

Coaxial

I&Q Modulator

50Ω

9 to 11 MHz

ZFMIQ-10M



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

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	Price	Qty.
SMA	ZFMIQ-10M	\$89.95	(1-9)
BRACKET (OPTION "B")		\$5.00	(1+)

Modulator Electrical Specifications

FREQUENCY (MHz)				CONVERSION LOSS (dB)			CARRIER REJECTION (-dBc)		SIDE BAND REJECTION (-dBc)		HARMONIC SUPPRESSION (-dBc)			
RF (SIGNAL)		LO (CARRIER)		I&Q		Max.	Typ. Min.		Typ. Min.		3XI/Q		5XI/Q	
f _L	f _U	Min.	Max.	$\overline{x}$	σ						Typ.	Min.	Typ.	Min.
9	11	DC	2	5.8	0.20	7.0	41	30	40	30	58	45	68	58

Operating LO power: 10±1dBm

1dB Compression: 0dBm typical

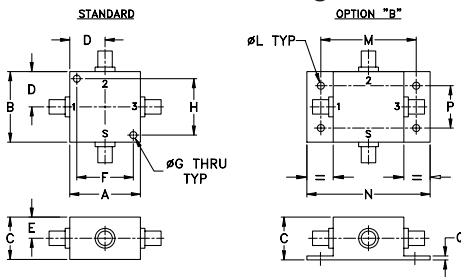
Conversion Loss: (I + Q) power, dBm-RF power, dBm

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)
	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	
9.00	5.75	0.05	35.58	36.08	57.16	56.84	59.79	50.88	67.42	70.24	0.08
9.11	5.74	0.05	35.91	36.34	57.12	57.23	60.05	50.93	67.39	70.97	0.08
9.21	5.76	0.05	36.15	36.57	56.98	57.32	59.95	50.99	67.41	70.92	0.08
9.32	5.75	0.05	36.38	36.88	57.33	56.88	59.83	51.01	67.29	71.08	0.08
9.42	5.75	0.05	36.60	37.17	57.09	57.26	60.02	51.06	67.09	71.26	0.08
9.53	5.75	0.04	36.86	37.38	57.33	57.59	60.13	51.09	67.20	71.66	0.08
9.63	5.74	0.04	37.17	37.62	57.47	57.27	59.87	51.10	67.03	72.10	0.08
9.74	5.75	0.04	37.33	37.84	57.23	56.86	60.06	51.10	66.99	71.83	0.08
9.84	5.74	0.04	37.40	37.92	56.85	57.27	60.39	51.26	67.19	72.23	0.08
9.95	5.74	0.05	37.79	38.40	56.95	57.76	60.28	51.26	67.45	69.86	0.08
10.05	5.74	0.06	37.97	38.68	56.95	56.86	60.29	51.26	67.15	70.00	0.08
10.16	5.74	0.06	38.14	38.80	56.73	57.25	60.17	51.25	67.47	73.11	0.08
10.26	5.77	0.06	38.39	38.96	56.82	57.24	60.15	51.31	67.55	72.08	0.08
10.37	5.76	0.07	38.69	39.40	56.82	57.23	59.95	51.30	67.32	71.97	0.08
10.47	5.78	0.06	38.88	39.56	56.64	57.39	59.91	51.25	67.51	72.22	0.09
10.58	5.77	0.06	39.02	39.64	56.96	57.09	60.13	51.32	67.43	72.29	0.09
10.68	5.75	0.06	39.12	39.63	56.83	57.08	60.23	51.32	67.66	72.08	0.09
10.79	5.78	0.07	39.25	39.80	57.09	57.23	60.03	51.30	67.29	72.10	0.09
10.89	5.79	0.07	39.53	40.09	56.74	57.01	59.84	51.21	67.74	71.68	0.09
11.00	5.78	0.07	39.79	40.25	56.63	57.17	59.63	51.17	67.13	72.17	0.09

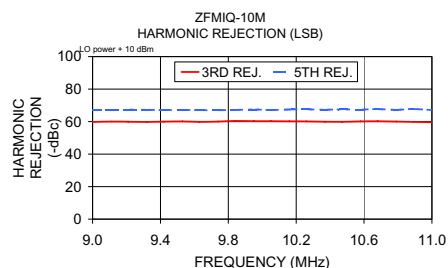
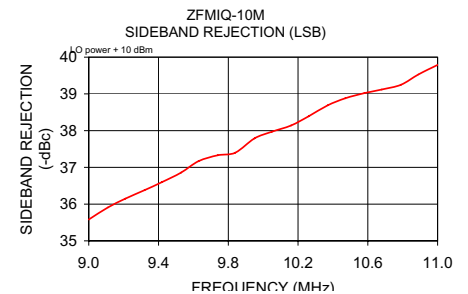
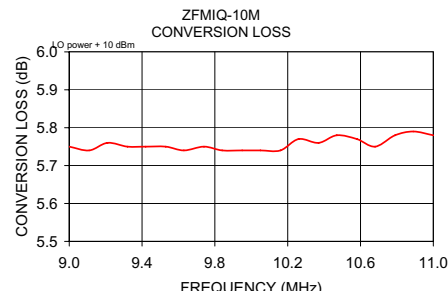
Outline Drawing



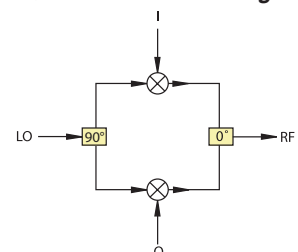
Outline Dimensions (inch/mm)

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



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.
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