

50Ω

137 to 143 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
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

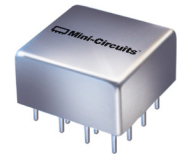
**external variable capacitors can be connected at pins 10&11 to ground for improvement of phase unbalance.

Features

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

Applications

- radar
- communication systems



CASE STYLE: C07

PRICE: \$22.20 ea. QTY (1-49)

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		$\bar{x}$	σ	Max.	Typ.	Max.	with reference to 90°		3X1/Q	5X1/Q		
MIQY-140D	f _L	f _U	Min.	Max.						Typ.	Max.	Typ.	Min.	Typ.	Min.
	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

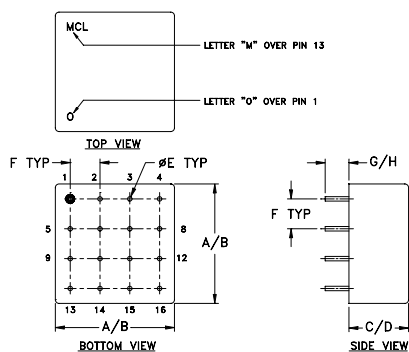
3. DC offset 1mV typ.

4. Conversion Loss=RF power, dBm - (I+Q) power, dBm

Typical Performance Data

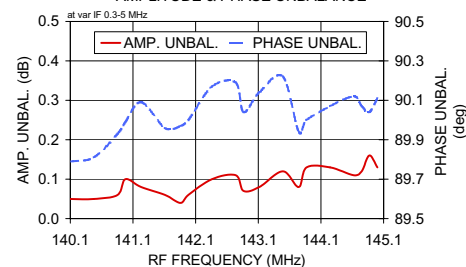
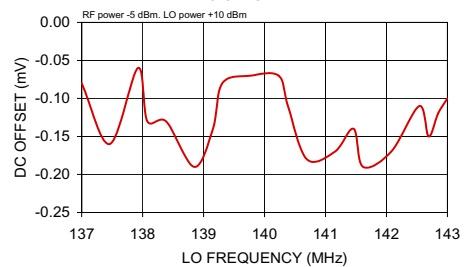
Frequency (MHz)		Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	Frequency (MHz)		DC Offset (mV)
RF	I&Q				LO	RF	
140.10	0.30	5.52	0.05	89.79	137.00	137.10	-0.08
140.48	0.66	5.50	0.05	89.81	137.46	137.56	-0.16
140.85	1.03	5.49	0.06	89.93	137.92	138.02	-0.06
140.98	1.15	5.49	0.10	89.99	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

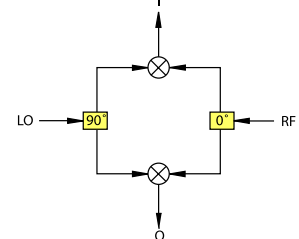


Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	wt grams
.770	.810	.380	.410	.030	.200	.20	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	11.0
19.56	20.57	9.65	10.41	0.76	5.08	5.08	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	3.56	11.0

MIQY-140D
AMPLITUDE & PHASE UNBALANCEMIQY-140D
DC OFFSET

I&Q demodulation block diagram



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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