

High IP3 Frequency Mixer

HJK-21LH+ HJK-21LH

Level 10 (LO Power +10 dBm) 1850 to 1910 MHz



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, 25 dBm typ.
- compression, 3 dB higher than LO power

Applications

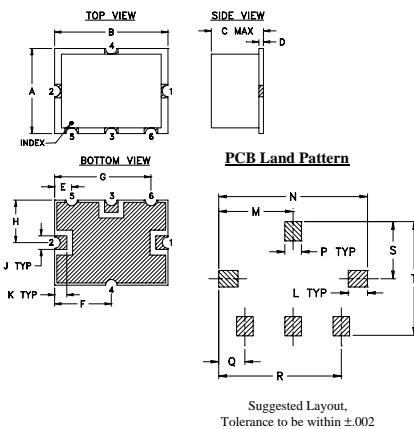
- base stations
- communication systems
- PCS

CASE STYLE: TTT167
PRICE: \$12.95 ea. QTY (1-9)

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

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

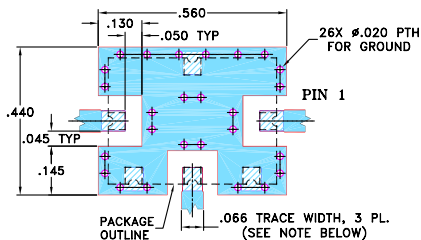
Outline Drawing



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. 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

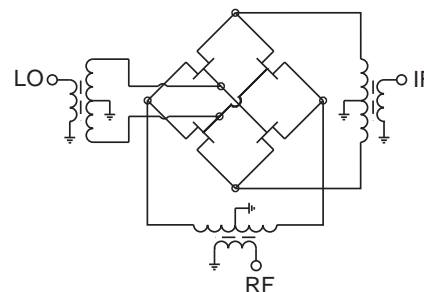
Electrical Specifications

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	0.3	8.9	+13	25	28	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 +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
1850.00	2090.00	7.13	30.85	18.78	1.47	3.30	26.91
1856.00	2096.00	7.14	31.01	18.86	1.48	3.43	27.08
1862.00	2102.00	7.12	30.97	18.95	1.49	3.60	27.21
1868.00	2108.00	7.09	30.94	18.99	1.48	3.73	26.47
1874.00	2114.00	7.09	31.16	18.98	1.47	3.80	26.48
1880.00	2120.00	7.09	31.50	18.96	1.46	3.83	25.46
1886.00	2126.00	7.10	31.74	18.95	1.46	3.86	25.49
1898.00	2138.00	7.16	31.79	19.07	1.48	4.02	25.44
1904.00	2144.00	7.16	31.71	19.20	1.48	4.04	25.63
1910.00	2150.00	7.20	31.89	19.28	1.47	4.06	25.32

Electrical Schematic



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ISO 9001 ISO 14001 AS 9100 CERTIFIED

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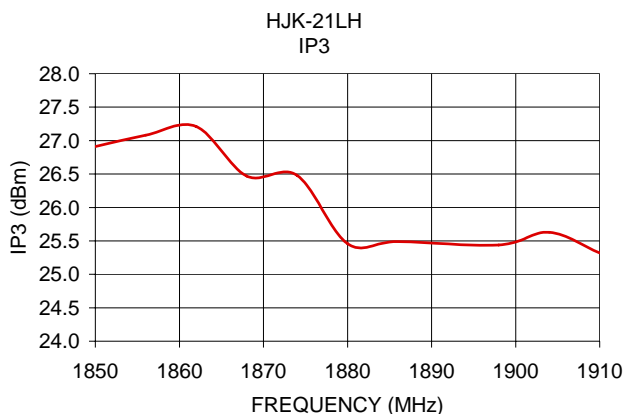
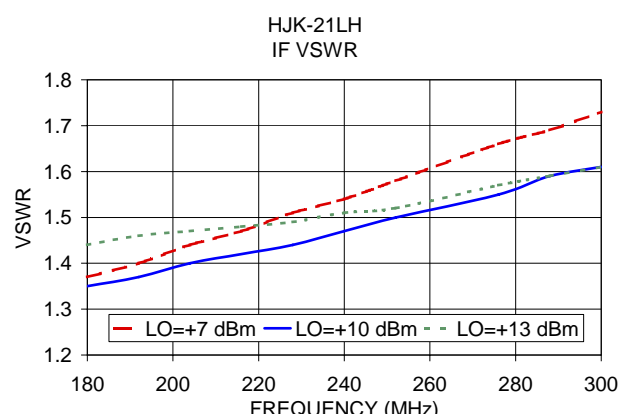
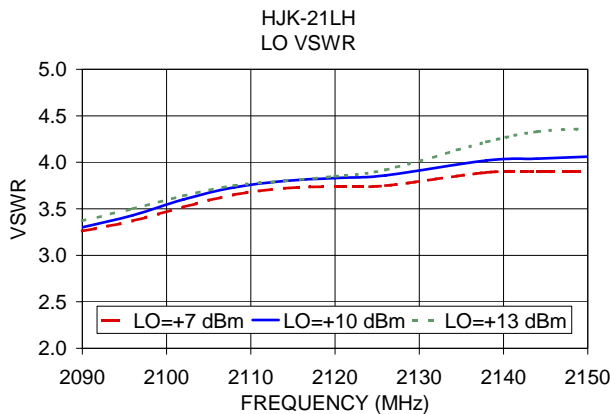
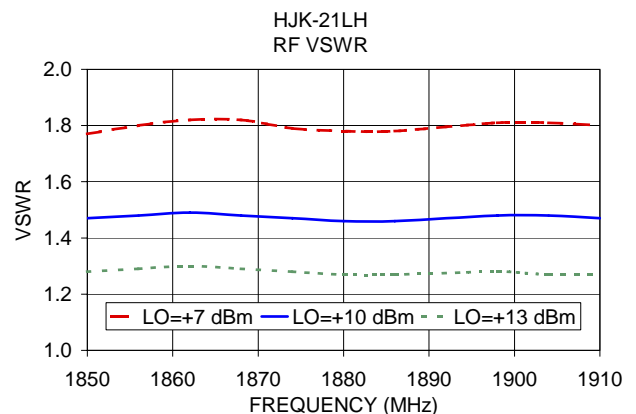
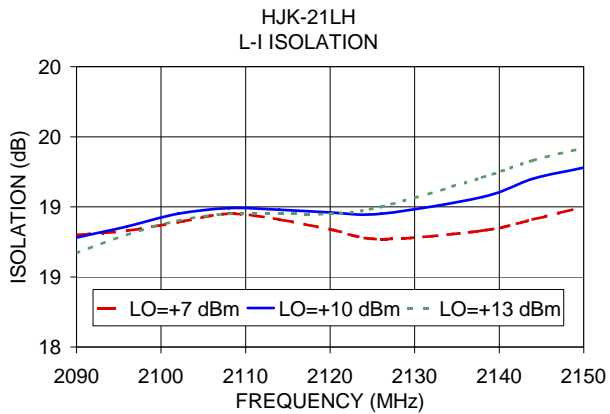
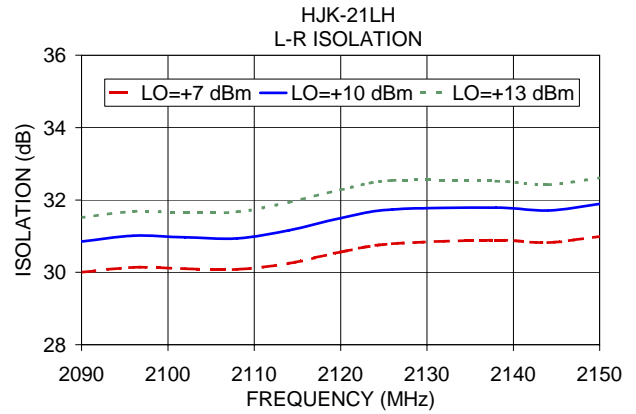
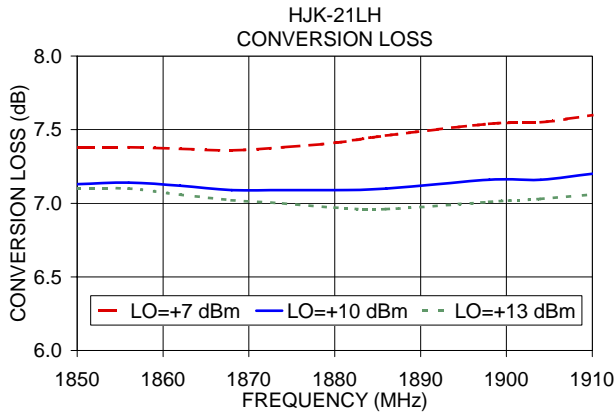
IF/RF MICROWAVE COMPONENTS

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.

Rev. F
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Performance Charts

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