

6.0-18.0GHz Surface Mount Quadrature Hybrid Coupler

FHC10292 Datasheet

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DESCRIPTION

DLI's surface mount 3dB Quadrature Hybrid Coupler offers good phase and amplitude balance in a small size with low loss and good isolation. The catalog 3 dB Hybrids are offered in a variety of frequency bands, which offers a drop in solution with highly repeatable performance.

FEATURES

- Small Size
- Solder Surface Mount Package
- 90 Degree phase delta between output ports
- Moisture Sensitivity Level: MSL1
- Frequency Stable over Temperature
- Operating & Storage Temp: -55°C to +125°C
- Characteristic Impedance: 50Ω

Packaging and Ordering Information

For packaging in tape and reel please use part number: FHC10292-T



SPECIFICATIONS*

Parameter	Frequency Range (GHz)	Min	Typ	Max	
Excess Insertion Loss (dB)	6.0 - 18.0		0.6	1.0	
Return Loss (dB)			15		
Isolation (dB)			15		
Amplitude Balance (dB)				±1	
90 Degree Phase Balance				±3.0	
CW Input Power** (W)	50				
Size (L x W x H)	0.350 x 0.250 x 0.010 in 8.89 x 6.35 x 0.25 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 vias as outlined in the recommended PCB layout that are connected to an adequate heat sink. Max power is based on 125°C base temperature.

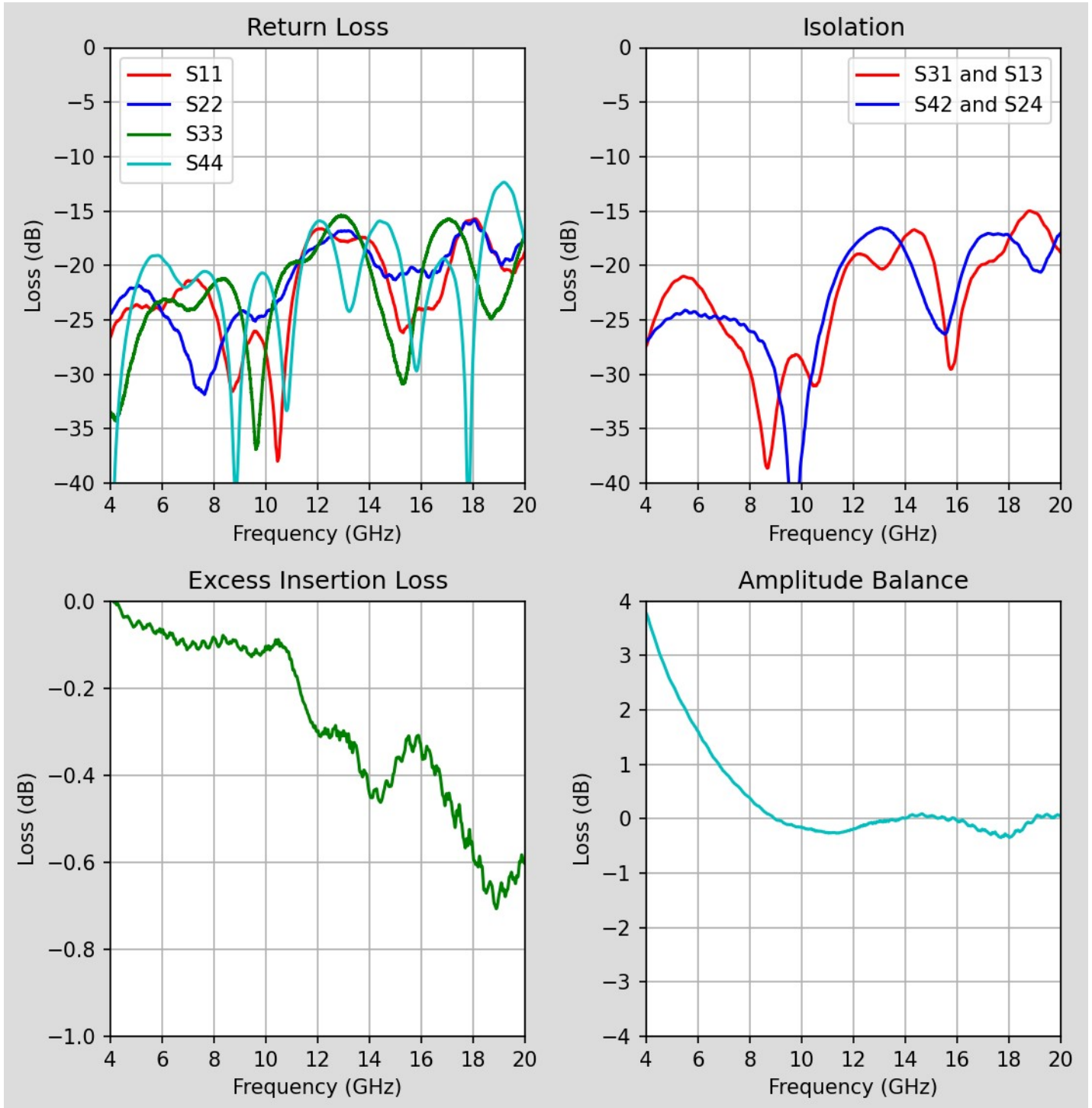
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Typical Performance:



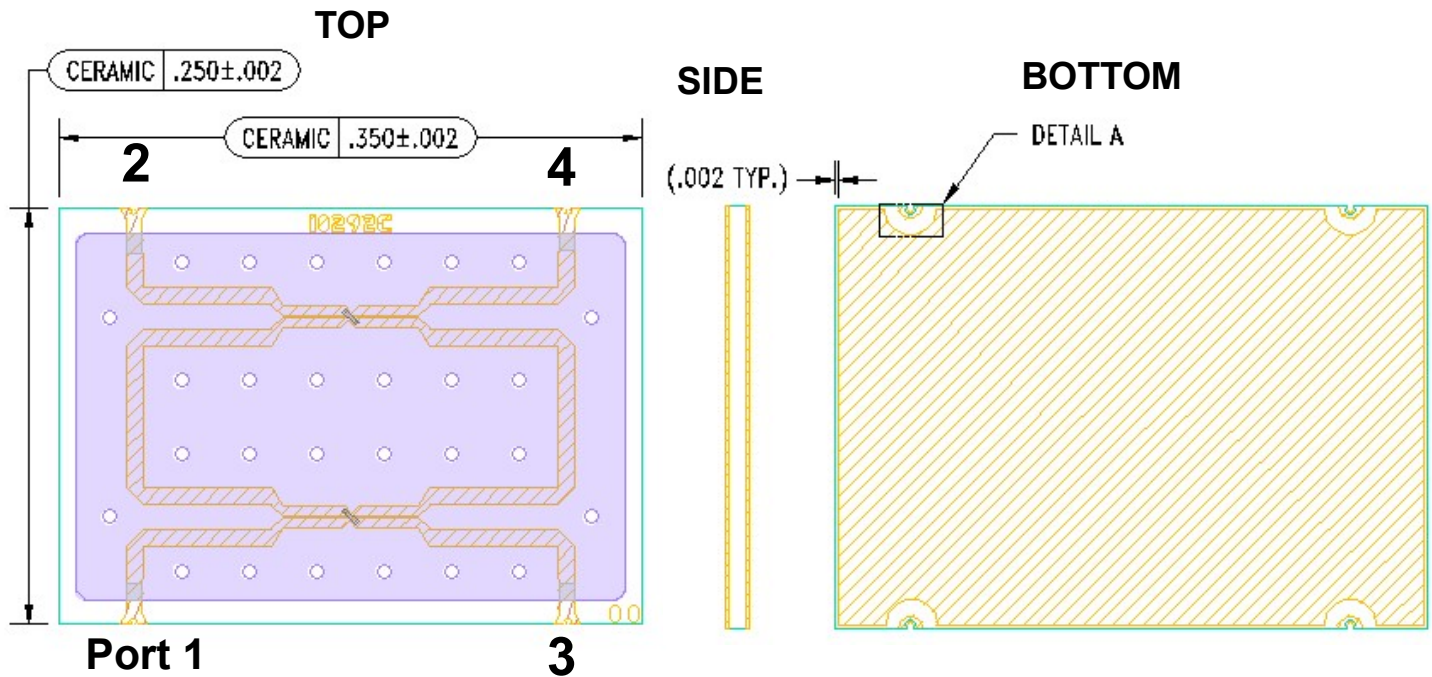
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Physical Dimensions

Units = inches



FHC10292 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	Isolated	Coupled	Input	Output
Configuration 4	Coupled	Isolated	Output	Input

Termination Finish: ENIG
3 - 6 μinch Au over 50 μinch Ni
Maximum Assembly Process
Temperature: 250°C

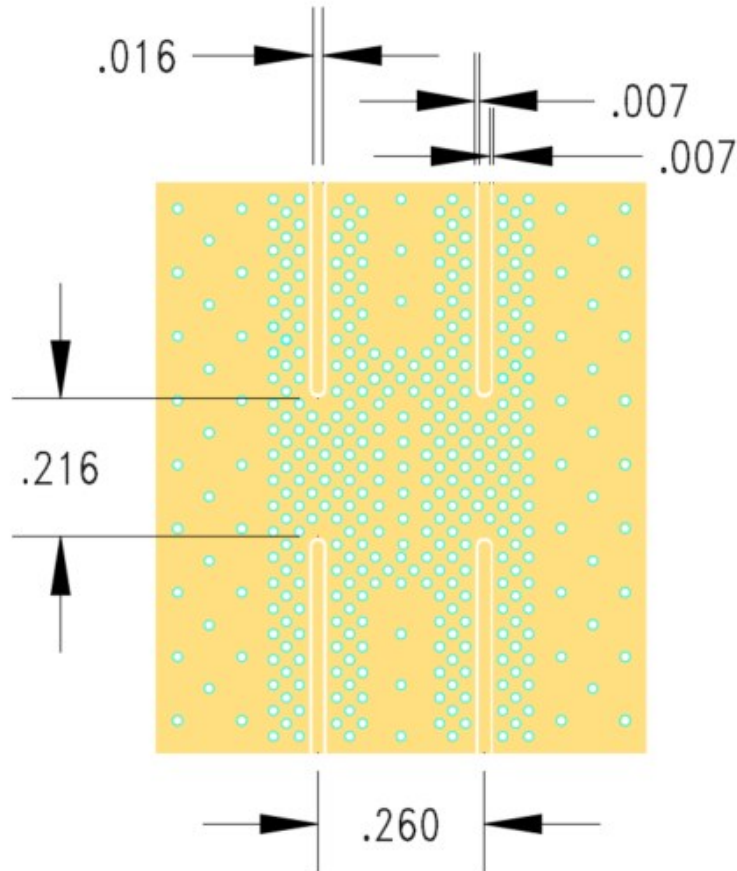
Tolerances:

- For values with 3 decimal places ±0.001
- For values with 4 decimal places ±0.0005

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RECOMMENDED LAYOUT



Parameters of the Recommended PCB:

- 0.010 inch Rogers Board RO4350B
- 3.66 dK, Board Material design
- Dimensions of 50.0 Ohm CPWG :
 - 0.016 inch RF trace width
 - 0.007 inch spacing

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

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