

Plug-In

I&Q Modulator

50Ω

137 to 143 MHz

MIQY-140M+



CASE STYLE: C07

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

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO 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
CASE GROUND	2,3,4,6,7,9,12,14,15,16

*Q= I +90° for lower sideband suppression

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

Features

- good carrier and sideband rejections
- excellent 3rd and 5th order harmonic suppression

Applications

- radar
- communications systems

Modulator Electrical Specifications

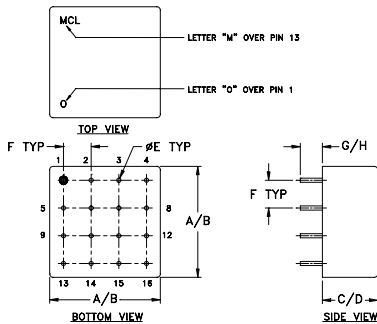
FREQUENCY (MHz)				CONVERSION LOSS (dB)			CARRIER REJECTION (-dBc)		SIDE BAND REJECTION (-dBc)		HARMONIC SUPPRESSION (-dBc)			
RF (SIGNAL/ LO (CARRIER) I&Q											3XI/Q		5XI/Q	
fL	fU	Min.	Max.	$\bar{x}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.
137	143	DC	5	5.8	0.20	7.0	34	30	36	30	45	35	60	50

1. Operating LO power: 10±1dBm
2. 1dB Compression: 0dBm typical
3. Conversion Loss: (I + Q) power, dBm - RF power, dBm
4. Carrier and sideband rejections measured at -5dBm I/Q power.

Typical Performance Data

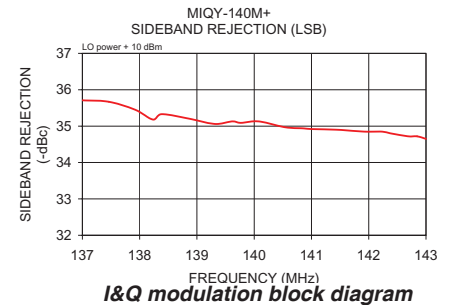
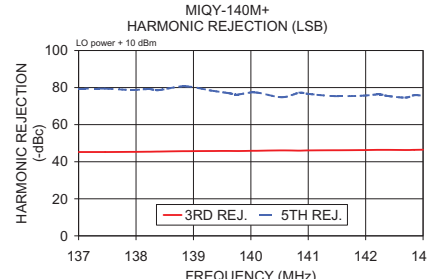
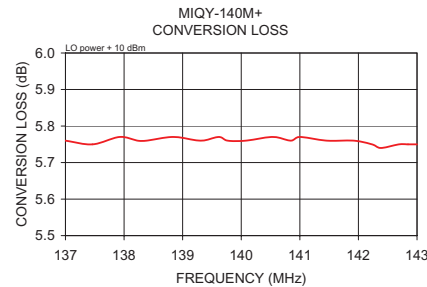
Carrier Freq. (MHz)	Conversion Loss $\bar{x}$ (dB)	Sideband Rejection ($\bar{x}$)		Carrier Rejection ($\bar{x}$)		3rd Harmonic Suppression ($\bar{x}$)		5th. Harmonic Suppression ($\bar{x}$)		DC Offset ($\bar{x}$) (mV)
		LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	
137.00	5.76	35.71	36.70	33.27	33.31	45.22	57.87	79.42	81.57	-0.08
137.46	5.75	35.67	36.51	33.24	33.30	45.22	58.08	79.42	79.88	-0.16
137.92	5.77	35.45	36.52	33.19	33.29	45.30	58.58	78.70	77.98	-0.06
138.23	5.76	35.18	36.15	33.22	33.28	45.40	58.58	79.20	79.38	-0.07
138.39	5.76	35.33	36.27	33.23	33.27	45.50	58.58	78.60	79.78	-0.13
138.85	5.77	35.21	36.25	33.15	33.26	45.69	58.78	80.69	77.68	-0.19
139.31	5.76	35.06	36.14	33.13	33.19	45.79	59.07	78.39	78.87	-0.08
139.62	5.77	35.13	36.06	33.15	33.25	45.80	59.27	77.00	78.97	-0.11
139.77	5.76	35.09	35.94	33.18	33.20	45.78	59.47	76.28	77.87	-0.07
140.08	5.76	35.13	35.90	33.15	33.19	45.89	59.77	77.39	77.17	-0.07
140.54	5.77	34.97	35.99	33.14	33.19	46.10	60.17	74.80	75.37	-0.18
140.85	5.76	34.94	36.12	33.09	33.22	45.98	60.37	77.28	76.87	-0.17
141.00	5.77	34.92	35.98	33.10	33.21	46.09	60.38	76.59	75.38	-0.17
141.46	5.76	34.90	36.02	33.10	33.13	46.20	60.78	75.40	75.98	-0.19
141.92	5.76	34.85	35.86	33.06	33.11	46.28	61.06	75.58	75.06	-0.17
142.23	5.75	34.85	35.95	33.05	33.16	46.39	61.28	76.29	74.88	-0.21
142.39	5.74	34.80	35.96	33.02	33.17	46.38	61.58	75.48	74.48	-0.11
142.69	5.75	34.72	35.93	33.04	33.11	46.30	61.58	74.60	73.38	-0.12
142.85	5.75	34.72	35.91	33.02	33.16	46.39	62.18	75.89	74.98	-0.10
143.00	5.75	34.65	36.01	33.02	33.11	46.49	61.58	75.59	72.48	-0.11

Outline Drawing

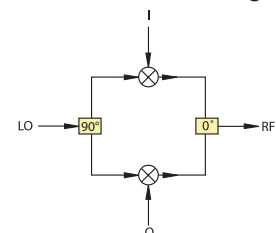


Outline Dimensions (inch/mm)

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



I&Q modulation block diagram



Notes

- A. 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.
- B. 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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