*Surface Mount*

# Directional Coupler

## 50Ω 10 to 500 MHz

# ADC-26-52+



*Generic photo used for illustration purposes only*

CASE STYLE: CD636

**+RoHS Compliant**

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

*Available Tape and Reel at no extra cost*

| Reel Size | Devices/Reel |
|---|---|
| 7" | 20, 50, 100, 200 |
| 13" | 500, 1000 |

## 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.

## Pin Connections

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

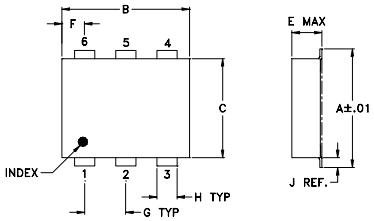
## Features

- wideband, 10-500 MHz
- low insertion loss, 0.2 dB typ.
- high directivity, 21 dB typ.
- aqueous washable
- protected by U.S Patents 6,133,525 & 6,140,887

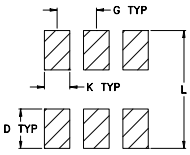
## Applications

- VHF/UHF
- reflective power measurements
- communications
- signal sampling

## Outline Drawing




**PCB Land Pattern**



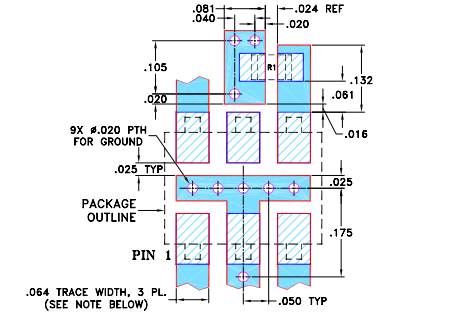

Suggested Layout,
Tolerance to be within ±.002

## Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| .272 | .310 | .220 | .100 | .162 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 4.11 | 1.40 | 2.54 |

| H | J | K | L | wt |
|---|---|---|---|---|
| .030 | .026 | .065 | .300 | grams |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.25 |

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




RESISTOR R1: 49.9 Ohm, 0805 SIZE.

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

## Directional Coupler Electrical Specifications

| FREQ. RANGE (MHz) | COUPLING (dB) | | MAINLINE LOSS[1] (dB) | | | | | | DIRECTIVITY (dB) | | | | | | VSWR (:1) | POWER INPUT[2] (W) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | L | | M | | U | | L | | M | | U | | | LM | U |
| $f_L$-$f_U$ | Nom. | Typ. Flatness | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Max. | Max. |
| 10-500 | 26.0±0.5 | ±0.9 | 0.15 | 0.35 | 0.2 | 0.3 | 0.3 | 0.5 | 35 | 22 | 25 | 16 | 18 | 11 | 1.1 | 2.0 | 5 |

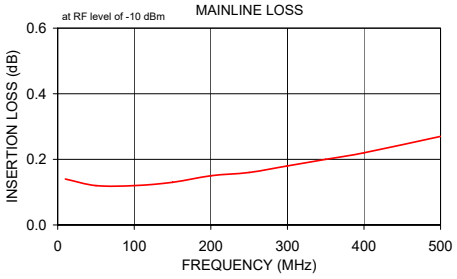
L= 10-100 MHz M= 100-250 MHz U= 250-500 MHz

1. Mainline loss includes theoretical power loss at coupled port.
2. Derate linearly to 0.5 Watt for "L, M" band and 1 Watt for "U" band at 85°C.

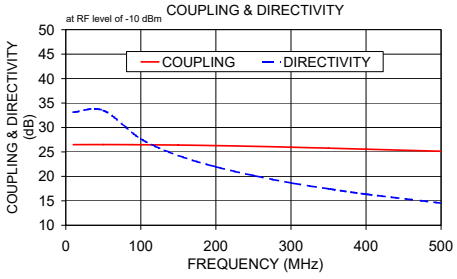
## Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) | Coupling (dB) | Directivity (dB) | Return Loss (dB) | | |
|---|---|---|---|---|---|---|
| | In-Out | In-Cpl | | In | Out | Cpl |
| 10.00 | 0.14 | 26.49 | 33.14 | 31.50 | 31.90 | 31.60 |
| 50.00 | 0.12 | 26.51 | 33.50 | 35.75 | 36.35 | 35.18 |
| 100.00 | 0.12 | 26.48 | 27.68 | 34.14 | 34.71 | 33.55 |
| 150.00 | 0.13 | 26.41 | 24.27 | 32.10 | 32.76 | 31.53 |
| 200.00 | 0.15 | 26.29 | 21.96 | 30.57 | 31.12 | 29.61 |
| 250.00 | 0.16 | 26.14 | 20.19 | 29.15 | 29.75 | 27.93 |
| 300.00 | 0.18 | 25.97 | 18.67 | 27.68 | 28.08 | 26.51 |
| 350.00 | 0.20 | 25.77 | 17.46 | 26.65 | 27.05 | 25.29 |
| 400.00 | 0.22 | 25.56 | 16.37 | 25.73 | 25.86 | 24.24 |
| 500.00 | 0.27 | 25.14 | 14.54 | 24.41 | 24.06 | 22.45 |

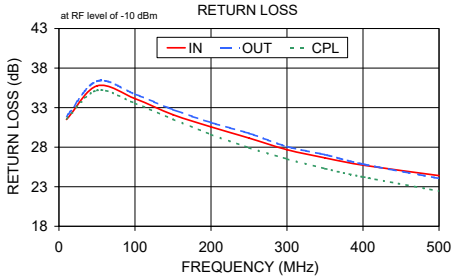
ADC-26-52+
MAINLINE LOSS



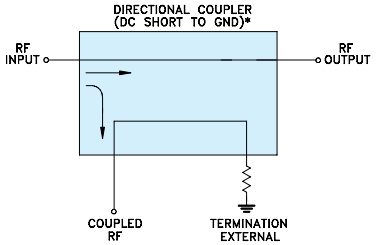

ADC-26-52+
COUPLING & DIRECTIVITY




ADC-26-52+
RETURN LOSS




## Electrical Schematic




* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) AND EXTERNAL TERMINATION.

Notes

A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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REV. C
M151107
ED-12758
ADC-26-52+
IG/TD/CP/AM
200420

# Directional Coupler ADC-26-52+

## *Typical Performance Data*

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = +25°C

| FREQUENCY (MHz) | INSERTION LOSS (dB) | COUPLING LOSS (dB) | DIRECTIVITY (dB) | RETURN LOSS (dB) | | |
|---|---|---|---|---|---|---|
| | | | | IN | OUT | CPL |
| 10 | 0.14 | 26.49 | 30.95 | 28.98 | 29.15 | 29.15 |
| 20 | 0.14 | 26.50 | 34.42 | 31.42 | 31.71 | 31.74 |
| 30 | 0.13 | 26.51 | 34.64 | 32.31 | 32.61 | 32.80 |
| 40 | 0.13 | 26.51 | 33.47 | 32.51 | 32.81 | 33.22 |
| 50 | 0.13 | 26.50 | 31.77 | 32.39 | 32.53 | 33.22 |
| 75 | 0.13 | 26.51 | 28.59 | 31.36 | 31.58 | 32.61 |
| 100 | 0.13 | 26.51 | 25.97 | 30.03 | 30.24 | 31.65 |
| 125 | 0.14 | 26.48 | 24.11 | 28.69 | 28.91 | 30.57 |
| 150 | 0.15 | 26.45 | 22.49 | 27.55 | 27.82 | 29.56 |
| 175 | 0.16 | 26.42 | 21.29 | 26.55 | 26.85 | 28.57 |
| 200 | 0.17 | 26.38 | 20.13 | 25.65 | 25.96 | 27.68 |
| 250 | 0.18 | 26.29 | 18.33 | 24.05 | 24.38 | 26.08 |
| 275 | 0.19 | 26.24 | 17.64 | 23.36 | 23.66 | 25.37 |
| 300 | 0.20 | 26.17 | 16.95 | 22.75 | 22.99 | 24.70 |
| 325 | 0.21 | 26.11 | 16.33 | 22.19 | 22.38 | 24.12 |
| 350 | 0.22 | 26.05 | 15.74 | 21.69 | 21.83 | 23.55 |
| 375 | 0.24 | 25.98 | 15.21 | 21.23 | 21.32 | 23.03 |
| 400 | 0.24 | 25.91 | 14.69 | 20.77 | 20.80 | 22.53 |
| 425 | 0.26 | 25.83 | 14.18 | 20.36 | 20.31 | 22.06 |
| 450 | 0.28 | 25.78 | 13.66 | 19.97 | 19.85 | 21.61 |
| 475 | 0.29 | 25.70 | 13.31 | 19.63 | 19.41 | 21.20 |
| 500 | 0.31 | 25.62 | 12.87 | 19.34 | 19.00 | 20.80 |
| 525 | 0.32 | 25.56 | 12.44 | 19.06 | 18.61 | 20.41 |
| 550 | 0.34 | 25.50 | 12.00 | 18.80 | 18.26 | 20.05 |
| 575 | 0.36 | 25.46 | 11.65 | 18.57 | 17.92 | 19.70 |
| 600 | 0.37 | 25.41 | 11.25 | 18.34 | 17.58 | 19.37 |
| 650 | 0.41 | 25.36 | 10.42 | 17.97 | 16.90 | 18.73 |
| 700 | 0.45 | 25.35 | 9.60 | 17.60 | 16.35 | 18.16 |
| 750 | 0.49 | 25.39 | 8.77 | 17.23 | 15.83 | 17.63 |
| 800 | 0.53 | 25.47 | 8.07 | 16.82 | 15.35 | 17.14 |
| 850 | 0.55 | 25.58 | 7.47 | 16.39 | 14.97 | 16.70 |
| 900 | 0.58 | 25.63 | 6.88 | 15.83 | 14.58 | 16.29 |
| 950 | 0.60 | 25.70 | 6.47 | 15.33 | 14.25 | 15.93 |
| 1000 | 0.65 | 25.81 | 5.91 | 14.85 | 13.95 | 15.61 |
| 1100 | 0.66 | 25.68 | 5.70 | 13.86 | 13.33 | 15.02 |
| 1200 | 0.70 | 25.50 | 5.50 | 13.00 | 12.76 | 14.50 |
| 1300 | 0.75 | 25.27 | 5.44 | 12.25 | 12.24 | 14.05 |
| 1400 | 0.80 | 25.03 | 5.38 | 11.60 | 11.77 | 13.63 |
| 1500 | 0.86 | 24.85 | 5.29 | 11.02 | 11.32 | 13.28 |
| 1600 | 0.92 | 24.58 | 5.45 | 10.48 | 10.92 | 12.94 |
| 1700 | 0.99 | 24.35 | 5.52 | 10.00 | 10.52 | 12.62 |
| 1800 | 1.06 | 24.26 | 5.65 | 9.63 | 10.21 | 12.33 |
| 1900 | 1.14 | 24.04 | 5.97 | 9.19 | 9.83 | 12.01 |
| 2000 | 1.21 | 23.93 | 6.27 | 8.81 | 9.52 | 11.74 |
| 2100 | 1.30 | 23.75 | 6.50 | 8.45 | 9.16 | 11.44 |
| 2200 | 1.39 | 23.62 | 6.78 | 8.11 | 8.87 | 11.17 |
| 2300 | 1.49 | 23.50 | 7.28 | 7.78 | 8.57 | 10.88 |
| 2400 | 1.61 | 23.25 | 7.90 | 7.49 | 8.31 | 10.60 |
| 2500 | 1.71 | 23.11 | 8.83 | 7.20 | 8.11 | 10.34 |
| 2600 | 1.85 | 23.09 | 9.94 | 6.96 | 7.92 | 10.06 |
| 2700 | 1.97 | 22.98 | 11.97 | 6.68 | 7.80 | 9.77 |
| 2800 | 2.11 | 22.81 | 14.14 | 6.44 | 7.67 | 9.48 |
| 2900 | 2.26 | 22.68 | 17.92 | 6.20 | 7.57 | 9.19 |
| 3000 | 2.42 | 22.40 | 24.98 | 6.02 | 7.52 | 8.88 |



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# Directional Coupler ADC-26-52+

## *Typical Performance Data*

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = -40°C

| FREQUENCY (MHz) | INSERTION LOSS (dB) | COUPLING LOSS (dB) | DIRECTIVITY (dB) | RETURN LOSS (dB) | | |
|---|---|---|---|---|---|---|
| | | | | IN | OUT | CPL |
| 10 | 0.06 | 26.50 | 24.38 | 23.43 | 23.39 | 22.78 |
| 20 | 0.09 | 26.53 | 32.70 | 28.99 | 29.10 | 28.59 |
| 30 | 0.10 | 26.54 | 36.92 | 30.91 | 31.10 | 30.74 |
| 40 | 0.10 | 26.54 | 37.83 | 31.59 | 31.81 | 31.82 |
| 50 | 0.10 | 26.54 | 35.13 | 31.55 | 31.62 | 32.34 |
| 75 | 0.10 | 26.54 | 29.54 | 29.92 | 30.01 | 32.43 |
| 100 | 0.10 | 26.52 | 26.34 | 28.35 | 28.45 | 31.52 |
| 125 | 0.11 | 26.51 | 24.37 | 27.64 | 27.77 | 30.26 |
| 150 | 0.11 | 26.47 | 22.97 | 27.25 | 27.47 | 29.06 |
| 175 | 0.11 | 26.42 | 21.67 | 26.43 | 26.66 | 27.97 |
| 200 | 0.11 | 26.38 | 20.40 | 25.21 | 25.45 | 27.07 |
| 250 | 0.12 | 26.26 | 18.48 | 23.40 | 23.66 | 25.61 |
| 275 | 0.13 | 26.20 | 17.84 | 22.95 | 23.19 | 25.00 |
| 300 | 0.13 | 26.12 | 17.13 | 22.45 | 22.63 | 24.41 |
| 325 | 0.14 | 26.05 | 16.43 | 21.78 | 21.94 | 23.87 |
| 350 | 0.15 | 25.96 | 15.82 | 21.14 | 21.25 | 23.31 |
| 375 | 0.16 | 25.87 | 15.32 | 20.65 | 20.73 | 22.76 |
| 400 | 0.17 | 25.78 | 14.79 | 20.29 | 20.30 | 22.24 |
| 425 | 0.18 | 25.69 | 14.33 | 19.97 | 19.91 | 21.74 |
| 450 | 0.19 | 25.63 | 13.92 | 19.63 | 19.51 | 21.28 |
| 475 | 0.20 | 25.50 | 13.45 | 19.22 | 19.01 | 20.87 |
| 500 | 0.21 | 25.41 | 12.98 | 18.88 | 18.57 | 20.47 |
| 525 | 0.23 | 25.32 | 12.55 | 18.60 | 18.18 | 20.10 |
| 550 | 0.24 | 25.25 | 12.09 | 18.35 | 17.83 | 19.76 |
| 575 | 0.26 | 25.18 | 11.71 | 18.14 | 17.49 | 19.41 |
| 600 | 0.28 | 25.11 | 11.26 | 17.93 | 17.15 | 19.07 |
| 650 | 0.32 | 25.02 | 10.35 | 17.67 | 16.51 | 18.40 |
| 700 | 0.36 | 25.00 | 9.37 | 17.36 | 15.92 | 17.81 |
| 750 | 0.40 | 25.07 | 8.33 | 17.08 | 15.38 | 17.25 |
| 800 | 0.44 | 25.23 | 7.37 | 16.79 | 14.90 | 16.75 |
| 850 | 0.47 | 25.46 | 6.50 | 16.29 | 14.45 | 16.27 |
| 900 | 0.49 | 25.64 | 5.68 | 15.61 | 13.99 | 15.84 |
| 950 | 0.52 | 25.84 | 5.12 | 15.06 | 13.67 | 15.46 |
| 1000 | 0.55 | 25.99 | 4.52 | 14.59 | 13.44 | 15.13 |
| 1100 | 0.55 | 25.96 | 4.27 | 13.56 | 12.90 | 14.54 |
| 1200 | 0.57 | 25.72 | 4.10 | 12.64 | 12.33 | 14.03 |
| 1300 | 0.60 | 25.43 | 4.13 | 11.91 | 11.85 | 13.62 |
| 1400 | 0.63 | 25.11 | 4.09 | 11.39 | 11.53 | 13.25 |
| 1500 | 0.69 | 24.87 | 3.94 | 10.76 | 11.03 | 12.89 |
| 1600 | 0.75 | 24.46 | 4.28 | 10.11 | 10.57 | 12.59 |
| 1700 | 0.79 | 24.12 | 4.47 | 9.77 | 10.32 | 12.29 |
| 1800 | 0.86 | 24.07 | 4.44 | 9.49 | 10.08 | 12.06 |
| 1900 | 0.93 | 23.81 | 4.84 | 8.99 | 9.67 | 11.76 |
| 2000 | 0.98 | 23.56 | 5.34 | 8.69 | 9.39 | 11.54 |
| 2100 | 1.08 | 23.39 | 5.68 | 8.25 | 8.99 | 11.29 |
| 2200 | 1.14 | 23.21 | 6.12 | 7.90 | 8.68 | 11.01 |
| 2300 | 1.21 | 23.01 | 6.85 | 7.70 | 8.48 | 10.78 |
| 2400 | 1.35 | 22.85 | 7.27 | 7.19 | 8.00 | 10.53 |
| 2500 | 1.44 | 22.63 | 8.06 | 7.05 | 7.88 | 10.23 |
| 2600 | 1.56 | 22.66 | 9.44 | 6.70 | 7.69 | 9.99 |
| 2700 | 1.64 | 22.51 | 11.34 | 6.55 | 7.59 | 9.68 |
| 2800 | 1.79 | 22.28 | 13.24 | 6.28 | 7.36 | 9.35 |
| 2900 | 1.93 | 22.15 | 16.13 | 5.98 | 7.17 | 9.04 |
| 3000 | 2.12 | 21.88 | 21.87 | 5.70 | 7.04 | 8.73 |



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# Directional Coupler ADC-26-52+

## *Typical Performance Data*

TEST CONDITIONS: INPUT POWER =0 dBm @Temperature = +85°C

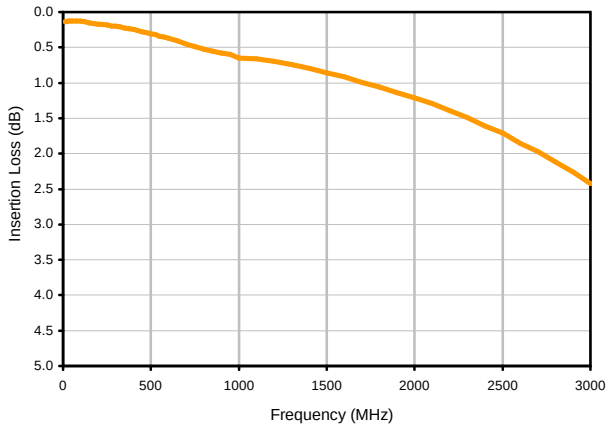
| FREQUENCY (MHz) | INSERTION LOSS (dB) | COUPLING LOSS (dB) | DIRECTIVITY (dB) | RETURN LOSS (dB) | | |
|---|---|---|---|---|---|---|
| | | | | IN | OUT | CPL |
| 10 | 0.16 | 26.47 | 33.08 | 31.88 | 32.25 | 32.04 |
| 20 | 0.15 | 26.49 | 33.97 | 32.99 | 33.43 | 33.65 |
| 30 | 0.15 | 26.49 | 32.64 | 33.05 | 33.43 | 34.01 |
| 40 | 0.15 | 26.49 | 31.31 | 32.80 | 33.18 | 33.94 |
| 50 | 0.15 | 26.49 | 30.22 | 32.65 | 32.86 | 33.57 |
| 75 | 0.16 | 26.50 | 27.78 | 32.26 | 32.62 | 32.41 |
| 100 | 0.16 | 26.50 | 25.78 | 31.39 | 31.79 | 31.29 |
| 125 | 0.17 | 26.48 | 24.02 | 29.72 | 30.12 | 30.27 |
| 150 | 0.19 | 26.47 | 22.39 | 28.00 | 28.39 | 29.42 |
| 175 | 0.19 | 26.44 | 21.13 | 26.68 | 27.04 | 28.57 |
| 200 | 0.20 | 26.42 | 20.00 | 25.85 | 26.25 | 27.79 |
| 250 | 0.23 | 26.36 | 18.28 | 24.56 | 25.01 | 26.28 |
| 275 | 0.24 | 26.32 | 17.67 | 23.85 | 24.25 | 25.57 |
| 300 | 0.25 | 26.27 | 16.94 | 23.15 | 23.46 | 24.89 |
| 325 | 0.27 | 26.23 | 16.32 | 22.55 | 22.81 | 24.28 |
| 350 | 0.28 | 26.18 | 15.75 | 22.08 | 22.27 | 23.70 |
| 375 | 0.29 | 26.13 | 15.25 | 21.68 | 21.84 | 23.17 |
| 400 | 0.30 | 26.08 | 14.75 | 21.28 | 21.35 | 22.67 |
| 425 | 0.32 | 26.03 | 14.26 | 20.86 | 20.87 | 22.21 |
| 450 | 0.33 | 25.99 | 13.84 | 20.47 | 20.40 | 21.77 |
| 475 | 0.35 | 25.94 | 13.45 | 20.08 | 19.90 | 21.38 |
| 500 | 0.36 | 25.88 | 13.03 | 19.77 | 19.50 | 20.99 |
| 525 | 0.38 | 25.84 | 12.65 | 19.50 | 19.12 | 20.63 |
| 550 | 0.39 | 25.81 | 12.26 | 19.23 | 18.78 | 20.28 |
| 575 | 0.42 | 25.77 | 11.97 | 18.97 | 18.44 | 19.95 |
| 600 | 0.43 | 25.74 | 11.64 | 18.68 | 18.09 | 19.63 |
| 650 | 0.47 | 25.69 | 11.00 | 18.22 | 17.43 | 19.02 |
| 700 | 0.50 | 25.65 | 10.46 | 17.77 | 16.90 | 18.48 |
| 750 | 0.53 | 25.62 | 9.88 | 17.29 | 16.38 | 17.96 |
| 800 | 0.57 | 25.60 | 9.45 | 16.83 | 15.89 | 17.50 |
| 850 | 0.59 | 25.59 | 9.13 | 16.40 | 15.53 | 17.08 |
| 900 | 0.62 | 25.54 | 8.71 | 15.88 | 15.12 | 16.68 |
| 950 | 0.65 | 25.51 | 8.45 | 15.38 | 14.74 | 16.31 |
| 1000 | 0.69 | 25.59 | 8.10 | 14.98 | 14.41 | 15.98 |
| 1100 | 0.73 | 25.37 | 7.86 | 14.00 | 13.69 | 15.33 |
| 1200 | 0.79 | 25.21 | 7.56 | 13.15 | 13.04 | 14.77 |
| 1300 | 0.86 | 25.05 | 7.37 | 12.39 | 12.44 | 14.23 |
| 1400 | 0.92 | 24.90 | 7.15 | 11.69 | 11.90 | 13.77 |
| 1500 | 0.99 | 24.77 | 6.92 | 11.11 | 11.43 | 13.36 |
| 1600 | 1.07 | 24.56 | 7.05 | 10.53 | 10.98 | 12.99 |
| 1700 | 1.16 | 24.36 | 6.89 | 10.01 | 10.52 | 12.60 |
| 1800 | 1.24 | 24.38 | 7.08 | 9.56 | 10.18 | 12.29 |
| 1900 | 1.34 | 24.21 | 7.20 | 9.12 | 9.78 | 11.93 |
| 2000 | 1.42 | 24.06 | 7.34 | 8.76 | 9.47 | 11.66 |
| 2100 | 1.53 | 23.93 | 7.52 | 8.38 | 9.12 | 11.36 |
| 2200 | 1.63 | 23.84 | 7.71 | 8.03 | 8.82 | 11.09 |
| 2300 | 1.74 | 23.73 | 8.10 | 7.69 | 8.55 | 10.82 |
| 2400 | 1.85 | 23.57 | 8.52 | 7.45 | 8.36 | 10.60 |
| 2500 | 2.00 | 23.48 | 8.82 | 7.17 | 8.18 | 10.40 |
| 2600 | 2.11 | 23.50 | 10.64 | 6.94 | 8.03 | 10.14 |
| 2700 | 2.25 | 23.32 | 12.46 | 6.67 | 7.89 | 9.87 |
| 2800 | 2.37 | 23.20 | 13.79 | 6.45 | 7.84 | 9.66 |
| 2900 | 2.52 | 23.10 | 17.16 | 6.22 | 7.80 | 9.41 |
| 3000 | 2.66 | 22.80 | 21.34 | 6.14 | 7.83 | 9.14 |



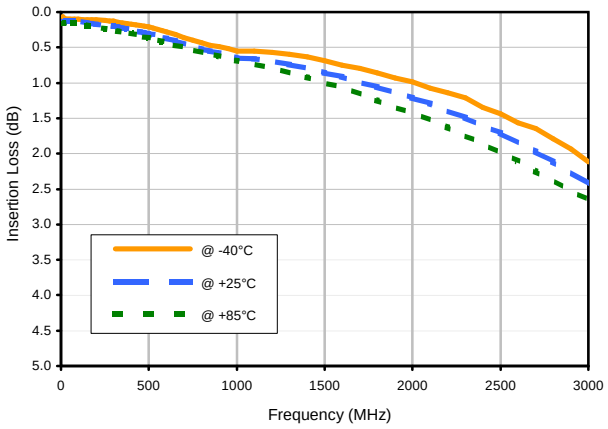
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## *Typical Performance Curves*

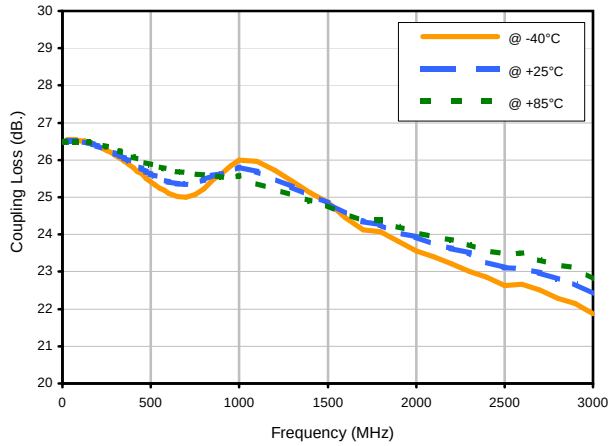
**Insertion Loss**



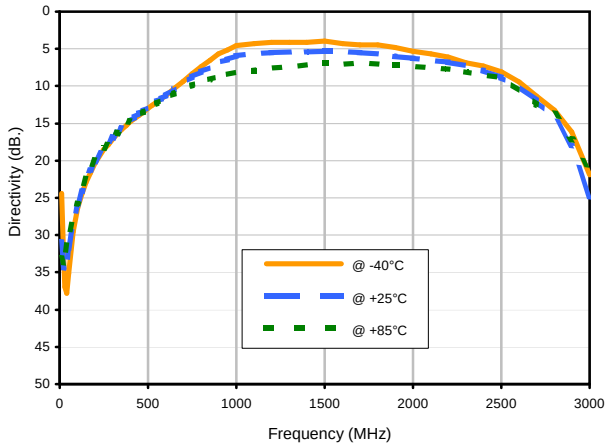

**Insertion Loss vs. TEMPERATURE**




**Coupling Loss vs. TEMPERATURE**




**Directivity vs. TEMPERATURE**



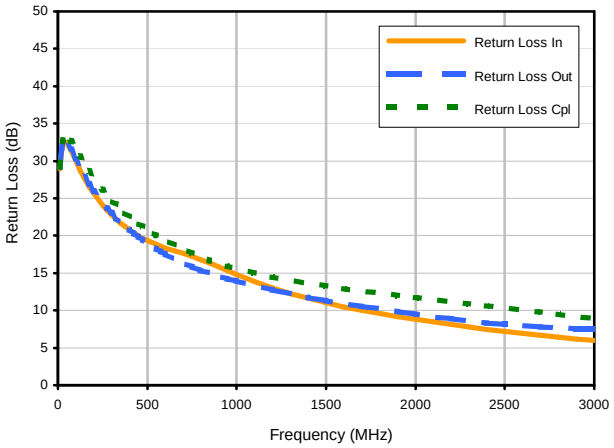




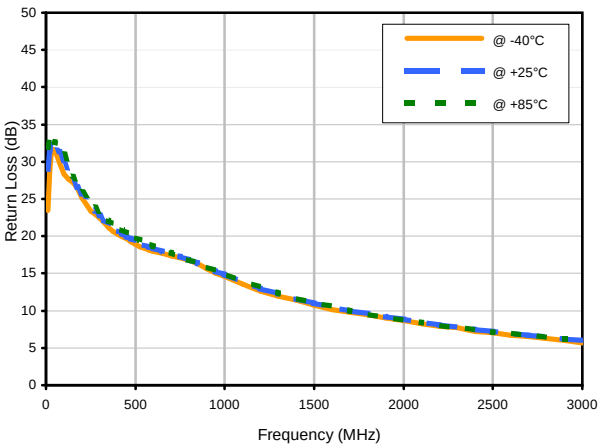
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## *Typical Performance Curves*

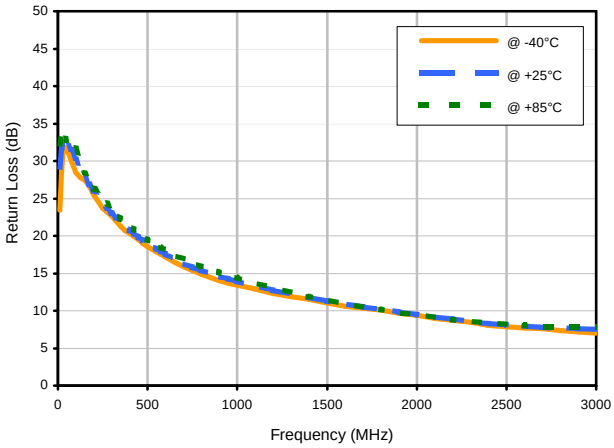
**Return Loss**



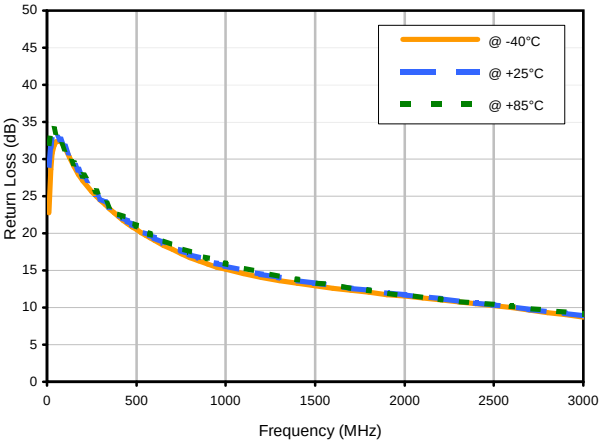

**Return Loss In vs. TEMPERATURE**




**Return Loss Out vs. TEMPERATURE**




**Return Loss Cpl vs. TEMPERATURE**





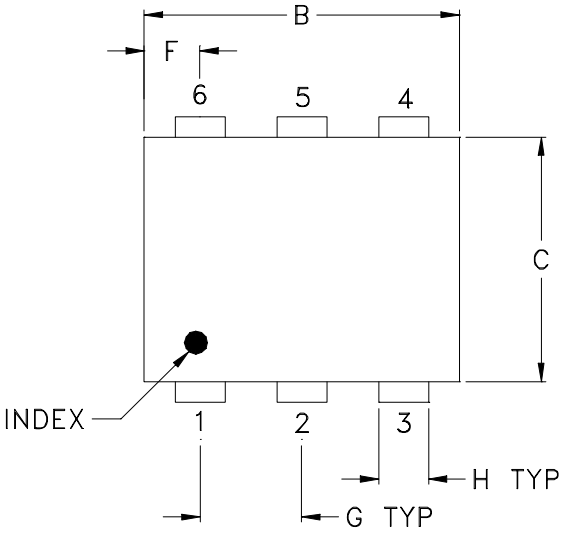


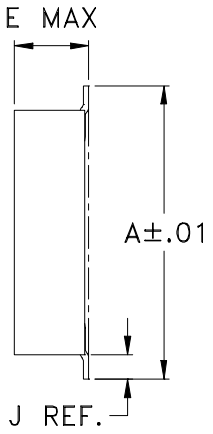
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# Case Style CD

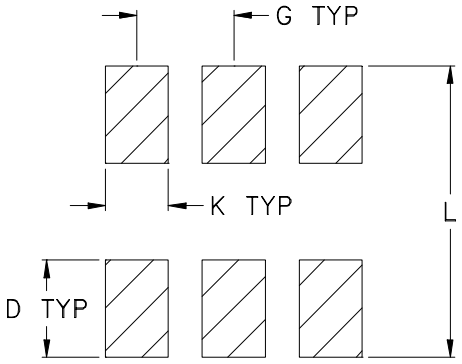
**CD541**
**CD542**
**CD636**
**CD637**

## Outline Dimensions




## PCB Land Pattern




Suggested Layout,
Tolerance to be within ±.002

| CASE# | A | B | C | D | E | F | G | H | J | K | L | WT, GRAM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CD541 | .272 (6.91) | .310 (7.87) | .220 (5.58) | .100 (2.54) | .082 (2.08) | .055 (1.40) | .100 (2.54) | .030 (0.76) | .026 (0.66) | .065 (1.65) | .300 (7.62) | .15 |
| CD542 | | | | | .112 (2.84) | | | | | | | .20 |
| CD636 | | | | | .162 (4.11) | | | | | | | .25 |
| CD637 | | | | | .206 (5.23) | | | | | | | .40 |

**Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3 Pl. ± .005**

**Notes:**

1. Case material: Plastic.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

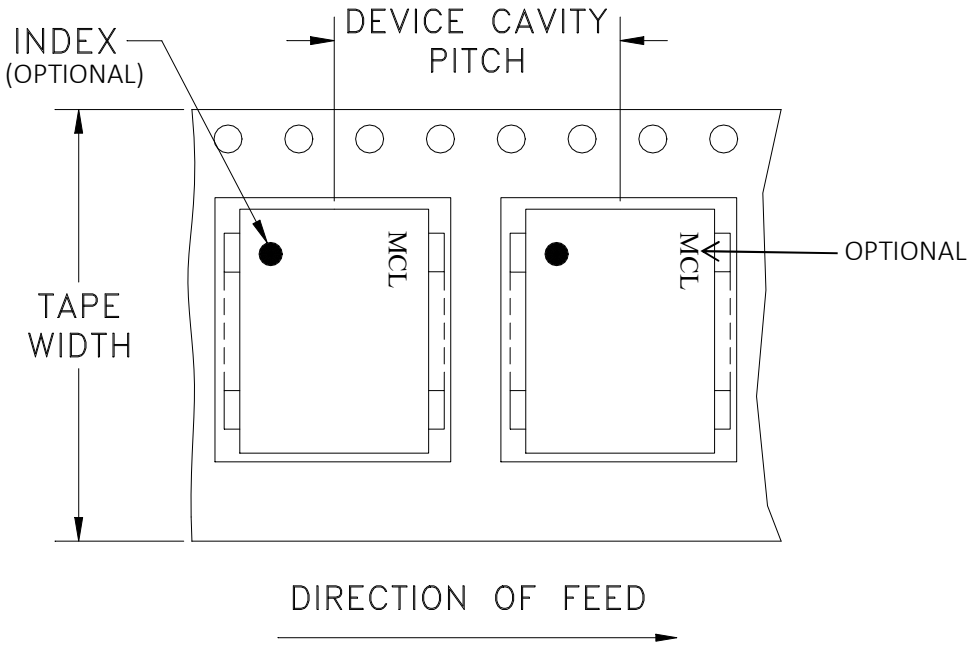

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# Tape & Reel Packaging TR-F34

DEVICE ORIENTATION IN T&R




| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel see note | |
|---|---|---|---|---|
| 16 | 12 | 7 | Small quantity standard (see note) | 20 |
| | | | | 50 |
| | | | | 100 |
| | | | | 200 |
| | | 13 | Standard | 500 |
| | | | | 1000 |

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

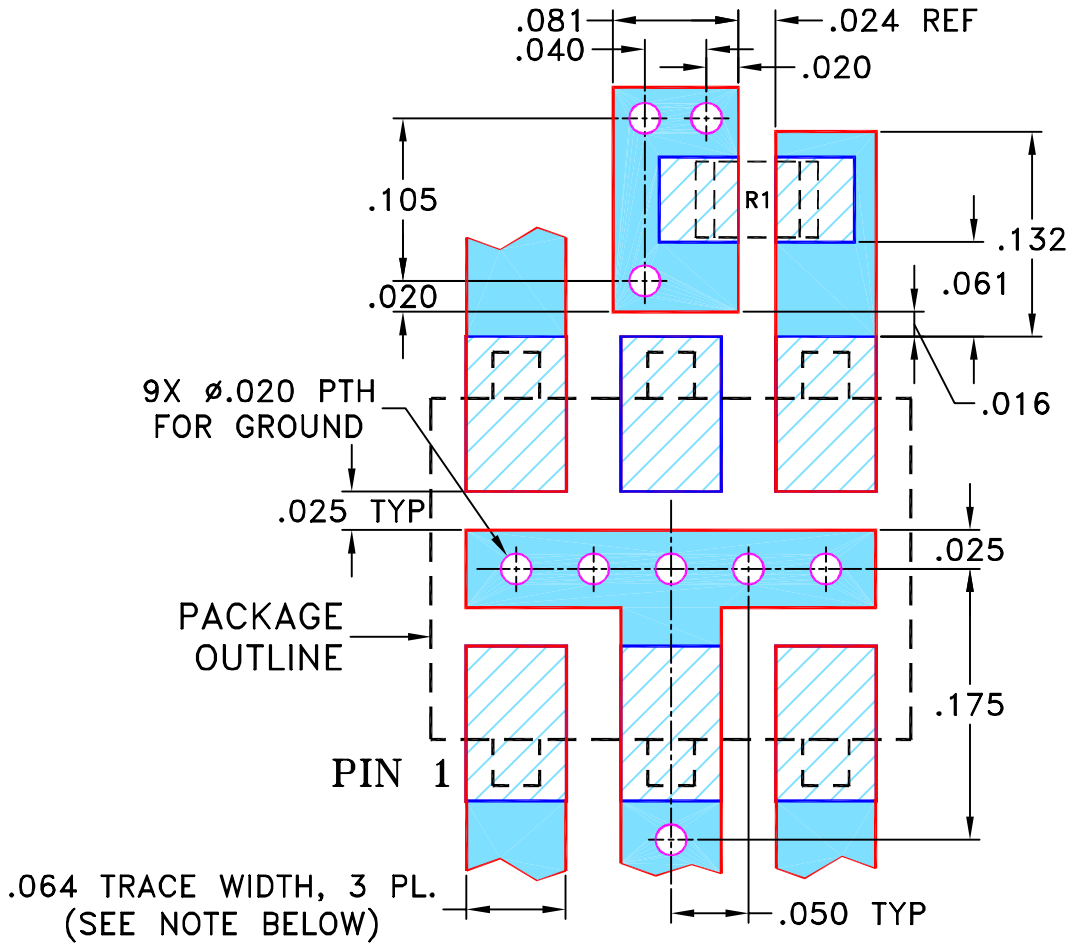
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THIRD ANGLE PROJECTION

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
| OR | M82272 | NEW RELEASE | 08/05/02 | MMG | DJ |
| A | M102713 | ADDED NOTE 2 & "...WITH SMOBC" | 01/17/06 | MMG | IL |

# SUGGESTED MOUNTING CONFIGURATION
# FOR CD542 CASE STYLE "kd" PIN CONNECTION




RESISTOR R1: 49.9 Ohm, 0805 SIZE.

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

| UNLESS OTHERWISE SPECIFIED | | INITIALS | DATE |
|---|---|---|---|
| DIMENSIONS ARE IN INCHES | DRAWN | MMG | 07/23/02 |
| TOLERANCES ON: | CHECKED | LC | 08/01/02 |
| 2 PL DECIMALS ± | APPROVED | DJ | 08/05/02 |
| 3 PL DECIMALS ± .005 | | | |
| ANGLES ± | | | |
| FRACTIONS ± | | | |

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ASHEETA1.DWG REV:A DATE:01/12/95

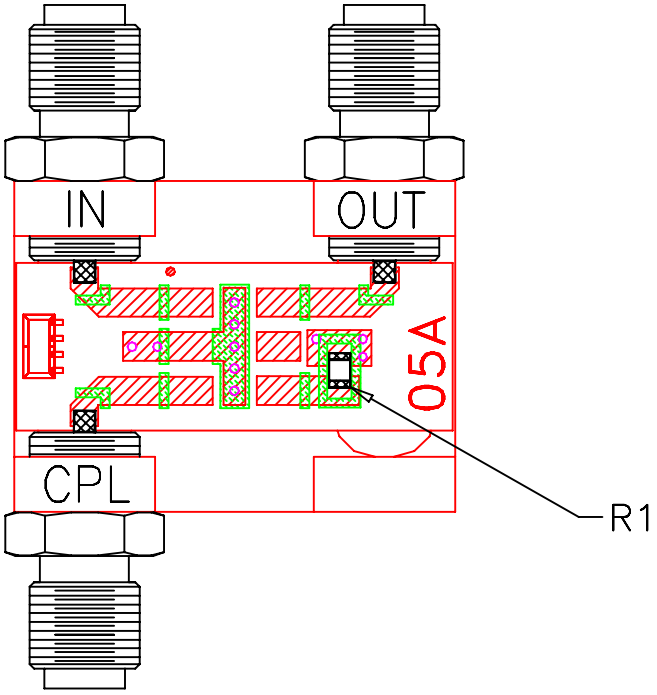
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# PL, kd, CD542, ADC, TB-05

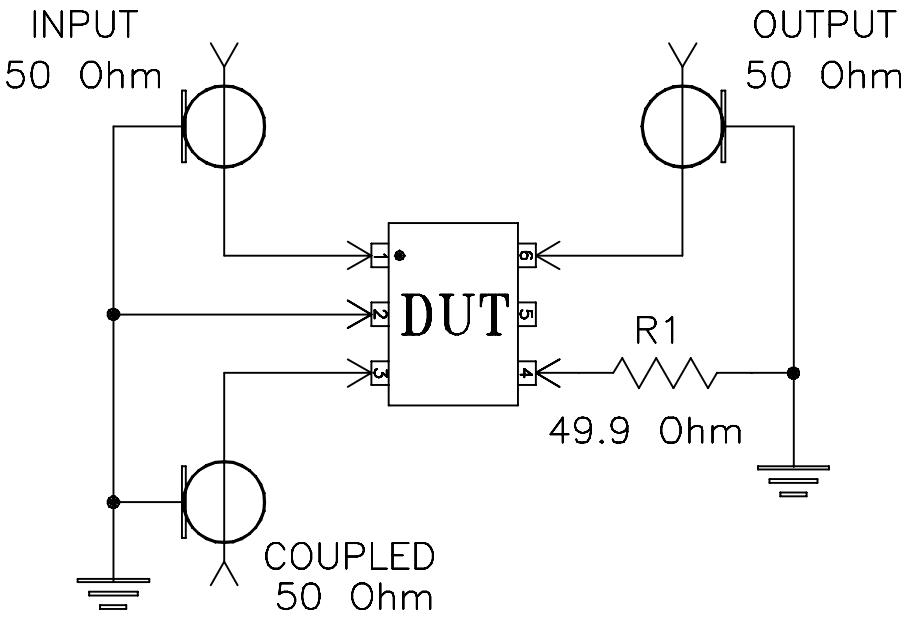
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|---|---|---|---|
| A | 15542 | 98-PL-095 | A |

| FILE: | SCALE: | SHEET: |
|---|---|---|
| 98PL095 | 8:1 | 1 OF 1 |

# Evaluation Board and Circuit




TB-05




Schematic Diagram

## Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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# Environmental Specifications ENV02T1

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -40° to 85°C<br>Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C<br>Ambient Environment | Individual Model Data Sheet |
| Humidity | 90 to 95% RH, 240 hours, 50°C | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Thermal Shock | -55° to 100°C, 100 cycles | MIL-STD-202, Method 107, Condition A-3, except +100°C |
| Solder Reflow Heat | Sn-Pb Eutetic Process: 225°C peak<br>Pb-Free Process 245° - 250°C peak | J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1 |
| Solderability | 10X Magnification | J-STD-002, 95% Coverage |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36) | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes | MIL-STD-202, Method 213, Condition A |
| Marking Resistance to Solvents | Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C;<br>distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215 |


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