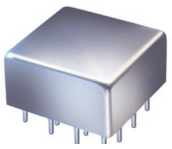
Plug-In

I&Q Demodulator

MIQY-140D

50Ω 137 to 143 MHz



CASE STYLE: C07
PRICE: $22.20 ea. QTY (1-49)

Maximum Ratings

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

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

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

*Q= I +90° for LO<RF
Q= I -90° for LO>RF
**external variable capacitors can be connected at pins 10&11 to ground for improvement of phase unbalance.

Features

- good amplitude and phase unbalance
- excellent 3rd and 5th harmonic suppression

Applications

- radar
- communication systems

Demodulator Electrical Specifications

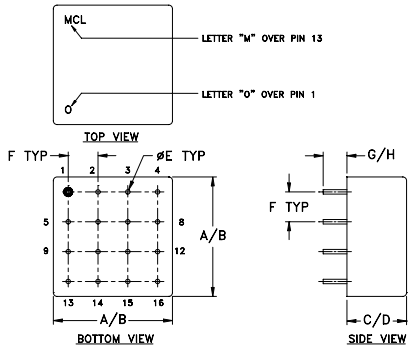
MODEL NO.	FREQUENCY (MHz) RF (SIGNAL) f_L	LO (CARRIER) f_U	I&Q Min.	I&Q Max.	CONVERSION LOSS (dB) $\bar{x}$	σ	Max.	AMPLITUDE UNBALANCE (dB) Typ.	Max.	PHASE UNBALANCE (Deg.) with reference to 90° Typ.	Max.	HARMONIC SUPPRESSION (dBc) 3XI/Q Typ.	3XI/Q Min.	5XI/Q Typ.	5XI/Q Min.
MIQY-140D	137	143	DC	5	5.5	0.25	7.0	0.10	0.6	0.5	3.0	47	35	70	50

Note:
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) RF	I&Q	Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	Frequency (MHz) LO	RF	DC Offset (mV)
140.10	0.30	5.52	0.05	89.79	137.00	137.10	-0.08
140.48	0.66	5.50	0.05	89.81	137.46	137.56	-0.16
140.85	1.03	5.49	0.06	89.93	137.92	138.02	-0.06
140.98	1.15	5.49	0.10	89.99	138.08	138.18	-0.13
141.23	1.38	5.49	0.08	90.09	138.39	138.49	-0.13
141.61	1.75	5.50	0.06	89.96	138.85	138.95	-0.19
141.86	1.99	5.50	0.04	89.97	139.15	139.25	-0.14
141.99	2.11	5.50	0.06	90.00	139.31	139.41	-0.08
142.36	2.47	5.50	0.10	90.17	139.77	139.87	-0.07
142.74	2.83	5.50	0.11	90.19	140.23	140.33	-0.07
142.86	2.96	5.51	0.07	90.04	140.39	140.49	-0.11
143.12	3.19	5.51	0.08	90.14	140.69	140.79	-0.18
143.49	3.56	5.51	0.12	90.22	141.15	141.25	-0.17
143.74	3.79	5.51	0.08	89.94	141.46	141.56	-0.14
143.87	3.92	5.51	0.13	90.00	141.62	141.72	-0.19

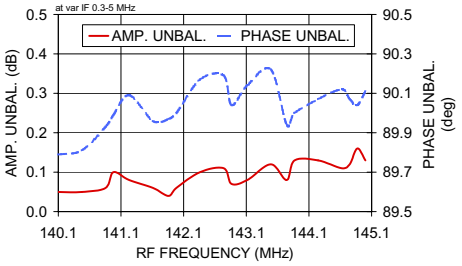
Outline Drawing



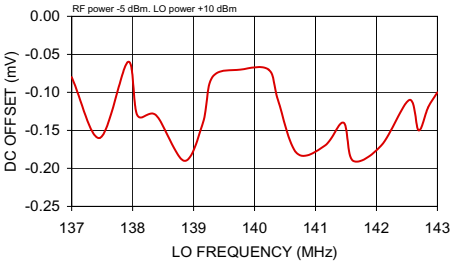
Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	wt
.770	.810	.380	.410	.030	.200	.20	.14	grams
19.56	20.57	9.65	10.41	0.76	5.08	5.08	3.56	11.0

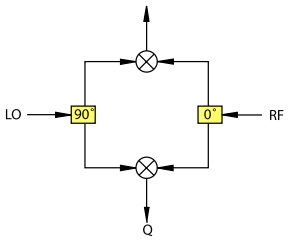
MIQY-140D
AMPLITUDE & PHASE UNBALANCE



MIQY-140D
DC OFFSET



I&Q demodulation block diagram



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IF/RF MICROWAVE COMPONENTS

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