



## 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 dB	
	RF	GHz LO	IF		dB Typ.	dB Max.	L to R		L to I/Q		dB Typ.	dB Min.
<b>Available in Standard Cougar Mixer Carriers</b>												
IQM2811	1.4-2.8	1.4-2.8	DC-500	13	10.5	11.5	42	35	40	30	25	20
IQM4221	2.1-4.1	2.1-4.1	DC-500	10	9.0	10.0	40	33	42	35	25	20
IQM11621	6.0-10.8	6.0-10.8	DC-500	10	8.5	10.0	25	20	40	33	28	23
IQM18621	15.0-18.0	15.0-18.0	DC-500	13	10.0	12.0	25	20	30	23	23	18
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 MHz			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	dB Typ.	dB Max.	dB Typ.	dB Max.	Deg Typ.	Deg Max.	dB Typ.	dB Max.	
<b>10% Bandwidth – Available in Cougar Flatpack</b>															
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
<b>Octave Bandwidth – Available in Cougar Flatpack</b>															
IQ069	60	fo ± 20 MHz	DC to 50 Min.	0	-20	20	4	6	55	45	90 ± 4	90 ± 5	0.25	0.5	1.5:1
IQ150	150	fo ± 50 MHz	DC to 50 Min.	0	-20	20	4	6	50	40	90 ± 4	90 ± 5	0.25	0.5	1.5:1

Current data sheets available on website. <sup>1</sup>RF and IQ Bandwidths are typically much greater than specified.



**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.	Deg Typ.	Deg Max.	dB Typ.	dB Max.	
<b>10% Bandwidth – 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		
<b>Octave Bandwidth – Available in Cougar Flatpack</b>																	
IQ068	60	fo ± 20 MHz	DC to 50 Min.	+10	9	11	55	45	55	45	90 ± 4	90 ± 5	0.25	0.50	1.5:1		
IQ158	150	fo ± 50 MHz	DC to 50 Min.	+10	9	11	50	45	55	45	90 ± 4	90 ± 5	0.25	0.50	1.5:1		

Current data sheets available on website. <sup>1</sup>RF and IQ Bandwidths are typically much greater than specified.