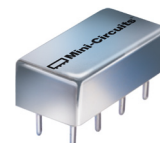


50Ω

20 to 23 MHz

MIQA-21M+



CASE STYLE: A06

Maximum Ratings

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

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 lower sideband suppression

Features

- hermetically sealed metal case
- excellent 3rd and 5th order harmonic
- good carrier and sideband rejections

Applications

- radar
- communication system
- military, hi-rel application

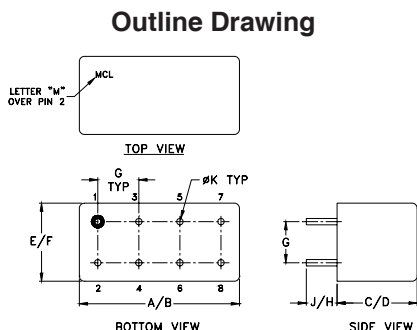
Modulator Electrical Specifications

FREQUENCY (MHz)				CONVERSION LOSS (dB)		CARRIER REJECTION (-dBc)		SIDE BAND REJECTION (-dBc)		HARMONIC SUPPRESSION (-dBc)			
RF (SIGNAL/ LO (CARRIER)		I&Q								3X1/Q		5X1/Q	
fL	fU	Min.	Max.	$\bar{x}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
20	23	DC	3	6.2	0.14	7.0	50	40	40	30	48	40	65

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.

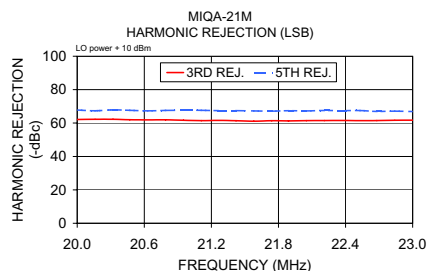
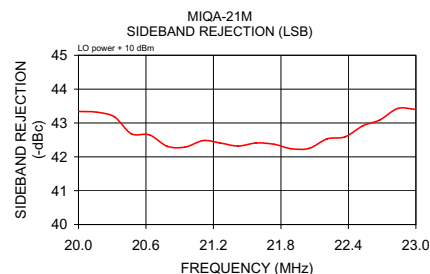
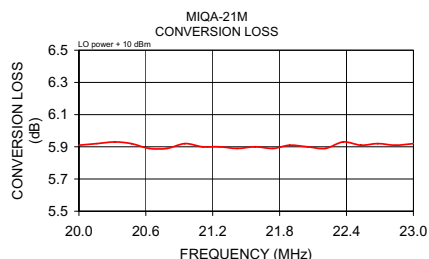
Typical Performance Data

Carrier Freq. (MHz)	Conversion Loss		Sideband Rejection(x)		Carrier Rejection(x)		3rd. Harmonic Suppression (x)		5th. Harmonic Suppression (x)		DC Offset (x)
	$\bar{x}$ (dB)	σ (dB)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	LSB (-dBc)	USB (-dBc)	(mV)
20.00	5.91	0.04	43.34	42.73	55.61	54.19	62.14	49.79	67.81	71.33	-0.21
20.16	5.92	0.04	43.32	42.65	55.18	54.49	62.28	49.76	67.35	71.99	-0.21
20.32	5.93	0.03	43.18	42.53	55.38	54.26	62.25	49.79	67.92	71.76	-0.21
20.47	5.92	0.03	42.68	43.11	55.35	55.03	62.01	50.37	67.65	72.60	-0.21
20.63	5.89	0.05	42.65	42.89	55.38	55.12	61.88	50.49	67.34	72.25	-0.21
20.79	5.89	0.04	42.31	42.86	54.99	54.89	61.93	50.56	67.59	71.96	-0.21
20.95	5.92	0.04	42.29	42.85	55.08	54.92	61.68	50.58	67.68	72.38	-0.21
21.11	5.90	0.05	42.48	42.85	55.15	54.91	61.45	50.61	67.65	72.48	-0.21
21.26	5.90	0.04	42.41	42.78	55.28	54.78	61.58	50.68	67.48	72.48	-0.21
21.42	5.89	0.04	42.32	42.93	55.24	54.67	61.41	50.67	67.44	71.97	-0.21
21.58	5.90	0.04	42.41	43.07	55.07	54.83	61.10	50.73	67.27	71.89	-0.20
21.74	5.89	0.04	42.37	43.50	54.99	54.70	61.42	50.80	67.16	72.34	-0.20
21.89	5.91	0.04	42.24	43.40	54.99	54.66	61.29	50.80	67.42	72.13	-0.20
22.05	5.90	0.04	42.25	43.58	54.97	54.70	61.43	50.83	67.27	72.27	-0.20
22.21	5.89	0.05	42.53	43.55	55.10	54.72	61.50	50.85	67.56	72.35	-0.20
22.37	5.93	0.05	42.59	44.03	54.69	54.71	61.52	50.88	67.45	72.08	-0.20
22.53	5.91	0.06	42.92	44.40	54.81	54.77	61.45	50.90	67.51	72.23	-0.20
22.68	5.92	0.05	43.09	44.65	54.91	54.67	61.51	50.90	66.98	72.20	-0.20
22.84	5.91	0.05	43.43	45.19	54.68	54.50	61.68	50.80	67.14	72.36	-0.20
23.00	5.92	0.06	43.40	45.23	54.83	54.26	61.73	50.82	66.93	72.22	-0.20

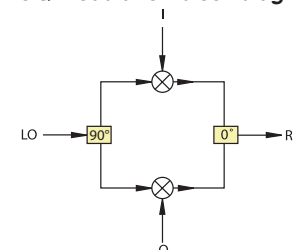


Outline Dimensions (inch mm)

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 modulation block diagram



Notes

- A. 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.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
 C. 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

