

# High IP3 Frequency Mixer

## ADE-751MH+

Level 13 (LO Power +13 dBm) 20 to 750 MHz



CASE STYLE: CD541

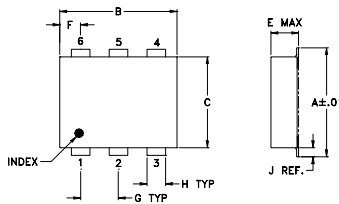
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

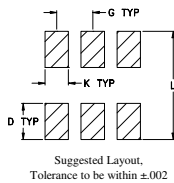
### Pin Connections

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

### Outline Drawing



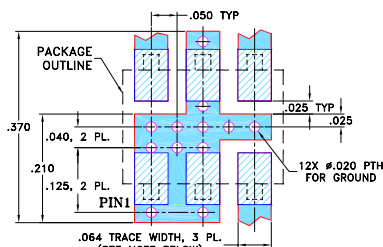
### PCB Land Pattern



### 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	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	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

- 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-Circuits' applicable established test performance criteria and measurement instructions.  
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### Features

- high IP3, 26 dBm typ.
- low conversion loss, 6.6 dB typ.
- good L-R isolation, 42 dB typ.
- low profile package
- aqueous washable
- protected by U.S. Patent 6,133,525

### Applications

- cellular

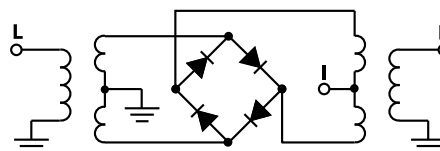
### Electrical Specifications at 25°C

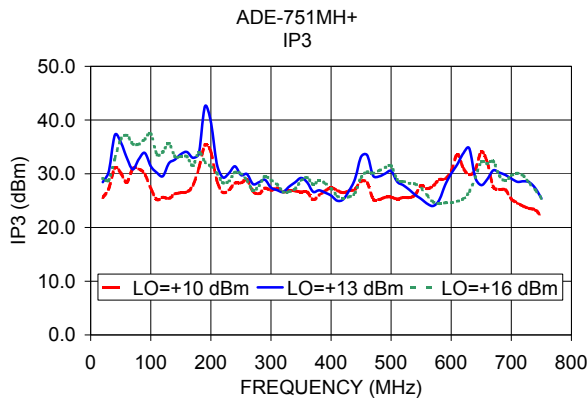
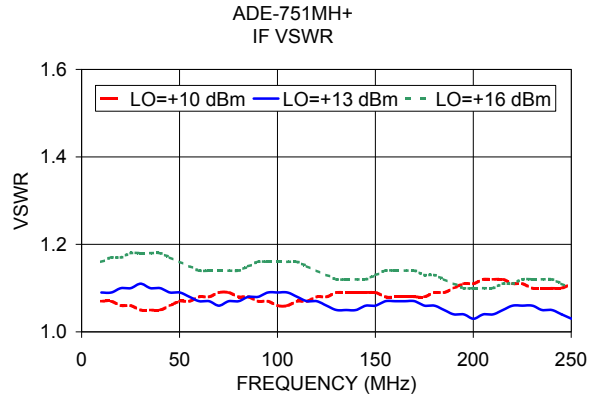
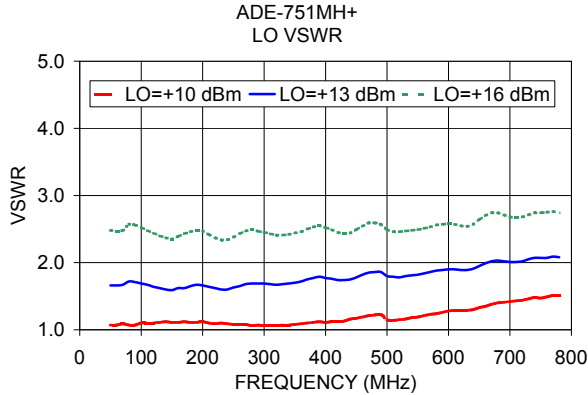
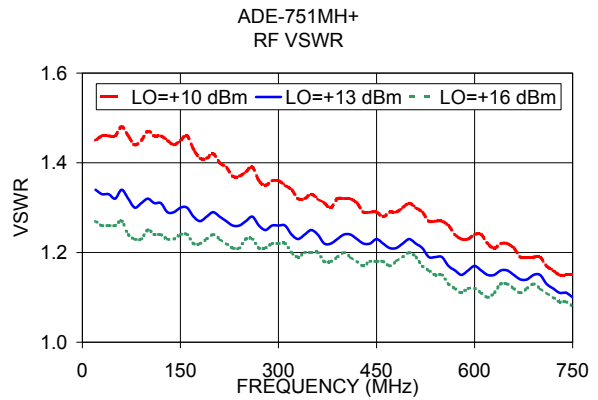
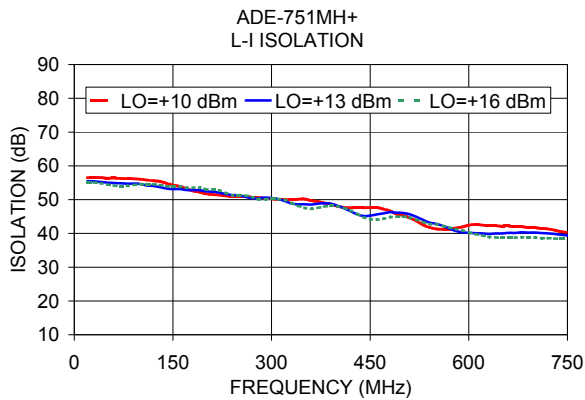
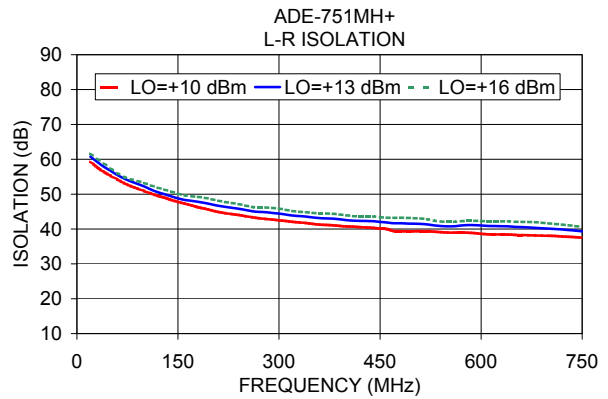
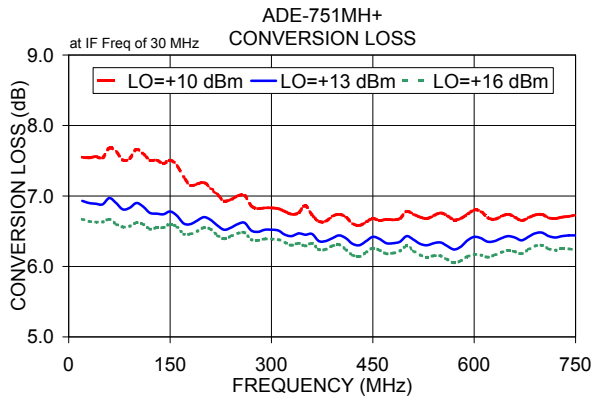
Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF	20	—	750	MHz
Frequency Range, LO	50	—	780	MHz
Frequency Range, IF	DC	—	250	MHz
Conversion Loss	—	6.6	8.2	dB
LO to RF Isolation	28	42	—	dB
LO to IF Isolation	27	40	—	dB
IP3	—	26	—	dBm
RF Input Power at 1 dB Compression	—	+9	—	dBm

### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
20.10	50.10	6.93	60.76	55.47	1.34	1.66	28.44
50.10	80.10	6.88	56.69	55.03	1.32	1.72	35.88
100.10	130.10	6.90	52.19	54.66	1.32	1.62	31.42
150.10	180.10	6.78	48.80	53.10	1.30	1.65	33.64
200.10	230.10	6.70	47.06	52.49	1.29	1.60	39.63
250.10	280.10	6.60	45.46	51.28	1.27	1.69	29.76
300.10	330.10	6.52	44.41	50.47	1.26	1.68	27.42
350.10	380.10	6.45	43.32	48.63	1.25	1.77	29.22
400.10	430.10	6.44	42.55	48.18	1.24	1.74	25.94
450.10	480.10	6.42	42.02	45.27	1.23	1.86	33.16
500.10	530.10	6.43	41.52	46.06	1.23	1.80	30.52
550.10	580.10	6.34	40.75	42.85	1.19	1.88	25.31
600.10	630.10	6.42	41.02	40.16	1.17	1.89	30.05
650.10	680.10	6.43	40.62	39.98	1.16	2.03	27.89
700.10	730.10	6.48	40.11	40.27	1.15	2.05	29.10
710.10	740.10	6.43	40.00	40.09	1.13	2.07	28.51
720.10	750.10	6.41	39.86	40.01	1.12	2.07	28.59
730.10	760.10	6.43	39.68	39.84	1.11	2.07	28.40
740.10	770.10	6.44	39.52	39.59	1.11	2.09	27.29
750.10	780.10	6.44	39.32	39.39	1.10	2.08	25.42

### Electrical Schematic





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