

High IP3

Frequency Mixer

Level 17 (LO Power +17 dBm) 345 to 480 MHz

HJK-481H+



Generic photo used for illustration purposes only

CASE STYLE: TTT881

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500

Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
LO Power	+19 dBm
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

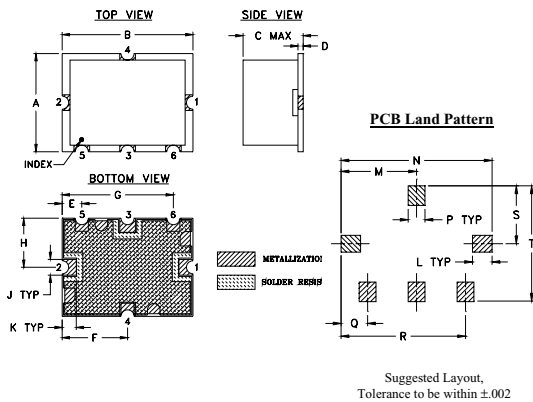
Features

- high IP3, 32 dBm typ.
- excellent L-R isolation, 55 dB typ.;
- L-I isolation, 38 dB typ.

Applications

- base stations
- communication systems
- wireless application in Health care
- weather instruments/radar/satellites
- general aviation air to ground telephone
- land mobile radio

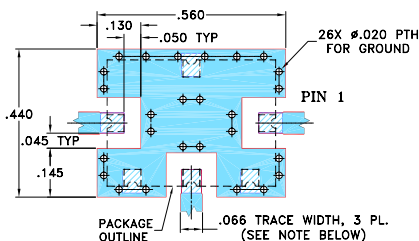
Outline Drawing



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	

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.

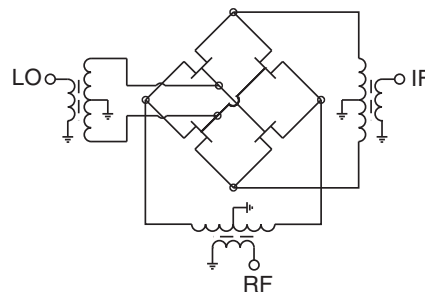
Electrical Specifications

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.
345-480	395-530	30-150	6.5	0.1	8.0	+20	32	55	43	38	28

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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
345.00	395.10	6.36	52.91	34.97	1.40	1.76	32.12
354.00	404.10	6.34	53.27	34.94	1.38	1.57	41.07
363.00	413.10	6.34	53.37	34.97	1.36	1.39	39.39
372.00	422.10	6.31	53.19	34.66	1.37	1.23	32.40
381.00	431.10	6.30	53.18	34.99	1.38	1.10	34.22
390.00	440.10	6.33	53.53	35.06	1.39	1.09	35.61
399.00	449.10	6.30	54.14	35.88	1.43	1.22	35.58
408.00	458.10	6.29	54.70	36.24	1.45	1.36	32.77
417.00	467.10	6.26	54.91	36.59	1.48	1.52	32.19
426.00	476.10	6.29	55.95	37.44	1.54	1.68	34.37
435.00	485.10	6.36	57.29	37.91	1.57	1.84	35.54
444.00	494.10	6.39	57.39	39.04	1.61	2.00	32.95
453.00	503.10	6.44	56.87	39.62	1.67	2.16	31.91
462.00	512.10	6.53	58.12	40.50	1.71	2.30	32.23
471.00	521.10	6.61	59.23	41.32	1.75	2.44	32.06
480.00	530.10	6.70	60.34	42.15	1.80	2.57	32.67

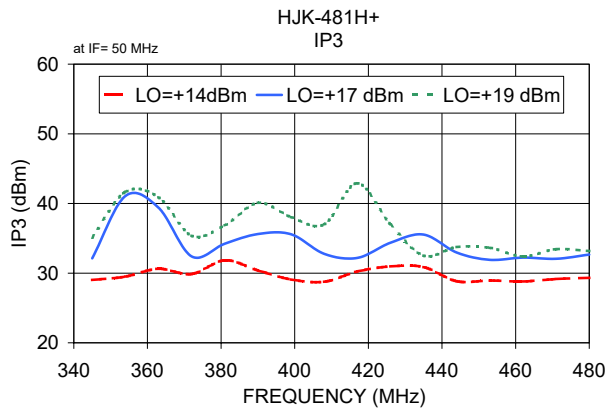
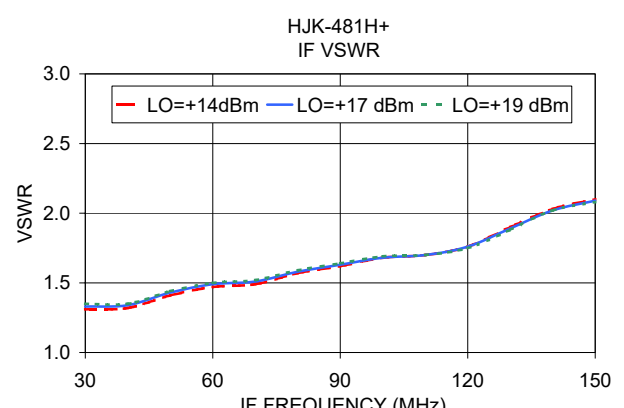
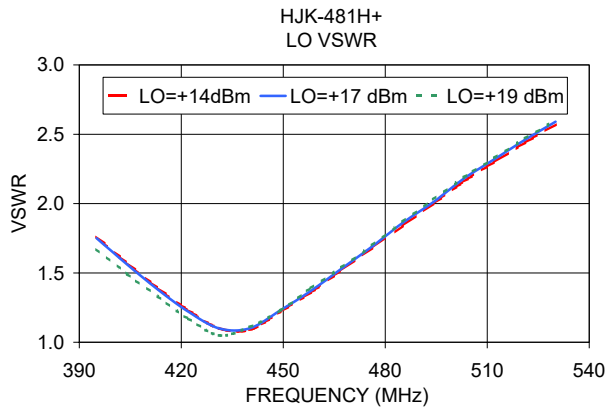
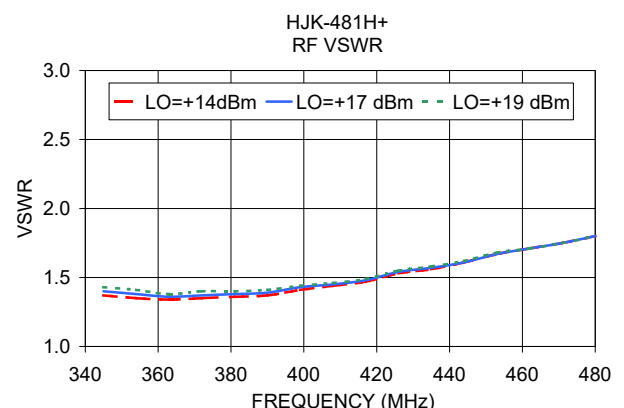
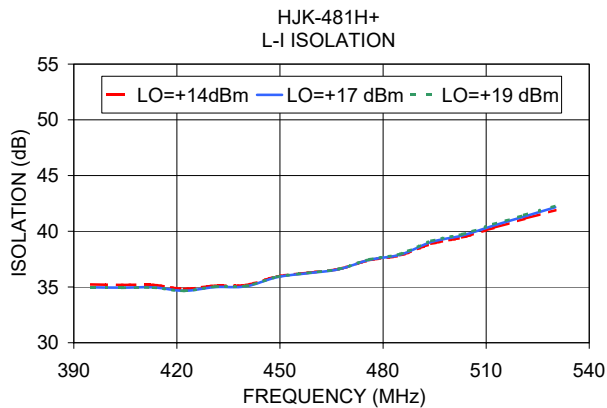
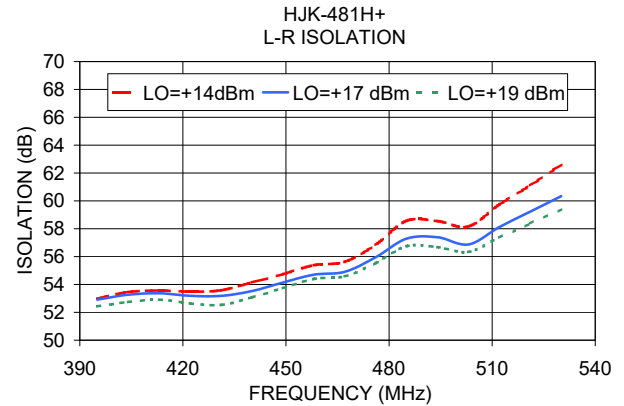
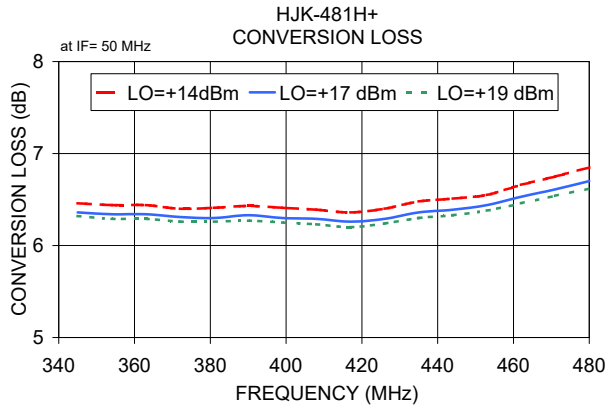
Electrical Schematic



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-Circuits' 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





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