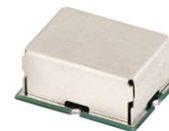


# High IP3 Frequency Mixer

## HJK-212LH+

Level 10 (LO Power +10 dBm) 1800 to 2100 MHz



CASE STYLE: TTT881  
PRICE: \$15.95 ea. QTY. (1-9)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify 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	+20 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 IP2, 57 dBm typ.
- high IP3, 24 dBm typ.
- good L-R isolation, 42 dB typ.
- compression, 3 dB higher than LO power
- wideband
- protected by US Patent 6,807,407

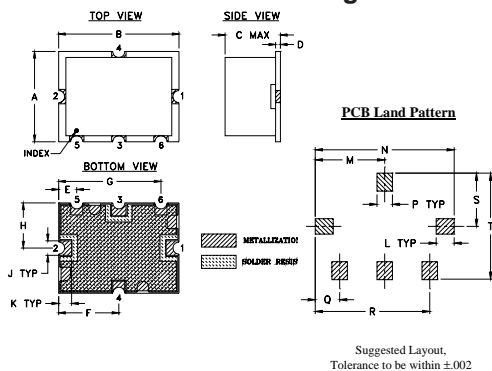
### Applications

- base stations
- communication systems
- cellular
- PCS
- DCS

### Electrical Specifications

FREQUENCY (MHz)			CONVERSION LOSS (dB)			RF in at 1dB Compr. (dBm)	IP3 (dBm)	IP2 (dBm)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF	Typ.	$\sigma$	Max.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	
1800-2100	1660-1960	10-270	6.8	0.15	9.0	+13	24	57	42	30	35	25

### Outline Drawing



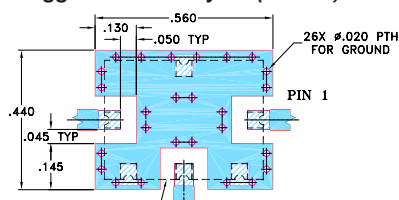
### Outline Dimensions (inch)

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	

### Typical Performance Data

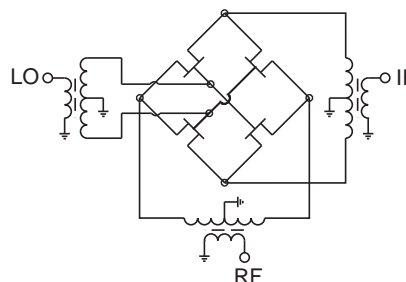
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)	IP2 (dBm)
RF	LO	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
1800.00	1660.00	7.03	45.61	36.67	1.29	2.55	24.92	58.17
1820.00	1680.00	6.95	44.60	36.06	1.34	2.19	26.17	61.21
1840.00	1700.00	6.79	43.50	35.60	1.41	1.90	28.34	62.30
1860.00	1740.00	6.66	40.87	35.39	1.46	1.41	27.63	57.90
1880.00	1760.00	6.59	40.50	35.21	1.48	1.20	26.81	57.70
1900.00	1780.00	6.59	40.29	35.20	1.49	1.04	26.46	66.34
1920.00	1800.00	6.65	40.32	35.30	1.53	1.12	25.91	59.50
1940.00	1820.00	6.74	40.29	35.42	1.56	1.29	25.62	60.43
1960.00	1840.00	6.78	40.31	35.61	1.57	1.47	24.78	63.78
1980.00	1860.00	6.82	40.34	35.86	1.57	1.68	23.92	61.84
2000.00	1880.00	6.86	40.40	36.19	1.59	1.96	23.33	64.53
2020.00	1900.00	6.93	40.55	36.46	1.60	2.25	23.01	59.08
2040.00	1922.50	7.01	40.68	36.73	1.59	2.51	23.24	57.66
2085.00	1945.00	7.16	40.62	37.32	1.60	2.86	22.09	51.12
2107.50	1967.50	7.20	40.66	37.95	1.60	3.41	21.57	51.15

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



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002", COPPER 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.  
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.  
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.  
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

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](http://www.minicircuits.com/MCLStore/terms.jsp).

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