

2 to 18GHz 10dB SMD Directional Coupler

FPC07234

www.knowlescapacitors.com

DESCRIPTION

DLI brand directional couplers utilize DLI's high dielectric ceramic materials to deliver small size and minimal performance variation over temperature. The components are well matched for monitoring incident and reflected power.

FEATURES

- Small Size
- Frequency Stable over Temperature
- Solder Surface Mount Package
- Moisture Sensitivity Level: MSL1
- Excellent Repeatability
- Operating & Storage Temp: -55°C to +125°C
- Characteristic Impedance: 50Ω
- For reference, the similar wire bond (WB) coupler is FPC09291

Packaging and Ordering Information: To request Tape and Reel packaging, please order part number FPC07234-T, see additional details on page 5

SPECIFICATIONS*

Parameter	Frequency Range (GHz)	Min	Typ.	Max
Passband Excess Insertion Loss* (dB)	2-18			1.2
Passband Return Loss (dB)		10		
Coupling (dB)		10		± 1.5
Directivity (dB)		9	10	11
CW Input Power (W)**				10
$\theta_{JC} \left(\frac{^{\circ}\text{C}}{\text{W}} \right)$	7.5			
Size (L x W x H)	0.500 x 0.150 x 0.030 in 12.7 x 3.81 x 0.76 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 125°C base temperature.

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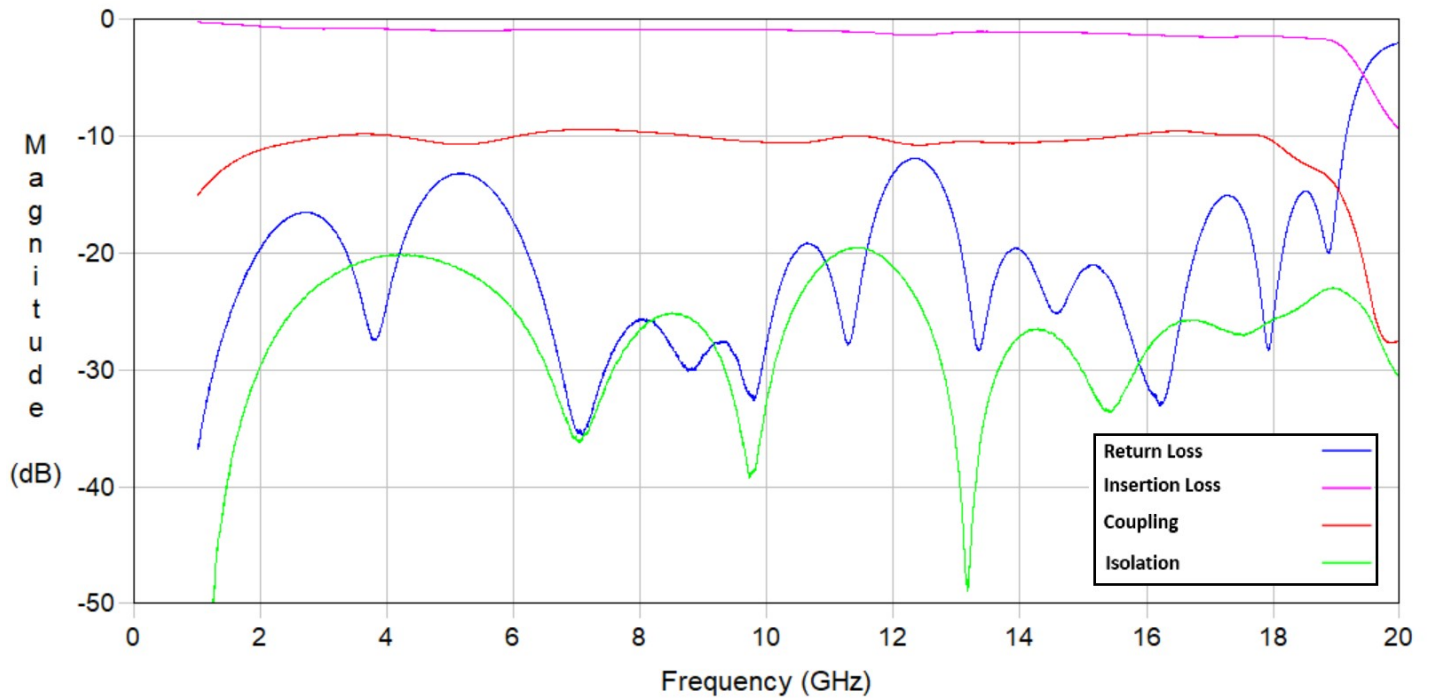
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Typical Measured Performance*



*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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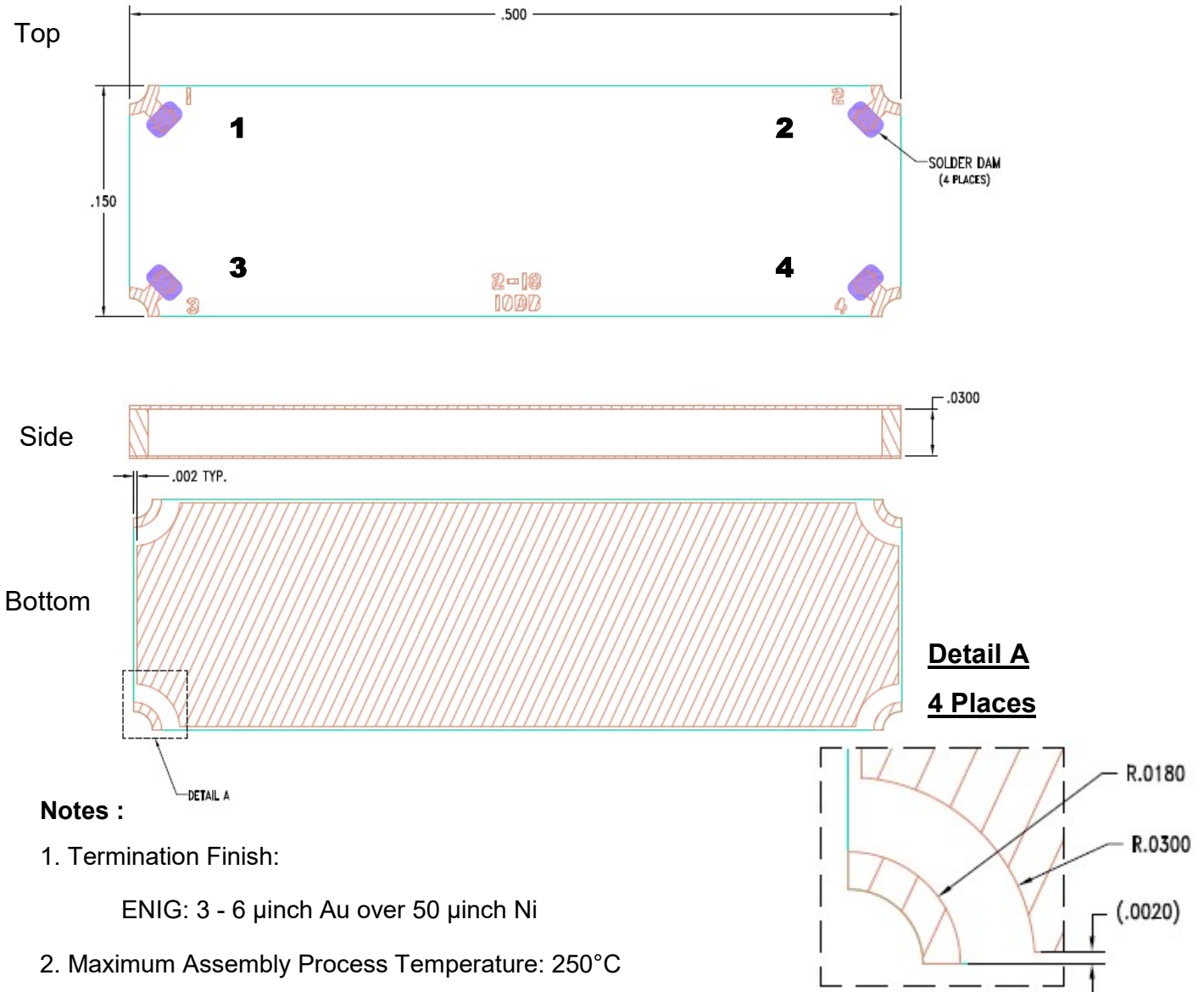
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Physical Dimensions

Units = Inches [mm]



Tolerances:

For values with 3 decimal places:

± 0.001

For values with 4 decimal places:

± 0.0005

FPC07234 Coupler Port Configuration				
	Port 1	Port 2	Port 3	Port 4
Configuration 1	Input	Output	Coupled	Isolated
Configuration 2	Output	Input	Isolated	Coupled
Configuration 3	Coupled	Isolated	Input	Output
Configuration 4	Isolated	Coupled	Output	Input

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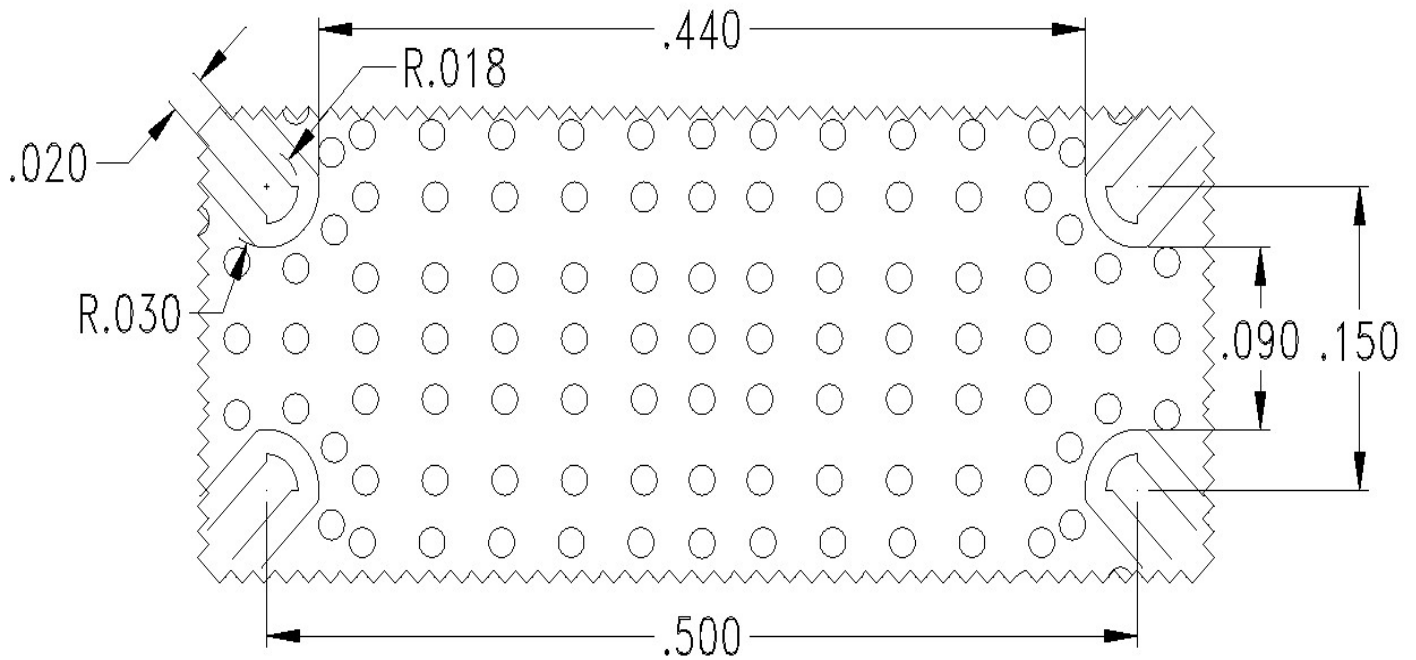
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Recommended PCB Layout



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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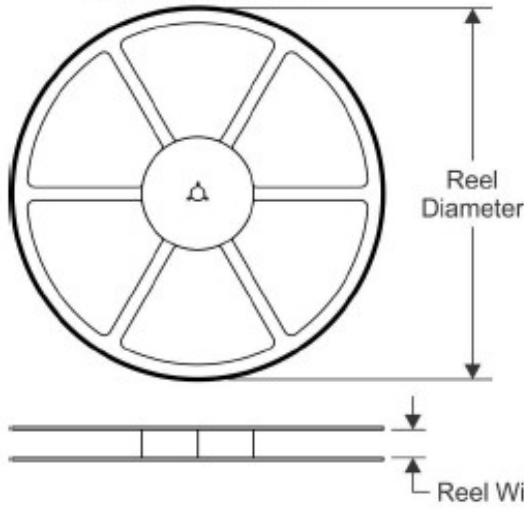
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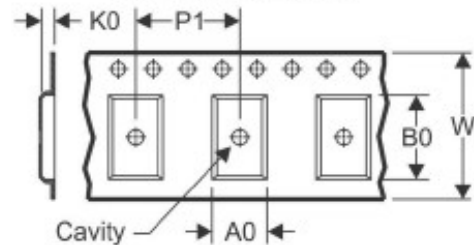
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TAPE AND REEL INFORMATION

REEL DIMENSIONS

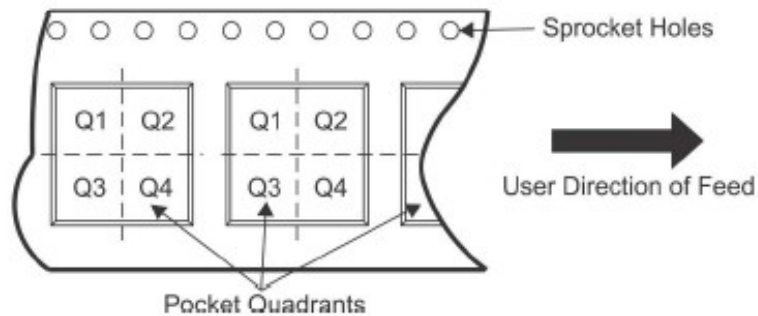


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
FPC07234-T	SMD	180	24.4	4.2	13.0	0.9	8	24	Q2

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