# Power Dividers

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## Description

DLI introduces its new high frequency surface mountable and wire bondable Wilkinson Power Dividers. These Power Dividers incorporate DLI's low loss high permittivity ceramics which provide small size and temperature stability along with integrated resistors. The compact size, broad band performance and ease of integration make these power dividers ideal anywhere board space is of a premium and quality signal splitting or combining is required.

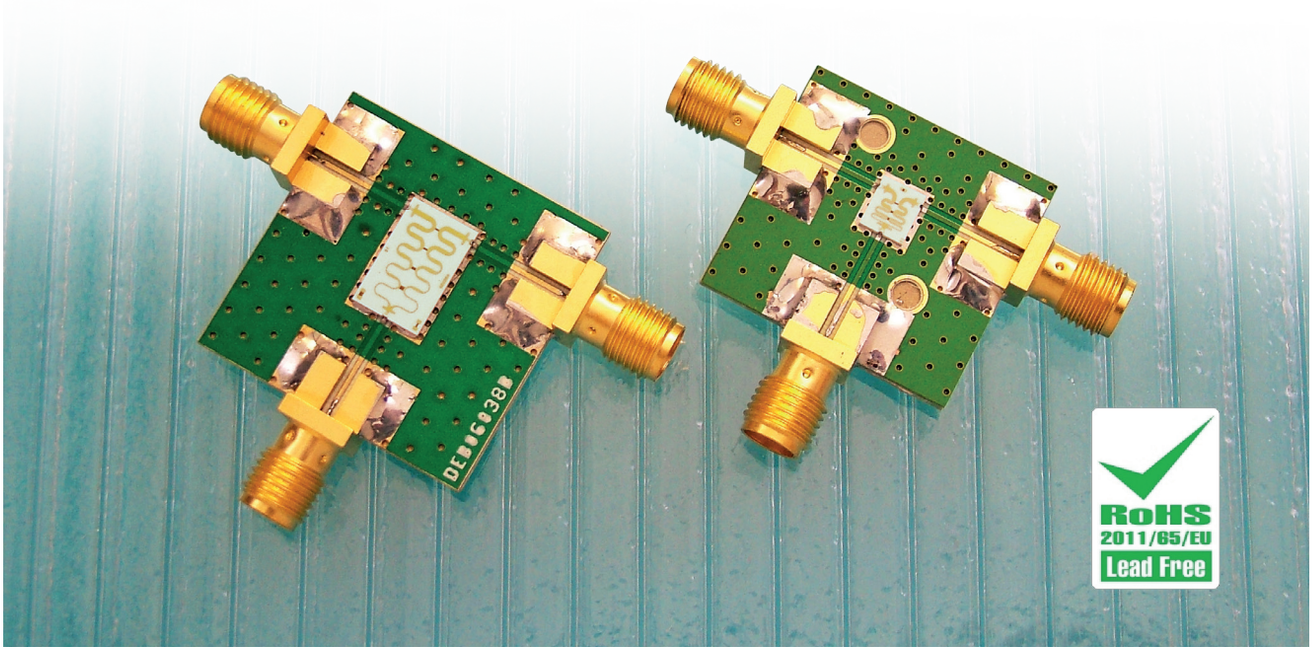
## Features

- Broad Band 2 to 18 GHz Frequency Coverage
- Low Excess Insertion Loss
- High Isolation
- Excellent Phase and Amplitude Balance
- Well matched on All Ports
- No External Resistors Required
- Compact Solder Surface Mount Package

## Specifications

| Part Number | Frequency Range (GHz) | Amplitude Balance Max. (dB) | Phase Balance Max. (degrees) | Excess Insertion Loss Typ. (dB) | Return Loss Typ. (dB) | Isolation Typ. (dB) | Input Power as a Splitter Max. (W)[2] | Mounting | Configuration |
|---|---|---|---|---|---|---|---|---|---|
| PDW06038 | 2 to 10 | ±0.25 | ±3.0 | 0.8 | 20 | 20 | 5 | SMT | 2-Way |
| PDW06041 | 2 to 10 | ±0.25 | ±3.0 | 0.8 | 20 | 20 | 5 | Chip & Wire | 2-Way |
| PDW05758 | 6 to 18 | ±0.25 | ±3.0 | 0.7 | 20 | 25 | 5 | SMT | 2-Way |
| PDW06011 | 6 to 18 | ±0.25 | ±3.0 | 0.7 | 20 | 25 | 5 | Chip & Wire | 2-Way |
| PDW06089 | 6 to 18 | ±0.5 | ±3.0 | 1.0 | 14 | 14 | TBD | SMT | 4-Way |
| PDW06401 | 2 to 10 | ±0.25 | ±5.0 | 0.5 | 25 | 20 | TBD | SMT | 2-Way |
| PDW06398 | 5 to 7 | ±0.25 | ±5.0 | 0.25 | 20 | 18 | TBD | SMT | 2-Way |
| PDW06399 | 9 to 11 | ±0.25 | ±5.0 | 0.25 | 20 | 15 | TBD | SMT | 2-Way |
| PDW06400 | 11 to 13 | ±0.25 | ±5.0 | 0.5 | 25 | 20 | TBD | SMT | 2-Way |
| PDW06407 | 2 to 18 | ±0.25 | ±5.0 | 2.5 | 18 | 20 | TBD | SMT | 2-Way |

1) Electrical Specifications at 25ºC; Over Temperature Performance TBD.
2) Load VSWR not to Exceed 1.2:1; Base Temperature not to Exceed 85ºC.

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10083-6/16

DIELECTRIC LABORATORIES

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## Soldering Information

DLI solderable components are compatible with both SnPb and 100% Sn mounting methods. Unless otherwise specified, component termination metal is Ni/Au. Gold layer is less than 6 micro-inch to eliminate any Au embrittlement concern. A detailed application note is available at dilabs.com.

## Use of Silver Loaded Epoxy Adhesives

Use of conductive epoxy in place of solders is not recommended on our solder surface mountable components. Isolation must be maintained between the ground plane and signal traces when mounted on PCB. Epoxy may bleed out and degrade performance.

## Board Layout Design (SMT)

Board layout for each surface mountable device will require a ground plane with RF I/O traces. Each catalog part number may require a different PCB pattern recommendation and the individual datasheet and pattern recommendation should be reviewed. Devices are designed for a single ended 50 ohm system unless otherwise stated. Proper transmission line impedance is required to meet published electrical specifications.

Published test data of component on Rogers RO4350B® 10 mil thick material. Components were designed to work with other board materials when source impedance are matched to 50Ω. Please contact DLI Applications Engineering with any questions on use of other RF layer.

See dilabs.com for more detailed application note on board mounting recommendations.

## RoHS

All products are RoHS compliant.

## Chip and Wire Information

DLI wire bond devices are designed for silver loaded epoxy adhesives to ground plane. A wire bond to I/O pad with thermo compression ball or wedge bonding on MIL-STD gold thickness (min 50 micro-inch). Device is also compatible with standard die attach methods but not compatible with Sn or SnPb solderable methods. Follow typical microwave wire bonding practices to minimize added inductance that may adversely impact electrical performance.

## Packaging

Components will be packaged in best standard commercial practices unless otherwise noted or requested. Packaging options include bulk and tape and reel.

## Handling & Storage

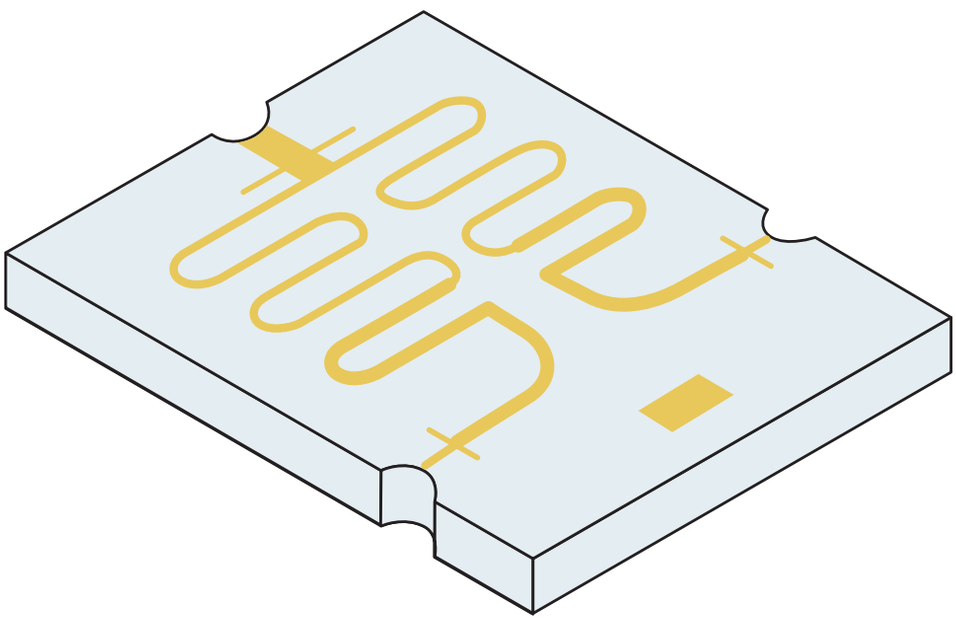
Components should never be handled with fingers; perspiration and skin oils can inhibit solderability or wire bond ability and will aggravate cleaning.

Ceramic components should never be handled with metallic instruments. Metal tweezers should never be used as these can chip the product and leave abraded metal tracks on the product surface. Plastic, carbon fiber and plastic coated metal types are readily available and recommended.

Devices are designed to withstand typical storage conditions. Devices may be stored between -55°C and +125°C and in a non-condensing environment.

Taped product should be stored out of direct sunlight, which might promote deterioration in tape performance.

Product, stored under the conditions recommended above, in its "as received" packaging, has a minimum shelf life of 2 years.



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LifeElectronics
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