

DESCRIPTION

DLI brand surface mount branchline couplers utilize DLI's high dielectric ceramic materials to deliver small size and minimal performance variation over temperature. The components are well matched for signal dividing or combining.

FEATURES

- Small Size
- Frequency Stable over Temperature
- Solder Surface Mountable
- Excellent Repeatability
- 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 FPC07183-T, see additional data on page 5.



SPECIFICATIONS*

Parameter	Frequency (GHz)	Min	Max
Passband Insertion Loss* (dB)	24 - 33	0.2	1
Min Passband Return Loss (dB)		14.5	
Coupling (dB)		3	4
Directivity (dB)		14.5	
CW Input Power** (W)			10
$\theta_{JC} \left(\frac{^{\circ}\text{C}}{\text{W}} \right)$	11.5		
Size (L x W x H)	0.180 x 0.110 x 0.010 in 4.572 x 2.794 x 0.254 mm		

*Electrical specifications based on typical mounted performance at room temperature. Insertion loss shall vary $\pm 0.5\text{dB}$ over temperature.

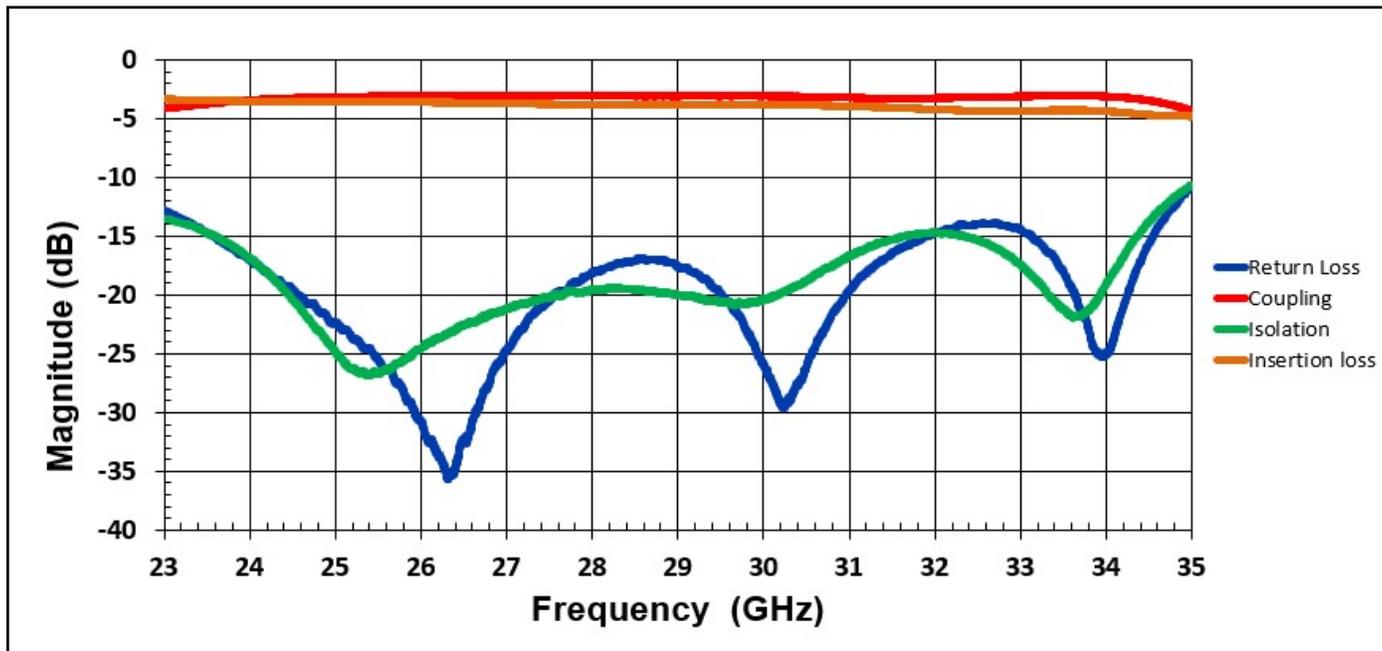
** Power rating assumes the component will be mounted to a PCB with good thermally conducting ground vias as outlined in the recommended PCB layout that are connected to an adequate heat sink. Max power is based on 85°C base temperature.

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.

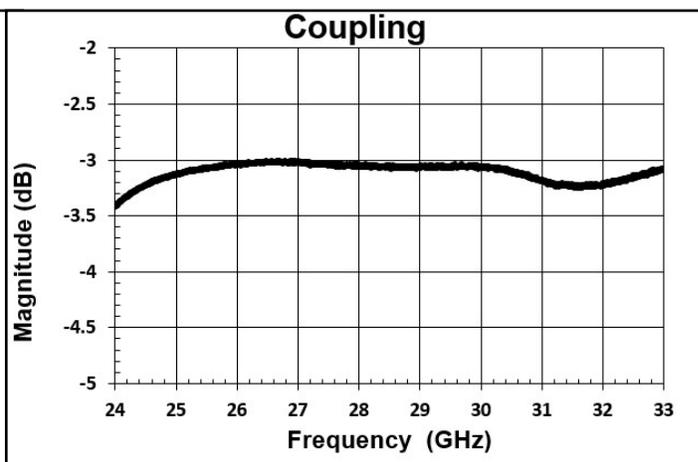
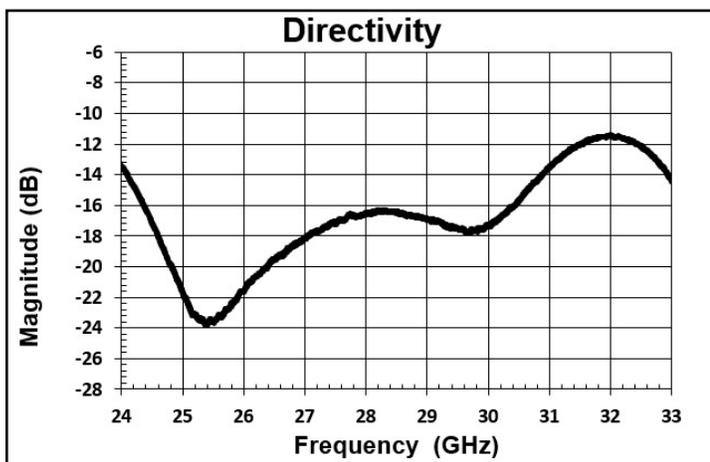
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Typical Measured Performance*



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



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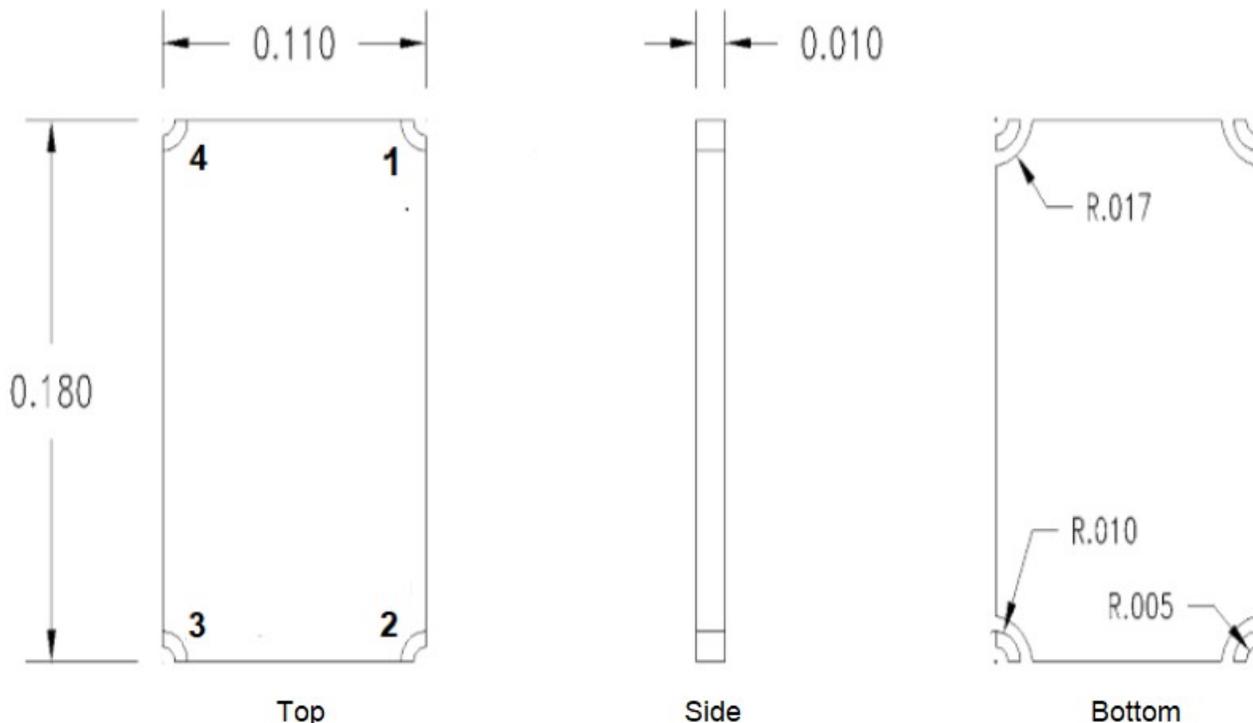
24 to 33GHz 3dB Branchline Coupler

FPC07183

www.knowlescapacitors.com

Physical Dimensions

Units = Inches



Notes :

1. Termination Finish:

ENIG: 3 - 6 μinch Au over 50 μinch Ni

2. Maximum Assembly Process Temperature: 250°C

Tolerances:

For values with 3 decimal places ±0.001

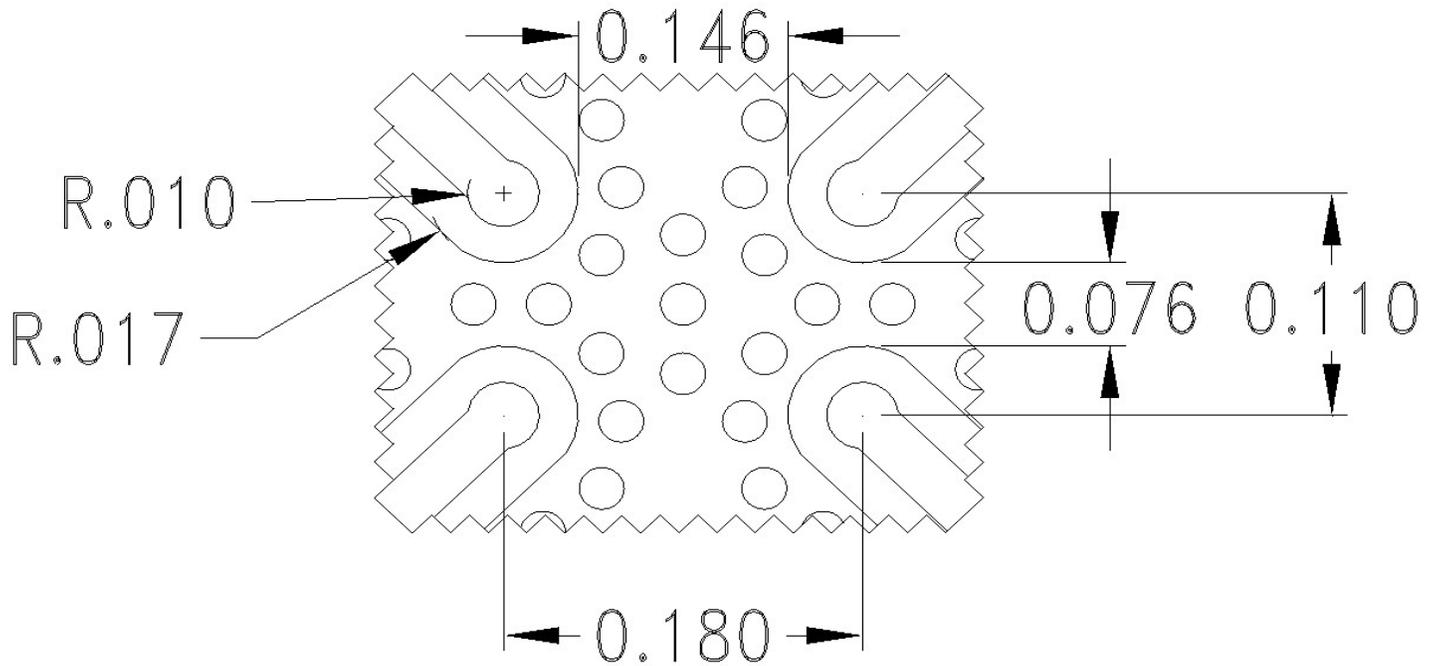
For values with 4 decimal places ±0.0005

FPC06630 Coupler Port Configuration				
	Port 1	Port 2	Port 3	Port 4
Configuration 1	Input	Output/Coupled (-90 degree phase)	Output/Coupled (180 degree phase)	Isolated
Configuration 2	Output/Coupled (-90 degree phase)	Input	Isolated	Output/Coupled (180 degree phase)
Configuration 3	Isolated	Output/Coupled (180 degree phase)	Output/Coupled (-90 degree phase)	Input
Configuration 4	Output/Coupled (180 degree phase)	Isolated	Input	Output/Coupled (-90 degree phase)

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Recommended PCB Layout



Note:

- 50Ω trace dimensions are application specific.
- Ensure adequate grounding beneath the part.
- Trace feed locations can be horizontal, vertical, or angled.

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

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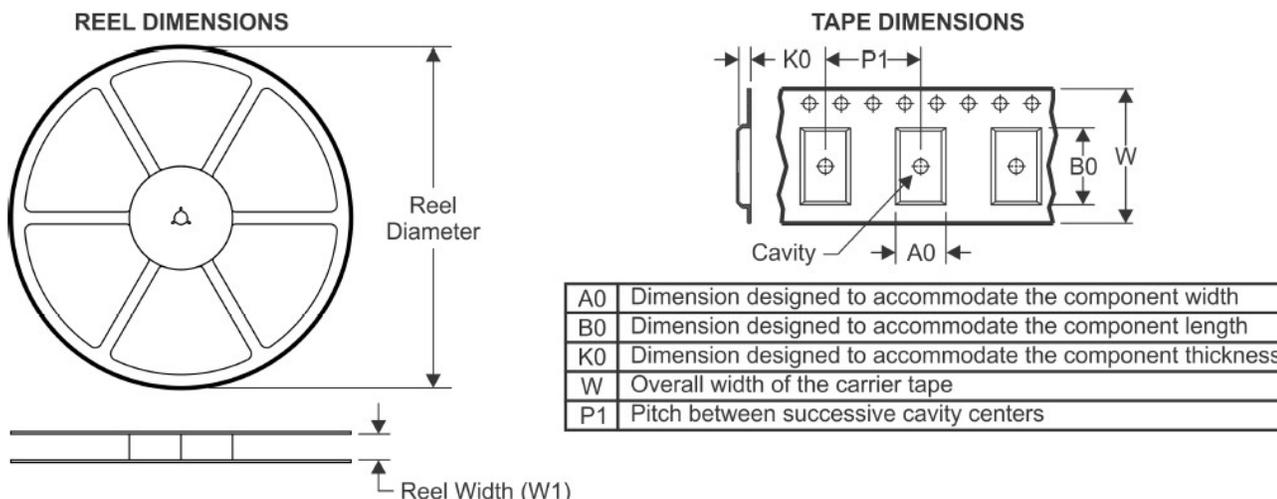
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24 to 33GHz 3dB Branchline Coupler

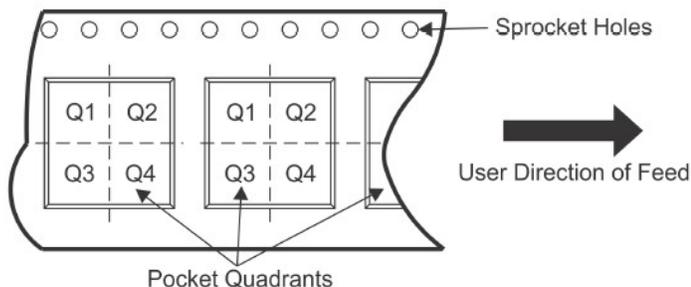
FPC07183

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TAPE AND REEL INFORMATION



QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*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
FPC07183-T	SMD		4	500	180.0	12.4	3.1	4.9	0.7	8.0	12.0	Q2

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