

# Bi-Directional Coupler

## Features

- wideband, 10 to 540 MHz
- low mainline loss, 0.2 dB typ.
- good return loss, 26 dB typ.
- high power handling, 25 Watt max.

## Applications

- military mobile

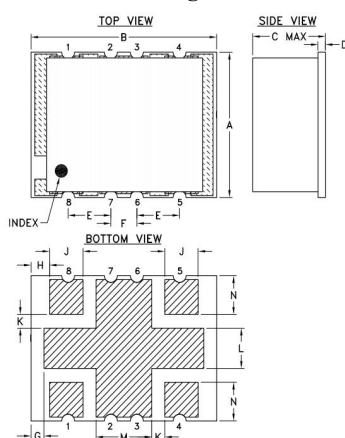
## Transformer Electrical Specifications

| Freq. range<br>(MHz) | Mainline Loss |     | Nominal Coupling | Directivity |     | Return Loss |
|----------------------|---------------|-----|------------------|-------------|-----|-------------|
|                      | Typ           | max |                  | Typ         | max |             |
| 10~540               | 0.2           | 0.6 | 19.8±0.5         | 16          | 26  | 26          |

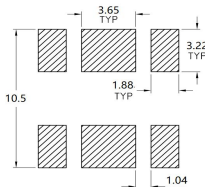
## Typical Performance Data

| Freq.<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling(dB) |         | Directivity(dB) |        | Return Loss(dB) |       |         |         |
|----------------|---------------------------------|--------------|---------|-----------------|--------|-----------------|-------|---------|---------|
|                |                                 | in-cpl       | out-cpl | out-cpl         | in-cpl | In              | Out   | Cpl-Fwd | Cpl-Rev |
| 10.0           | 0.08                            | 20.20        | 20.14   | 27.39           | 27.16  | 24.12           | 24.24 | 23.90   | 23.97   |
| 50.0           | 0.15                            | 20.26        | 20.16   | 47.58           | 47.12  | 35.06           | 35.95 | 33.45   | 33.81   |
| 100.0          | 0.16                            | 20.28        | 20.19   | 34.70           | 43.72  | 35.11           | 35.24 | 32.06   | 31.68   |
| 150.0          | 0.17                            | 20.26        | 20.20   | 30.36           | 36.64  | 34.22           | 34.18 | 30.65   | 29.81   |
| 200.0          | 0.18                            | 20.21        | 20.20   | 27.57           | 33.63  | 33.40           | 32.58 | 29.07   | 28.15   |
| 250.0          | 0.19                            | 20.15        | 20.18   | 25.43           | 31.10  | 32.59           | 31.71 | 27.53   | 26.81   |
| 350.0          | 0.21                            | 19.95        | 20.10   | 22.53           | 26.74  | 30.67           | 29.41 | 25.30   | 24.70   |
| 400.0          | 0.23                            | 19.83        | 20.04   | 21.54           | 25.36  | 30.25           | 28.81 | 24.24   | 23.73   |
| 500.0          | 0.25                            | 19.49        | 19.87   | 19.74           | 21.71  | 28.06           | 26.60 | 22.44   | 22.13   |
| 540.0          | 0.27                            | 19.34        | 19.75   | 18.90           | 20.49  | 27.68           | 26.47 | 21.81   | 21.46   |

## Outline Drawing



## PCB Land Pattern



Suggested L aout, Tolerance to be within  $\pm 0.05\text{mm}$

### Pin Connections

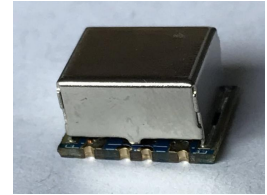
|         |         |
|---------|---------|
| Input   | 8       |
| Output  | 1       |
| Forward | 5       |
| Reverse | 4       |
| Ground  | 2,3,6,7 |

### Maximum Ratings

|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -20°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 25W max.       |

Case temperature is defined as temperature on ground leads.  
Permanent damage may occur if any of these limits are exceeded.

## JY-SYDC-20-62HP



50Ω

20 dB Coupling

