

Surface Mount Directional Coupler

50Ω 5 to 1000 MHz

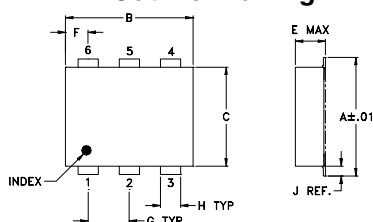
Maximum Ratings

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

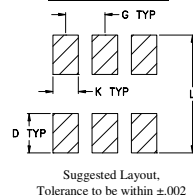
Pin Connections

| | |
|----------------------|---|
| INPUT | 1 |
| OUTPUT | 6 |
| COUPLED | 3 |
| GROUND | 2 |
| 50Ω TERM EXTERNAL | 4 |
| ISOLATE (DO NOT USE) | 5 |

Outline Drawing



PCB Land Pattern

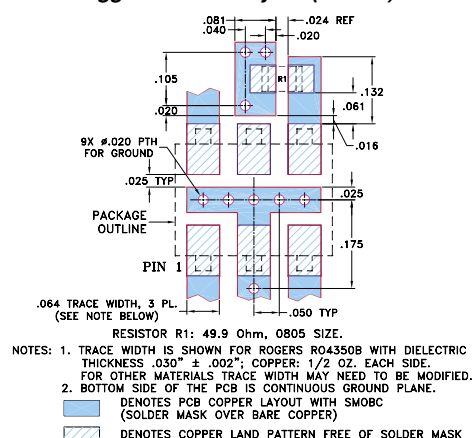


Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|------|------|------|
| .272 | .310 | .220 | .100 | .112 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 2.84 | 1.40 | 2.54 |

| H | J | K | L | wt |
|------|------|------|------|-------|
| .030 | .026 | .065 | .300 | grams |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.20 |

Demo Board MCL P/N: TB-05 Suggested PCB Layout (PL-095)



Features

- wideband, 5-1000 MHz
- low insertion loss, 0.8 dB typ.
- high directly, 40 dB typ.
- aqueous washable
- protected by U.S Patents 6,133,525 & 6,140,887

Applications

- communications
- cable tv

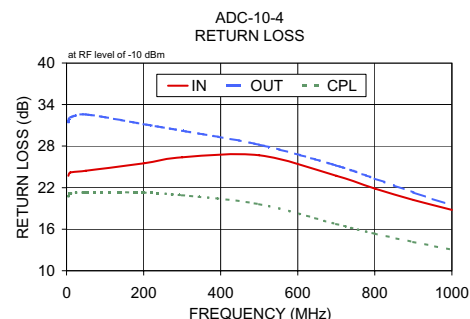
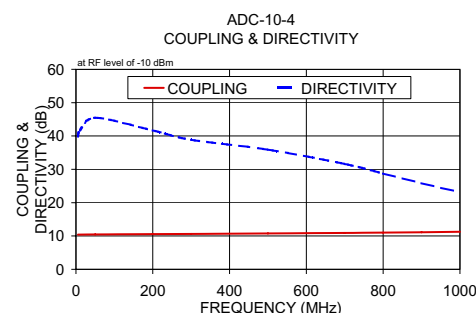
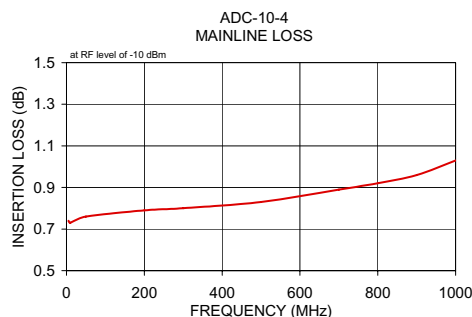
Directional Coupler Electrical Specifications

| FREQ. (MHz) | COUPLING (dB) | | MAINLINE LOSS ¹ (dB) | | | | | | DIRECTIVITY (dB) | | | | | | VSWR (:1) | POWER INPUT, W | |
|--------------------------------|------------------|----------|------------------------------------|------|------|------|------|------|---------------------|------|------|------|------|------|--------------|-------------------|------|
| | Nom. | Flatness | L | | M | | U | | L | | M | | U | | | L | MU |
| f _L -f _U | | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Max. | Max. |
| 5-1000 | 10.5±0.5 | ±1.0 | 0.8 | 1.3 | 0.8 | 1.2 | 1.0 | 1.5 | 40 | 23 | 40 | 20 | 25 | 13 | 1.2 | 1 | 1 |

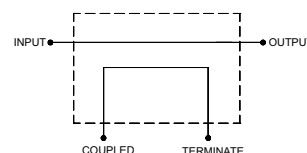
L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) | | |
|--------------------|---------------------------------|----------------------------|---------------------|---------------------|-------|-------|
| | | | | In | Out | Cpl |
| 5.00 | 0.74 | 10.44 | 39.83 | 23.72 | 31.43 | 20.70 |
| 10.00 | 0.73 | 10.43 | 41.65 | 24.20 | 32.13 | 21.20 |
| 50.00 | 0.76 | 10.48 | 45.47 | 24.43 | 32.57 | 21.30 |
| 200.00 | 0.79 | 10.55 | 41.69 | 25.51 | 31.16 | 21.29 |
| 300.00 | 0.80 | 10.60 | 38.88 | 26.39 | 30.23 | 20.91 |
| 500.00 | 0.83 | 10.76 | 35.93 | 26.67 | 28.20 | 19.60 |
| 700.00 | 0.89 | 10.92 | 31.62 | 23.71 | 25.20 | 16.74 |
| 800.00 | 0.92 | 11.00 | 28.76 | 21.88 | 23.31 | 15.37 |
| 900.00 | 0.96 | 11.12 | 25.83 | 20.21 | 21.32 | 14.15 |
| 1000.00 | 1.03 | 11.25 | 23.20 | 18.78 | 19.45 | 13.03 |



electrical schematic



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