

CASE STYLE: A06

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.	

Pin Connections

LO (carrier)	1
RF (signal)	8
I (0°)(ref.)	7
Q (90°)*	4
NOT USED	2
GROUND	3,5,6
CASE GROUND	3,5,6

* Q=I+90° for LO<RF

Q=I-90° for LO>RF

Features

- hermetically sealed metal case
- excellent 3rd and 5th order harmonic suppression
- good amplitude and phase unbalance

Applications

- radar and communication systems
- military, hi-rel applications

+RoHS Compliant

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

Demodulator Electrical Specifications

FREQUENCY (MHz)				CONVERSION LOSS (dB)			AMPLITUDE UNBALANCE (dB)		PHASE UNBALANCE (Deg.)		HARMONIC SUPPRESSION (dBc)			
RF (SIGNAL)		LO (CARRIER)		I&Q					with reference to 90°		3X1/Q		5X1/Q	
f _L	f _U	Min.	Max.	$\bar{x}$	σ	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.
20	23	DC	3	6.1	0.15	7.0	0.15	0.6	0.7	3.0	64	35	67	50

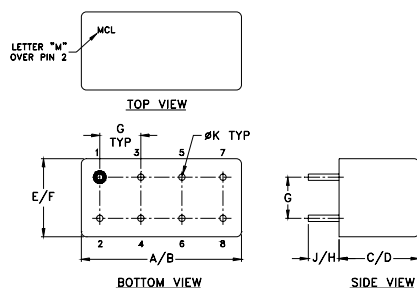
Notes:

- Operating LO Power: 10±0.5 dBm
- 1 dB Compression at +4 dBm RF input
- DC offset 1mV typ.
- Conversion Loss=RF power, dBm - (I+Q) power, dBm

Typical Performance Data

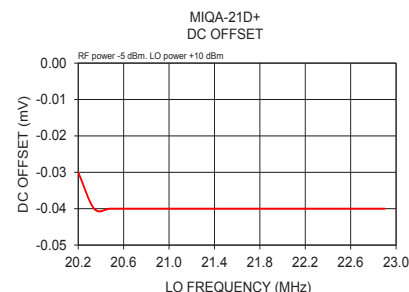
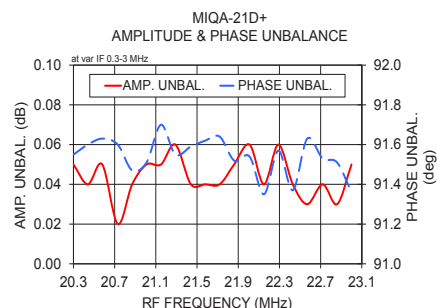
Frequency (MHz)		Conversion Loss (dB)	Amplitude Unbalance (dB)	Phase (I&Q) (deg.)	Frequency (MHz)		DC Offset (mV)
LO=20MHz	RF I&Q				LO	RF	
20.30	0.30	5.91	0.05	91.55	20.20	20.30	-0.03
20.44	0.44	5.91	0.04	91.60	20.34	20.44	-0.04
20.58	0.58	5.94	0.05	91.63	20.48	20.58	-0.04
20.73	0.73	5.95	0.02	91.60	20.63	20.73	-0.04
20.87	0.87	5.94	0.04	91.47	20.77	20.87	-0.04
21.01	1.01	5.89	0.05	91.51	20.91	21.01	-0.04
21.15	1.15	5.91	0.05	91.70	21.05	21.15	-0.04
21.29	1.29	5.93	0.06	91.55	21.19	21.29	-0.04
21.44	1.44	5.95	0.04	91.59	21.34	21.44	-0.04
21.58	1.58	5.94	0.04	91.62	21.48	21.58	-0.04
21.72	1.72	5.91	0.04	91.64	21.62	21.72	-0.04
21.86	1.86	5.91	0.05	91.52	21.76	21.86	-0.04
22.01	2.01	5.90	0.06	91.54	21.91	22.01	-0.04
22.15	2.15	5.91	0.04	91.35	22.05	22.15	-0.04
22.29	2.29	5.92	0.06	91.57	22.19	22.29	-0.04
22.43	2.43	5.92	0.04	91.37	22.33	22.43	-0.04
22.57	2.57	5.94	0.03	91.63	22.47	22.57	-0.04
22.72	2.72	5.95	0.04	91.53	22.62	22.72	-0.04
22.86	2.86	5.92	0.03	91.51	22.76	22.86	-0.04
23.00	3.00	5.92	0.05	91.36	22.90	23.00	-0.04

Outline Drawing

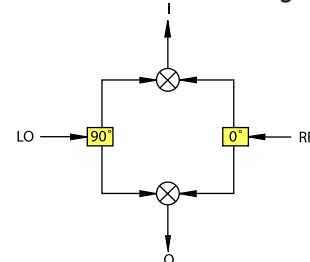


Outline Dimensions (inch/mm)

A	B	C	D	E	F
.770	.800	.285	.310	.370	.400
19.56	20.32	7.24	7.87	9.40	10.16
G	H	J	K	wt	
.200	.20	.14	.031	grams	
5.08	5.08	3.56	0.79	5.2	



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.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp