

# Ceramic Surface Mount Frequency Mixer WIDE BAND

## SIM-43MH+

### Level 13 (LO Power +13 dBm) 824 to 4200 MHz



Generic photo used for illustration purposes only

CASE STYLE: HV1195

#### Maximum Ratings

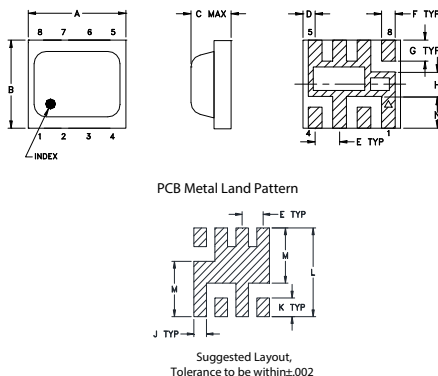
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW

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

#### Pin Connections

LO	8
RF	4
IF	2
GROUND	1,3,5,6,7

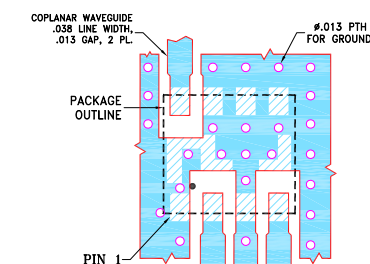
#### Outline Drawing



#### 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.
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#### Notes

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- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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#### Features

- wide bandwidth, 824 to 4200 MHz
- low conversion loss, 6.1 dB typ.
- excellent L-R isolation, 35 dB typ.
- LTCC double balanced mixer
- tiny size, low profile, 0.08"
- useable as up and down converter
- aqueous washable
- protected by US patent 7,027,795

#### Applications

- cellular
- defense & weather radar
- defense communications
- PCN
- WCDMA
- WIFI
- blue tooth
- VSAT
- ISM

#### Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS* (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)			
		Typ.	Min.	Typ.	Min.				
LO/RF $f_c - f_u$	IF	Typ.	$\sigma$	Max.	Typ.	Min.	Typ.		
824-4200	DC-1500								
824-2500		6.3	0.1	8.3	37	26	24	10	20
2500-4200		5.7	0.1	9.8	30	22	20	14	22

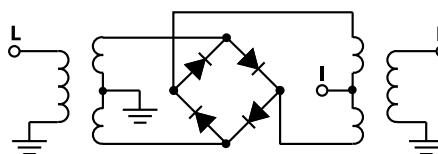
1 dB Compression: +9 dBm typ.

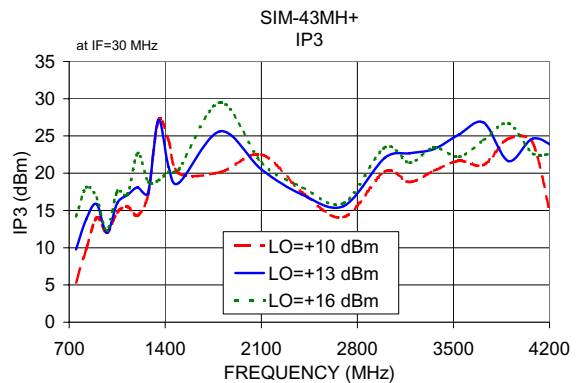
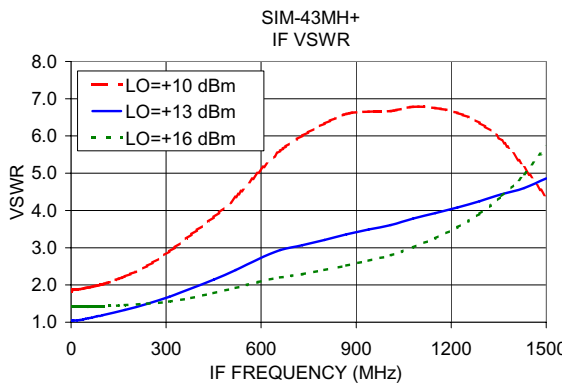
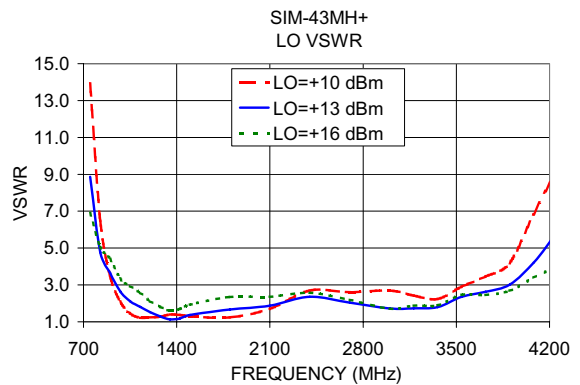
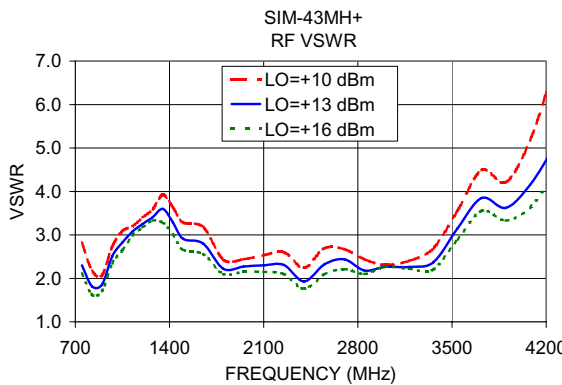
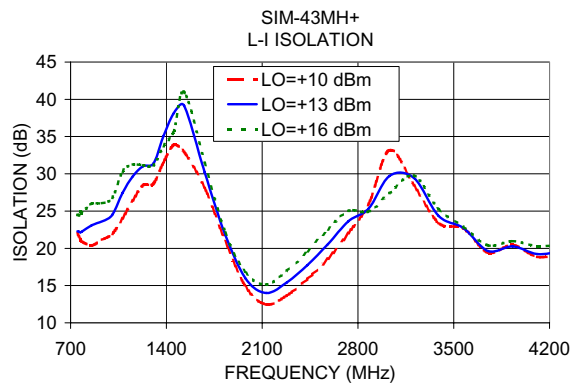
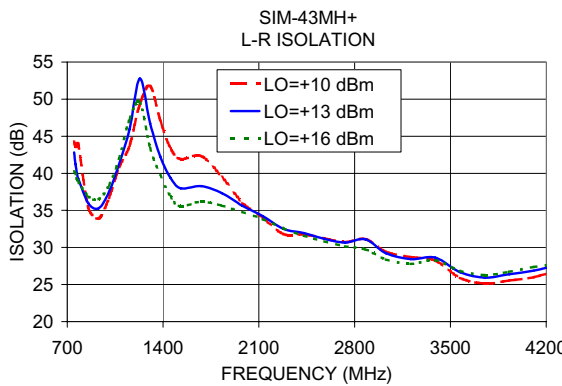
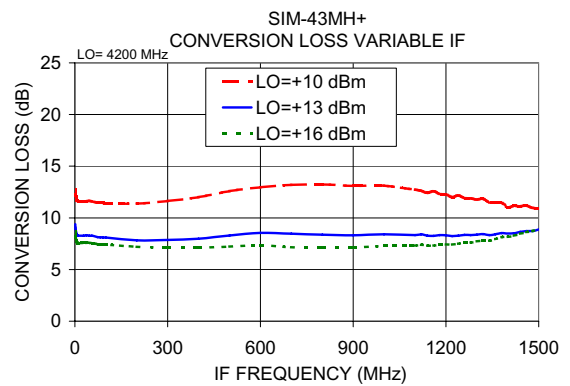
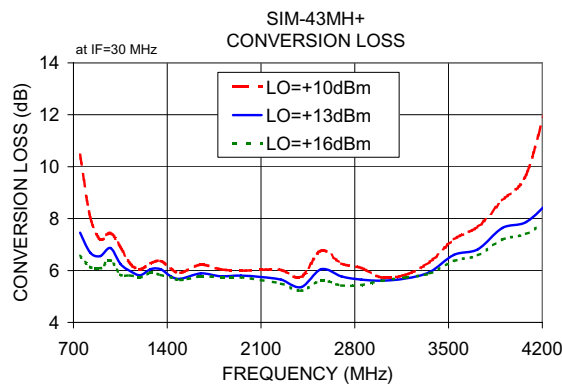
\* Conversion loss at 30 MHz IF.  $\sigma$  is a measure of repeatability from unit to unit.

#### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	
						RF
750.00	780.00	7.46	39.30	22.20	2.30	8.86
825.00	855.00	6.69	35.94	23.10	1.81	4.77
900.00	930.00	6.56	35.28	23.61	1.86	3.65
975.00	1005.00	6.87	37.48	24.51	2.51	2.65
1050.00	1080.00	6.25	41.33	27.47	2.83	2.12
1125.00	1155.00	5.97	45.94	29.67	3.08	1.81
1200.00	1230.00	5.82	52.76	31.04	3.25	1.53
1275.00	1305.00	6.05	46.72	31.39	3.41	1.29
1350.00	1380.00	6.05	42.28	35.10	3.60	1.13
1425.00	1455.00	5.78	39.40	38.15	3.29	1.19
1500.00	1530.00	5.68	37.98	39.15	2.91	1.37
1800.00	1830.00	5.78	37.32	21.79	2.22	1.67
2100.00	2130.00	5.75	34.21	14.00	2.30	1.88
2400.00	2430.00	5.36	31.94	17.74	1.93	2.36
2700.00	2730.00	5.77	30.66	23.65	2.44	2.04
3000.00	3030.00	5.61	29.22	29.71	2.26	1.72
3360.00	3390.00	5.94	28.61	24.35	2.37	1.80
3540.00	3570.00	6.60	26.65	22.73	3.15	2.36
4080.00	4110.00	7.87	26.87	19.22	4.15	4.21
4260.00	4290.00	8.69	27.67	19.60	5.02	5.88

#### Electrical Schematic





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