

High IP3 Frequency Mixer

Level 17 (LO Power +17 dBm) 1800 to 2100 MHz

HJK-212H+



CASE STYLE: TTT881

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, 63 dBm typ.
- very high IP3, 32 dBm typ.
- good L-R isolation, 42 dB typ.
- compression, 3 dB higher than LO power
- protected by US Patent 6,807,407

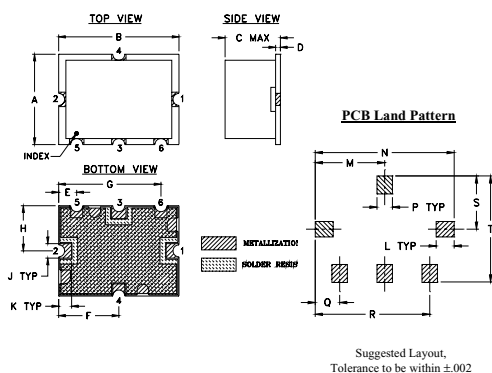
Applications

- 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.	σ	Max.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.
1800-2100	1660-1960	10-270	6.5	0.15	8.6	+20	32	63	42	30	35	25

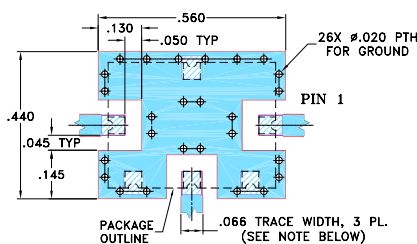
Outline Drawing



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	

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



- NOTE:**
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.030" \pm .002"$; 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.

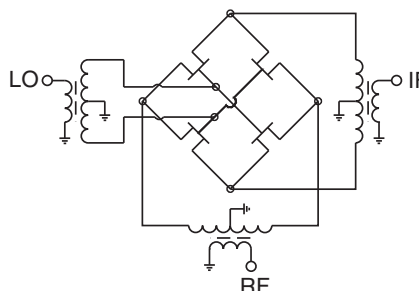
Notes

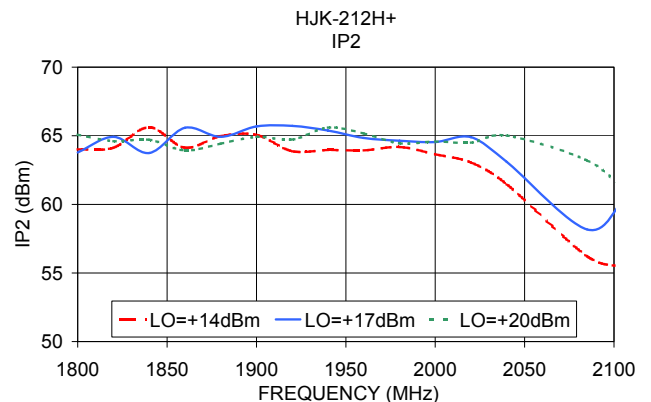
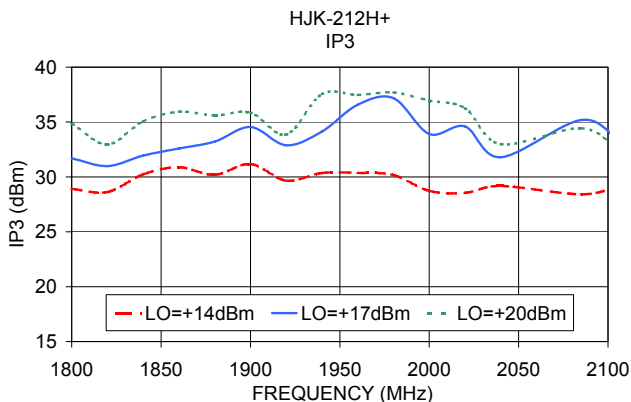
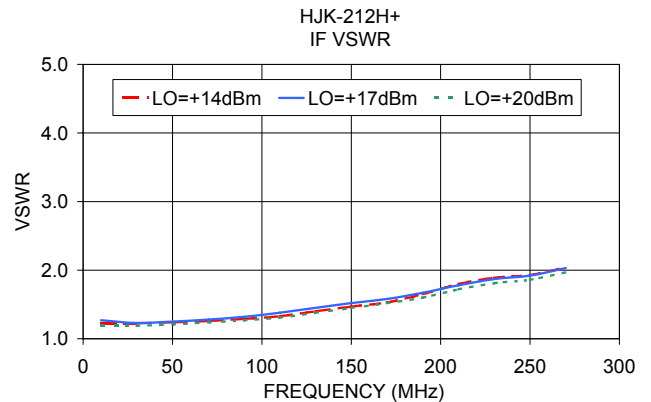
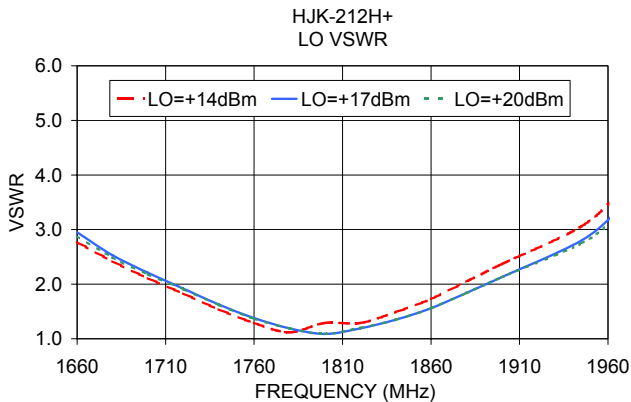
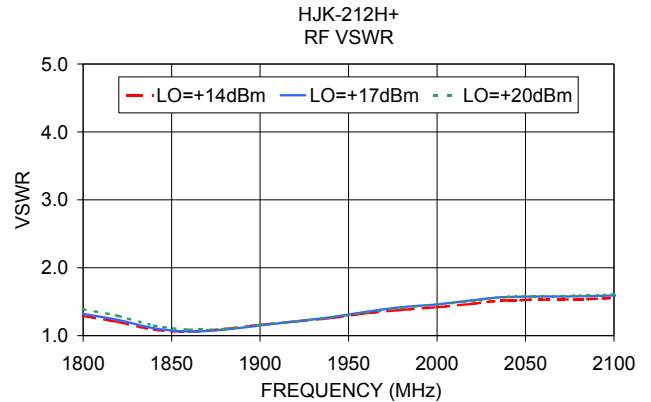
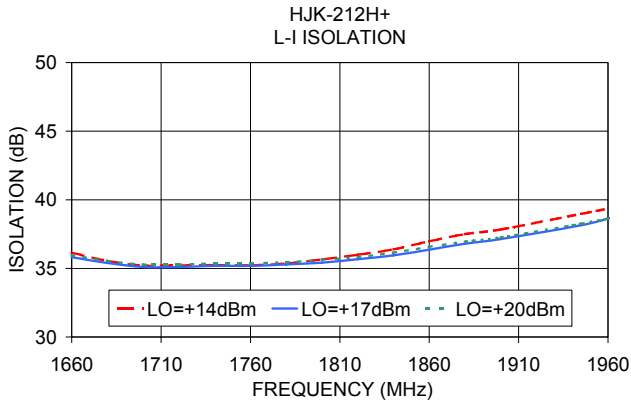
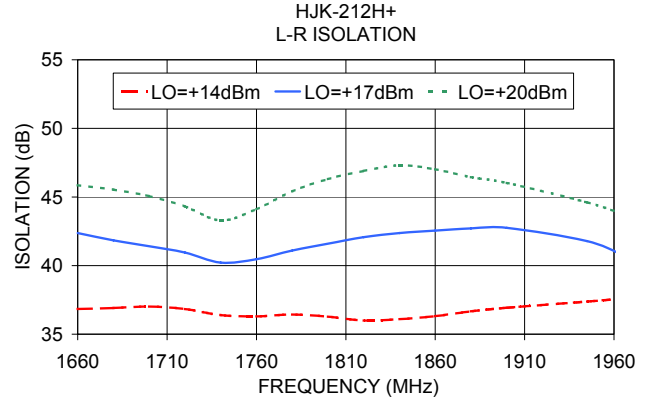
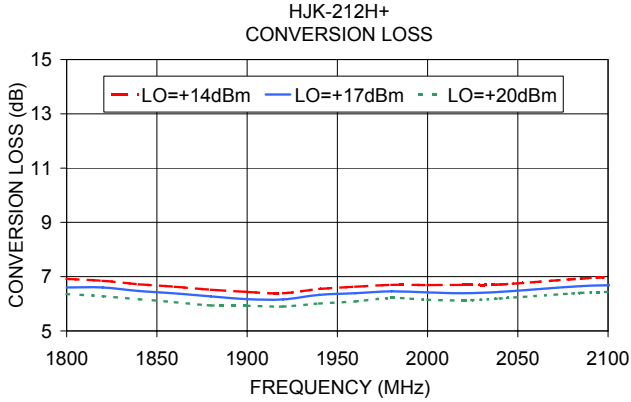
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Typical Performance Data

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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
1800.00	1660.00	6.60	42.37	35.81	1.32	2.95	31.69	63.78
1820.00	1680.00	6.60	41.84	35.39	1.23	2.53	30.99	64.92
1840.00	1700.00	6.47	41.41	35.10	1.11	2.21	31.95	63.74
1860.00	1720.00	6.38	40.95	35.10	1.06	1.92	32.59	65.58
1880.00	1740.00	6.27	40.22	35.18	1.09	1.63	33.22	64.92
1900.00	1760.00	6.17	40.47	35.18	1.15	1.38	34.55	65.68
1920.00	1780.00	6.16	41.10	35.29	1.21	1.19	32.88	65.72
1940.00	1800.00	6.33	41.60	35.42	1.27	1.09	34.14	65.38
1960.00	1820.00	6.39	42.07	35.67	1.35	1.19	36.58	64.84
1980.00	1840.00	6.46	42.37	35.95	1.42	1.35	37.17	64.64
2000.00	1860.00	6.42	42.55	36.36	1.46	1.56	33.91	64.54
2020.00	1880.00	6.39	42.71	36.80	1.52	1.84	34.60	64.90
2040.00	1900.00	6.44	42.75	37.14	1.57	2.13	31.79	63.10
2085.00	1945.00	6.65	41.78	38.15	1.58	2.80	35.19	58.17
2107.50	1967.50	6.69	40.61	38.90	1.60	3.40	33.18	60.70

Electrical Schematic





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