Up Converter
Frequency Mixer

SIM-U432H+

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

CASE STYLE: HV1195
PRICE: $9.95 ea. QTY (10)

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200, 500

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

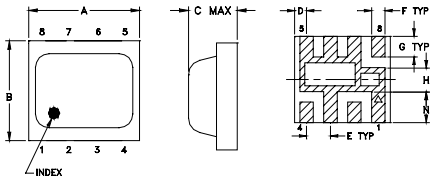
Features

- 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

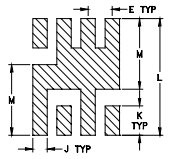
Applications

- WIMAX
- wide band receivers

Outline Drawing



PCB Land Pattern



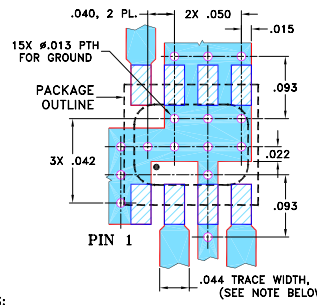
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.21	0.64	1.27	0.71	1.09

H	J	K	L	M	N	wt
.050	.030	.060	0.238	0.144	0.065	grams
1.27	0.76	1.52	6.05	3.66	1.65	0.08

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



NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. 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

Electrical Specifications

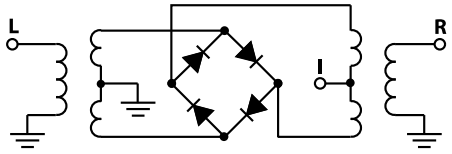
FREQUENCY (MHz)			CONVERSION LOSS* (dB)			LO-IF (IN) ISOLATION (dB)		LO-RF (OUT) ISOLATION (dB)		IP3 at center band (dBm)
IF (IN)	LO	RF (OUT)	Typ.	σ**	Max.	Typ.	Min.	Typ.	Min.	Typ.
0.1-800	1100-4250	1100-3900	7.5	0.2	9.8	24	13	36	28	26

1 dB Compression: +14 dBm typ.
* Conversion Loss at 30 MHz IF
** σ is a standard deviation

Typical Performance Data

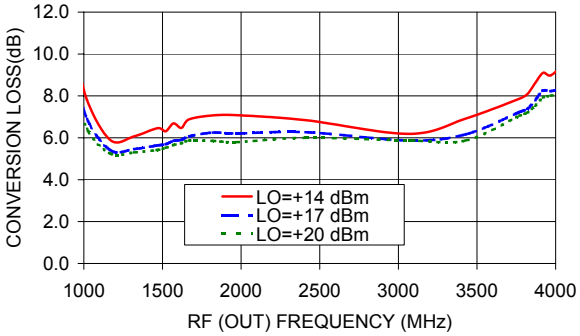
Frequency (MHz)			Conversion Loss (dB)	Isolation L-I (dB)	Isolation L-R (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
IF (IN)	LO	RF (OUT)	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
30.00	975.10	945.10	9.21	16.41	37.30	4.82	1.56
30.00	1050.10	1020.10	6.90	16.28	38.13	2.79	1.53
30.00	1200.10	1170.10	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

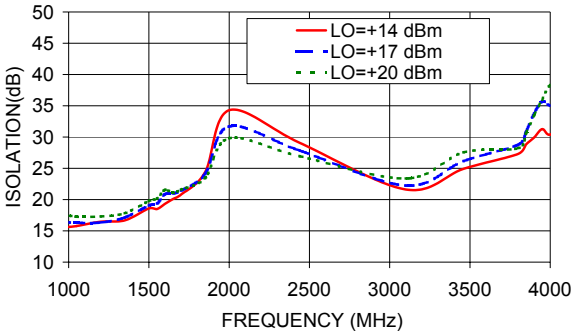


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

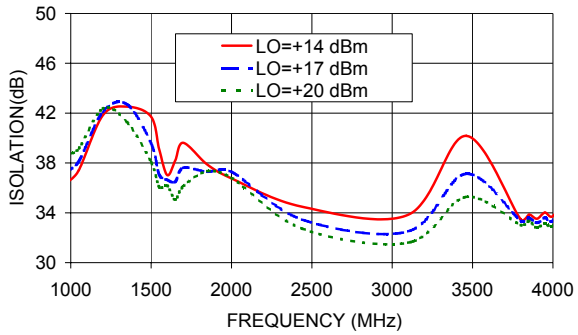
SIM-U432H+
CONVERSION LOSS



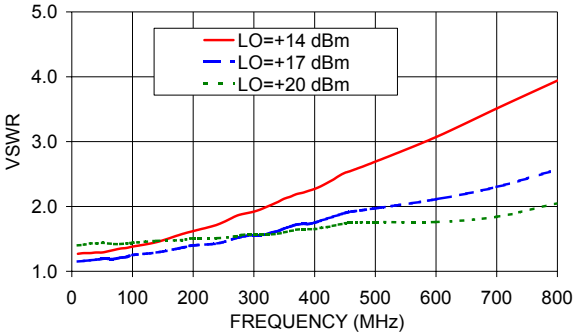
SIM-U432H+
L-I (IN) ISOLATION



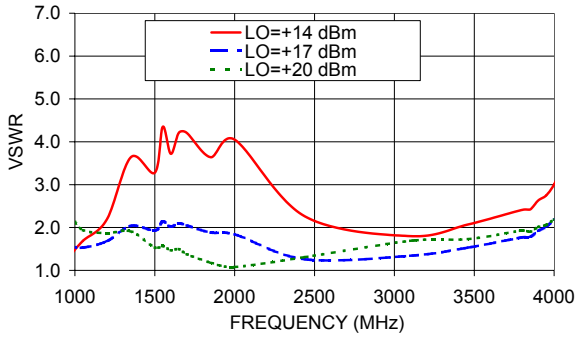
SIM-U432H+
L-R (OUT) ISOLATION



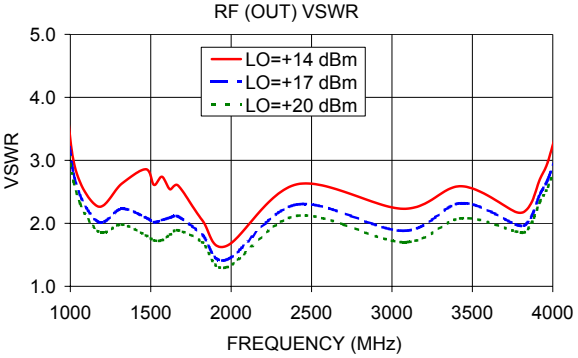
SIM-U432H+
IF (IN) VSWR



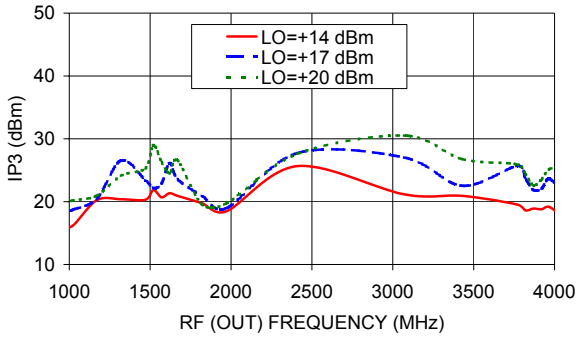
SIM-U432H+
LO VSWR



SIM-U432H+
RF (OUT) VSWR



SIM-U432H+
IP3



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