

Surface Mount Directional Coupler

SEDC-10-63+

50Ω 10 dB Coupling 50 to 6000 MHz



Generic photo used for illustration purposes only

CASE STYLE: BL301-1

+RoHS Compliant

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

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |

Permanent damage may occur if any of these limits are exceeded.

Pad Connections

| | |
|---------|------------|
| INPUT | 10 |
| OUTPUT | 24 |
| COUPLED | 15 |
| GROUND | ALL OTHERS |

Features

- wideband, 50-6000 MHz
- flat coupling, ±0.5 dB typ.
- high directivity, 28 dB typ.

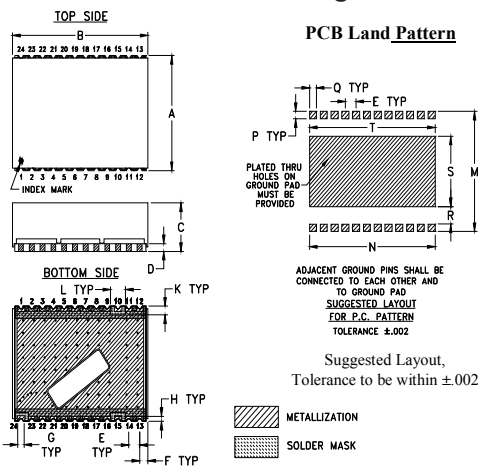
Applications

- military defense
- signal monitoring

Electrical Specifications at 25°C

| Parameter | Condition (MHz) | Min. | Typ. | Max. | Unit |
|--|-----------------|------|------|------|------|
| Frequency Range | | 50 | | 6000 | MHz |
| Mainline Loss (above theoretical loss, 0.4 dB) | 50-6000 | — | 4.0 | 5.5 | dB |
| Coupling | 50-6000 | 9.0 | 10.0 | 11.0 | dB |
| Coupling Flatness(±) | 50-6000 | — | 0.5 | 1.0 | dB |
| Directivity | 50 | 22.5 | 24 | — | |
| | 700 | 26.0 | 29 | — | |
| | 2750 | 23.0 | 27 | — | dB |
| 6000 | 23.0 | 24 | — | | |
| Return Loss (Input) | 50-6000 | — | 18 | — | dB |
| Return Loss (Output) | 50-6000 | — | 14 | — | dB |
| Return Loss (Coupling) | 50-6000 | — | 14 | — | dB |
| Input Power | 50-6000 | — | — | 1.0 | W |

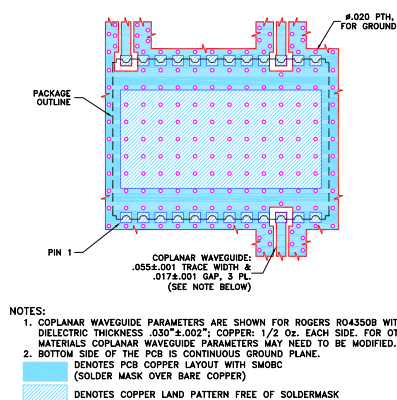
Outline Drawing



Outline Dimensions (inch/mm)

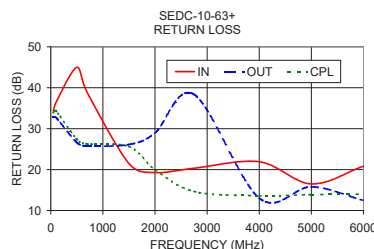
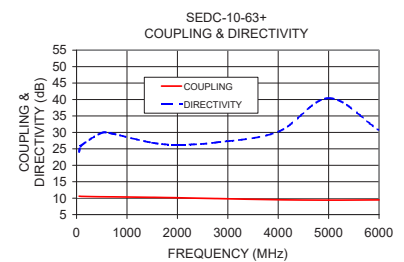
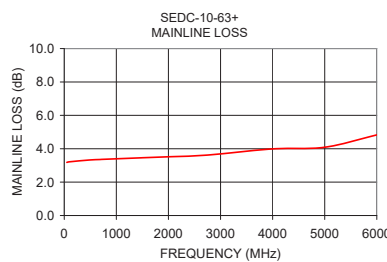
| A | B | C | D | E | F | G | H | K |
|-------|-------|-------|------|------|-------|-------|-------|-------|
| .93 | 1.26 | .39 | .062 | .100 | .078 | 0.06 | .040 | .070 |
| 23.62 | 32.00 | 9.91 | 1.57 | 2.54 | 1.98 | 1.52 | 1.02 | 1.78 |
| L | M | N | P | Q | R | S | T | wt |
| .140 | .970 | 1.165 | .060 | .065 | 0.140 | 0.570 | 1.165 | grams |
| 3.56 | 24.64 | 29.59 | 1.52 | 1.65 | 3.56 | 14.48 | 29.59 | 7.3 |

Demo Board MCL P/N: TB-605+ Suggested PCB Layout (PL-437)

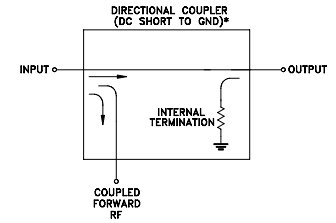


Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) | | |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
| | | | | In | Out | Cpl |
| 50.00 | 3.18 | 10.59 | 24.05 | 34.33 | 32.85 | 33.95 |
| 100.00 | 3.22 | 10.53 | 26.08 | 36.42 | 32.73 | 34.33 |
| 500.00 | 3.33 | 10.42 | 29.85 | 45.01 | 26.62 | 27.42 |
| 700.00 | 3.36 | 10.39 | 29.64 | 38.81 | 25.78 | 26.25 |
| 1500.00 | 3.46 | 10.25 | 26.85 | 21.47 | 26.12 | 25.64 |
| 2000.00 | 3.52 | 10.11 | 26.30 | 19.27 | 28.93 | 19.99 |
| 2750.00 | 3.62 | 9.89 | 26.90 | 20.32 | 38.36 | 14.66 |
| 4000.00 | 3.99 | 9.52 | 30.19 | 21.92 | 13.01 | 13.61 |
| 5000.00 | 4.09 | 9.40 | 40.39 | 16.49 | 15.79 | 13.89 |
| 6000.00 | 4.83 | 9.47 | 30.65 | 20.83 | 12.48 | 13.99 |



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

Notes

- 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.
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