

Coaxial I&Q Demodulator

50Ω

9 to 11 MHz

ZFMIQ-10D

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.	

Coaxial Connections

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

* Q= I+90° for LO<RF
Q= I-90° for LO>RF

Features

- rugged, shielded case
- excellent 3rd and 5th order harmonics suppression
- good phase and amplitude unbalance

Applications

- radar and communication systems



CASE STYLE: J17			
Connectors	Model	Price	Qty.
SMA	ZFMIQ-10D	\$89.95	(1-9)
BRACKET (OPTION "B")		\$5.00	(1+)

Demodulator Electrical Specifications

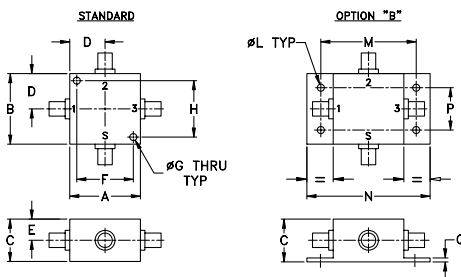
FREQUENCY (MHz)				CONVERSION LOSS (dB)			AMPLITUDE UNBALANCE (dB)		PHASE UNBALANCE (Deg.) with reference to 90°		HARMONIC SUPPRESSION (dBc)				
RF (SIGNAL)		LO (CARRIER)		I&Q								3XI/Q		5XI/Q	
f _L	f _U	Min.	Max.	$\overline{x}$	σ	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ	Min.	Max.
9	11	DC	2	6.0	0.10	7.0	0.15	0.3	1.0	3.0	50	35	65	55	

Notes:
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

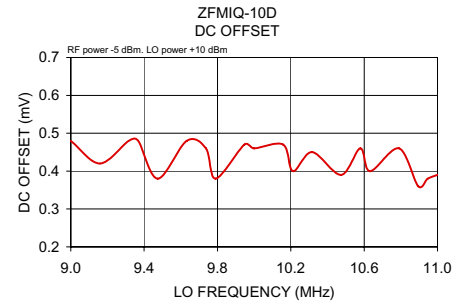
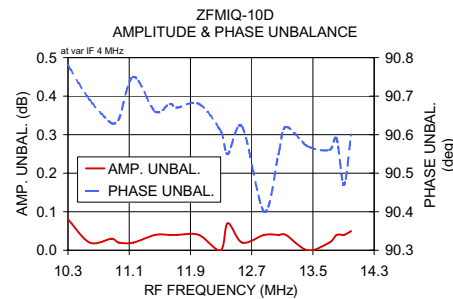
Frequency (MHz)		Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	Frequency (MHz)		DC Offset (mV)
LO=10MHz RF	I&Q				LO	RF	
10.30	0.30	5.85	0.08	90.78	9.00	9.10	0.48
10.59	0.59	5.82	0.02	90.69	9.16	9.26	0.42
10.87	0.87	5.80	0.03	90.63	9.32	9.42	0.48
10.96	0.96	5.80	0.02	90.64	9.37	9.47	0.48
11.15	1.15	5.83	0.02	90.75	9.47	9.57	0.38
11.44	1.44	5.78	0.04	90.66	9.63	9.73	0.48
11.63	1.63	5.77	0.04	90.68	9.74	9.84	0.46
11.72	1.72	5.77	0.04	90.67	9.79	9.89	0.38
12.01	2.01	5.75	0.04	90.68	9.95	10.05	0.47
12.29	2.29	5.73	0.00	90.61	10.00	10.10	0.46
12.39	2.39	5.73	0.07	90.55	10.16	10.26	0.47
12.58	2.58	5.72	0.02	90.62	10.21	10.31	0.40
12.86	2.86	5.71	0.04	90.40	10.32	10.42	0.45
13.05	3.05	5.70	0.04	90.55	10.47	10.57	0.39
13.15	3.15	5.69	0.04	90.62	10.58	10.68	0.46
13.43	3.43	5.67	0.00	90.57	10.63	10.73	0.40
13.72	3.72	5.63	0.02	90.56	10.79	10.89	0.46
13.81	3.81	5.62	0.04	90.59	10.90	11.00	0.36
13.91	3.91	5.61	0.04	90.47	10.95	11.05	0.38
14.00	4.00	5.61	0.05	90.60	11.00	11.10	0.39

Outline Drawing

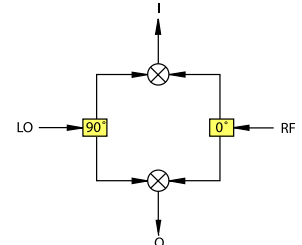


Outline Dimensions (inch/mm)

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 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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www.minicircuits.com P.O. Box 35166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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