

High IP3

# Frequency Mixer

## ADE-851FH+

Level 17 (LO Power +17 dBm) 620 to 850 MHz



Generic photo used for illustration purposes only

CASE STYLE: CD636

**+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

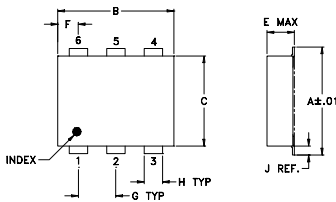
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	20 dBm
LO Power	19 dBm
Permanent damage may occur if any of these limits are exceeded.	

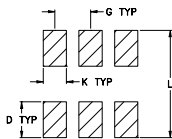
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

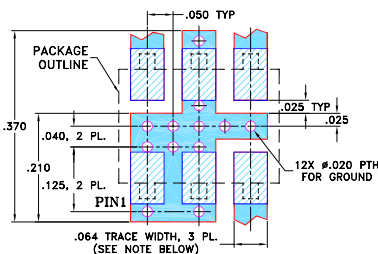


Suggested Layout.  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.162	.055	.100
6.91	7.87	5.59	2.54	4.11	1.40	2.54
H	J	K	L			wt
.030	.026	.065	.300			grams
0.76	0.66	1.65	7.62			0.25

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



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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.  
C. The parts covered by this specification document are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- excellent IP3, 34 dBm typ.
- excellent P1dB compression, +20 dBm at input
- good L-R isolation, 34 dB typ.
- good L-I isolation, 36 dB typ.
- aqueous washable
- patent pending

### Applications

- cellular
- mobil radio
- wireless communication service

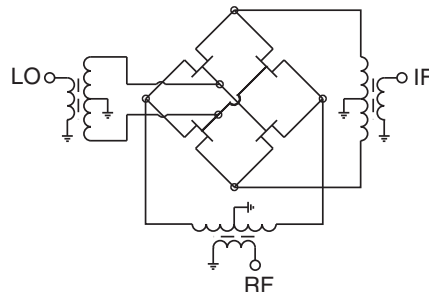
### Electrical Specifications at 25°C

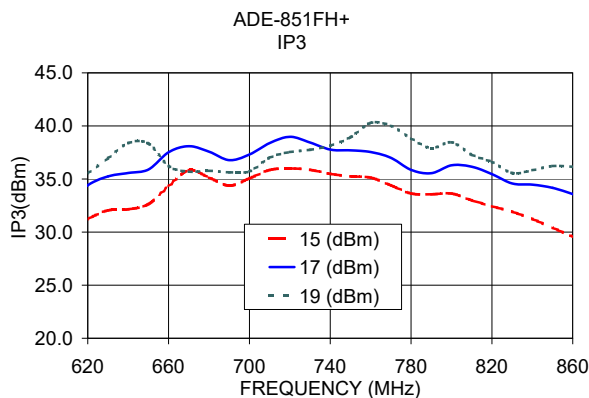
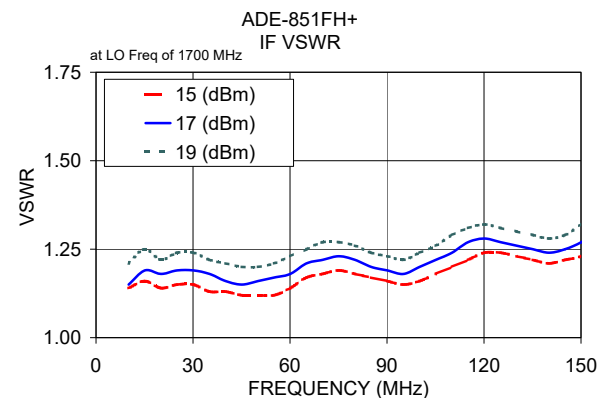
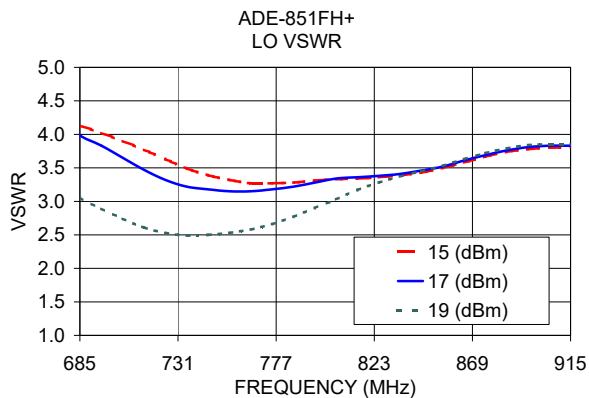
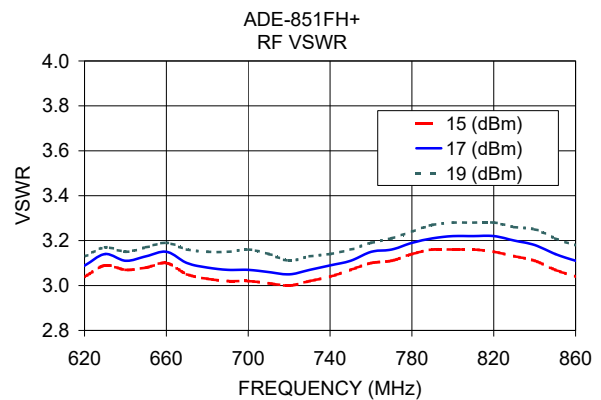
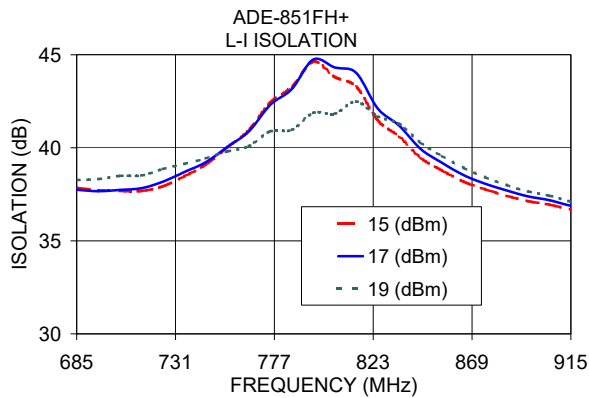
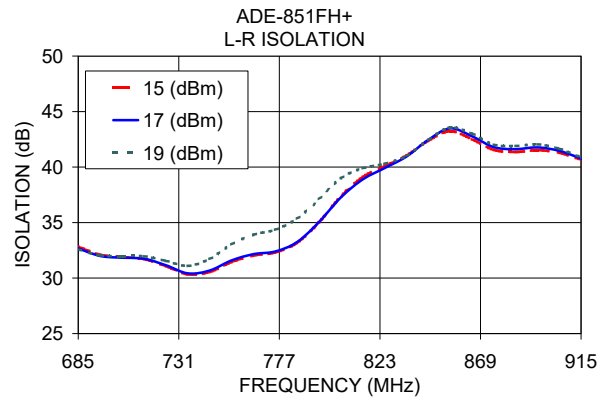
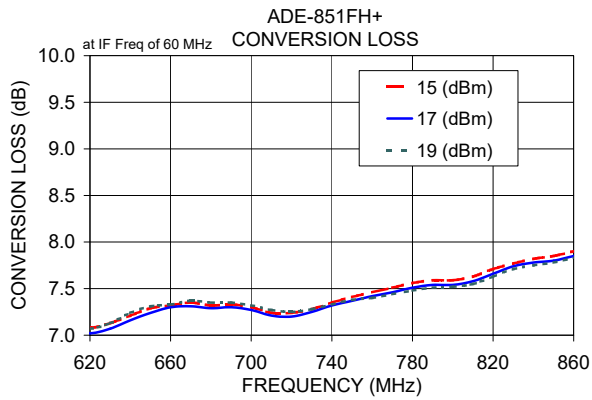
Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF	620	—	850	MHz
Frequency Range, LO	685	—	915	MHz
Frequency Range, IF	10	—	150	MHz
Conversion Loss	—	7.3	8.9	dB
LO to RF Isolation	25	34	—	dB
LO to IF Isolation	23	36	—	dB
IP3	—	34	—	dBm
RF Input Power at 1 dB Compression	—	+20	—	dBm

### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)		IP3 (dBm)
	LO	+17dBm	LO	+17dBm	LO	+17dBm	LO	+17dBm	
620.10	685.10	7.02	32.67	37.75	3.09	3.98	34.43		
640.10	705.10	7.16	31.84	37.74	3.11	3.65	35.57		
650.10	715.10	7.24	31.74	37.83	3.13	3.47	35.90		
660.10	725.10	7.30	31.16	38.18	3.15	3.32	37.53		
670.10	735.10	7.31	30.43	38.70	3.10	3.22	38.09		
680.10	745.10	7.29	30.68	39.23	3.08	3.18	37.57		
690.10	755.10	7.30	31.59	40.05	3.07	3.15	36.78		
700.10	765.10	7.27	32.16	40.88	3.07	3.15	37.32		
710.10	775.10	7.21	32.40	42.31	3.06	3.18	38.39		
720.10	785.10	7.20	33.24	43.16	3.05	3.22	38.98		
740.10	805.10	7.32	37.26	44.32	3.09	3.34	37.77		
750.10	815.10	7.37	38.89	44.03	3.11	3.36	37.70		
760.10	825.10	7.42	39.91	42.12	3.15	3.38	37.54		
780.10	845.10	7.51	42.45	39.94	3.19	3.46	35.85		
790.10	855.10	7.54	43.49	39.19	3.21	3.52	35.55		
800.10	865.10	7.54	42.78	38.53	3.22	3.61	36.30		
820.10	885.10	7.66	41.62	37.71	3.22	3.76	35.45		
830.10	895.10	7.74	41.77	37.39	3.20	3.81	34.58		
840.10	905.10	7.78	41.46	37.18	3.18	3.83	34.47		
850.10	915.10	7.80	40.78	36.88	3.14	3.83	34.17		

### Electrical Schematic





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