

Frequency Mixer

ADEX-10L

Level 4 (LO Power +4 dBm) 10 to 1000 MHz



Generic photo used for illustration purposes only
CASE STYLE: CD542

Maximum Ratings

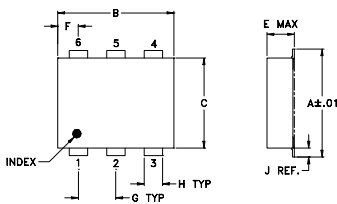
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Permanent damage may occur if any of these limits are exceeded.

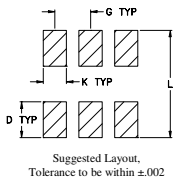
Pin Connections

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

Outline Drawing



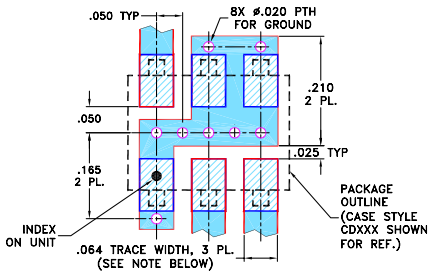
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54
H	J	K	L	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	0.20		

Demo Board MCL P/N: TB-03 Suggested PCB Layout (PL-052)



- 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

- 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.
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Features

- excellent L-R isolation, 60 dB typ.
- low conversion loss, 7.2 dB typ.
- flat conversion loss ±0.2 dB typ. over entire band
- good VSWR, 1.5:1 typ. for LO & RF, 1.8:1 Typ. for IF
- good performance to 1500 MHz
- aqueous washable
- protected by U.S. Patents 6,133,525 & 6,947,717

Applications

- cellular
- PCN

Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
		L	M	U	L	M	U							
LO/RF f_L - f_U	Mid-Band m Total Range Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.						
10-1000	7.2 0.10 8.2 [†] 8.8 [†]	75	55	60	40	47	37	40	26	33	20	24	13	16

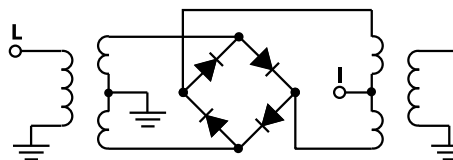
1 dB COMP: +1 dBm typ.
[†]Conversion loss increases 0.8 dB when IF is above 150 MHz

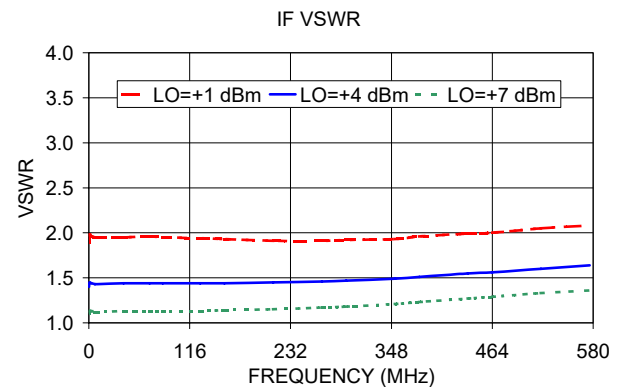
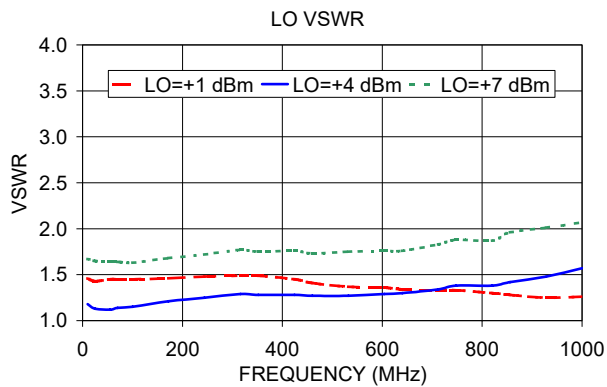
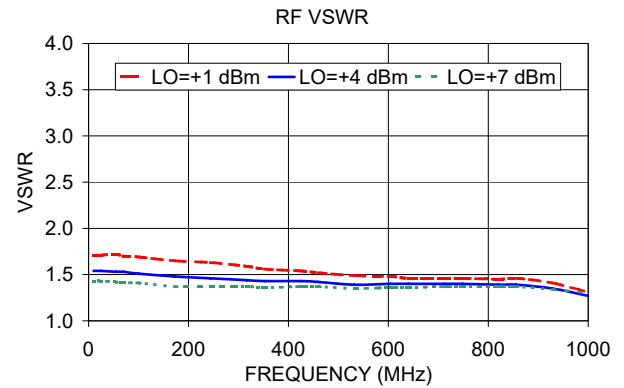
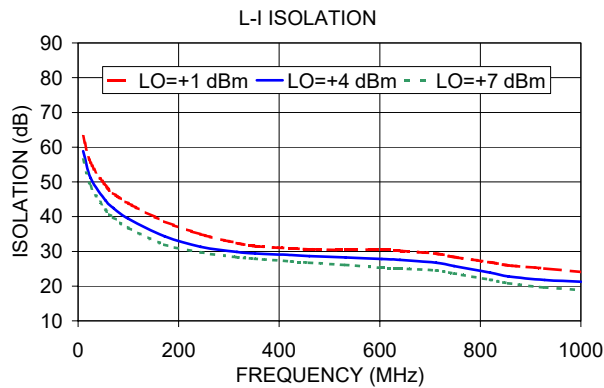
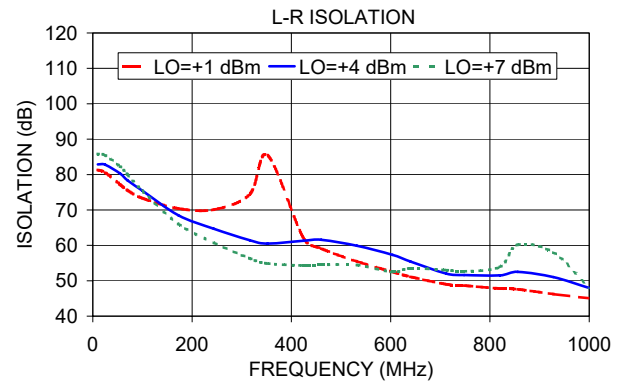
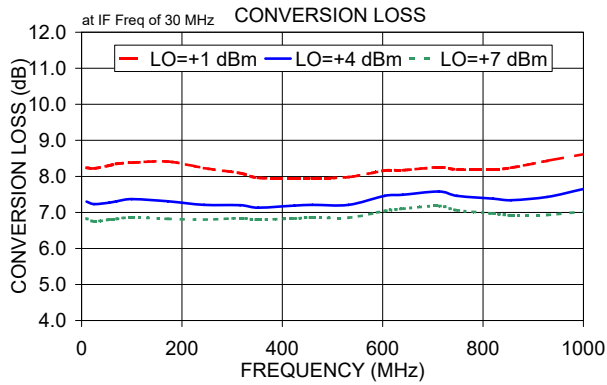
L = low range [f_L to 10 f_L] M = mid range [10 f_L to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2f_L$ to $f_U/2$]

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 +4dBm	LO +4dBm	LO +4dBm	LO +4dBm	LO +4dBm
10.00	40.00	7.30	82.88	58.83	1.54	1.18
25.00	55.00	7.23	82.79	51.06	1.54	1.13
55.00	85.00	7.27	80.30	44.57	1.53	1.12
70.00	100.00	7.31	78.35	42.47	1.53	1.14
100.00	130.00	7.37	75.43	39.36	1.51	1.15
172.00	202.00	7.31	68.52	34.38	1.48	1.21
244.00	274.00	7.21	64.68	31.33	1.46	1.25
316.00	346.00	7.20	61.44	29.83	1.44	1.29
352.00	382.00	7.13	60.51	29.38	1.43	1.28
424.00	454.00	7.19	61.30	28.92	1.43	1.28
460.00	490.00	7.21	61.56	28.63	1.42	1.27
532.00	562.00	7.21	59.88	28.24	1.39	1.27
604.00	634.00	7.46	57.30	27.79	1.40	1.29
640.00	670.00	7.49	55.44	27.54	1.40	1.30
712.00	742.00	7.58	52.02	26.70	1.40	1.34
748.00	778.00	7.46	51.61	25.74	1.40	1.38
820.00	850.00	7.38	51.53	23.84	1.39	1.38
856.00	886.00	7.34	52.51	22.81	1.39	1.42
928.00	958.00	7.43	51.02	21.76	1.35	1.48
1000.00	1030.00	7.65	47.97	21.23	1.27	1.57

Electrical Schematic





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