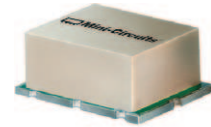


High IP3 Frequency Mixer

Level 13 (LO Power +13 dBm) 1850 to 1910 MHz

HJK-21MH+ HJK-21MH



CASE STYLE: TTT167
PRICE: \$14.95 ea. QTY (1-9)

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
LO & RF Power	+16 dBm
Permanent damage may occur if any of these limits are exceeded.	

Pin Connections

LO	2
RF	1
IF	3
GROUND	4,5,6

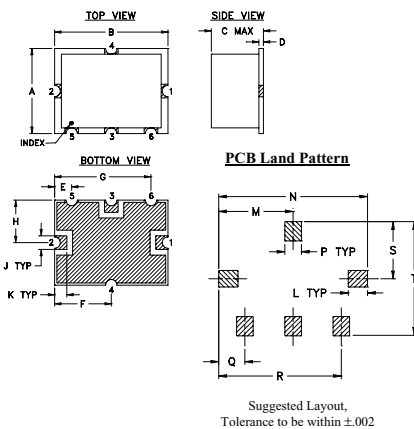
Features

- high IP3, 29 dBm typ.
- compression, 3 dB higher than LO power

Applications

- base stations
- communication systems
- PCS

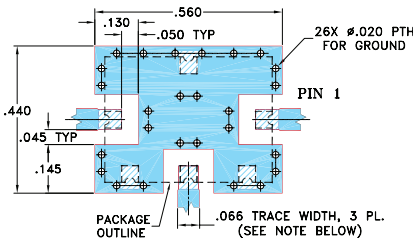
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54		0.8

Demo Board MCL P/N: TB-12 Suggested PCB Layout (PL-079)



NOTE:

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. THE USE OF SOLDER MASK OVER THE GROUND AREA UNDER THE UNIT AS SHOWN IS RECOMMENDED TO PREVENT POTENTIAL SHORTING. IF USER CHOOSES TO EXPOSE METAL UNDER THE ENTIRE UNIT GROUND PAD FOR IMPROVED GROUNDING, IT IS RECOMMENDED A SOLDER MASK DAM BE APPLIED AROUND EACH GROUND PAD TO ENSURE FILLET AND CONNECTION AT GROUND PADS.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE. REMOTE PCB COPPER LAYOUT WITH SOLDER MASK

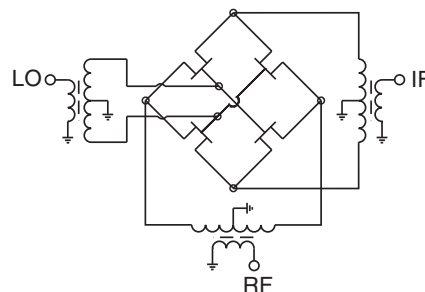
Electrical Specifications

FREQUENCY (MHz)			CONVERSION LOSS (dB)			RF in at 1dB Compr (dBm)	IP3 (dBm)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF	Typ.	σ	Max.	Typ.	Typ.	Typ.	Min.	Typ.	Min.
1850-1910	2090-2150	180-300	7.2	0.2	8.9	+16	29	29	20	19	13

Typical Performance Data

Frequency		Conversion Loss (dB)	Isolation L-R	Isolation L-I	VSWR RF Port	VSWR LO Port	IP3 (dBm)
RF MHz	LO MHz	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1850.00	2090.00	7.23	29.02	19.74	1.35	3.32	29.76
1856.00	2096.00	7.22	28.53	19.89	1.35	3.43	31.24
1862.00	2102.00	7.19	29.17	19.89	1.35	3.59	31.15
1868.00	2108.00	7.15	29.05	19.96	1.35	3.76	30.87
1874.00	2114.00	7.12	28.87	20.00	1.35	3.94	31.10
1880.00	2120.00	7.10	28.68	19.94	1.35	4.08	29.66
1886.00	2126.00	7.08	28.82	19.86	1.34	4.17	29.09
1892.00	2132.00	7.08	29.54	19.91	1.33	4.20	29.87
1898.00	2138.00	7.11	29.63	19.86	1.33	4.19	29.28
1904.00	2144.00	7.15	29.34	19.89	1.33	4.19	28.81
1910.00	2150.00	7.19	29.67	20.06	1.33	4.10	29.07

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED
I/F/R MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.

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Performance Charts

HJK-21MH+ HJK-21MH

