

Up Converter Frequency Mixer

SIM-U742MH+

Level 13 (LO Power +13 dBm) 0.1 to 7400 MHz



Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
IF Power	50mW

For extended temperature range, consult factory.

Pin Connections

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

Features

- up converter mixer
- low conversion loss, 8.0 dB typ.
- high IP3, 20 dBm typ.
- ceramic, tiny size
- aqueous washable
- protected by US Patent, 7,027,795

Applications

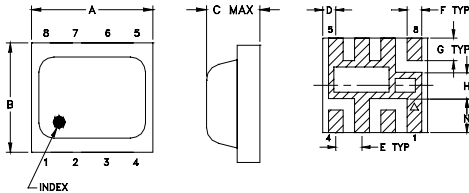
- instrumentation
- wide band receivers

CASE STYLE: HV1195
PRICE: \$9.95 ea. QTY (10-49)

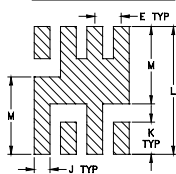
+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Outline Drawing



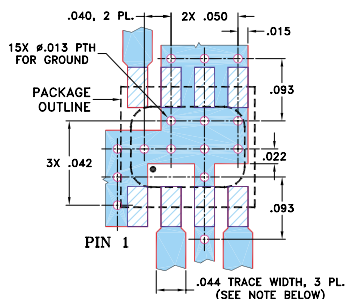
PCB Land Pattern



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:

- 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.
 - 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.
0.1-3300	2300-7400	2300-7400	8.0	0.4	9.8	17	11	23	13	20

1 dB Compression: +9 dBm typ.

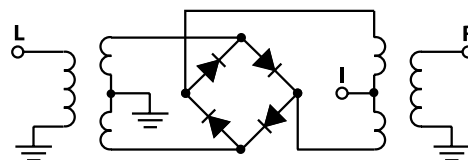
* Conversion loss at 4075 MHz RF

** σ is a standard deviation

Typical Performance Data

Frequency (MHz)			Conver. Loss (dB)	Freq. (MHz)	Isolation L-I (dB)	Isolation L-R (dB)	VSWR LO Port (:1)	Freq. (MHz)	VSWR RF (OUT) Port (:1)
IF (IN)	LO	RF (OUT)	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
21.10	4096.10	4075.00	6.03	2280.00	21.11	35.76	3.36	2250.00	2.32
31.10	4106.10	4075.00	6.05	2500.00	25.02	42.09	2.74	2470.00	2.72
41.10	4116.10	4075.00	6.03	2720.00	27.47	35.87	2.40	2690.00	2.91
194.85	4141.10	3946.25	5.99	2950.00	28.05	31.81	2.29	2920.00	3.19
338.60	4156.10	3817.50	5.95	3250.00	26.76	29.17	1.91	3220.00	2.90
482.35	4171.10	3688.75	5.94	3370.00	25.09	28.95	2.13	3340.00	3.02
769.85	4236.10	3466.25	5.95	3430.00	24.87	29.31	1.95	3400.00	2.90
1057.35	4617.35	3560.00	6.14	3650.00	23.46	29.32	1.80	3620.00	2.78
1201.10	4807.98	3606.88	6.52	4750.00	16.89	26.01	3.68	4720.00	3.43
1344.85	4998.60	3653.75	7.08	5630.00	16.30	22.90	4.40	5600.00	3.03
1632.35	5379.85	3747.50	8.67	5720.00	16.72	22.41	4.23	5690.00	2.88
1919.85	5761.10	3841.25	9.09	5900.00	17.80	21.43	5.30	5870.00	2.54
2207.35	6142.35	3935.00	8.72	6080.00	19.31	20.77	3.32	6050.00	2.28
2351.10	6332.98	3981.88	8.28	6260.00	21.40	21.15	2.84	6230.00	2.41
2494.85	6523.60	4028.75	7.97	6350.00	22.67	21.56	2.38	6320.00	2.34
2782.35	6904.85	4122.50	7.83	6440.00	24.00	22.02	1.86	6410.00	2.30
2926.10	7095.48	4169.38	7.66	6780.00	26.39	22.15	1.59	6750.00	2.79
3069.85	7286.10	4216.25	8.23	7030.00	21.16	19.85	1.96	7000.00	3.11
3213.60	7376.10	4162.50	8.62	7280.00	17.83	20.22	2.73	7250.00	3.84
3357.35	7476.10	4118.75	9.08	7530.00	15.28	21.99	6.61	7500.00	5.23

Electrical Schematic



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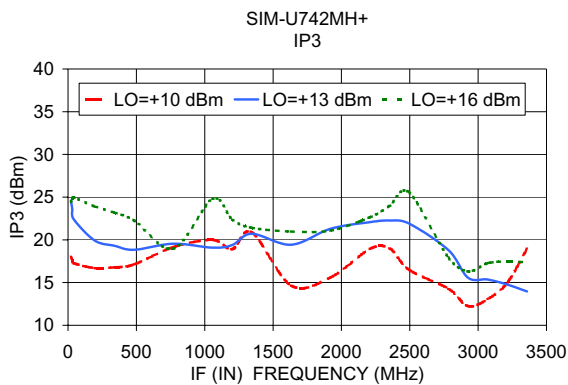
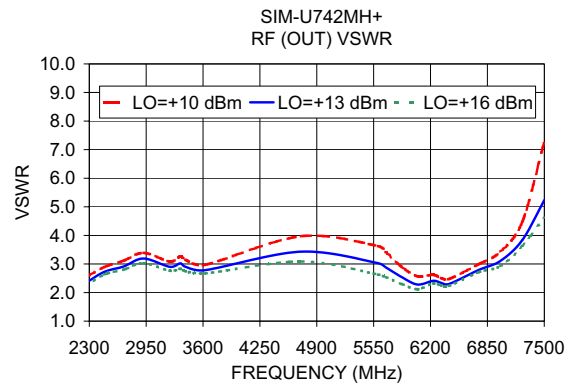
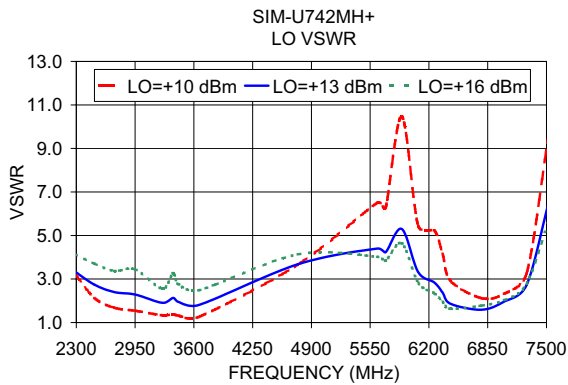
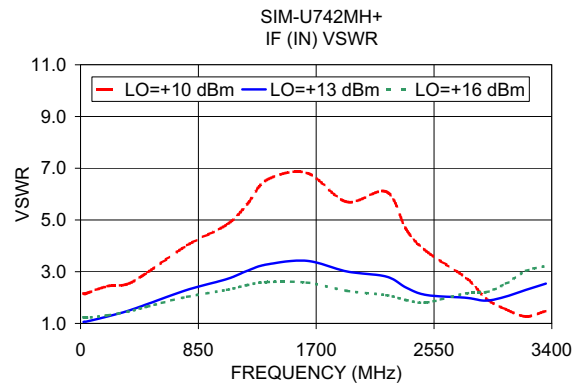
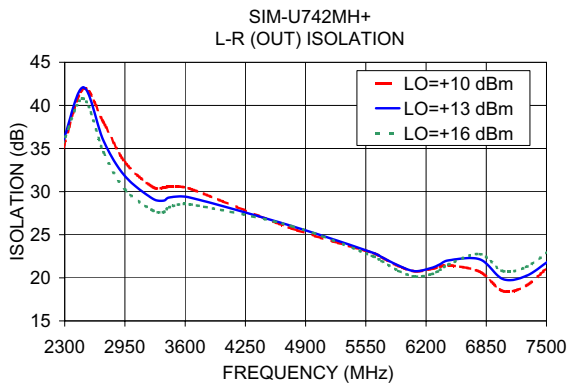
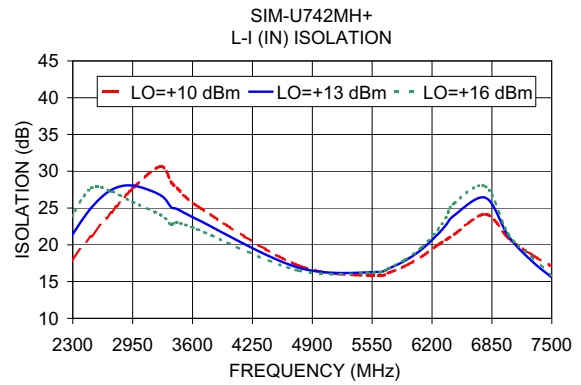
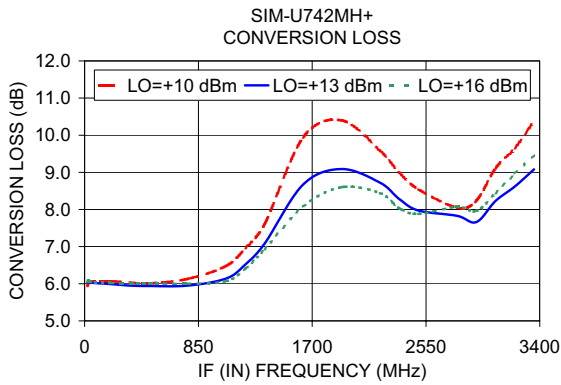
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RF/IF MICROWAVE COMPONENTS

REV. A
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080715
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Performance Charts

SIM-U742MH+



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