

# Up Converter Frequency Mixer

## HJK-U232H+

Level 17 (LO Power +17 dBm) 850 to 2360 MHz



### Maximum Ratings

Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
LO Power	+19dBm
IF Power	+20dBm

### Pin Connections

LO	2
IF (IN)	3
RF (OUT)	1
GROUND	4,5,6

### Features

- up converter mixer
- very high IP3, 31 dBm typ.
- excellent L-R isolation, 46 dB typ;  
L-I isolation, 35 dB typ.
- protected by US Patent 6,807,407

### Applications

- base stations
- communication systems
- cellular
- mobile satellite
- GPS
- fixed microwave

CASE STYLE: TTT881

PRICE: \$14.95 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.*

### Electrical Specifications

FREQUENCY (MHz)			CONVERSION LOSS (dB)			LO-IF (IN) ISOLATION (dB)		LO-RF (OUT) ISOLATION (dB)		IP3 at center band (dBm)
IF (IN)	LO	RF (OUT)	Typ.	$\sigma^*$	Max.	Typ.	Min.	Typ.	Min.	Typ.
850-1850	370-510	1220-2360	6.8	0.1	8.8	35	28	46	40	31

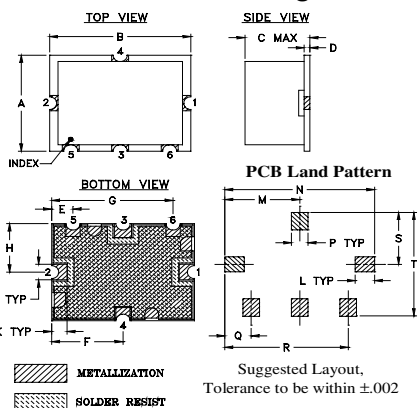
1 dB COMPR. +20 dBm typ.

\*  $\sigma$  is a standard deviation.

### Typical Performance Data

Frequency (MHz)			Conversion Loss (dB)	Isolation L-I (dB)	Isolation L-R (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)
IF (IN)	LO	RF (OUT)	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
850.00	370.00	1220.00	7.23	36.84	48.48	2.40	3.96	28.09
910.00	380.00	1290.00	7.24	36.40	48.08	2.22	3.40	29.57
1030.00	400.00	1430.00	7.05	35.53	47.30	2.28	2.33	32.57
1071.00	405.50	1476.50	7.14	35.32	47.10	2.06	2.10	34.48
1112.00	411.00	1523.00	6.98	35.16	46.98	2.11	1.90	37.69
1194.00	422.00	1616.00	7.00	34.92	46.68	1.90	1.57	37.65
1276.00	433.00	1709.00	6.99	34.84	46.56	1.66	1.33	34.59
1358.00	444.00	1802.00	6.96	34.88	46.38	1.51	1.23	34.25
1440.00	455.00	1895.00	6.65	35.03	46.34	1.45	1.28	34.00
1481.00	460.50	1941.50	6.60	35.13	46.37	1.48	1.35	33.57
1563.00	471.50	2034.50	6.45	35.37	46.52	1.46	1.55	31.93
1645.00	482.50	2127.50	6.53	35.65	46.82	1.52	1.79	30.58
1768.00	499.00	2267.00	6.97	36.15	47.25	1.71	2.15	29.44
1809.00	504.50	2313.50	7.13	36.32	47.38	1.83	2.25	29.11
1850.00	510.00	2360.00	7.43	36.50	47.46	1.97	2.35	29.07

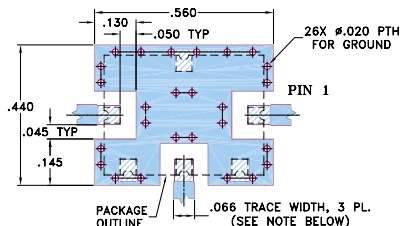
### Outline Drawing



### Outline Dimensions (inch)

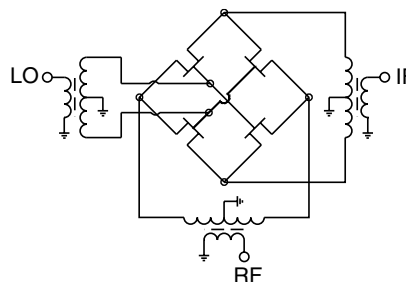
A	B	C	D	E	F	G	H	J	K
.38	.50	.23	.020	.075	.250	.425	.187	.050	.050
9.65	12.70	5.84	0.51	1.91	6.35	10.80	4.75	1.27	1.27
L	M	N	P	Q	R	S	T	wt.	
.070	.270	.540	.060	.095	.445	.208	.415	grams	
1.78	6.86	13.72	1.52	2.41	11.30	5.28	10.54	0.8	

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



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030"  $\pm$  .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



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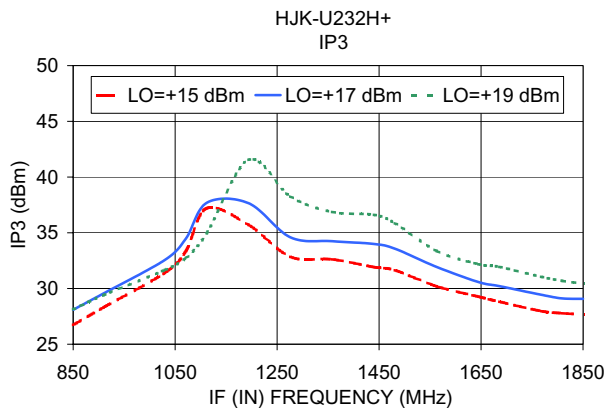
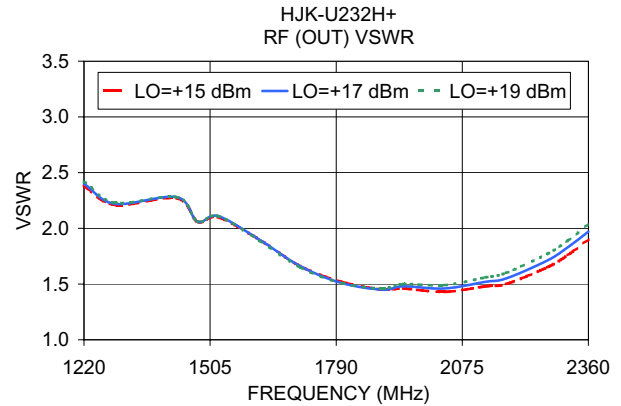
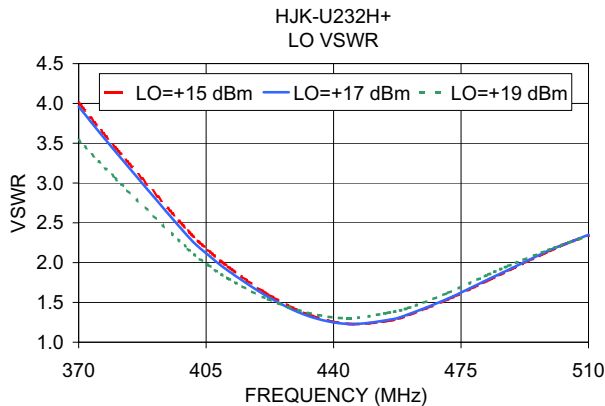
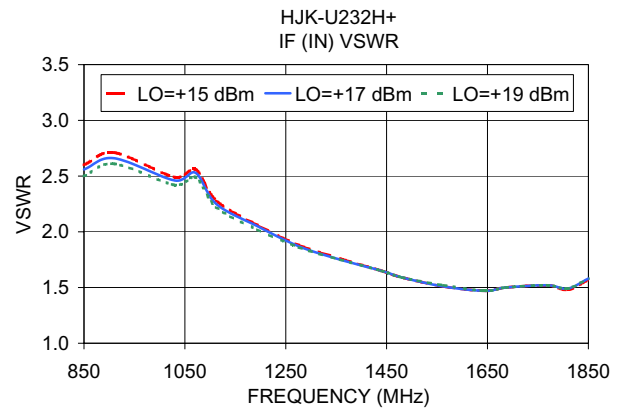
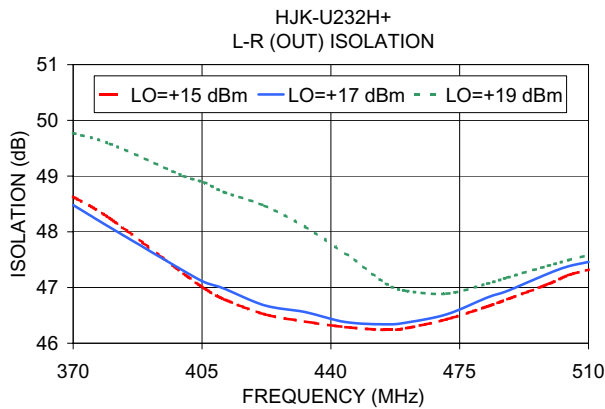
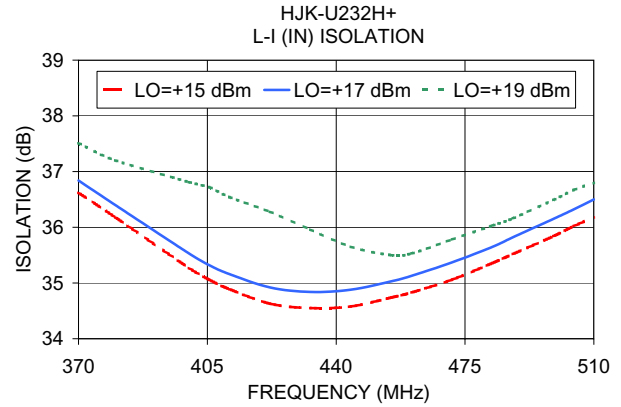
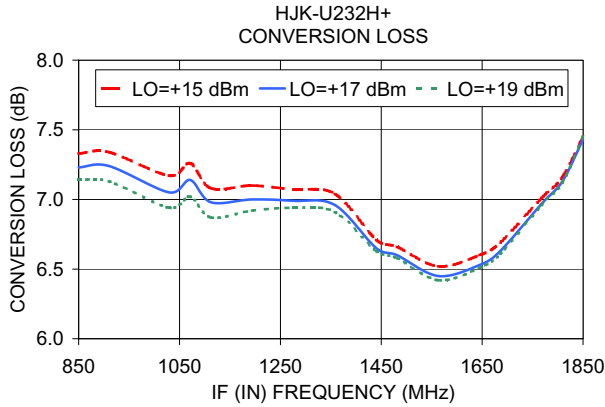
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RF/IF MICROWAVE COMPONENTS

REV. OR  
M112301  
HJK-U232H+  
ED-12998/1  
WL/AM  
070808  
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# Performance Charts

# HJK-U232H+



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