

High IP3

Frequency Mixer

Level 17 (LO Power +17 dBm) 390 to 540 MHz

HJK-541H+



CASE STYLE: TTT881

Maximum Ratings

Operating Temperature	-40°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.

Pad Connections

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

Features

- high IP3, 32 dBm typ.
- excellent L-R isolation, 42 dB typ.;
- L-I isolation, 36 dB typ.

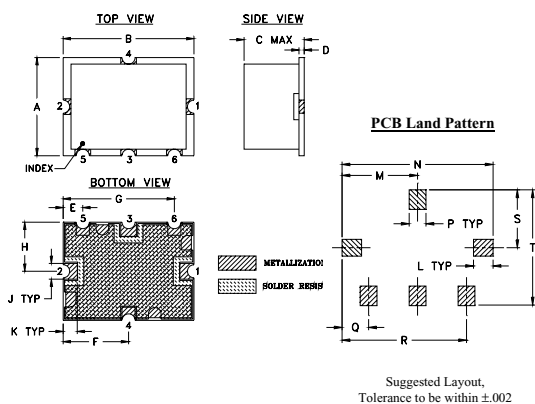
Applications

- base stations
- mobil radio
- radar
- weather instruments/radar/satellites
- general aviation air to ground services
- broadcast

+RoHS Compliant

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

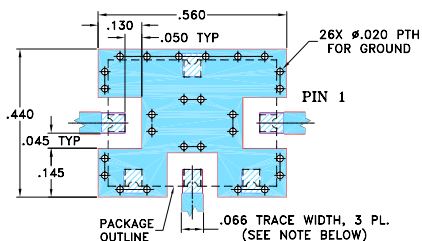
Outline Drawing



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.

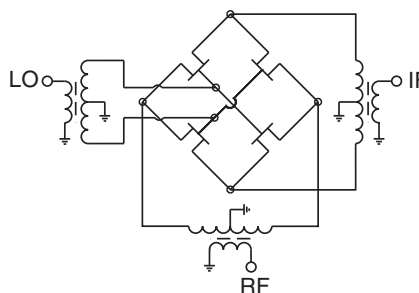
Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF	390	—	540	MHz
Frequency Range, LO	500	—	650	MHz
Frequency Range, IF	100	—	180	MHz
Conversion Loss	—	7.4	8.5	dB
LO to RF Isolation	37	42	—	dB
LO to IF Isolation	28	36	—	dB
IP3	—	32	—	dBm
RF Input Power at 1 dB Compression	—	+20	—	dBm

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
390.00	500.10	6.74	47.15	37.56	1.89	3.31	36.09
400.00	510.10	6.67	47.58	37.34	1.97	2.94	34.37
410.00	520.10	6.70	48.05	36.82	2.05	2.60	32.67
420.00	530.10	6.80	48.53	36.81	2.11	2.31	33.43
430.00	540.10	6.84	48.96	36.76	2.20	2.04	33.08
440.00	550.10	6.80	49.12	36.97	2.25	1.81	34.18
450.00	560.10	6.75	48.92	37.31	2.34	1.60	32.86
460.00	570.10	6.79	48.67	37.37	2.40	1.42	32.63
470.00	580.10	6.88	48.55	37.30	2.48	1.26	32.81
480.00	590.10	6.99	48.72	37.52	2.55	1.11	33.33
490.00	600.10	7.04	48.69	37.48	2.62	1.04	34.11
500.00	610.10	7.00	48.32	37.47	2.68	1.16	33.25
510.00	620.10	6.93	48.29	37.74	2.73	1.31	33.05
520.00	630.10	6.97	48.33	37.70	2.81	1.47	32.13
540.00	650.10	7.22	48.54	38.57	2.92	1.87	31.64

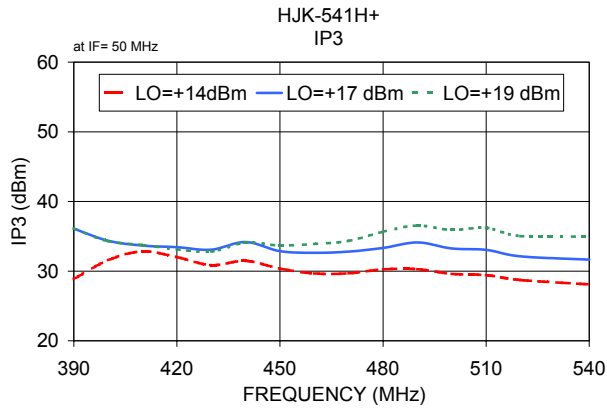
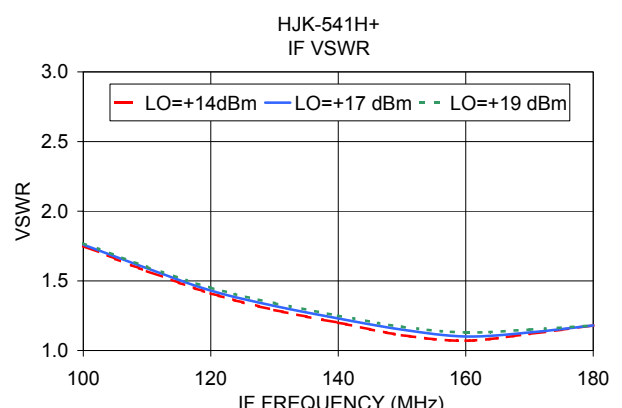
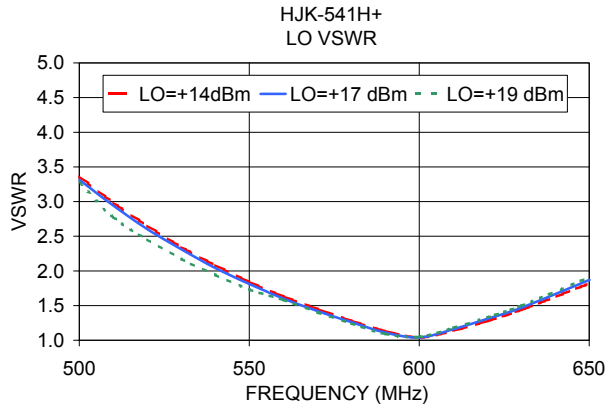
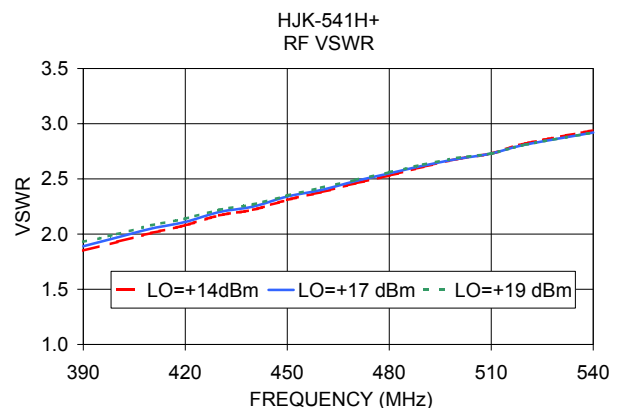
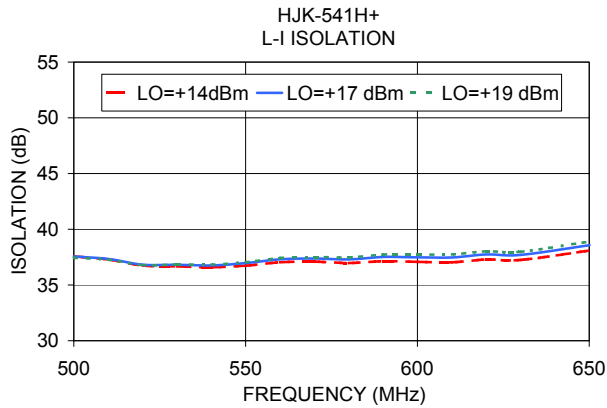
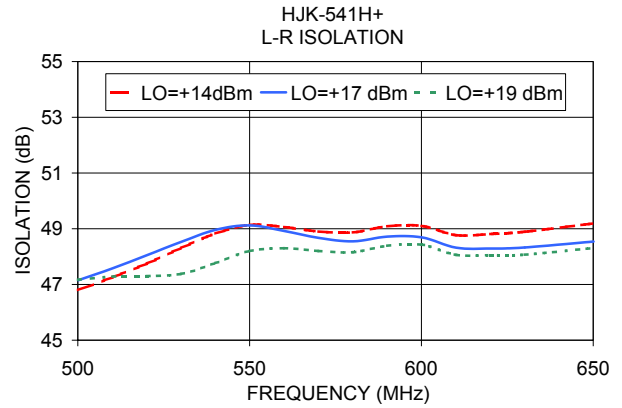
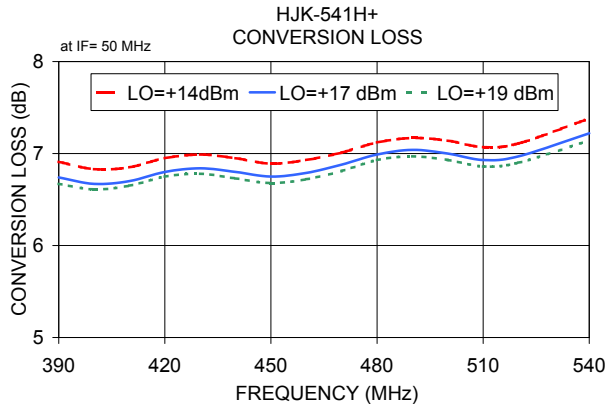
Electrical Schematic



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.
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