



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
SMA ZFMIQ-91M-S
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		$\overline{x}$	σ	Max.	Typ.	Min.	Typ.	Min.	3XI/Q		5XI/Q	
f_L	f_U	Min.	Max.										Typ.	Min.	Typ.	Min.
86	95	DC	5			5.5	0.17	6.5	38	30	38	30	48	45	58	55

Operating LO power: 10±1dBm

1dB Compression: 0dBm typical

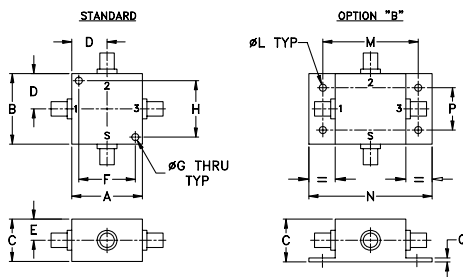
Conversion Loss: (I + Q) power, dBm - RF power, dBm

Carrier and sideband rejections measured at -5dBm I/Q power.

Typical Performance Data

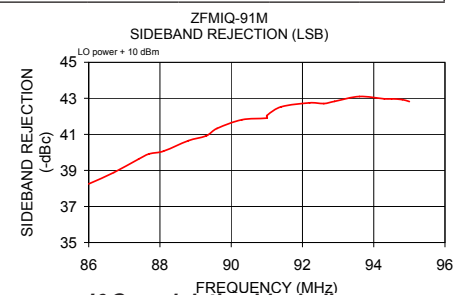
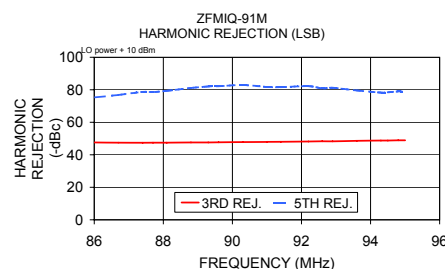
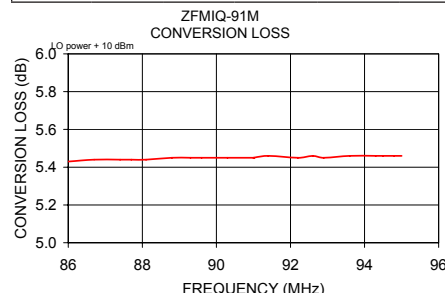
Carrier Freq. (MHz)	Conversion Loss		Sideband Rejection ($\bar{x}$)		Carrier Rejection ($\bar{x}$)		3rd Harmonic Suppression ($\bar{x}$)		5th Harmonic Suppression ($\bar{x}$)		DC Offset ($\bar{x}$) (mV)
	$\bar{x}$ (dB)	σ (dB)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	
86.00	5.43	0.01	38.25	38.49	47.39	47.41	47.59	53.41	75.27	77.69	0.37
86.70	5.44	0.02	38.88	38.76	47.31	47.24	47.45	53.41	76.83	78.37	0.36
87.40	5.44	0.02	39.63	39.13	47.26	46.98	47.43	53.21	78.67	79.85	0.36
87.70	5.44	0.01	39.92	39.24	47.12	47.06	47.47	53.28	78.61	80.58	0.36
88.10	5.44	0.02	40.07	39.46	47.09	47.03	47.47	53.36	79.35	80.87	0.36
88.80	5.45	0.01	40.65	40.03	47.07	47.04	47.61	53.31	81.11	82.87	0.37
89.30	5.45	0.02	40.92	40.31	46.95	46.77	47.57	53.45	82.03	82.83	0.37
89.60	5.45	0.02	41.33	40.49	46.93	46.95	47.69	53.41	82.17	83.19	0.36
90.30	5.45	0.02	41.81	40.74	46.86	46.89	47.83	53.73	82.93	83.93	0.36
91.00	5.45	0.02	41.90	41.32	46.84	46.76	47.93	53.87	81.69	82.39	0.36
91.00	5.45	0.02	42.04	41.44	46.86	46.74	47.95	53.85	81.69	83.45	0.36
91.40	5.46	0.02	42.53	41.58	46.81	46.63	47.98	54.05	81.60	81.45	0.37
92.20	5.45	0.02	42.75	42.00	46.56	46.52	48.17	54.33	82.23	81.55	0.37
92.80	5.46	0.02	42.71	42.24	46.44	46.45	48.33	54.37	80.81	80.47	0.37
92.90	5.45	0.02	42.83	42.24	46.53	46.54	48.29	54.49	81.21	80.15	0.36
93.60	5.46	0.02	43.10	43.00	46.43	46.24	48.58	54.97	79.58	78.29	0.36
94.30	5.46	0.02	42.97	43.22	46.26	46.25	48.76	55.09	78.26	78.29	0.37
94.50	5.46	0.02	42.97	43.37	46.21	46.10	48.77	55.14	78.45	77.70	0.37
94.80	5.46	0.02	42.93	43.40	46.27	46.13	48.91	55.36	78.95	77.40	0.37
95.00	5.46	0.02	42.82	43.50	46.23	46.17	48.89	55.30	78.71	76.78	0.38

Outline Drawing

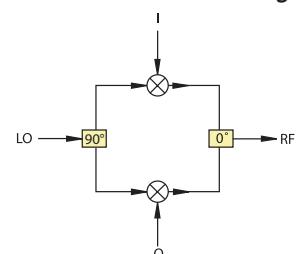


Outline Dimensions (inch/mm)

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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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