

Frequency Mixer

ADE-13+

Level 7 (LO Power +7 dBm) 50 to 1600 MHz

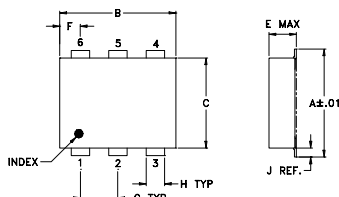
Maximum Ratings

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

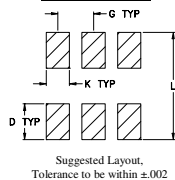
Pin Connections

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

Outline Drawing



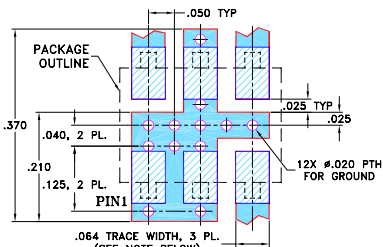
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.082	.055	.100
6.91	7.87	5.59	2.54	2.08	1.40	2.54
H	J	K	L			
.030	.026	.065	.300			wt
0.76	0.66	1.65	7.62			grams
						0.15

Demo Board MCL P/N: TB-02
Suggested PCB Layout (PL-051)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

Notes

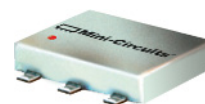
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Features

- low conversion loss, 8.1 dB typ.
- excellent L-R isolation, 40 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

Applications

- satellite distribution
- GPS



CASE STYLE: CD541

+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"	20, 50, 100, 200, 500
13"	500, 1000

Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
LO/RF		Mid-Band		Total Range Max.	L		M		U		L		M		U			
f _L -f _U		$\overline{X}$	σ		Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	
50-1600	50-1000	8.1	0.10	9.0	9.8	50	25	40	25	33	20	49	30	35	20	32	20	

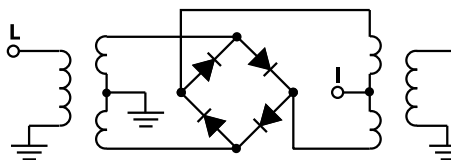
1 dB COMP.: +1 dBm typ.

L = low range [f_L to 10 f_L]
m = mid band [2f_L to f_U/2]M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U]

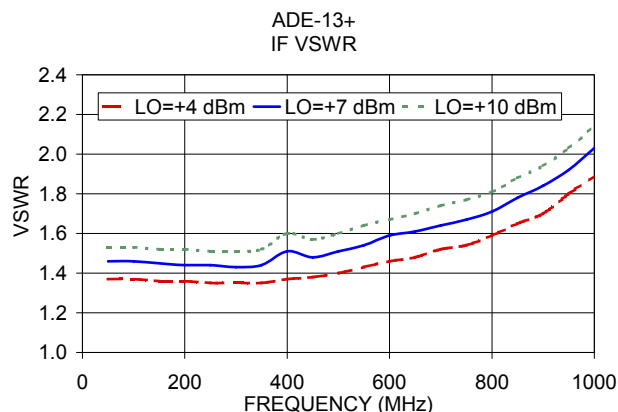
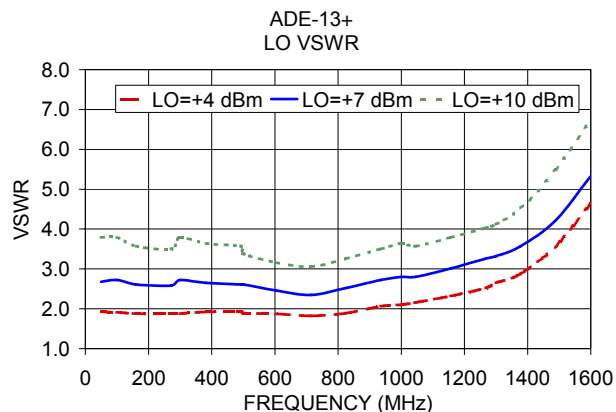
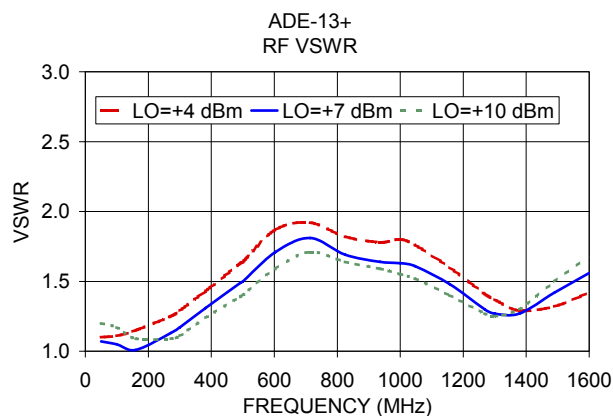
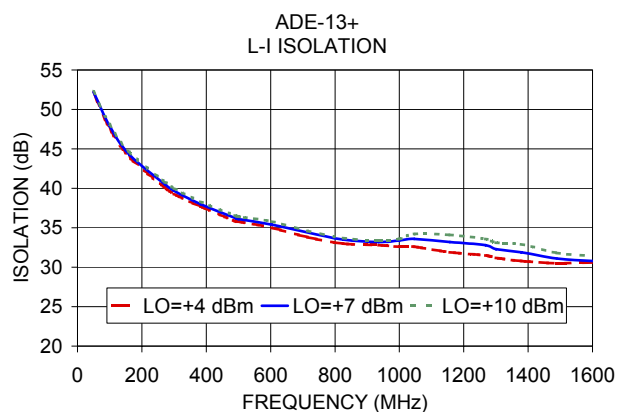
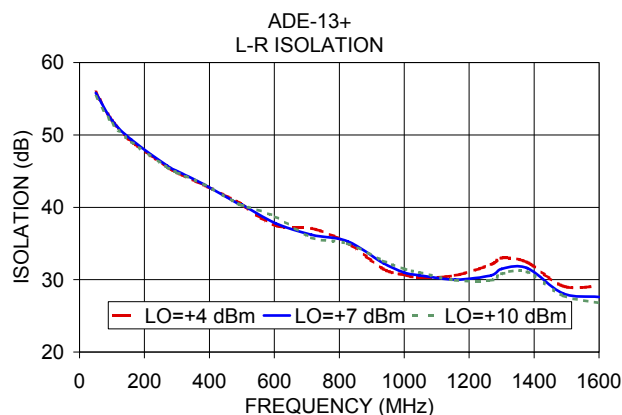
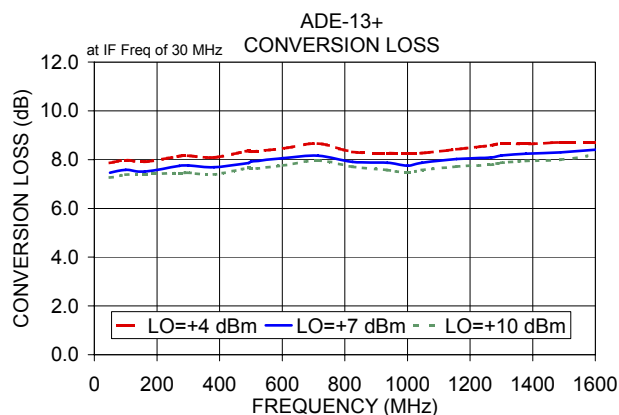
Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO					
		LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
50.00	80.00	7.46	55.80	52.20	1.07	2.68
100.00	130.00	7.58	52.00	47.90	1.05	2.72
160.71	190.71	7.51	49.30	44.30	1.01	2.61
271.43	301.43	7.74	45.70	40.50	1.13	2.58
300.00	330.00	7.76	45.00	39.70	1.17	2.72
382.14	412.14	7.69	43.20	38.00	1.31	2.65
492.86	522.86	7.86	40.40	36.20	1.49	2.61
500.00	530.00	7.92	40.40	36.10	1.50	2.61
603.57	633.57	8.06	37.80	35.40	1.71	2.46
714.29	744.29	8.16	36.20	34.40	1.81	2.35
825.00	855.00	7.91	35.30	33.50	1.69	2.52
935.71	965.71	7.87	32.30	33.20	1.64	2.72
1000.00	1030.00	7.75	31.00	33.40	1.63	2.80
1046.43	1076.43	7.87	30.60	33.60	1.61	2.80
1157.14	1187.14	8.02	30.00	33.20	1.48	3.01
1267.86	1297.86	8.09	30.60	32.80	1.30	3.26
1300.00	1330.00	8.17	31.50	32.30	1.27	3.32
1378.57	1408.57	8.24	31.60	31.90	1.27	3.57
1489.29	1519.29	8.30	28.10	31.10	1.42	4.22
1600.00	1630.00	8.40	27.60	30.80	1.56	5.33

Electrical Schematic


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