

Up Converter Frequency Mixer

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

SIM-U742MH+



Generic photo used for illustration purposes only

CASE STYLE: HV1195

Maximum Ratings

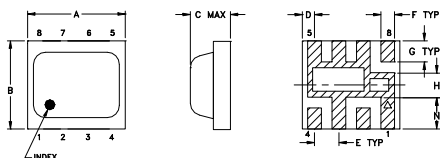
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
IF Power	50mW

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

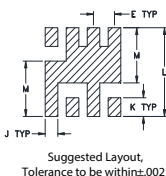
Pin Connections

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

Outline Drawing



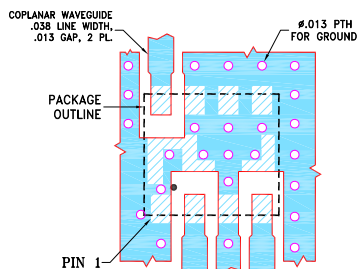
PCB Metal Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.2098	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, 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

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

1 dB Compression: +9 dBm typ.

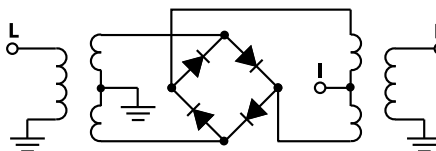
* Conversion loss at 4075 MHz RF

** 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
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



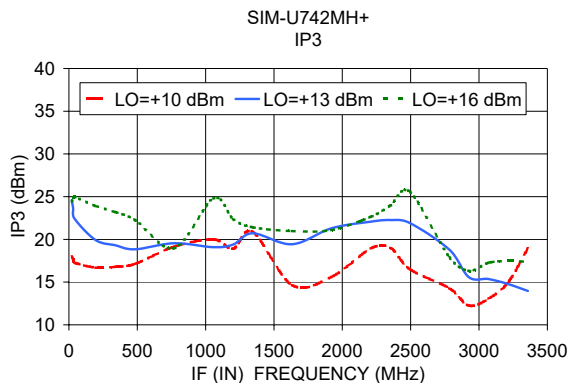
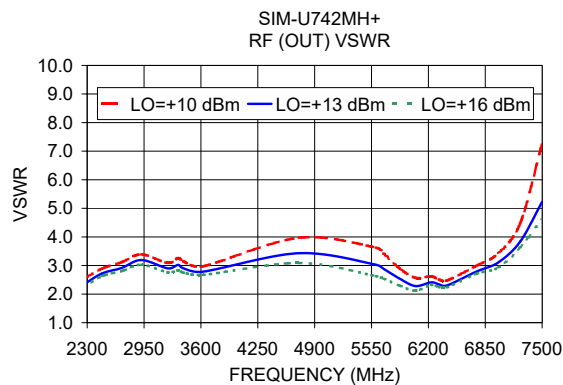
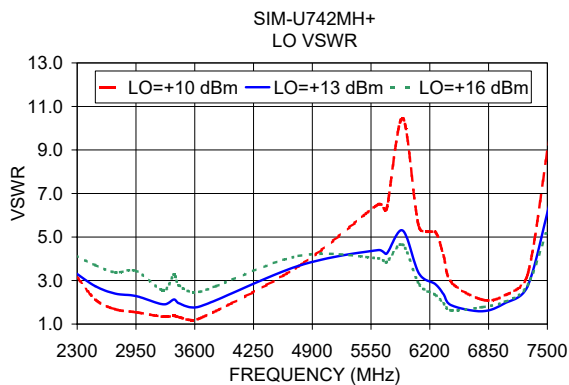
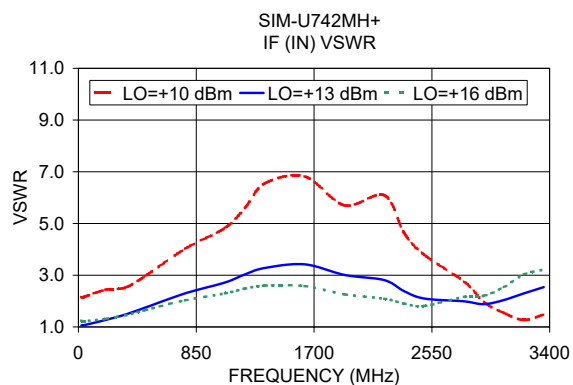
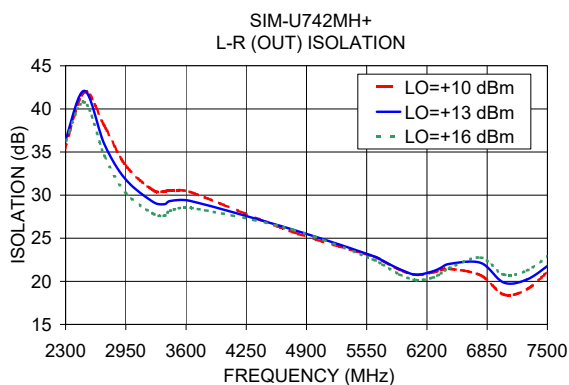
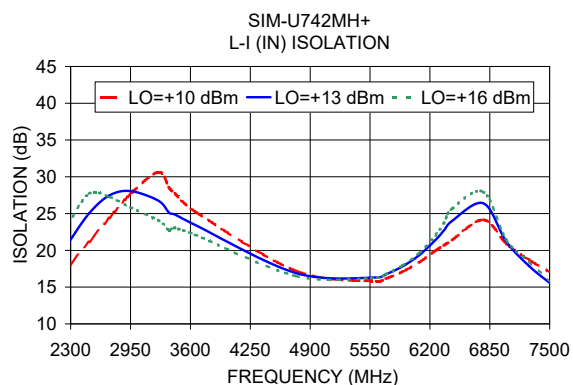
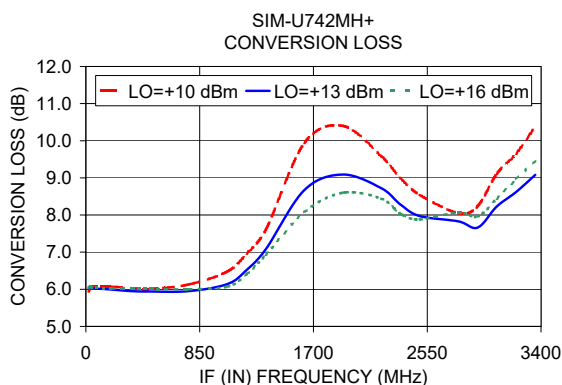
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