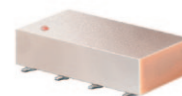


# Surface Mount Power Splitter/Combiner

## SCPQ-85C+ SCPQ-85C

2 Way-90° 50Ω 55 to 85 MHz



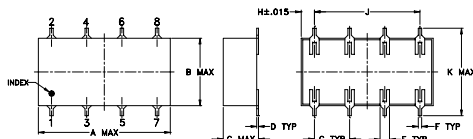
### Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Operating Temperature                                           | -40°C to 85°C  |
| Storage Temperature                                             | -55°C to 100°C |
| Power Input (as a splitter)                                     | 1W max.        |
| Permanent damage may occur if any of these limits are exceeded. |                |

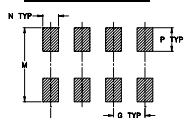
### Pin Connections

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

### Outline Drawing



#### PCB Land Pattern

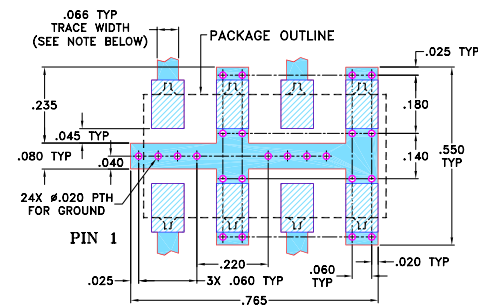


Suggested Layout,  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E    | F    | G     |
|-------|-------|-------|-------|------|------|-------|
| .75   | .38   | .20   | .010  | .050 | .020 | .200  |
| 19.05 | 9.65  | 5.08  | 0.25  | 1.27 | 0.51 | 5.08  |
| H     | J     | K     | M     | N    | P    | wt    |
| .075  | .600  | .450  | .470  | .100 | .150 | grams |
| 1.91  | 15.24 | 11.43 | 11.94 | 2.54 | 3.81 | 1.6   |

### Demo Board MCL P/N: TB-51 Suggested PCB Layout (PL-062)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B 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

### Features

- low insertion loss, 0.3 dB typ.
- high isolation, 30 dB typ.

### Applications

- VHF
- modulators
- balanced amplifiers
- signal processing

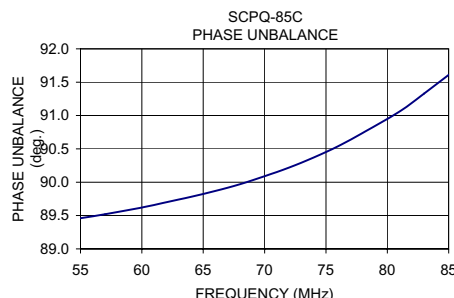
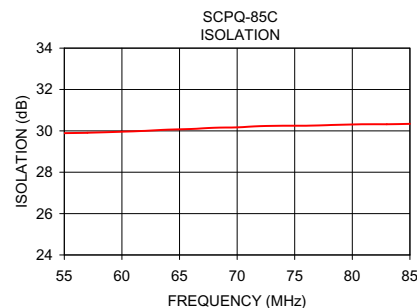
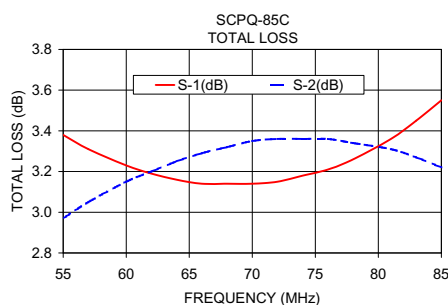
### Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) |
|-------------------|----------------|--------------------------------------------------------|---------------------------|--------------------------|
| $f_L$ - $f_U$     | Typ. Min.      | Typ. Max.                                              | Max.                      | Max.                     |
| 55-85             | 30 20          | 0.3 0.6                                                | 3                         | 0.6                      |

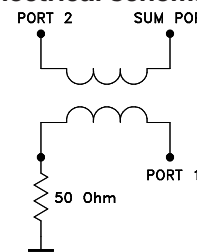
### Typical Performance Data

| Frequency (MHz) | Total Loss <sup>1</sup> (dB) |      | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
|                 | S-1                          | S-2  |                          |                |                        |        |        |        |
| 55.00           | 3.38                         | 2.97 | 0.41                     | 29.89          | 89.46                  | 1.04   | 1.03   | 1.04   |
| 57.00           | 3.31                         | 3.05 | 0.26                     | 29.91          | 89.52                  | 1.04   | 1.03   | 1.04   |
| 60.00           | 3.23                         | 3.15 | 0.08                     | 29.96          | 89.62                  | 1.04   | 1.03   | 1.05   |
| 62.00           | 3.19                         | 3.20 | 0.01                     | 30.00          | 89.70                  | 1.04   | 1.04   | 1.05   |
| 64.00           | 3.16                         | 3.25 | 0.09                     | 30.06          | 89.78                  | 1.05   | 1.04   | 1.05   |
| 66.00           | 3.14                         | 3.29 | 0.15                     | 30.09          | 89.87                  | 1.05   | 1.04   | 1.06   |
| 68.00           | 3.14                         | 3.32 | 0.18                     | 30.15          | 89.97                  | 1.05   | 1.04   | 1.06   |
| 70.00           | 3.14                         | 3.35 | 0.21                     | 30.17          | 90.09                  | 1.06   | 1.05   | 1.06   |
| 72.00           | 3.15                         | 3.36 | 0.21                     | 30.23          | 90.22                  | 1.06   | 1.05   | 1.07   |
| 74.00           | 3.18                         | 3.36 | 0.18                     | 30.25          | 90.37                  | 1.07   | 1.05   | 1.07   |
| 76.00           | 3.21                         | 3.36 | 0.14                     | 30.25          | 90.54                  | 1.07   | 1.06   | 1.07   |
| 78.00           | 3.26                         | 3.34 | 0.08                     | 30.28          | 90.74                  | 1.08   | 1.06   | 1.08   |
| 81.00           | 3.36                         | 3.31 | 0.05                     | 30.32          | 91.06                  | 1.09   | 1.07   | 1.08   |
| 83.00           | 3.45                         | 3.27 | 0.18                     | 30.32          | 91.33                  | 1.10   | 1.07   | 1.09   |
| 85.00           | 3.55                         | 3.22 | 0.32                     | 30.34          | 91.61                  | 1.10   | 1.08   | 1.09   |

1. Total Loss = Insertion Loss + 3dB splitter loss.



### electrical schematic



For detailed performance specs & shopping online see web site

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