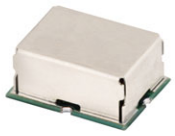
High IP3

Frequency Mixer

HJK-212H+

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



CASE STYLE: TTT881
PRICE: $16.95 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

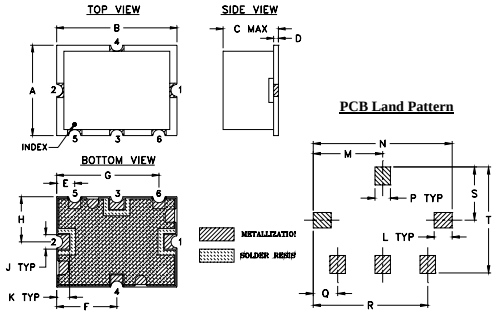
Features

- high IP2, 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

Outline Drawing



Suggested Layout,
Tolerance to be within ±.002

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

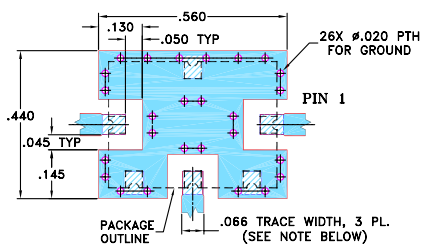
Electrical Specifications

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

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

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

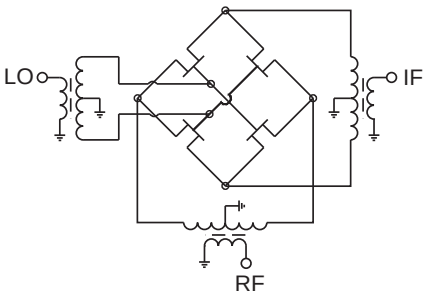


NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. GROUND PAD SHALL BE FREE OF SOLDER MASK IF REQUIRED FOR SOLDERING.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER), SEE NOTE 2.

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Electrical Schematic



REV. OR
M111197
HJK-212H+
ED-10324E/3
WL/QL
090921

Performance Charts

HJK-212H+

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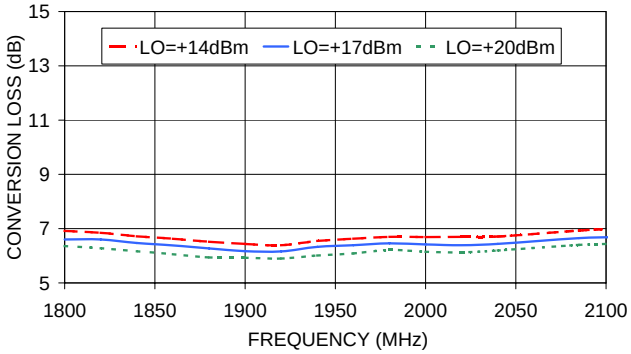
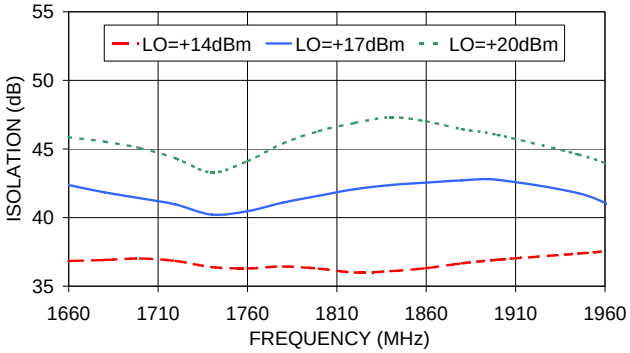
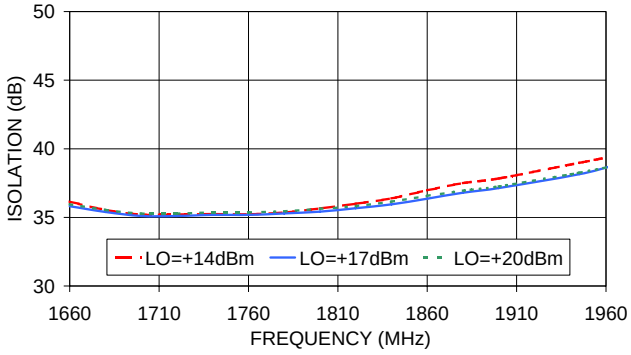
CONVERSION LOSS



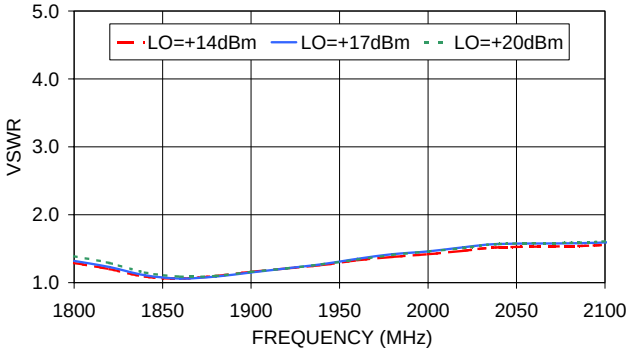
HJK-212H+
L-R ISOLATION



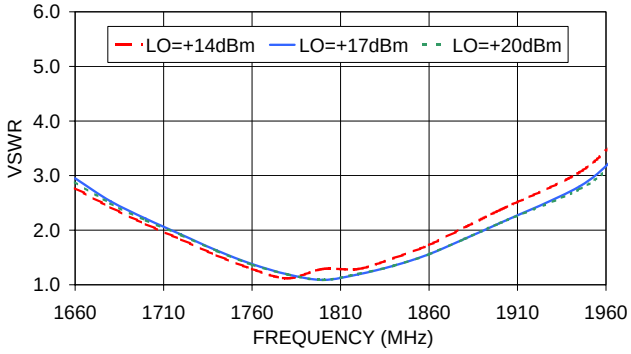
HJK-212H+
L-I ISOLATION



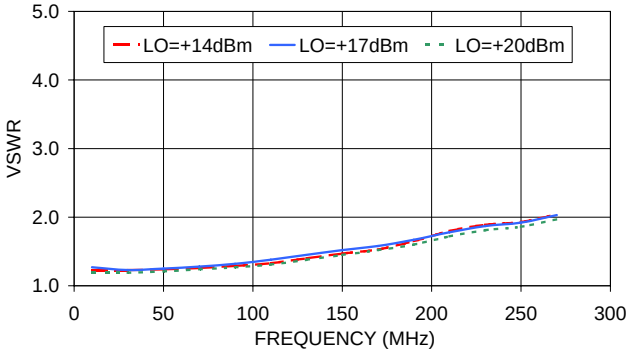
HJK-212H+
RF VSWR



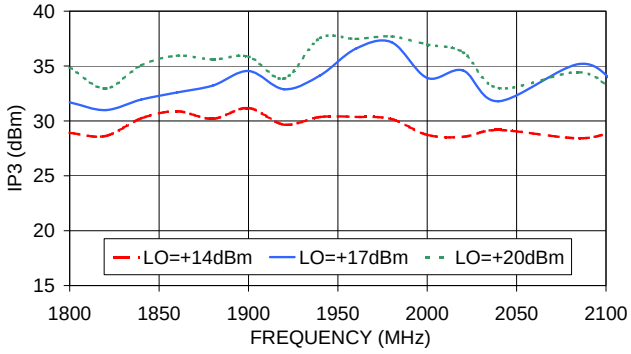
HJK-212H+
LO VSWR



HJK-212H+
IF VSWR



HJK-212H+
IP3



HJK-212H+
IP2