

Surface Mount I&Q Demodulator

50Ω 104 to 176 MHz

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO/RF Power	50mW
I&Q Current	40mA

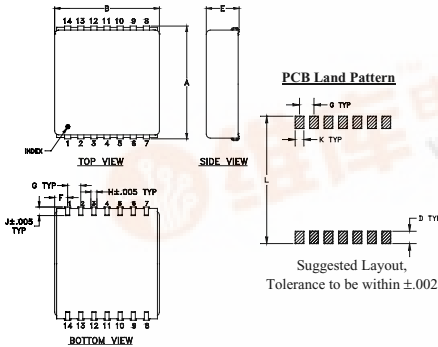
Pin Connections

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

*Q=+90° for LO<RF

Q=-90° for LO>RF

Outline Drawing

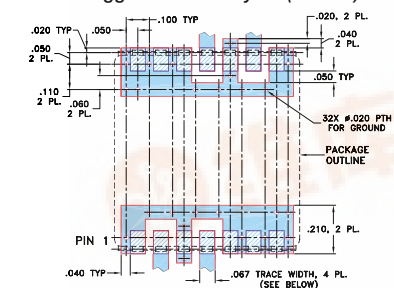


Outline Dimensions (inch mm)

A	B	C	D	E	F
.870	.800	—	.100	.250	.100
22.09	20.32	—	2.54	6.35	2.54

G	H	J	K	L	wt.
.100	.047	.065	.065	.890	grams
2.54	1.19	1.65	1.65	22.60	4.0

Demo Board MCL P/N: TB-21 Suggested PCB Layout (PL-209)



NOTE:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- shielded metal case with J-leads
- excellent 3rd & 5th order harmonic suppression
- good amplitude & phase unbalance
- aqueous washable

Applications

- communication systems



CASE STYLE: BG291

PRICE: \$ 54.95 ea. QTY (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Demodulator Electrical Specifications

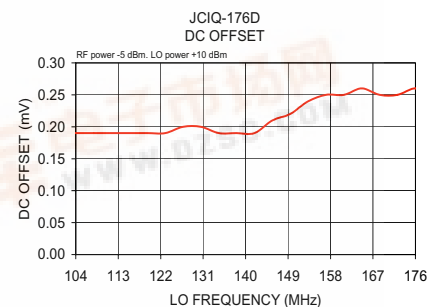
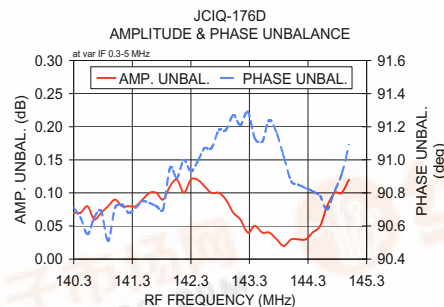
MODEL NO.	FREQUENCY (MHz)				CONVERSION LOSS (dB)			AMPLITUDE UNBALANCE (dB)		PHASE UNBALANCE (Deg.)		HARMONIC SUPPRESSION (dBc)			
	RF (SIGNAL)		LO (CARRIER)		I&Q		Max.	Typ.	Max.	Typ.	Max.	with reference to 90°		3XI/Q	
	f _r	f _u	Min.	Max.	σ	Max.						Typ.	Min.	Typ.	Min.
JCIQ-176D	104	176	DC	5	5.5	0.1	7.0	0.15	0.6	2	5	52	40	65	50

Notes:

1. Operating LO Power: 10±0.5 dBm
2. 1 dB Compression at +4 dBm RF input
3. DC offset 1mV typ.
4. Conversion Loss=RF power, dBm - (I+Q) power, dBm

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	Frequency (MHz)		DC Offset (mV)
				LO	RF	
140.30	0.30	5.67	90.71	96.00	96.10	0.18
140.54	0.54	5.61	90.55	100.00	100.10	0.19
140.77	0.77	5.56	90.69	104.00	104.10	0.19
141.01	1.01	5.55	90.71	107.79	107.89	0.19
141.24	1.24	5.57	90.68	115.37	115.47	0.19
141.48	1.48	5.55	90.75	119.16	119.26	0.19
141.71	1.71	5.55	90.72	122.95	123.05	0.19
141.95	1.95	5.54	90.95	126.74	126.84	0.20
142.18	2.18	5.55	91.00	134.32	134.42	0.19
142.42	2.42	5.54	90.99	138.11	138.21	0.19
142.78	2.78	5.55	91.18	141.90	142.00	0.19
143.03	3.03	5.55	91.27	145.68	145.78	0.21
143.27	3.27	5.55	91.29	153.26	153.36	0.24
143.52	3.52	5.56	91.11	157.05	157.15	0.25
143.77	3.77	5.56	91.16	160.84	160.94	0.25
144.01	4.01	5.55	90.87	164.63	164.73	0.26
144.26	4.26	5.56	90.83	172.21	172.31	0.25
144.51	4.51	5.56	90.78	176.00	176.10	0.26
144.75	4.75	5.55	90.81	180.00	180.10	0.25
145.00	5.00	5.56	91.09	184.00	184.10	0.26



I&Q demodulation block diagram

