

Surface Mount

# Power Splitter/Combiner

2 Way-90° 50Ω

1200 to 2200 MHz

**NEW!**

**QCC-20**



**BLUE CELL™**

CASE STYLE: GF981

PRICE: \$4.95 ea. QTY (10-49)

## Maximum Ratings

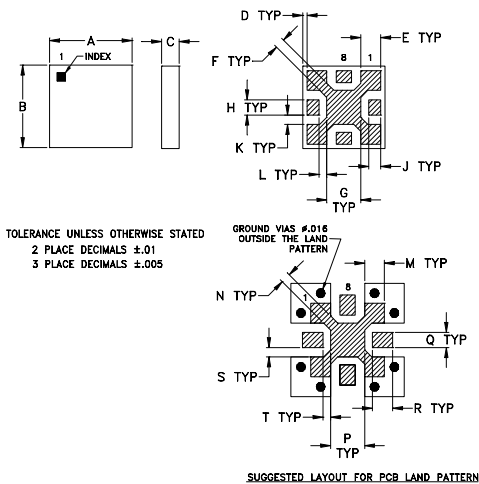
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| Power Input           | 17.5W* max.    |

\*derate linearly to 3.5W at 100°C ambient.

## Pin Connections

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

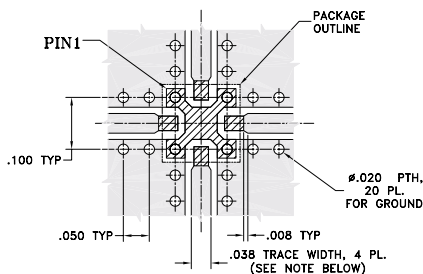
## Outline Drawing



## Outline Dimensions (inch)

| A    | B    | C    | D    | E    | F    | G    | H    | J    |       |
|------|------|------|------|------|------|------|------|------|-------|
| .150 | .150 | .032 | .008 | .036 | .018 | .062 | .028 | .022 |       |
| 3.81 | 3.81 | 0.81 | 0.20 | 0.91 | 0.46 | 1.57 | 0.71 | 0.56 |       |
| K    | L    | M    | N    | P    | Q    | R    | S    | T    | wt.   |
| .017 | .014 | .036 | .018 | .062 | .028 | .037 | .017 | .014 | grams |
| 0.43 | 0.36 | 0.91 | 0.46 | 1.57 | 0.71 | 0.94 | 0.43 | 0.36 | .05   |

## Demo Board MCL P/N: TB-302 Suggested PCB Layout (PL-128)



### NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS R04350 WITH DIELECTRIC THICKNESS .020" ± .0025". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- IF YOUR PCB DESIGN RULES ALLOW, GROUND VIAS SHOULD BE PLACED UNDER THE LAND PATTERN FOR BETTER RF PERFORMANCE.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Features

- low insertion loss, 0.4 dB typ.
- high isolation, 25 dB typ.
- LTCC construction
- excellent temperature stability
- small size, 0.15"X0.15"
- patent pending

## Applications

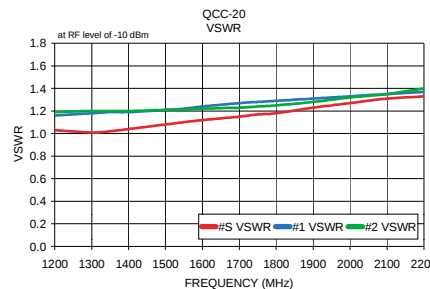
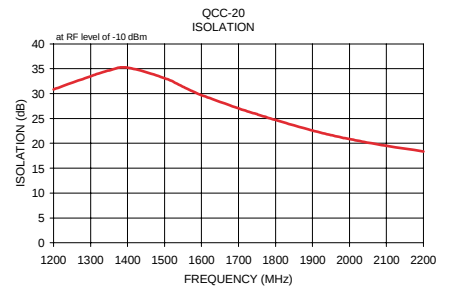
- WCDMA
- PCS
- DECT
- PHS
- defense
- radar

## Splitter Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | INSERTION LOSS (dB)<br>Avg. of coupled outputs<br>less 3 dB | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) |
|-------------------|----------------|-------------------------------------------------------------|---------------------------|--------------------------|
| $f_L$ - $f_U$     | Typ. Min.      | Typ. Max.                                                   | Typ. Max.                 | Typ. Max.                |
| 1200-2200         |                |                                                             |                           |                          |
| 1200-1400         | 32 24          | 0.4 0.6                                                     | 1 3                       | 0.4 1.0                  |
| 1400-1800         | 35 20          | 0.4 0.7                                                     | 1 3                       | 0.5 0.85                 |
| 1800-2200         | 23 16          | 0.6 0.9                                                     | 1 5                       | 0.5 0.9                  |

## Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB)<br>S-1 | Insertion Loss (dB)<br>S-2 | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|----------------------------|----------------------------|--------------------------|----------------|------------------------|--------|--------|--------|
| 1200.00         | 3.06                       | 3.64                       | 0.58                     | 30.83          | 90.74                  | 1.03   | 1.16   | 1.19   |
| 1300.00         | 3.28                       | 3.43                       | 0.16                     | 33.49          | 91.05                  | 1.01   | 1.18   | 1.20   |
| 1350.00         | 3.37                       | 3.35                       | 0.03                     | 34.64          | 91.20                  | 1.02   | 1.19   | 1.20   |
| 1400.00         | 3.47                       | 3.27                       | 0.20                     | 35.21          | 91.33                  | 1.04   | 1.19   | 1.20   |
| 1500.00         | 3.63                       | 3.16                       | 0.47                     | 33.11          | 91.51                  | 1.08   | 1.21   | 1.21   |
| 1550.00         | 3.70                       | 3.12                       | 0.58                     | 31.38          | 91.57                  | 1.10   | 1.22   | 1.21   |
| 1600.00         | 3.76                       | 3.09                       | 0.67                     | 29.70          | 91.60                  | 1.12   | 1.24   | 1.22   |
| 1700.00         | 3.84                       | 3.07                       | 0.77                     | 27.04          | 91.58                  | 1.15   | 1.27   | 1.23   |
| 1750.00         | 3.87                       | 3.08                       | 0.79                     | 25.86          | 91.55                  | 1.17   | 1.28   | 1.24   |
| 1800.00         | 3.89                       | 3.10                       | 0.79                     | 24.69          | 91.48                  | 1.18   | 1.29   | 1.25   |
| 1900.00         | 3.89                       | 3.18                       | 0.71                     | 22.58          | 91.25                  | 1.23   | 1.31   | 1.28   |
| 1950.00         | 3.87                       | 3.24                       | 0.63                     | 21.66          | 91.11                  | 1.25   | 1.32   | 1.30   |
| 2000.00         | 3.83                       | 3.32                       | 0.52                     | 20.85          | 90.94                  | 1.27   | 1.33   | 1.32   |
| 2100.00         | 3.73                       | 3.52                       | 0.21                     | 19.49          | 90.53                  | 1.31   | 1.35   | 1.35   |
| 2200.00         | 3.56                       | 3.78                       | 0.22                     | 18.38          | 90.13                  | 1.33   | 1.37   | 1.40   |



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