

X2 Frequency Multiplier

KBA-40+ KBA-40

50Ω Output 5400 to 9600 MHz



CASE STYLE: SM2

Maximum Ratings

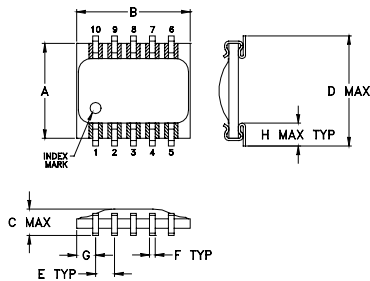
| | |
|---|----------------|
| Operating Temperature | -40°C to 85 °C |
| Storage Temperature | -55°C to 100°C |
| RF Input Power | 200mW |
| Permanent damage may occur if any of these limits are exceeded. | |

Pin Connections

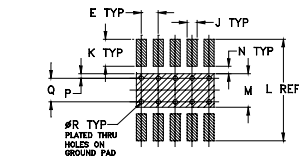
| | |
|---------|---------------|
| INPUT | 10 |
| OUTPUT | 6 |
| SAMPLE* | 1 |
| GROUND | 2,3,4,5,7,8,9 |

* Sample port output power, -10 dBc typ.
Terminate in 50 ohms if not used.

Outline Drawing



PCB Land Pattern

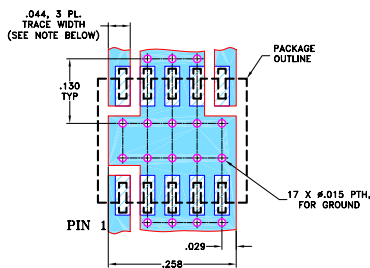


Suggested Layout,
Tolerance to be within ±0.02
ADJACENT GROUND PINS SHALL BE CONNECTED
TO EACH OTHER AND TO GROUND PAD

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | |
|------|------|------|------|------|------|------|------|-------|
| .250 | .300 | .095 | .290 | .050 | .115 | .050 | .060 | |
| 6.35 | 7.62 | 2.41 | 7.37 | 1.27 | 2.92 | 1.27 | 1.52 | |
| J | K | L | M | N | P | Q | R | wt |
| .030 | .080 | .300 | .100 | .020 | .015 | .070 | .014 | grams |
| 0.76 | 2.03 | 7.62 | 2.54 | 0.51 | 0.38 | 1.78 | 0.36 | 0.3 |

Demo Board MCL P/N: TB-74 Suggested PCB Layout (PL-067)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. 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-Circuits 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-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 5400 to 9600 MHz
- low insertion loss, 12.3 dB typ.
- low profile, 0.070" max.
- aqueous washable
- protected by U.S patent 5,534,830

Applications

- synthesizers
- local oscillators

Electrical Specifications

| MULTIPLICATION FACTOR | FREQUENCY (MHz) | | INPUT POWER (dBm) | CONVERSION LOSS (dB) | | *HARMONIC OUTPUT (dBc) | | | | | | |
|-----------------------|-----------------|-----------|-------------------|----------------------|------|------------------------|---------|---------|---------|---------|---------|----|
| | F1 Input | F2 Output | | Typ. | Max. | F1 Typ. | F1 Min. | F3 Typ. | F3 Min. | F4 Typ. | F4 Min. | |
| 2 | 2700-4800 | 5400-9600 | 10 | 16 | 12.3 | 17.6 | 18 | 10 | 26 | 15 | 24 | 14 |
| | 2700-4800 | 5400-9600 | 5 | 10 | 13 | 19 | 15 | 8 | 26 | 16 | 26 | 12 |

* Harmonics of input frequency below the power level of F2

Typical Performance Data 25°C

| Input Frequency (MHz) | Conversion Loss (dB) F2 | F1 | F3 (-dBc) | F4 |
|-----------------------|-------------------------|-------|-----------|-------|
| 2700.00 | 14.26 | 27.19 | 35.82 | 15.80 |
| 2750.00 | 13.90 | 26.33 | 40.98 | 16.70 |
| 2900.00 | 12.84 | 21.84 | 33.70 | 19.39 |
| 3000.00 | 12.90 | 22.03 | 34.30 | 21.18 |
| 3200.00 | 13.59 | 25.82 | 43.18 | 20.79 |
| 3600.00 | 10.77 | 23.96 | 26.54 | 24.70 |
| 3800.00 | 11.60 | 18.24 | 23.18 | 31.24 |
| 4000.00 | 12.09 | 17.42 | 21.89 | 34.19 |
| 4400.00 | 13.44 | 19.00 | 34.16 | 36.27 |
| 4800.00 | 13.61 | 18.85 | 29.53 | 38.03 |

