

High IP3

NON-CATALOG

Frequency Mixer

MCA-2751FH+

Level 17 LO Power+17 dBm 2430 to 2750 MHz



CASE STYLE: DZ883
PRICE: Contact Sales Dept.

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

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

Pin Connections

| | |
|--------|---------------|
| LO | 10 |
| RF | 5 |
| IF | 3 |
| GROUND | 1,2,4,6,7,8,9 |

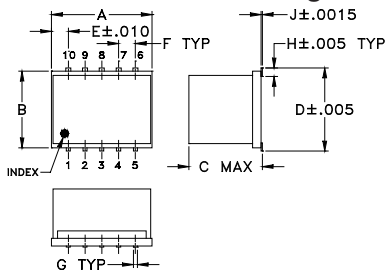
Features

- high IP3, 31 dBm typ.
- good L-R isolation, 40 dB typ.
- excellent 1 dB compression
- industry standard foot print
- LTCC design for excellent temperature stability performance repeatability and small size
- aqueous washable
- double balanced mixer
- low price
- protected by US Patent 6,959,180

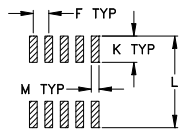
Applications

- line of sight links
- satellite communications
- WiMAX

Outline Drawing



PCB Land Pattern

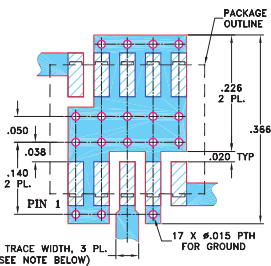


Suggested L layout,
Tolerance to be within ±0.02

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|------|-------|------|
| .30 | .250 | .190 | .266 | .050 | .050 | .012 |
| 7.62 | 6.35 | 4.83 | 6.76 | 1.27 | 1.27 | 0.30 |
| H | J | K | L | M | wt | |
| .029 | .004 | .085 | .296 | .030 | grams | |
| 0.74 | 0.10 | 2.16 | 7.52 | 0.76 | 0.5 | |

Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; 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

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- 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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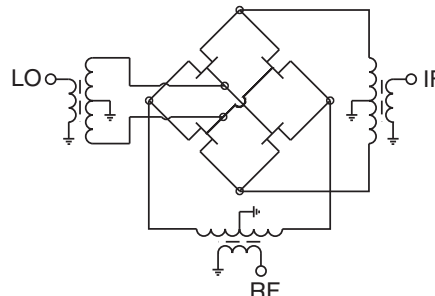
Electrical Specifications (T_{AMB} = -55°C to 100°C)

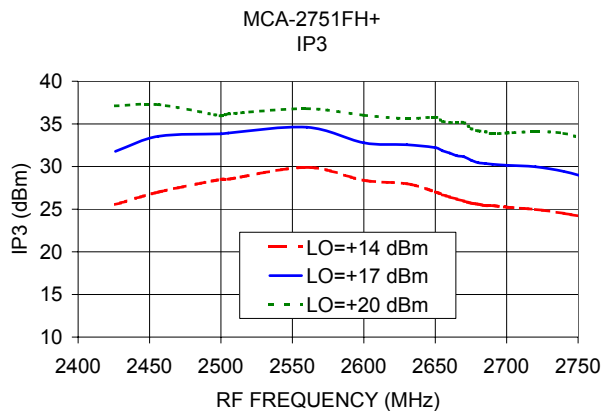
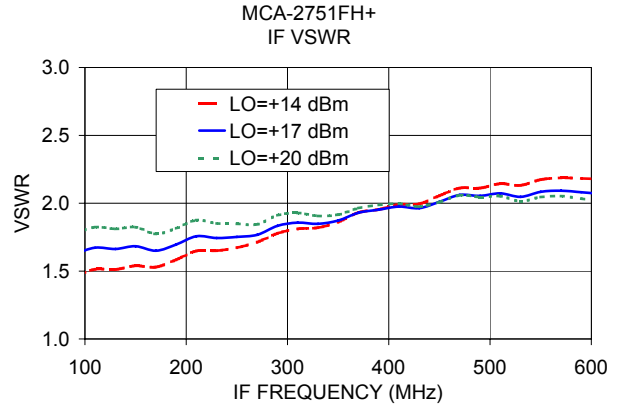
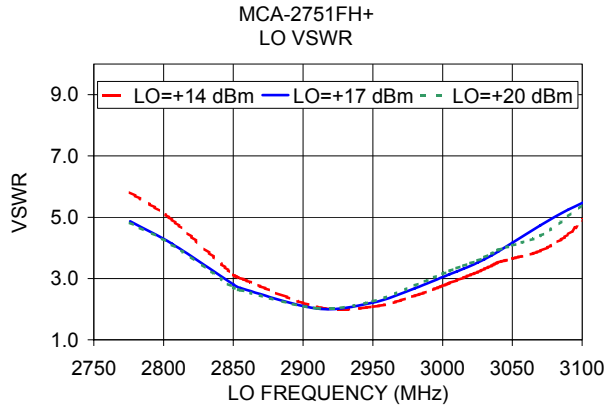
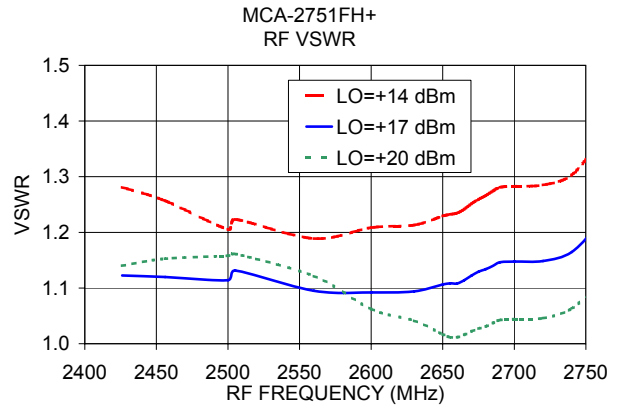
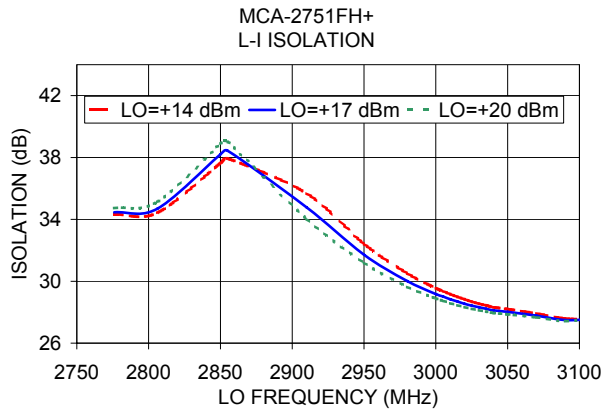
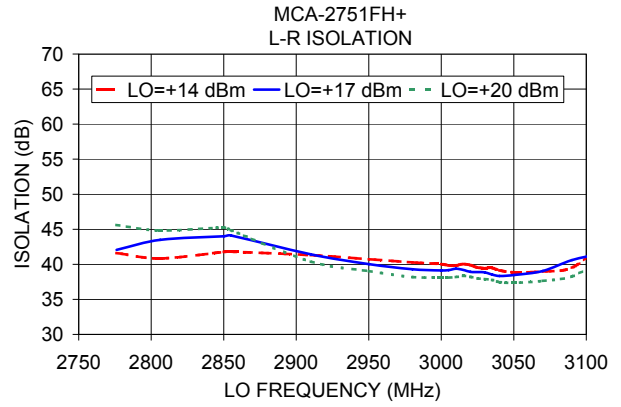
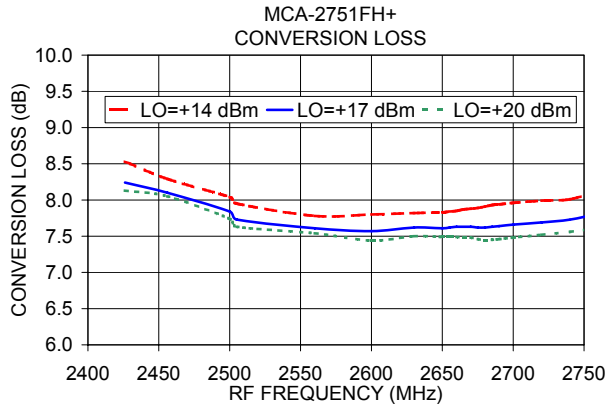
| FREQUENCY (MHz) | | | IP3 (dBm) | RF in at 1 dB compr. (dBm) | CONVERSION LOSS (dB) | LO-RF ISOLATION (dB) | LO-IF ISOLATION (dB) |
|-----------------|-----------|---------|-----------|----------------------------|----------------------|----------------------|----------------------|
| RF | LO | IF | Typ. | Min. | Typ. Max. | Typ. Min. | Typ. Min. |
| 2430-2750 | 2780-3100 | 100-600 | 31 | 15 | 7.6 9.1 | 40 34 | 32 23 |

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 +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm |
| 2426.10 | 2776.10 | 8.24 | 42.06 | 34.46 | 1.12 | 4.87 | 31.78 |
| 2456.10 | 2806.10 | 8.10 | 43.49 | 34.69 | 1.12 | 4.13 | 33.54 |
| 2500.10 | 2850.10 | 7.84 | 44.00 | 38.21 | 1.11 | 2.80 | 33.84 |
| 2505.10 | 2855.10 | 7.73 | 44.11 | 38.43 | 1.13 | 2.69 | 33.92 |
| 2560.10 | 2910.10 | 7.61 | 41.42 | 34.77 | 1.10 | 2.02 | 34.61 |
| 2600.10 | 2950.10 | 7.57 | 40.02 | 31.71 | 1.09 | 2.21 | 32.78 |
| 2630.10 | 2980.10 | 7.62 | 39.30 | 30.01 | 1.09 | 2.68 | 32.56 |
| 2650.10 | 3000.10 | 7.61 | 39.13 | 29.17 | 1.11 | 3.05 | 32.21 |
| 2655.10 | 3005.10 | 7.62 | 39.18 | 29.01 | 1.11 | 3.14 | 31.85 |
| 2660.10 | 3010.10 | 7.63 | 39.37 | 28.83 | 1.11 | 3.23 | 31.58 |
| 2665.10 | 3015.10 | 7.63 | 39.20 | 28.69 | 1.11 | 3.32 | 31.27 |
| 2670.10 | 3020.10 | 7.63 | 38.92 | 28.54 | 1.12 | 3.42 | 31.14 |
| 2675.10 | 3025.10 | 7.62 | 38.89 | 28.42 | 1.13 | 3.52 | 30.74 |
| 2680.10 | 3030.10 | 7.62 | 38.85 | 28.32 | 1.13 | 3.63 | 30.45 |
| 2685.10 | 3035.10 | 7.63 | 38.53 | 28.22 | 1.14 | 3.76 | 30.35 |
| 2690.10 | 3040.10 | 7.64 | 38.33 | 28.12 | 1.15 | 3.89 | 30.26 |
| 2700.10 | 3050.10 | 7.66 | 38.48 | 28.02 | 1.15 | 4.17 | 30.14 |
| 2720.10 | 3070.10 | 7.69 | 39.05 | 27.78 | 1.15 | 4.74 | 29.98 |
| 2740.10 | 3090.10 | 7.73 | 40.60 | 27.49 | 1.16 | 5.25 | 29.42 |
| 2760.10 | 3110.10 | 7.81 | 41.53 | 27.57 | 1.22 | 5.66 | 28.54 |

Electrical Schematic





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