

## 6 - 18GHz 4-way Wilkinson Power Divider

### PDW06089

[www.knowlesc capacitors.com](http://www.knowlesc capacitors.com)

#### DESCRIPTION

DLI's 6-18 GHz 4-way power divider / combiner offers unmatched size and performance in a surface mount configuration. This power divider utilizes DLI's low loss temperature stable materials which offer small size and minimal performance variation over temperature.

#### FEATURES

- Small Size
- Frequency Stable over Temperature
- Solder Surface Mount Package
- Excellent Repeatability
- Moisture Sensitivity Level: MSL1
- Operating & Storage Temp: -55°C to +125°C
- Characteristic Impedance: 50Ω

#### Packaging and Ordering Information:

To request tape and reel packaging, please order part number PDW06089-T, see page 5.



#### SPECIFICATIONS\*

| Parameter                            | Frequency Range (GHz)                               | Min | Typ. | Max     |
|--------------------------------------|---|-----|------|---------|
| Nominal Power Splitting (dB)         | 6 - 18  |     | 6.0  |         |
| Nominal Phase Shift (Deg)            |   |     | 0.0  |         |
| Excess Insertion Loss (dB)           |   |     |      | 1       |
| Return Loss (dB)                     |   | 14  |      |         |
| Amplitude Balance (dB)               |   |     |      | ± 0.5   |
| Phase Balance (Deg)                  |   |     |      | ± 3.0   |
| Isolation (dB)                       |   | 14  |      |         |
| Max CW Input Power** as Divider (W)  |   |     |      | 6       |
| Max CW Input Power** as Combiner (W) |   |     |      | 1.8 *** |
| Size (L x W x H)                     | 0.300 x 0.250 x 0.020 in.<br>7.62 x 6.35 x 0.508 mm |     |      |         |

\*Electrical specifications based on typical mounted performance at room temperature. Insertion loss shall vary ±0.5dB over temperature.

\*\*Power rating assumes the component will be mounted to a PCB with good thermally conducting ground via's as outlined in the recommended PCB layout that are connected to an adequate heat sink. Max power is based on 85°C base temperature.

\*\*\*Power rating as a combiner assumes that the incoming signals are of equal amplitude and phase.

Information in this document is for informational and guideline purposes only. All information regarding the Product described in this datasheet is subject to change from time to time at Knowles Precision Devices' sole discretion. It is the customer's sole responsibility to evaluate the suitability of the Product in the customer's particular application. Knowles Precision Devices assumes no responsibility or liability for the use of the information contained within.

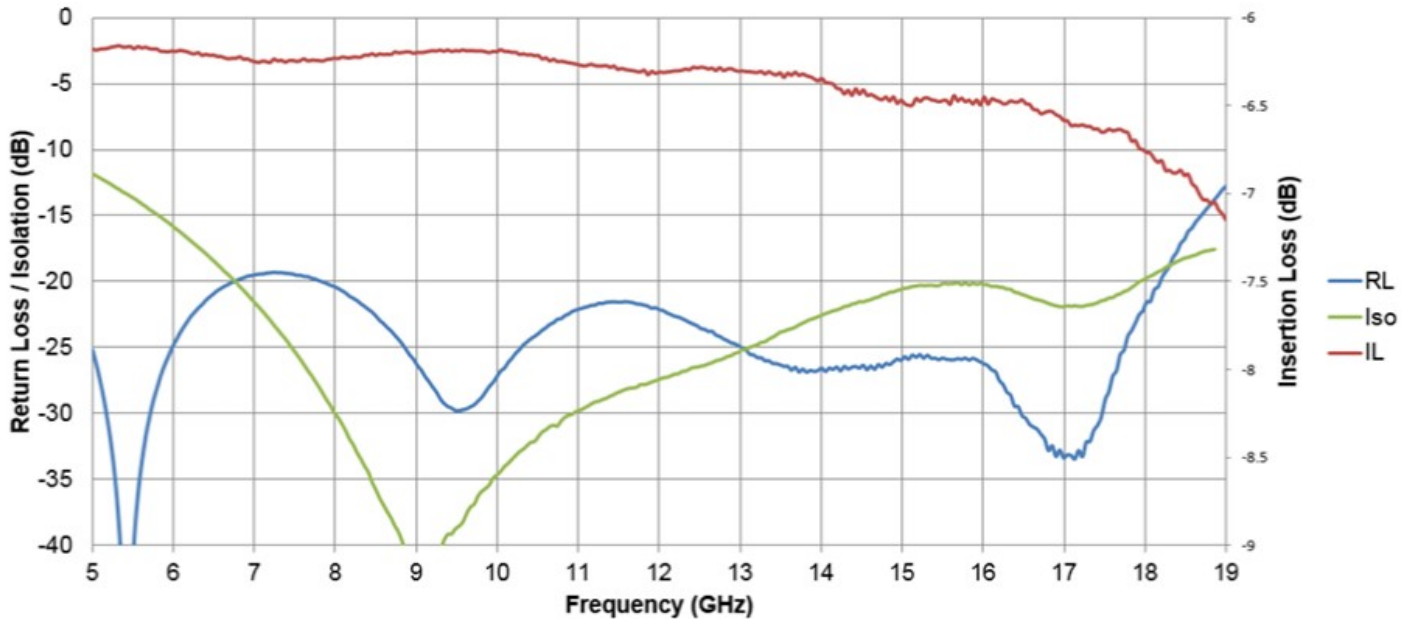
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### Typical Measured Performance



\*Typical de-embedded measured performance mounted on a connectorized test fixture. DEB is 0.010 in. RO4350B with 50.0Ohm CPW ground traces going into the ports at room temperature.

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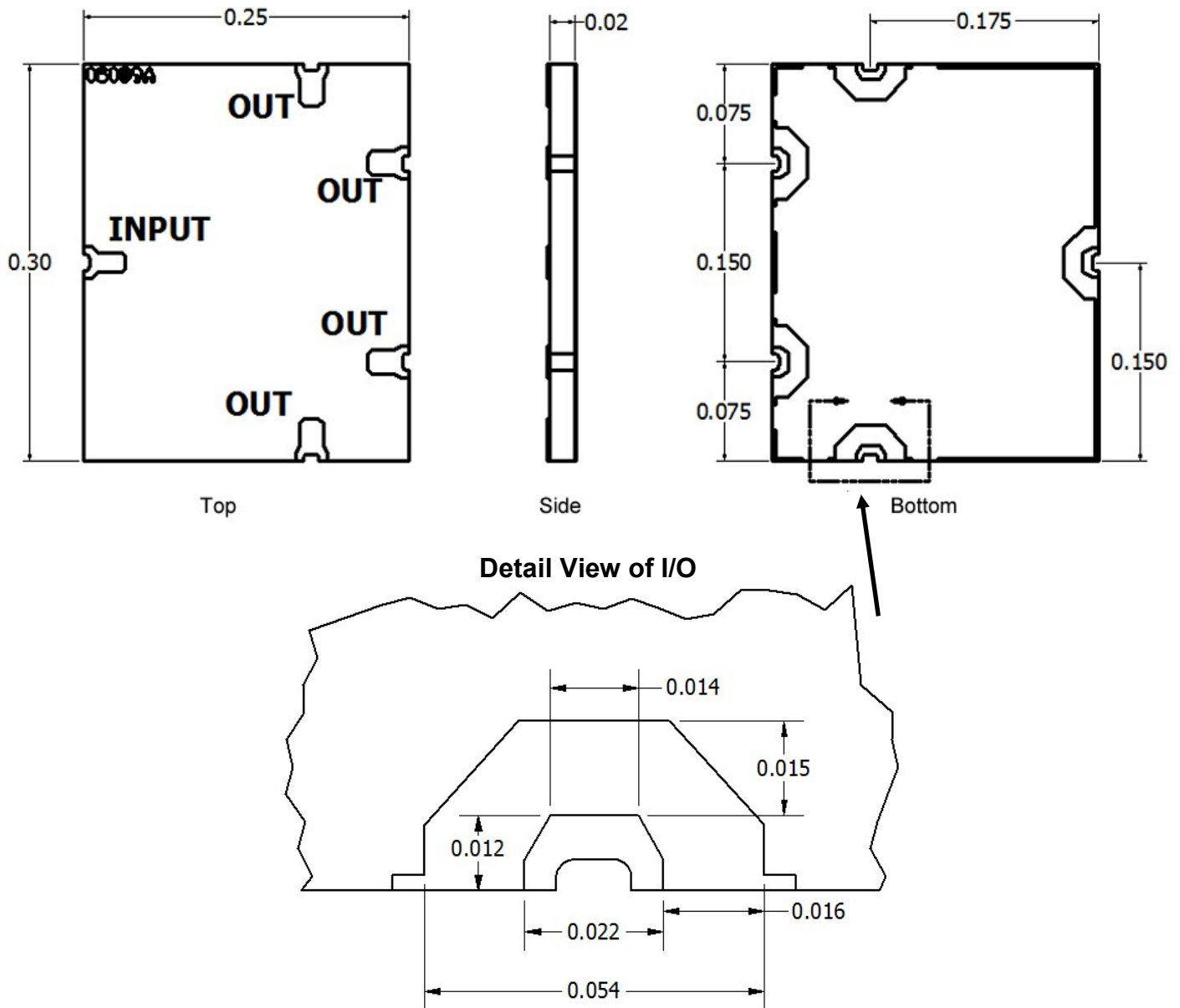
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### Physical Dimensions

Units = Inches



#### Notes :

1. Termination Finish:

ENIG: 3 - 6  $\mu$ inch Au over 50  $\mu$ inch Ni

2. Maximum Assembly Process Temperature: 250°C

#### Tolerances:

For values with 3 decimal places  $\pm 0.001$

For values with 4 decimal places  $\pm 0.0005$

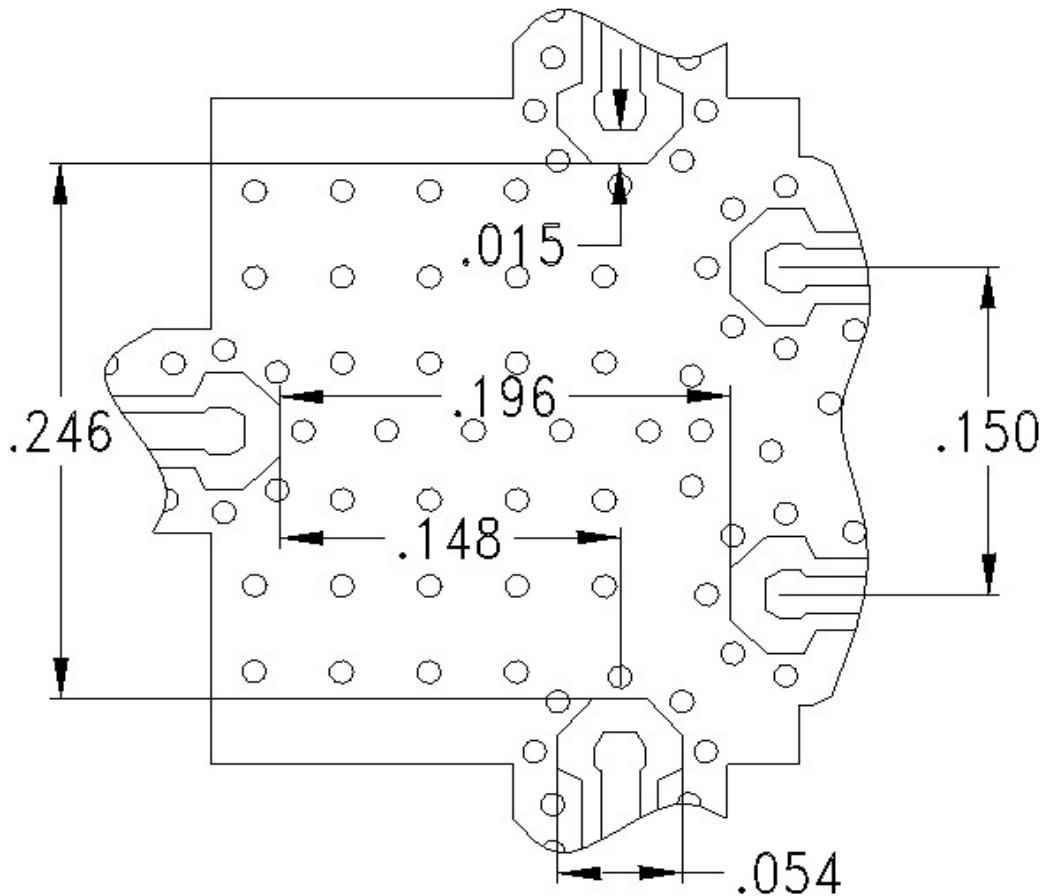
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**Recommended PCB Layout**



**Note :**

Units = Inches

- 50Ω trace dimensions are application specific.
- Ensure adequate grounding beneath the part.

For further details and best practices, reference the **Microwave Products Guide**, available at: <https://www.knowlescapacitors.com/Support/Catalogs>

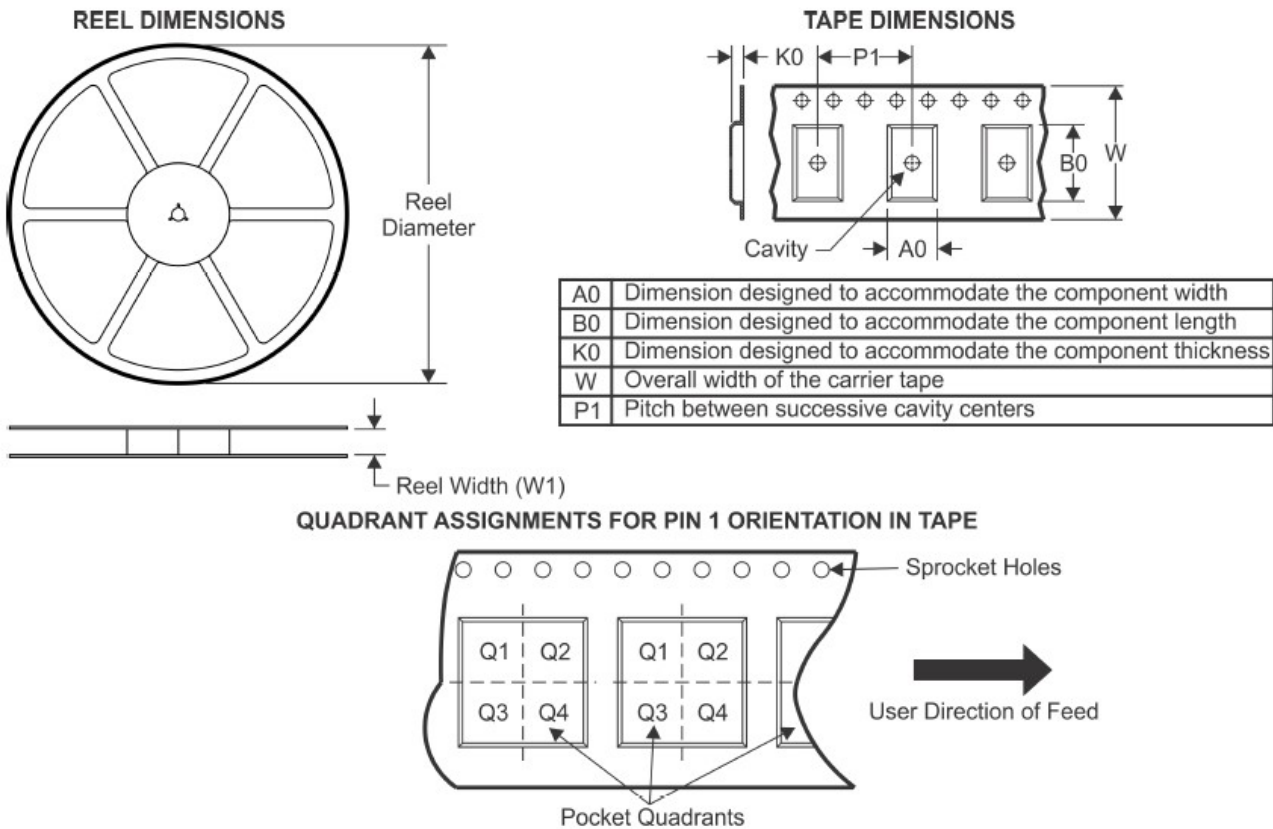
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### TAPE AND REEL INFORMATION



\*All dimensions are nominal

| Device     | Package Type | Package Drawing | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P1 (mm) | W (mm) | Pin1 Quadrant |
|------------|--------------|-----------------|------|-----|--------------------|--------------------|---------|---------|---------|---------|--------|---------------|
| PDW06089-T | SMD          |                 | 5    | 500 | 180.0              | 25.5               | 8.26    | 6.85    | 1.64    | 12.0    | 24.0   | Q1-2          |

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