20	15	90 ± 1	90 ± 2	0.1	0.2	1.5:1

