

8 to 12GHz 25dB Directional Coupler

FPC06077

www.knowlesc capacitors.com

DESCRIPTION

DLI introduces its new high frequency surface mountable catalog direction couplers. These couplers incorporate DLI's high dielectric ceramic materials which provide small size and minimal performance variation over temperature. The components are well matched for monitoring incident and reflected power.

FEATURES

- Small Size
- Solder Surface Mount Package
- Moisture Sensitivity Level: MSL1
- Frequency Stable over Temperature
- 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 FPC06077-T, see additional data on page 5.

SPECIFICATIONS*

Parameter	Frequency (GHz)	Min	Max
Passband Insertion Loss* (dB)	8 - 12		0.3
Passband Return Loss (dB)		15	
Coupling (dB)		23	25
Directivity (dB)		10	
CW Input Power (W)**			25
$\theta_{JC} \left(\frac{^{\circ}\text{C}}{\text{W}} \right)$	3		
Size (LxWxH)	0.120 x .080 x .015 in 3.048 x 2.032 x .381mm		



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

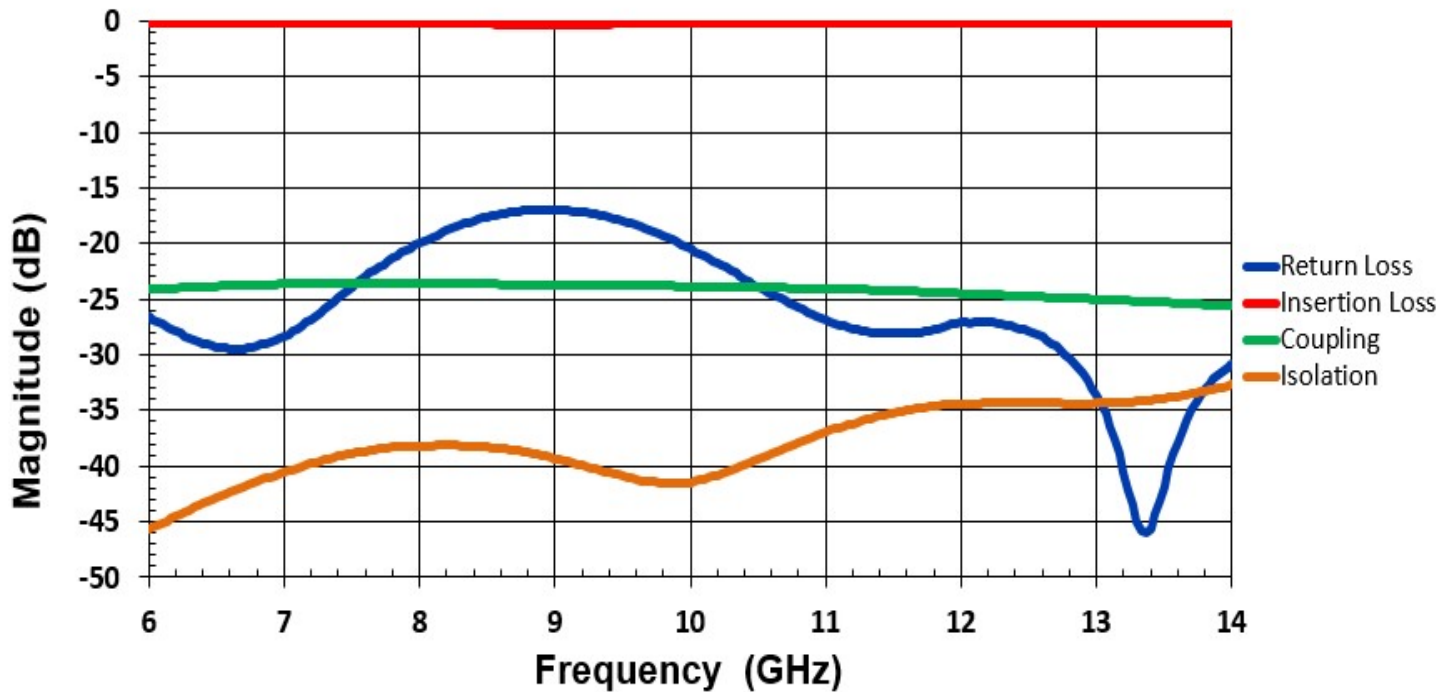
** Power rating assumes the component will be mounted to a PCB with good thermally conducting ground via's as outlined in the recommended PCB layout that are connected to an adequate heat sink. Max power is based on 125°C base temperature.

8 to 12GHz 25dB Directional Coupler

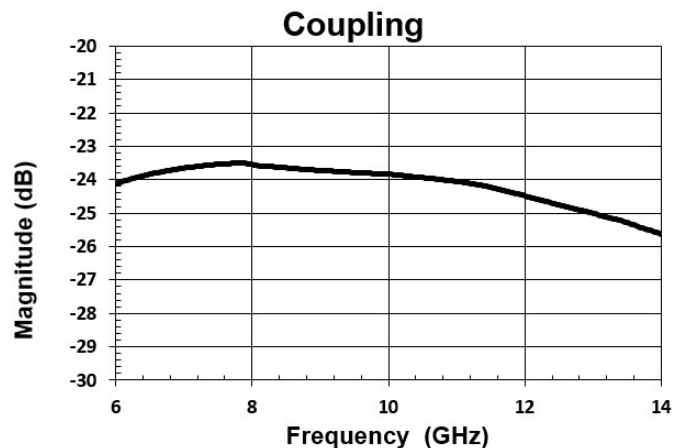
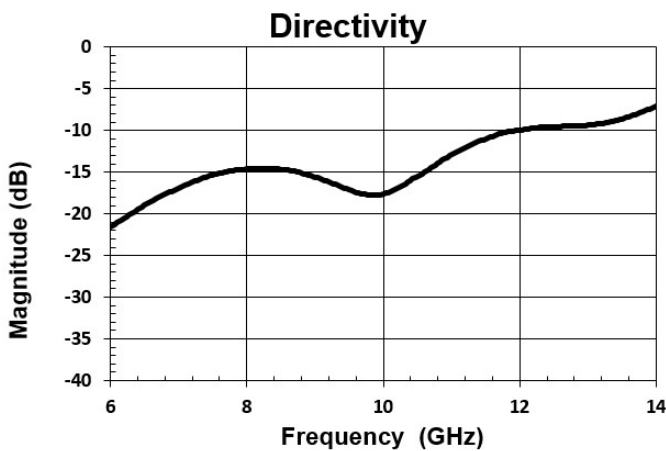
FPC06077

www.knowlesc capacitors.com

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.



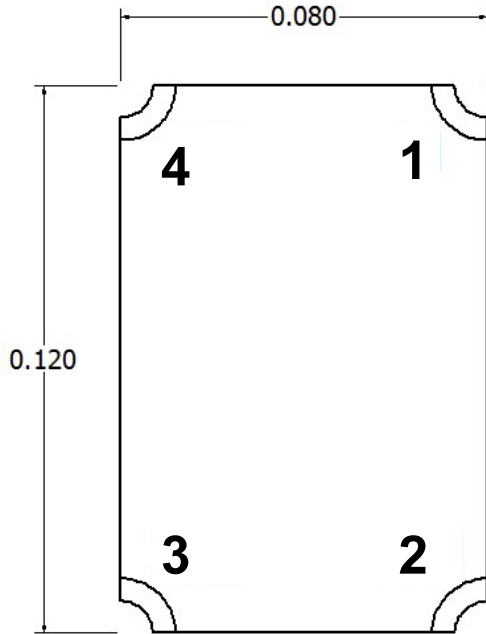
8 to 12GHz 25dB Directional Coupler

FPC06077

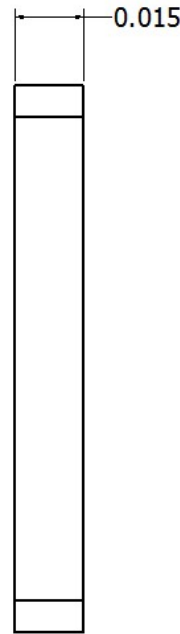
www.knowlesc capacitors.com

Physical Dimensions

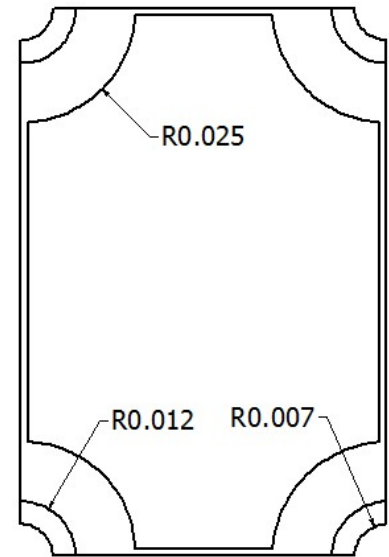
Units = Inches



Top



Side



Bottom

Notes :

1. Mounting Surface Metallization:

ENIG: 3 - 6 μ inch Au over 50 μ inch Ni

2. Maximum Assembly Process Temperature: 250°C

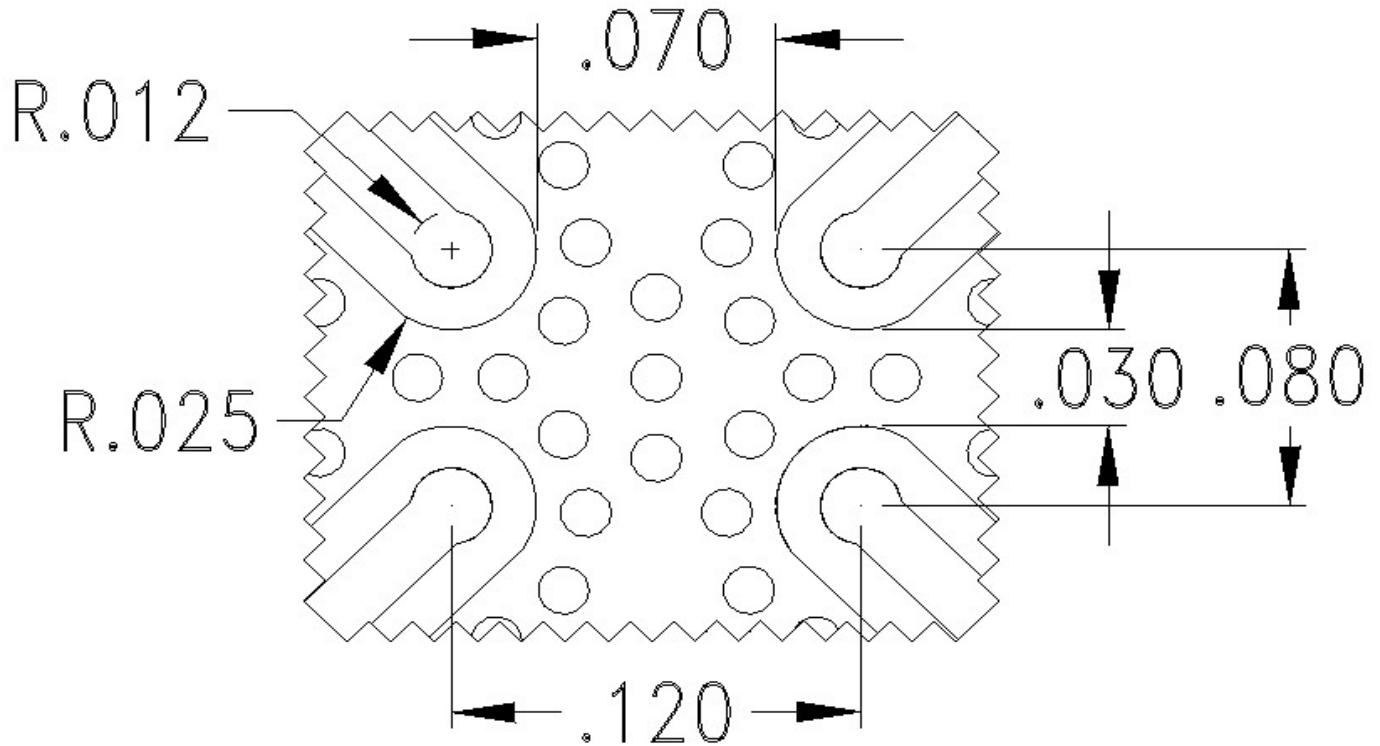
Tolerances:

For values with 3 decimal places ± 0.001

For values with 4 decimal places ± 0.0005

FPC06077 Coupler Port Configuration				
	Port 1	Port 2	Port 3	Port 4
Configuration 1	Input	Output	Isolated	Coupled
Configuration 2	Output	Input	Coupled	Isolated
Configuration 3	Coupled	Isolated	Output	Input
Configuration 4	Isolated	Coupled	Input	Output

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 more information on how to mount this SMD part, refer to the SMD Guide, available in the Thin Film section of <https://www.knowlescapacitors.com/Support/Resources>

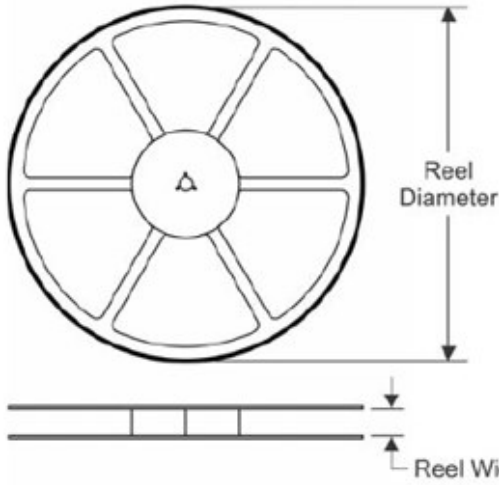
8 to 12GHz 25dB Directional Coupler

FPC06077

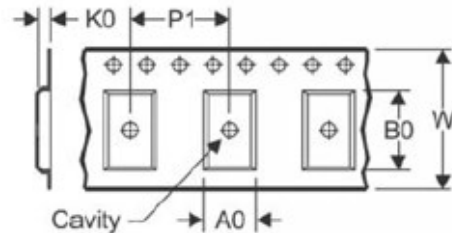
www.knowlesc capacitors.com

TAPE AND REEL INFORMATION

REEL DIMENSIONS

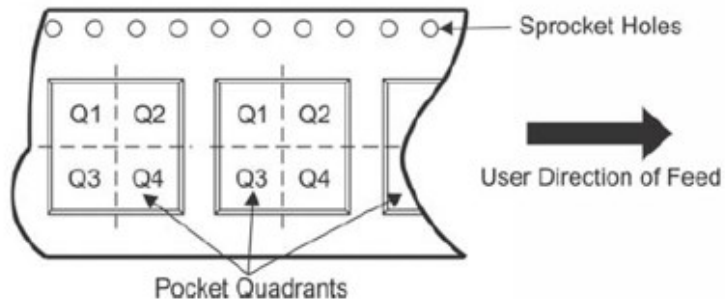


TAPE DIMENSIONS



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
FPC06077-T	SMD	180	12.4	2.3	3.3	0.6	4	12	Q1