

# Directional Coupler

## HT-ADC-15-4+



50Ω 5 to 1000 MHz

### Features

- wideband, 5-1000 MHz
- low mainline loss, 0.6 dB typ.
- high directivity, 24 dB typ.

### Applications

- cable tv
- communications

### Directional Coupler Electrical Specifications

| FREQ.<br>(MHz) | COUPLING<br>(dB) |          | INSERTION LOSS<br>ABOVE 3.0 dB |      | DIRECTIVITY<br>(dB) |      | VSWR<br>(-1) | POWER<br>INPUT, W |           |
|----------------|------------------|----------|--------------------------------|------|---------------------|------|--------------|-------------------|-----------|
|                | Nom.             | Flatness | Min.                           | Max. | Min.                | Max. |              | Typ.              | L<br>Max. |
| 5-1000         | 15.5±0.5         | ±0.5     | 0.6                            | 1.2  | 17                  | 28   | 1.20         | 1.0               | 1.0       |

### Typical Performance Data (TEST CONDITIONS: INPUT POWER = 0dBm @ Temperature = +25°C)

| Freq.<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling<br>(dB)<br>In-Cpl | Directivity<br>(dB) | Return Loss (dB) |       |       |
|----------------|---------------------------------|----------------------------|---------------------|------------------|-------|-------|
|                |                                 |                            |                     | In               | Out   | Cpl   |
| 5              | 0.50                            | 15.81                      | 24.01               | 31.88            | 31.38 | 22.25 |
| 10             | 0.49                            | 15.79                      | 23.99               | 35.41            | 34.12 | 22.95 |
| 50             | 0.53                            | 15.83                      | 24.08               | 34.79            | 34.52 | 22.89 |
| 200            | 0.55                            | 15.88                      | 24.31               | 28.00            | 35.16 | 23.47 |
| 300            | 0.56                            | 15.90                      | 24.52               | 26.35            | 34.54 | 24.15 |
| 500            | 0.61                            | 15.92                      | 25.64               | 24.41            | 31.51 | 26.25 |
| 700            | 0.63                            | 15.94                      | 28.27               | 25.88            | 28.84 | 28.66 |
| 800            | 0.66                            | 15.96                      | 30.62               | 27.63            | 27.73 | 29.71 |
| 900            | 0.71                            | 16.02                      | 33.51               | 28.77            | 26.69 | 29.10 |
| 1000           | 0.75                            | 16.09                      | 33.23               | 27.25            | 25.54 | 26.64 |

### Maximum Ratings

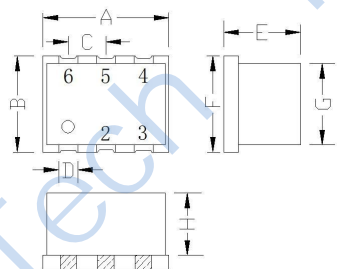
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |

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

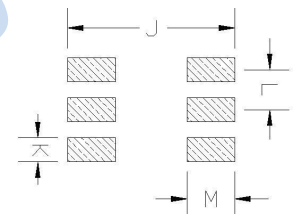
### Pin Connections

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

### Outline Drawing



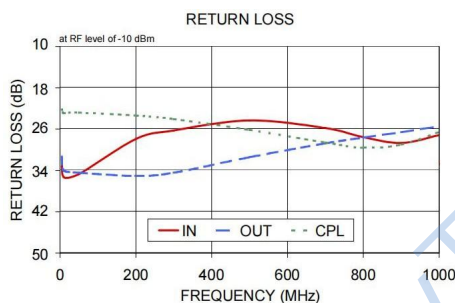
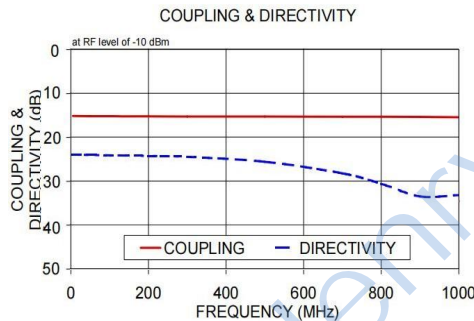
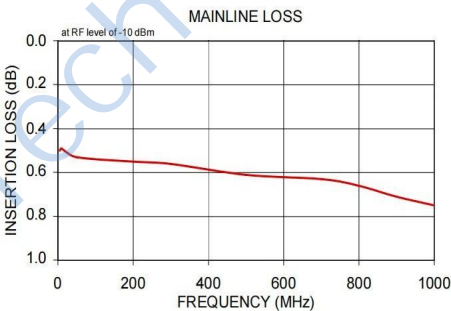
### PCB Land Pattern



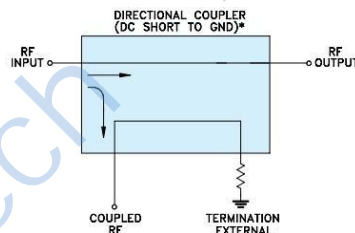
Suggested Layout,  
Tolerance to be within ±0.02

### Outline Dimensions: Unit (mm)

| Dimension | Value | Dimension | Value |
|-----------|-------|-----------|-------|
| A         | 8.70  | J         | 8.00  |
| B         | 6.50  | K         | 1.50  |
| C         | 2.54  | G         | 5.50  |
| D         | 1.30  | H         | 4.30  |
| E         | 5.40  | L         | 2.54  |
| F         | 6.50  | M         | 2.00  |
| WT        | 0.5g  |           |       |



### Electrical Schematic



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