

Surface Mount I&Q Modulator

IQBG-2000A

50Ω LO Drive +10 dBm 1800 to 2000 MHz

Maximum Ratings

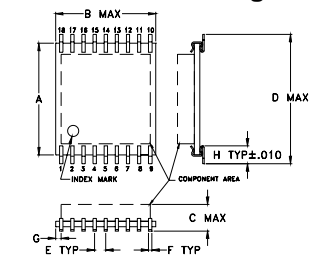
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	20 dBm max.
LO Power	50 mW
I & Q Current	40mA

Pin Connections

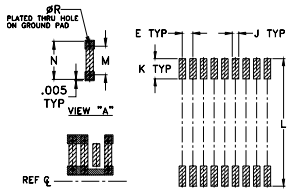
LO (carrier)	9
RF (signal)	14
I (0°)(ref.)	10
Q (90°)*	18
GROUND	1,2,3,4,5,6,7,8,11,12,13,15,16,17

* Q = I + 90° for lower sideband suppression

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within .002
Each ground pin shall have footprint
per view "A". All ground pads shall
be connected to each other per view "B".

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.500	.460	.075	.575	.050	.015	.025	.070	.030
12.70	11.68	1.91	14.61	1.27	0.38	0.64	1.78	0.76
K	L	M	N	P	Q	R	wt	
.095	.600	.120	.160	--	--	.012	grams	
2.41	15.24	3.05	4.06	--	--	0.30	0.5	

Features

- excellent sideband rejection, 34 dB typ.
- excellent temperature stability
- low noise floor
- low height
- protected by US patents, 5,534,830 and 5,745,017

Applications

- communications systems

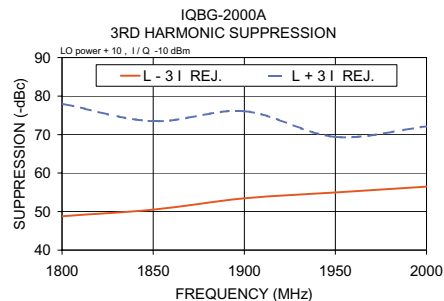
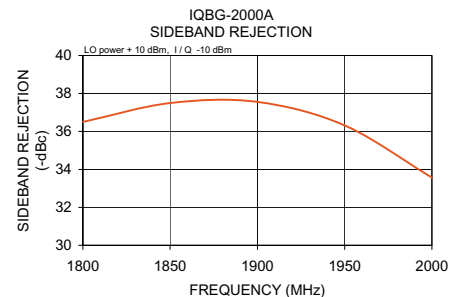
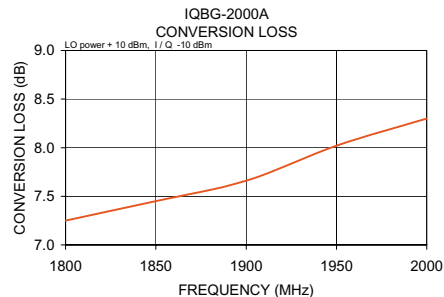
Modulator Electrical Specifications

MODEL NO.	FREQUENCY (MHz)				CONVERSION LOSS (dB)		CARRIER REJECTION (-dBc)		SIDE BAND REJECTION (-dBc)		HARMONIC SUPPRESSION (dBc)			
	RF (SIGNAL)/ LO (CARRIER)	I&Q	fL	fU	Min.	Max.	Typ.	Min.	Typ.	Min.	3X1/Q	5X1/Q	Typ.	Min.
IQBG-2000A	1800	2000	DC	10	7.5	9.0	30	20	34	28	50	45	70	50

Typical Performance Data

Carrier Frequency (MHz)	Conversion Loss (dB)	Sideband Rejection LSB (-dBc)	Carrier Rejection (-dBc)	3rd. Harmonic Suppression L - 3I (-dBc)	3rd. Harmonic Suppression L + 3I (-dBc)
I/Q = 0.1 MHz	\bar{x} (dB)	σ (dB)			
1800	7.25	0.09	36.50	24.72	48.80
1850	7.45	0.11	37.50	26.41	50.52
1900	7.66	0.08	37.55	26.47	53.47
1950	8.02	0.05	36.31	28.23	54.98
2000	8.30	0.11	33.57	28.80	56.50

Typical 5th Harmonic Suppression performance: at noise floor, -79 dBc



Recommended IF Diplexer

