

High Power

# Directional Coupler

**NEW!**

**JYDC-7-1HP**

50Ω

30 to 500 MHz

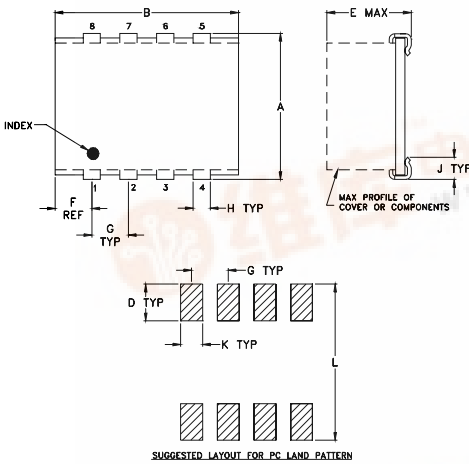
## Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -45°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |

## Pin Connections

|                      |     |
|----------------------|-----|
| INPUT                | 1   |
| OUTPUT               | 8   |
| COUPLED              | 3   |
| GROUND               | 2,7 |
| 50Ω TERM (EXTERNAL)  | 6   |
| ISOLATE (DO NOT USE) | 4,5 |

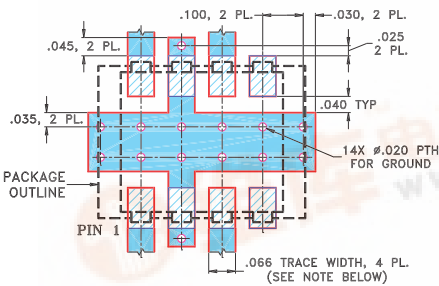
## Outline Drawing



## Outline Dimensions (inch/mm)

| A     | B     | C    | D     | E     | F    | G    |
|-------|-------|------|-------|-------|------|------|
| .395  | .500  | —    | .100  | .230  | .100 | .100 |
| 10.03 | 12.70 | —    | 2.54  | 5.84  | 2.54 | 2.54 |
| H     | J     | K    | L     | wt.   |      |      |
| .047  | .065  | .065 | .425  | grams |      |      |
| 1.19  | 1.65  | 1.65 | 10.80 | .71   |      |      |

## Demo Board MCL P/N: TB-282 Suggested PCB Layout (PL-157)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.030 ± 0.002, 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.

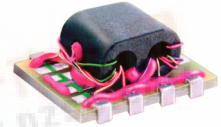
— DENOTES PCB COPPER LAYOUT  
— DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Features

- high power handling, 5 watts
- low insertion loss, 1.3 dB typ.
- excellent VSWR, 1.25:1 typ.
- good flatness, ±0.1 dB typ.
- protected by patent 6,140,887

## Applications

- VHF/UHF receivers
- cellular



CASE STYLE: BJ1051  
PRICE: \$17.95 ea. QTY. (10-49)

## Directional Coupler Electrical Specifications

| FREQ. RANGE (MHz) | COUPLING (dB) |               | MAINLINE LOSS* (dB) |           |           | DIRECTIVITY (dB) |           |           | VSWR (-1) | POWER INPUT, W |      |     |     |
|-------------------|---------------|---------------|---------------------|-----------|-----------|------------------|-----------|-----------|-----------|----------------|------|-----|-----|
|                   | Nom.          | Max. 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. |     |     |
| 30-500            | 7.3±0.4       | ±0.2          | 1.3                 | 1.6       | — — 1.4   | 1.9              | 30        | 22        | — — 20    | 15             | 1.25 | 5.0 | 5.0 |

L= 30-200 MHz U= 200-500 MHz  
\* include the theoretical loss = 0.9 dB.

## Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) |       |       |
|-----------------|----------------------------|----------------------|------------------|------------------|-------|-------|
|                 |                            |                      |                  | In               | Out   | Cpl   |
| 30.00           | 1.17                       | 7.33                 | 26.24            | 20.09            | 18.15 | 16.30 |
| 100.00          | 1.27                       | 7.42                 | 28.87            | 21.78            | 20.14 | 17.62 |
| 150.00          | 1.30                       | 7.44                 | 27.70            | 22.10            | 19.90 | 17.78 |
| 200.00          | 1.33                       | 7.44                 | 25.89            | 22.33            | 19.53 | 17.84 |
| 245.00          | 1.35                       | 7.42                 | 24.50            | 22.30            | 19.21 | 17.83 |
| 300.00          | 1.39                       | 7.39                 | 22.71            | 22.35            | 18.90 | 17.72 |
| 350.00          | 1.43                       | 7.35                 | 21.38            | 22.18            | 18.74 | 17.56 |
| 400.00          | 1.47                       | 7.30                 | 20.11            | 21.78            | 18.56 | 17.39 |
| 450.00          | 1.52                       | 7.25                 | 18.98            | 21.18            | 18.42 | 17.16 |
| 500.00          | 1.59                       | 7.20                 | 17.94            | 20.33            | 18.31 | 16.87 |

