

Surface Mount Power Splitter/Combiner

**QBA-07+
QBA-07**

2 Way-90° 50Ω 340 to 680 MHz



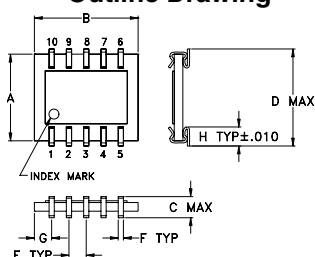
Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |

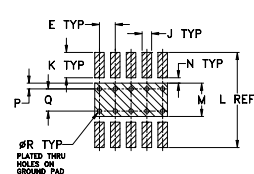
Pin Connections

| | |
|----------------------|-------------|
| SUMPORT | 1 |
| PORT 1 (+90°) | 10 |
| PORT 2 (0°) | 6 |
| GROUND | 2,3,4,7,8,9 |
| 50 OHM TERM EXTERNAL | 5 |

Outline Drawing



PCB Land Pattern

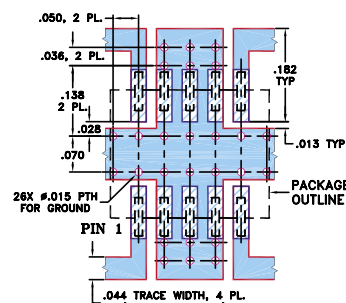


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | |
|------|------|------|------|------|------|------|------|-------|
| .250 | .300 | .070 | .320 | .050 | .015 | .050 | .075 | |
| 6.35 | 7.62 | 1.78 | 8.13 | 1.27 | 0.38 | 1.27 | 1.91 | |
| J | K | L | M | N | P | Q | R | wt |
| .030 | .095 | .330 | .100 | .020 | .015 | .070 | .014 | grams |
| 0.76 | 2.41 | 8.38 | 2.54 | 0.51 | 0.38 | 1.78 | 0.36 | 0.3 |

Demo Board MCL P/N: TB-115 Suggested PCB Layout (PL-004)



NOTE: 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- low insertion loss, 0.5 dB typ.
- high power capability, 27W
- hermetically sealed
- low variation with temperature
- low profile, 0.07" height
- protected by U.S. Patent 5,534,830

Applications

- NMT
- land mobile radio
- broadcasting

Splitter Electrical Specifications

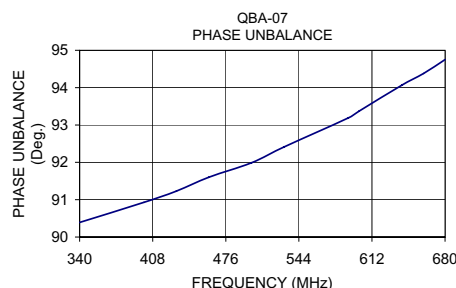
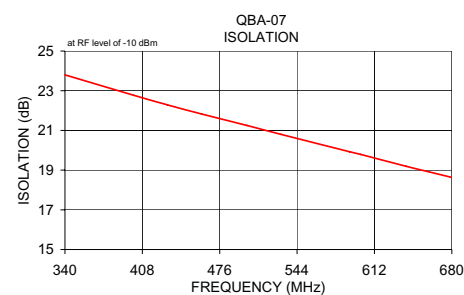
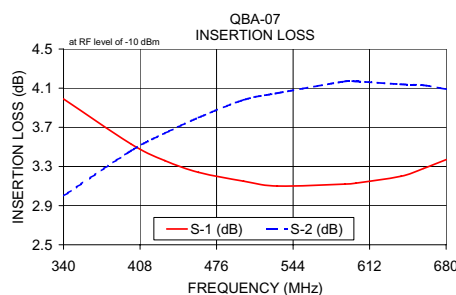
| FREQ. RANGE (MHz) | ISOLATION (dB) | INSERTION LOSS (dB) Avg. of Coupled Outputs less 3 dB | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) | THERMAL RESISTANCE θ_{jc} , °C/W | POWER (W) |
|-------------------|----------------|---|---------------------------|--------------------------|---|-----------|
| f_L - f_U | Typ. Min. | \bar{X} σ | Typ. Max. | Typ. Max. | Typ. | |
| 340-680 | 22 16 | 0.8 0.1 | 3.0 7.0 | 0.7 2.0 | 20 | 21* |
| 340-530 | 23 18 | 0.5 0.1 | 1.7 4.0 | 0.7 2.0 | 20 | 27** |

* Derate linearly to 9W at 100°C

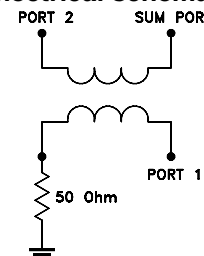
** Derate linearly to 12W at 100°C

Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|--------------------|------------------------|------|--------------------------------|-------------------|------------------------------|-----------|-----------|-----------|
| | S-1 | S-2 | | | | | | |
| 340.00 | 3.99 | 3.00 | 0.99 | 23.80 | 90.39 | 1.14 | 1.08 | 1.12 |
| 400.00 | 3.53 | 3.46 | 0.07 | 22.78 | 90.93 | 1.17 | 1.10 | 1.14 |
| 430.00 | 3.36 | 3.64 | 0.27 | 22.29 | 91.23 | 1.19 | 1.11 | 1.14 |
| 460.00 | 3.24 | 3.80 | 0.56 | 21.83 | 91.60 | 1.20 | 1.12 | 1.15 |
| 500.00 | 3.15 | 3.98 | 0.83 | 21.25 | 91.99 | 1.22 | 1.14 | 1.17 |
| 530.00 | 3.10 | 4.05 | 0.96 | 20.80 | 92.41 | 1.24 | 1.15 | 1.18 |
| 590.00 | 3.12 | 4.17 | 1.05 | 19.93 | 93.19 | 1.27 | 1.18 | 1.20 |
| 600.00 | 3.13 | 4.17 | 1.04 | 19.79 | 93.37 | 1.27 | 1.19 | 1.21 |
| 640.00 | 3.20 | 4.14 | 0.94 | 19.19 | 94.07 | 1.29 | 1.21 | 1.22 |
| 660.00 | 3.28 | 4.13 | 0.85 | 18.91 | 94.38 | 1.30 | 1.22 | 1.23 |
| 680.00 | 3.37 | 4.09 | 0.73 | 18.63 | 94.75 | 1.31 | 1.23 | 1.24 |



electrical schematic



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