

Coaxial I&Q Modulator

50Ω

95 to 105 MHz

ZFMIQ-100M



Maximum Ratings

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

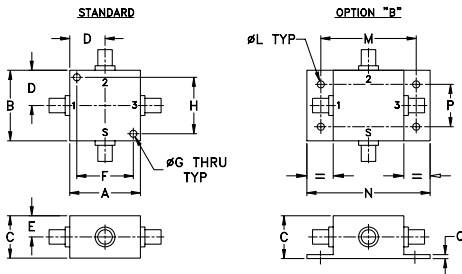
Permanent damage may occur if any of these limits are exceeded.

Coaxial Connections

LO (carrier)	1
RF (signal)	3
I (0°)(ref.)	S
Q (90°)*	2

*Q= I + 90° for lower sideband suppression

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H
1.25	1.25	.75	.63	.38	1.000	.125	1.000
31.75	31.75	19.05	16.00	9.65	25.40	3.18	25.40

J	K	L	M	N	P	Q	wt
--	--	.125	1.688	2.18	.75	.07	grams
--	--	3.18	42.88	55.37	19.05	1.78	75.0

Features

- rugged shielded case
- excellent 3rd and 5th order harmonic suppression
- good carrier and sideband rejection

Applications

- radar and communication systems

CASE STYLE: J17

Connectors	Model
SMA	ZFMIQ-100M
BRACKET (OPTION "B")	

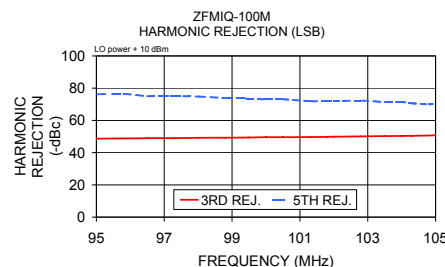
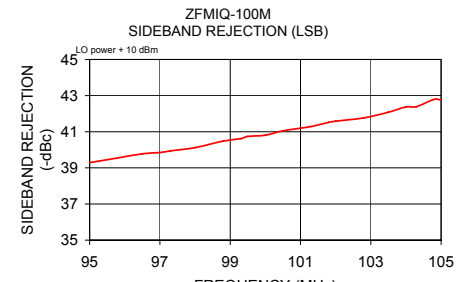
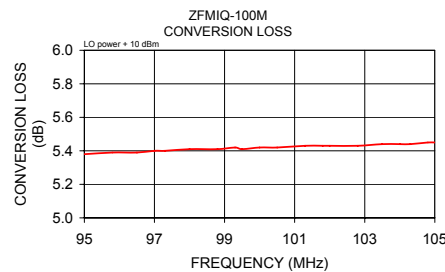
Modulator Electrical Specifications

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			
f _L	f _U	Min.	Max.	\bar{x}	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	
95	105	DC	5	5.5	0.17	6.5	38	30	38	30	48	45	58	55

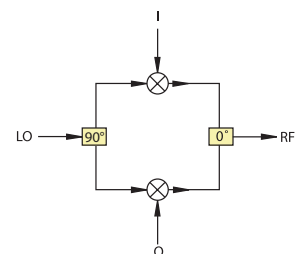
1. Operating LO power: 10±1dBm
2. 1dB Compression: 0dBm typical.
3. Conversion Loss: (I + Q) power, dBm - RF power, dBm.
4. Carrier and sideband rejections measured at -5dBm I/Q power.

Typical Performance Data

Carrier Freq. (MHz)	Conversion Loss		Sideband Rejection (x)		Carrier Rejection (x)		3rd Harmonic Suppression (x)		5th Harmonic Suppression (x)		DC Offset (mV)
	\bar{x} (dB)	σ (dB)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	
95.00	5.38	0.02	39.29	44.75	52.53	52.54	48.67	54.98	76.21	73.88	0.21
95.80	5.39	0.03	39.55	44.33	52.71	52.13	48.79	55.31	76.43	73.83	0.20
96.50	5.39	0.03	39.78	44.03	52.17	52.17	48.93	55.49	75.07	72.99	0.20
97.00	5.40	0.03	39.85	43.85	52.19	51.95	49.01	55.77	75.07	72.63	0.19
97.30	5.40	0.03	39.94	43.81	51.97	51.60	48.99	55.76	75.07	73.12	0.21
98.00	5.41	0.03	40.12	43.30	51.77	51.53	49.23	56.37	74.79	72.51	0.21
98.80	5.41	0.03	40.48	42.87	51.40	51.45	49.28	56.69	73.94	71.49	0.21
99.30	5.42	0.02	40.62	42.62	51.50	51.43	49.38	56.91	73.90	71.57	0.21
99.50	5.41	0.03	40.74	42.63	51.44	51.27	49.42	57.03	73.36	71.15	0.23
100.00	5.42	0.03	40.81	42.25	51.12	51.35	49.58	57.31	73.12	70.29	0.22
100.50	5.42	0.03	41.05	41.97	51.12	51.29	49.60	57.59	73.10	70.95	0.21
101.30	5.43	0.02	41.29	41.72	51.06	50.78	49.68	58.16	71.94	70.18	0.22
101.80	5.43	0.02	41.52	41.56	50.81	50.88	49.83	58.36	72.01	70.24	0.21
102.00	5.43	0.02	41.58	41.38	50.89	50.72	49.91	58.72	71.99	70.24	0.21
102.80	5.43	0.02	41.77	41.03	50.55	50.44	49.58	59.22	72.27	69.68	0.21
103.50	5.44	0.02	42.08	40.55	50.35	50.45	50.27	60.13	71.39	69.29	0.23
104.00	5.44	0.02	42.37	40.32	50.07	50.23	50.35	60.23	71.41	69.13	0.23
104.30	5.44	0.02	42.39	40.23	50.37	50.07	50.47	60.33	70.63	69.29	0.23
104.80	5.45	0.02	42.79	40.02	50.00	49.85	50.64	61.17	69.98	69.15	0.23
105.00	5.45	0.02	42.75	39.83	49.95	49.99	50.81	61.15	70.53	68.43	0.23



I&Q modulation 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-Circuits' applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

