

# Surface Mount Frequency Mixer

## ADEX-10L+

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

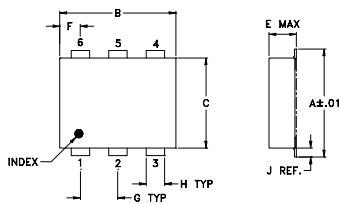
#### Maximum Ratings

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.	

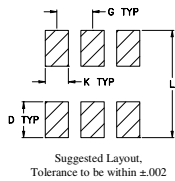
#### Pin Connections

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

#### Outline Drawing



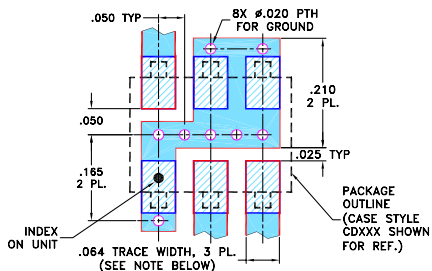
#### PCB Land Pattern



#### 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.

- DEMOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
■ DEMOTES 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



Generic photo used for illustration purposes only  
CASE STYLE: CD542

#### +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
13"	500, 1000

#### 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 <sup>†</sup> 8.8 <sup>†</sup>	75	55	60	40	47	37	40
		26	23	33	20	24	13	16

1 dB COMP: +1 dBm typ.

<sup>†</sup>Conversion loss increases 0.8 dB when IF is above 150 MHz

L = low range [ $f_L$  to  $10 f_L$ ]

m = mid band [ $2 f_L$  to  $f_U/2$ ]

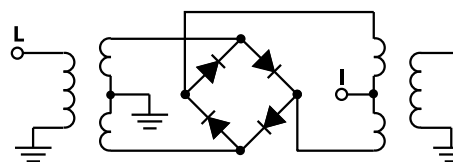
M = mid range [ $10 f_L$  to  $f_U/2$ ]

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 +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

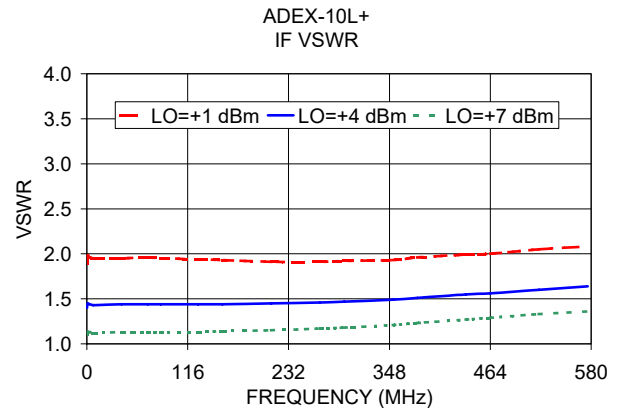
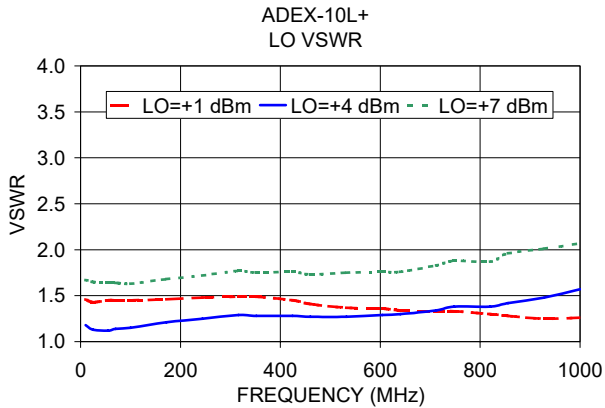
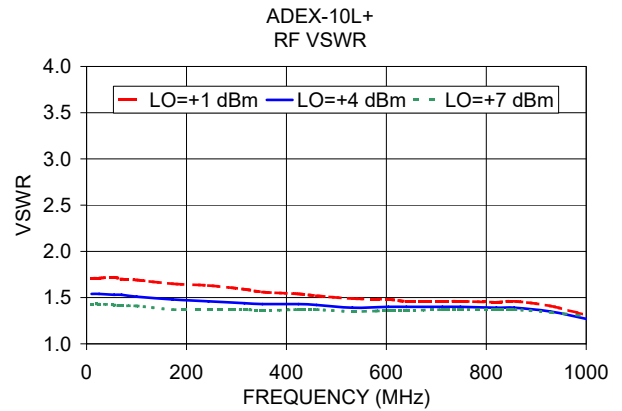
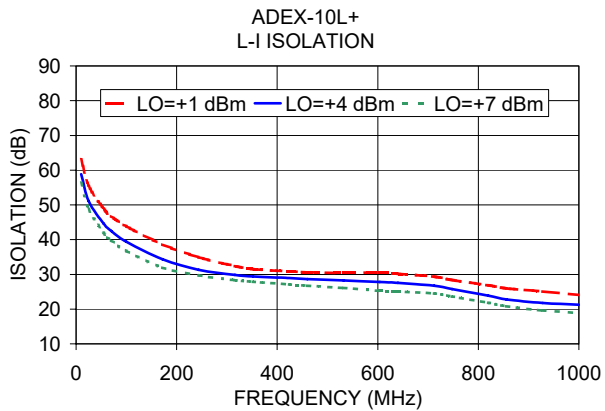
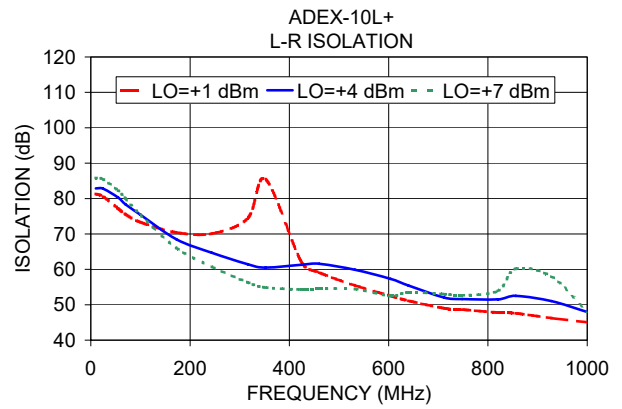
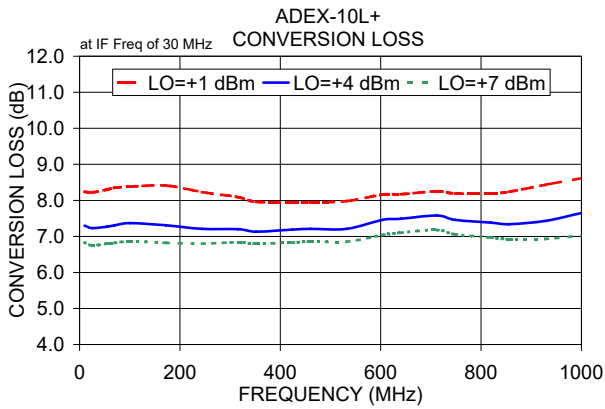
#### Electrical Schematic



**Mini-Circuits**

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