

High Reliability Mixer

ADE-R1MHW+

Level 13 (LO Power +13 dBm) 5 to 600 MHz



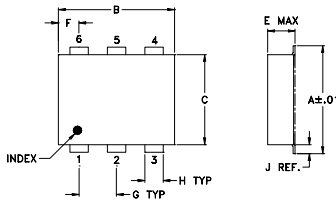
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

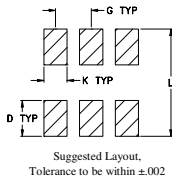
Pin Connections

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

Outline Drawing



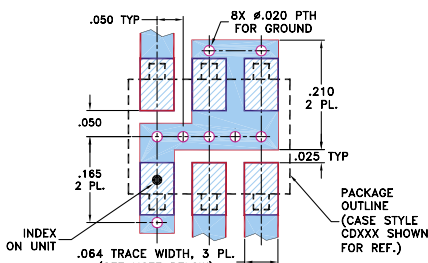
PCB Land Pattern



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

Features

- hermetically sealed ceramic quad
- low conversion loss, 5.2 dB typ.
- excellent L-R isolation, 53 dB typ.
- excellent IP3, 18 dBm typ.
- low profile package
- aqueous washable
- protected by US patent 6,133,525

Applications

- HF/VHF/UHF/ receivers

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 \bar{X} σ Max. Total Range Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.						
5-600	DC-600	63	50	53	35	43	27	56	40	44	28	30	20	18

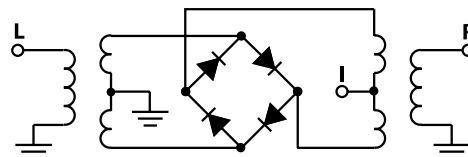
1 dB COMP.: +9 dBm typ.

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
3.25	33.25	5.66	61.47	53.84	1.36	2.37
5.50	35.50	5.38	60.99	53.36	1.23	2.39
7.75	37.75	5.28	60.52	52.86	1.17	2.39
10.00	40.00	5.22	60.02	52.39	1.14	2.37
12.00	42.00	5.20	59.77	51.99	1.12	2.39
27.00	57.00	5.20	57.23	49.41	1.07	2.40
42.00	72.00	5.19	55.28	47.25	1.05	2.37
57.00	87.00	5.18	53.83	45.41	1.03	2.33
102.00	132.00	5.18	51.52	42.92	1.04	2.37
155.00	185.00	5.20	48.58	40.94	1.04	2.35
205.00	235.00	5.27	47.97	39.72	1.06	2.51
255.00	285.00	5.30	44.90	37.91	1.08	2.43
303.75	333.75	5.35	44.64	36.96	1.11	2.70
351.25	381.25	5.46	42.61	34.91	1.12	2.48
398.75	428.75	5.41	40.40	32.47	1.18	2.84
446.25	476.25	5.55	38.26	30.77	1.21	2.62
480.00	510.00	5.58	37.54	30.22	1.23	3.06
500.00	530.00	5.66	37.42	30.16	1.24	2.97
550.00	580.00	5.66	36.13	28.38	1.28	2.70
600.00	630.00	5.54	35.82	27.39	1.30	2.79

Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

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