

# Up Converter Frequency Mixer

## SIM-U432H+

### Level 17 (LO Power +17 dBm) 0.1 to 3900 MHz



Generic photo used for illustration purposes only

CASE STYLE: HV1195

#### Maximum Ratings

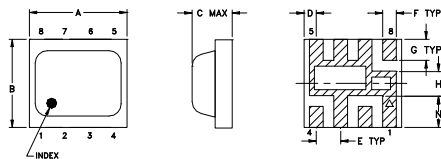
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	100mW

For extended temperature range, consult factory.  
Permanent damage may occur if any of these limits are exceeded.

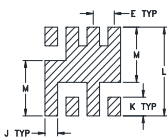
#### Pin Connections

LO	4
IF (IN)	2
RF (OUT)	8
GROUND	1,3,5,6,7

#### Outline Drawing



PCB Metal Land Pattern

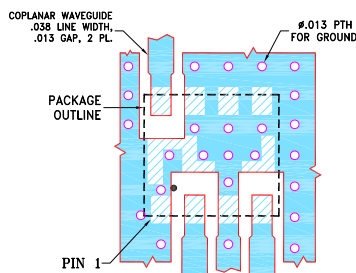


Suggested Layout, Tolerance to be within ±.002

#### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.2098	0.64	1.27	0.71	1.09
H	J	K	L	M	N	wt
.050	.030	.043	.204	.127	0.065	grams
1.27	0.76	1.09	5.18	3.23	1.65	0.08

#### Demo Board MCL P/N: TB-382 Suggested PCB Layout (PL-239)



- NOTES:
- TRACE WIDTH AND GAP ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020±.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
  - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

#### Features

- up converter mixer
- low conversion loss, 7.5 dB typ.
- high IP3, 26 dBm typ.
- ceramic, tiny size
- aqueous washable
- protected by US patent, 7,027,795

#### Applications

- WIMAX
- wide band receivers

#### Electrical Specifications

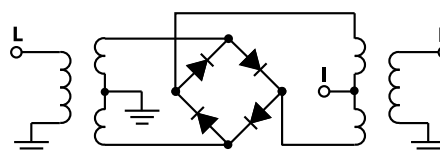
FREQUENCY (MHz)			CONVERSION LOSS* (dB)			LO-IF (IN) ISOLATION (dB)		LO-RF (OUT) ISOLATION (dB)		IP3 at center band (dBm)
IF (IN)	LO	RF (OUT)	Typ.	σ**	Max.	Typ.	Min.	Typ.	Min.	Typ.
0.1-800	1100-4250	1100-3900	7.5	0.2	9.8	24	13	36	28	26

1 dB Compression: +14 dBm typ.  
\* Conversion Loss at 30 MHz IF  
\*\* σ 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)
IF (IN)	LO	RF (OUT)	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
30.00	975.10	945.10	9.21	16.41	37.30	4.82	1.56
30.00	1050.10	1020.10	6.90	16.28	38.13	2.79	1.53
30.00	1200.10	1170.10	5.40	16.34	42.11	2.03	1.68
30.00	1350.10	1320.10	5.46	17.13	42.70	2.23	2.04
30.00	1500.10	1470.10	5.64	19.04	39.57	2.09	1.93
30.00	1550.10	1520.10	5.69	19.36	37.06	2.02	2.14
30.00	1600.10	1570.10	5.85	20.85	36.64	2.05	2.02
30.00	1650.10	1620.10	5.90	20.98	36.49	2.09	2.10
30.00	1700.10	1670.10	6.07	21.41	37.60	2.11	2.05
30.00	1850.10	1820.10	6.25	24.12	37.29	1.82	1.88
30.00	2000.10	1970.10	6.21	31.70	37.29	1.42	1.84
30.00	2440.10	2410.10	6.27	27.83	33.46	2.30	1.26
30.00	3100.10	3070.10	5.87	22.23	32.51	1.88	1.34
30.00	3460.10	3430.10	6.17	26.15	37.13	2.32	1.53
30.00	3800.10	3770.10	7.23	28.76	33.36	1.98	1.77
30.00	3850.10	3820.10	7.37	30.91	33.59	1.96	1.78
30.00	3900.10	3870.10	7.80	33.77	33.19	2.12	1.92
30.00	3950.10	3920.10	8.25	35.67	33.61	2.46	2.02
30.00	4000.10	3970.10	8.23	35.04	33.37	2.70	2.18
30.00	4100.10	4070.10	8.39	34.66	35.92	3.43	2.56

#### Electrical Schematic



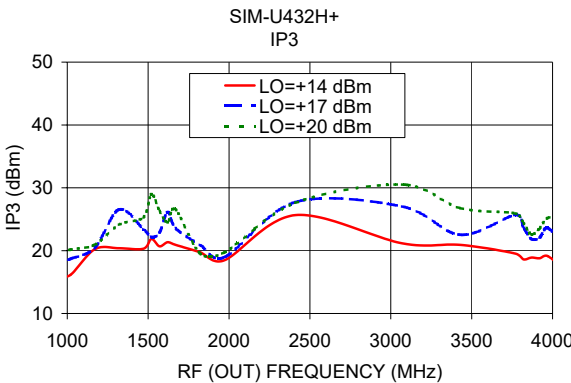
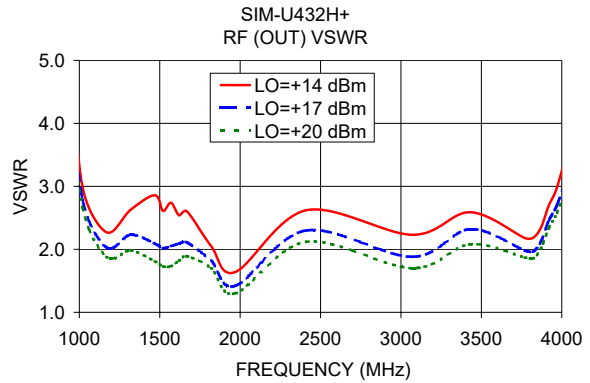
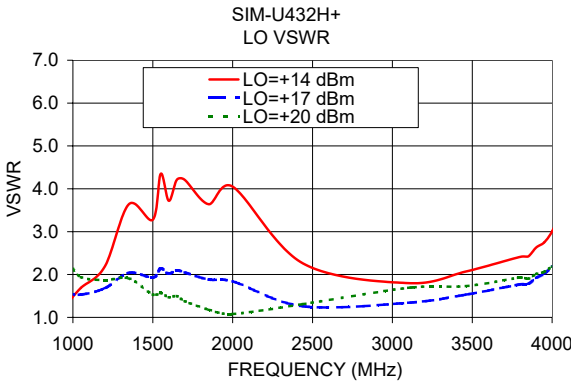
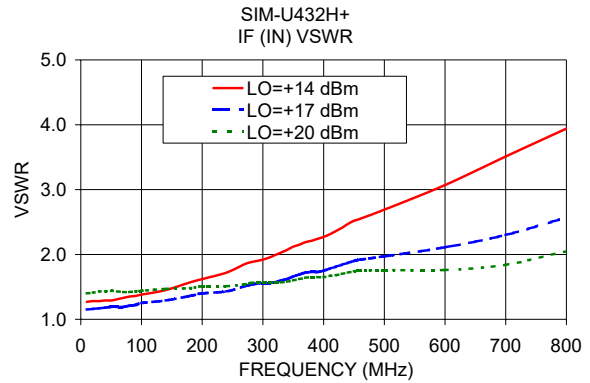
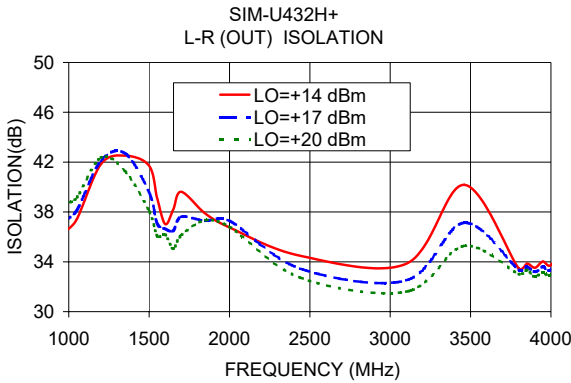
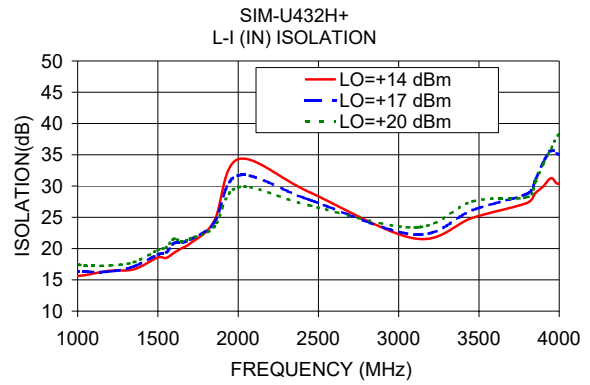
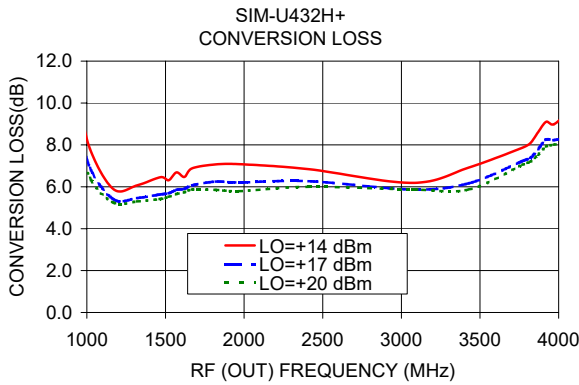
#### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



[www.minicircuits.com](http://www.minicircuits.com) P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. C  
ECO-000060  
SIM-U432H+  
ED-12399/4  
DJ/TD/CP/AM  
200821  
Page 1 of 2



**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](http://www.minicircuits.com/MCLStore/terms.jsp)

