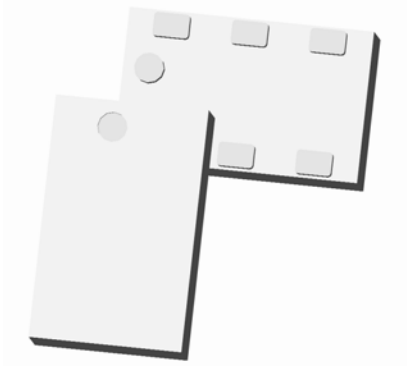
# Model PD1722J5050S3

Rev A

# Ultra Low Profile 0805 Power Divider
# 3 Way 50Ω to 50Ω



## Description

The PD1722J5050S3 is a low profile, sub-miniature Wilkinson power divider in an easy to use surface mount package and is ideal for high volume manufacturing while delivering higher performances than traditional printed and lumped element solutions. It has been designed for the DCS, PCS, UMTS and CDMA markets. The PD1722J5050S3 is matched to 50 Ω and has a height profile of 0.84 mm. Three external resistors are required for operation. Components are available on tape and reel for high volume manufacturing pick and place.

This components is constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability having X and Y thermal coefficient of expansion (CTE) of 17 ppm/°C.

## Features:

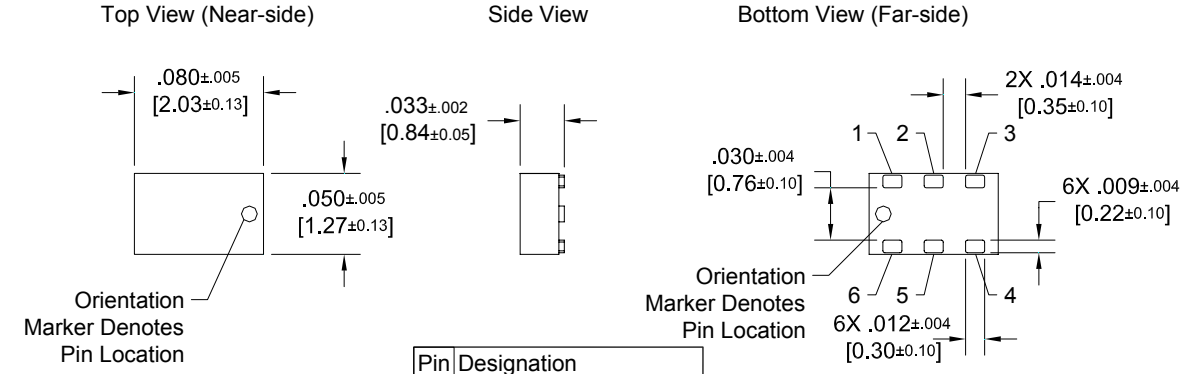
- **1700 – 2200 MHz**
- **0.84 mm Height Profile**
- **50Ω Outputs/Inputs**
- **DCS/PCS/UMTS/CDMA**
- **External resistors required**
- **Low Insertion Loss**
- **Surface Mountable**
- **Tape & Reel**
- **Non-conductive Surface**
- **RoHS Compliant**

## Detailed Electrical Specifications: Specifications subject to change without notice.

| Parameter | ROOM (25°C) Min. | Typ. | Max | Unit |
|---|---|---|---|---|
| Frequency | 1700 | | 2200 | MHz |
| Input Port Impedance | | 50 | | Ω |
| Output Port Impedance | | 50 | | Ω |
| Return Loss | 9 | 11 | | dB |
| Insertion Loss* | | 0.9 | 1.3 | dB |
| Amplitude Balance | | 0.5 | 0.9 | dB |
| Phase Balance | | 9 | 12 | Degrees |
| Isolation (Output Ports) | 14 | 17 | | dB |
| Power Handling | | | 1 | Watts |
| Operating Temperature | -55 | | +85 | ºC |

* Insertion Loss stated at room temperature (Insertion Loss is approximately 0.1 dB higher at +85 ºC)

## Outline Drawing




| Pin | Designation |
|---|---|
| 1 | Output 1 |
| 2 | GND |
| 3 | Output 2 |
| 4 | GND |
| 5 | Input |
| 6 | Output 3 |

Dimensions are in Inches [Millimeters]
Mechanical Outline

Tolerances are Non-Cumulative

Available on Tape and Reel for Pick and Place Manufacturing.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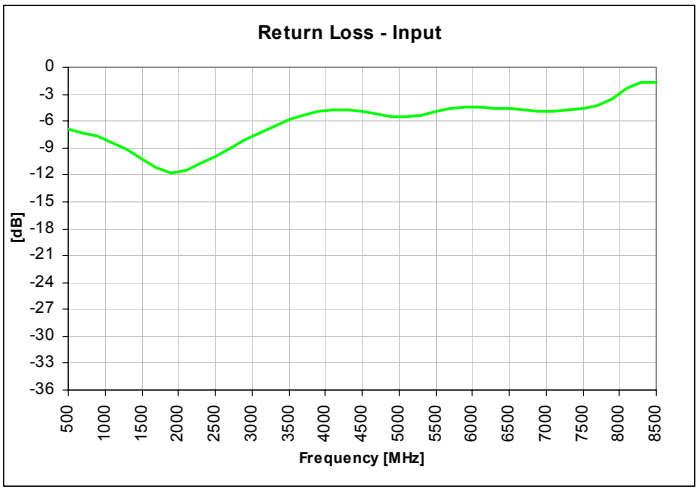
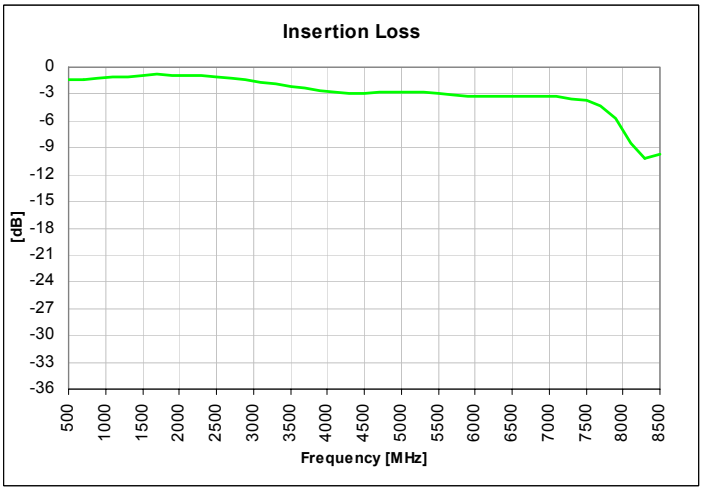
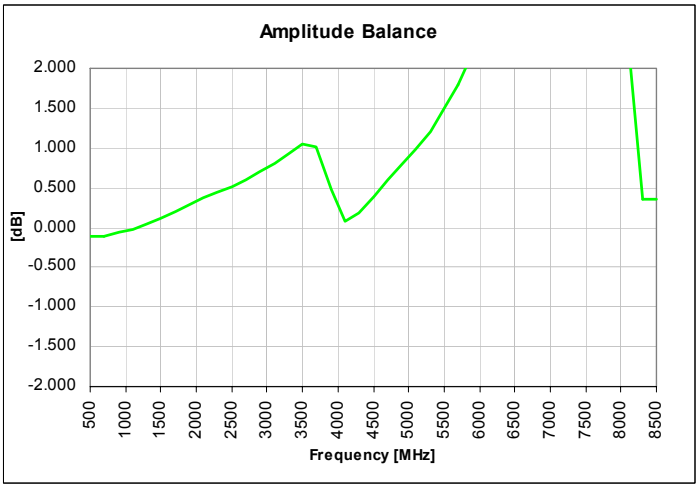
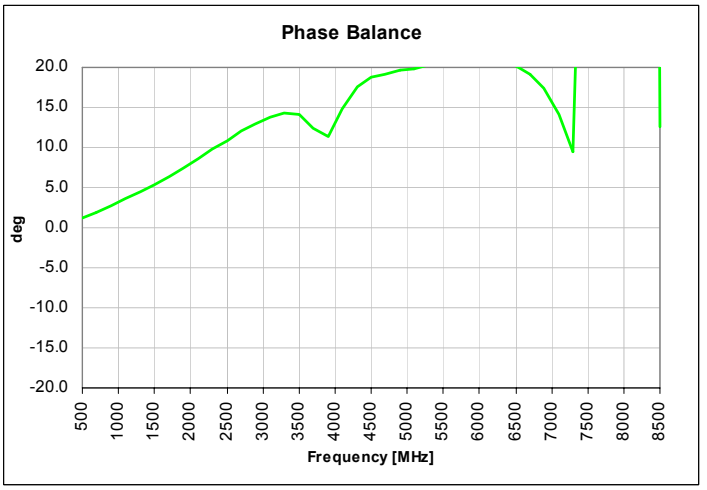
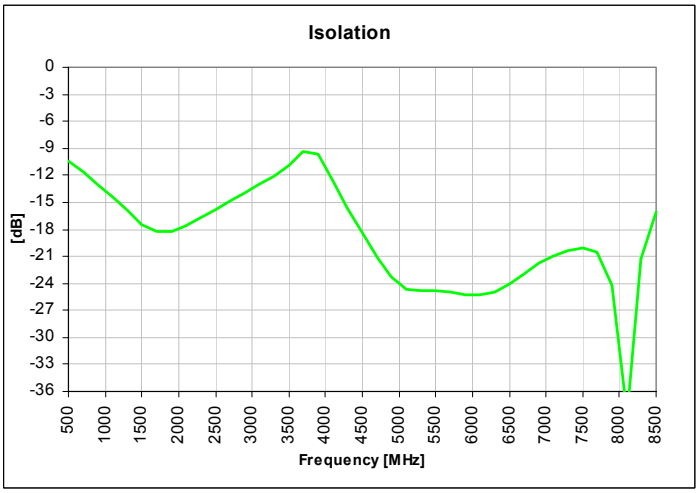
## Typical Broadband Performance: 500 MHz. to 8.5 GHz.





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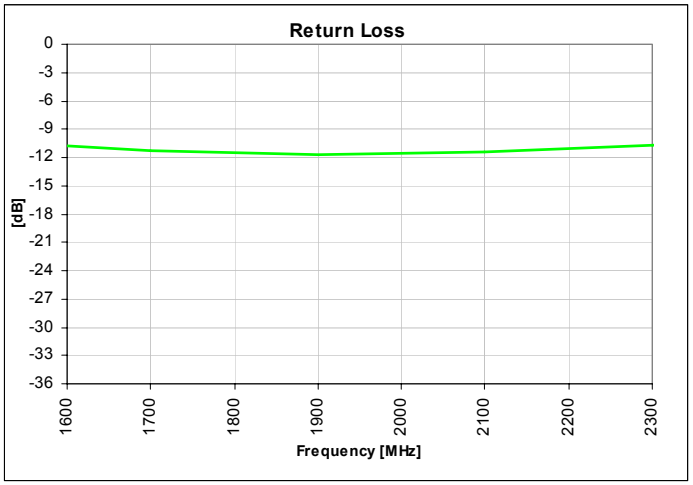
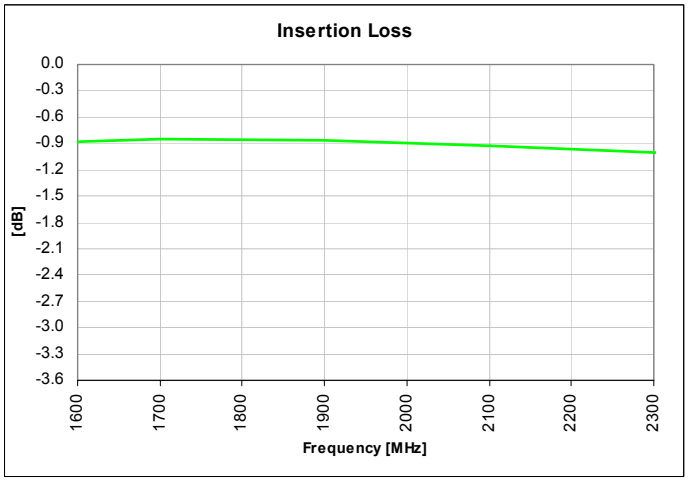
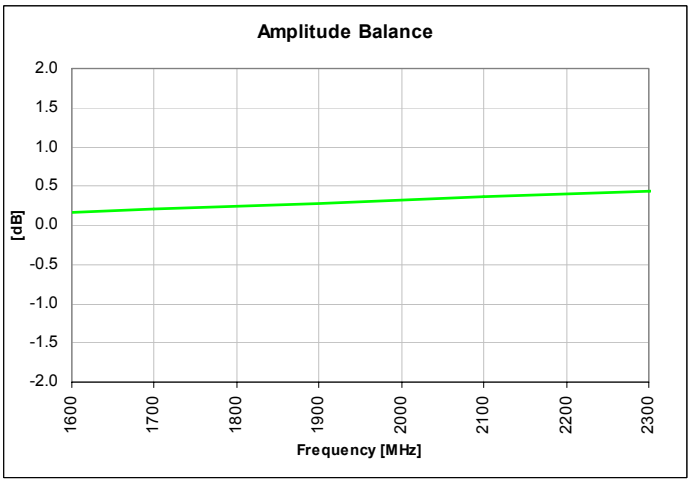
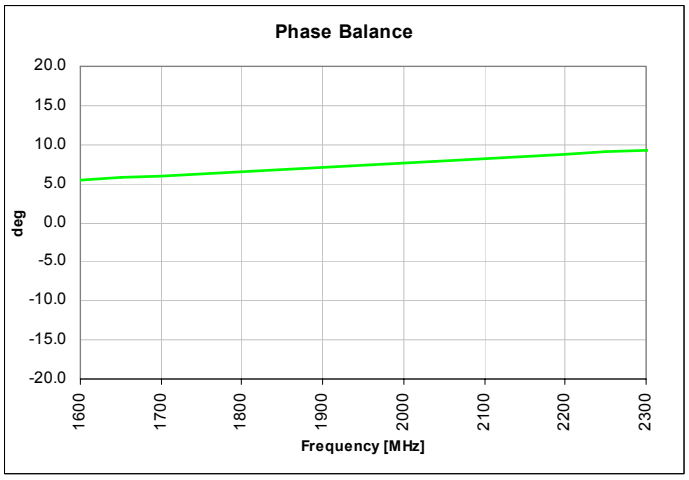
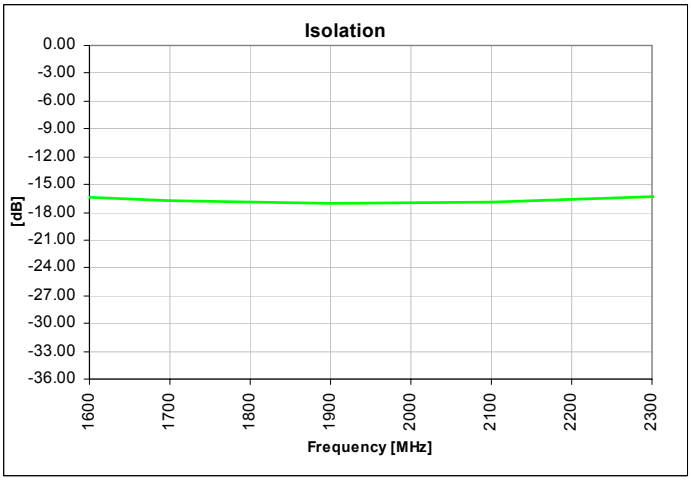
## Typical Performance: 1600 MHz. to 2300 MHz.



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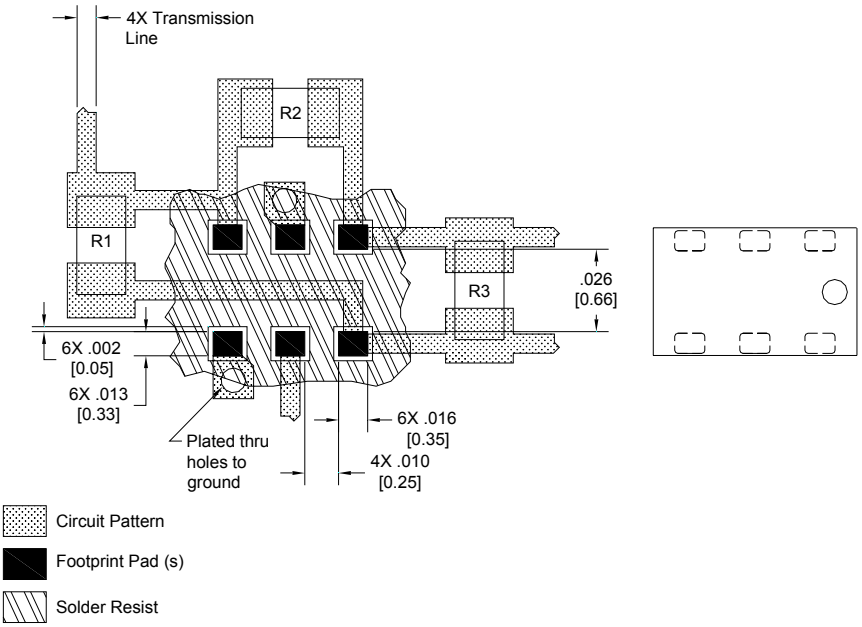
## Mounting Configuration:

In order for Xinger surface mount components to work optimally, the proper impedance transmission lines must be used to connect to the RF ports. If this condition is not satisfied, insertion loss, Isolation and VSWR may not meet published specifications.

All of the Xinger components are constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability having X and Y thermal coefficient of expansion (CTE) of 17 ppm/$^{o}$C.

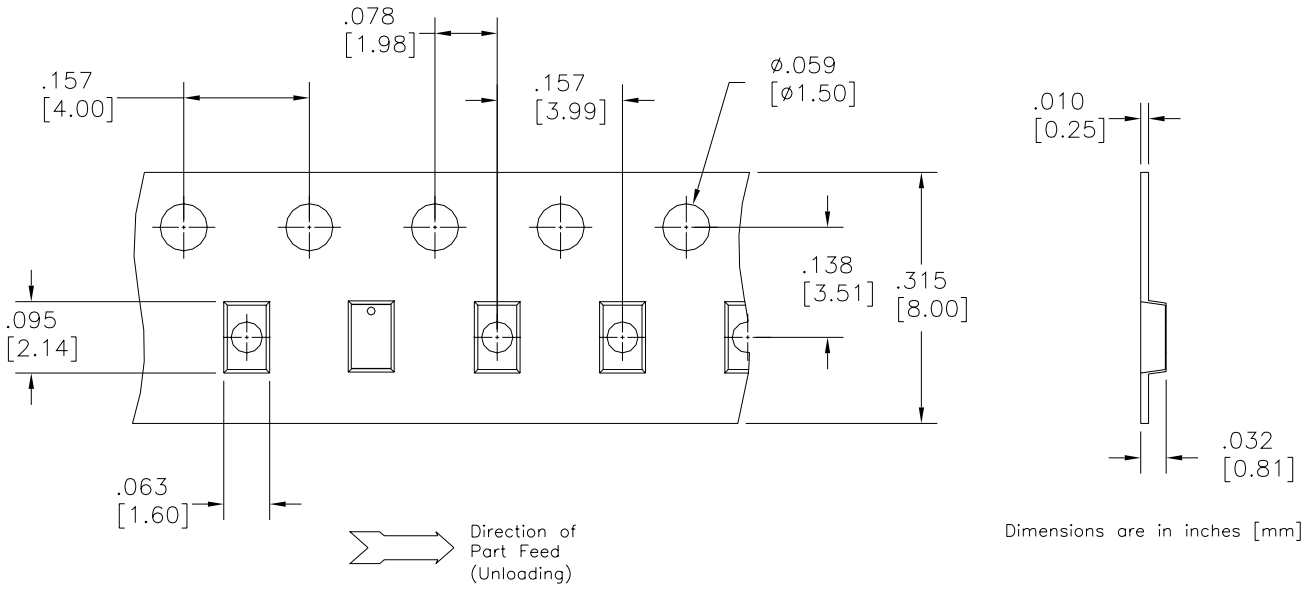
An example of the PCB footprint used in the testing of these parts is shown below. In specific designs, the transmission line widths need to be adjusted to the unique dielectric coefficients and thicknesses as well as varying pick and place equipment tolerances. In addition, since the PD1722J5050S3 is a Wilkinson power divider, external 0402 100Ω resistors must be mounted as shown in the Figure below.

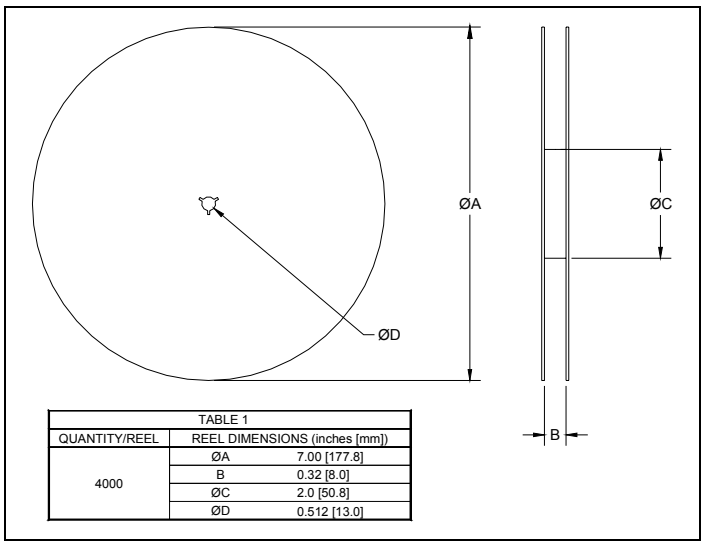
**Pad Footprint w/ 0402 Resistor Locations**



## Packaging and Ordering Information

Parts are available in reels and are packaged per EIA 481-2. Parts are oriented in tape and reel as shown below. Minimum order quantities are 4000 per reel. See Model Numbers below for further ordering information.




| TABLE 1 | | |
|---|---|---|
| QUANTITY/REEL | REEL DIMENSIONS (inches [mm]) | |
| 4000 | ØA | 7.00 [177.8] |
| | B | 0.32 [8.0] |
| | ØC | 2.0 [50.8] |
| | ØD | 0.512 [13.0] |



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Rev A

## BD 2425 J 50 100 A 00

| Function | Frequency | Package Dimensions | Unbalanced Impedance | Balanced Impedance + Coupling | Plating Finish | Codes |
|---|---|---|---|---|---|---|
| B = Balun<br>BD = Balun + DC<br>F = Filter<br>FB = Filter / Balun<br>C = 3dB Coupler<br>DC = Directional<br>J = RF Jumper<br>X = RF cross over | 0110 = 100 – 1000 MHz<br>0810 = 800 – 1000 MHz<br>0922 = 950 – 2150 MHz<br>0826 = 800 – 6200 MHz<br>1222 = 1200 – 2200 MHz<br>1416 = 1400 – 1600 MHz<br>1722 = 1700 – 2200 MHz<br>2326 = 2300 – 2600 MHz<br>2425 = 2400 – 2500 MHz<br>3150 = 3100 – 5000 MHz<br>3436 = 3400 – 3600 MHz<br>4859 = 4800 – 5900MHz<br>5153 = 5100 – 5300 MHz<br>5159 = 5100 – 5900 MHz<br>5759 = 5700 – 5900 MHz | A = 150 x 150 mils (4mm x 4mm)<br>C = 120 x 120 mils (3mm x 3mm)<br>E = 100 x 80 mils (2.5mm x 2mm)<br>J = 80 x 50 mils (2mm x 1.25mm)<br>L = 60 x 30 mils (1.5mm x 0.75mm)<br>N = 40 x 40 mils (1mm x 1mm) | 50 = 50 Ohm<br>75 = 75 Ohm | 25 = 25 Ω Balanced<br>30 = 30 Ω Balanced<br>50 = 50 Ω Balanced<br>75 = 75 Ω Balanced<br>100 = 100 Ω Balanced<br>150 = 150 Ω Balanced<br>200 = 200 Ω Balanced<br>300 = 300 Ω Balanced<br>400 = 400 Ω Balanced<br>03 = 3dB Hybrid<br>10 = 10dB Directional<br>20 = 20dB Directional | A = Gold<br>P = Tin-Lead | |


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