Design Evaluation Board (DEB) Datasheet

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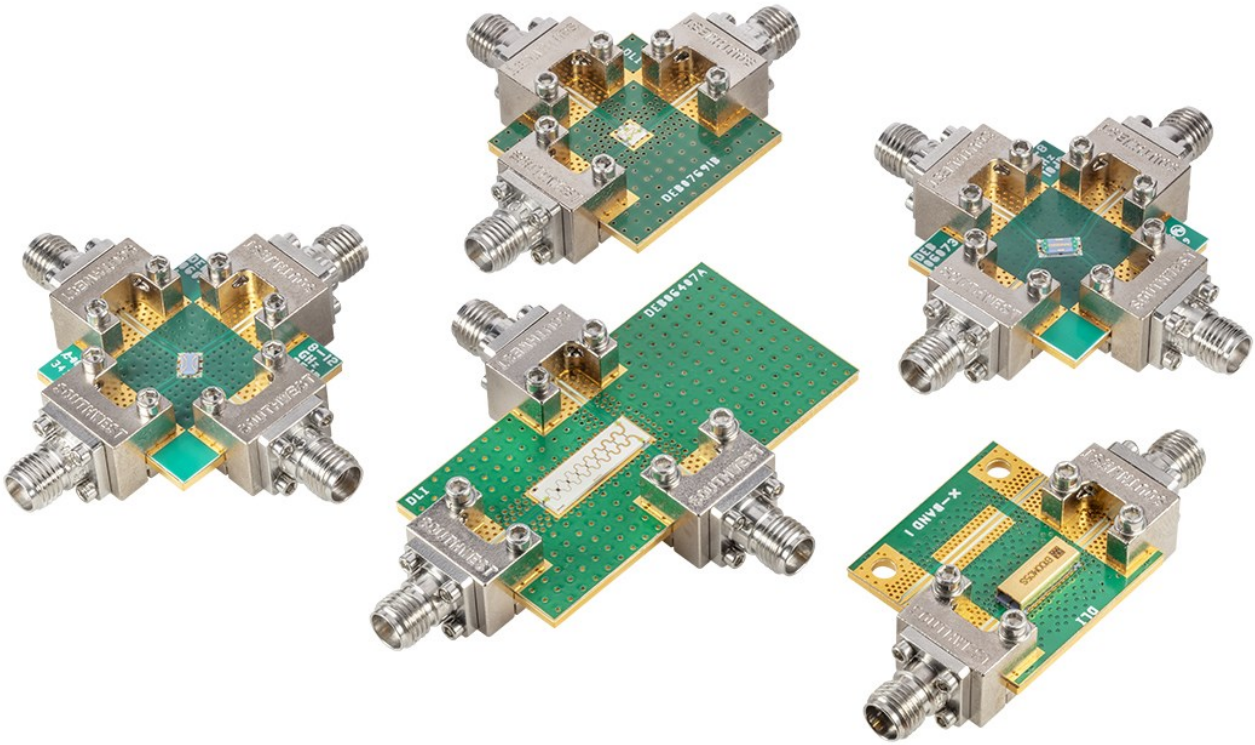

DLI brand Design Evaluation Boards (DEB) are a great way to test the assembled performance of DLI devices in a connectorized module. Each DEB includes a device mounted onto a 10 mil thick Rogers RO4350B circuit board with an aluminum base plate and connectors at each I/O port.

The filters, couplers and dividers in this datasheet utilize DLI's high dielectric ceramic materials to deliver small size and minimal performance variation over temperature. The selection of DLI Microwave Products Catalog devices are offered in a variety of frequency bands, demonstrating a range of useful performance for RF and Microwave applications.

DEB FEATURES:

Fully assembled test board for evaluation of DLI devices

Maximum Temperature for Exposure: 150°C

DEBs are not RoHS Compliant due to SnPb solder used to attach the part to the board (and for filters, solder for attaching the integrated shielding, RoHS compliant per exemption 7a)

Electrical specifications differ from the performance of the device alone, referenced on the product datasheet here: https://www.knowlescapacitors.com/Products/Microwave-Products

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Design Evaluation Board (DEB) Datasheet

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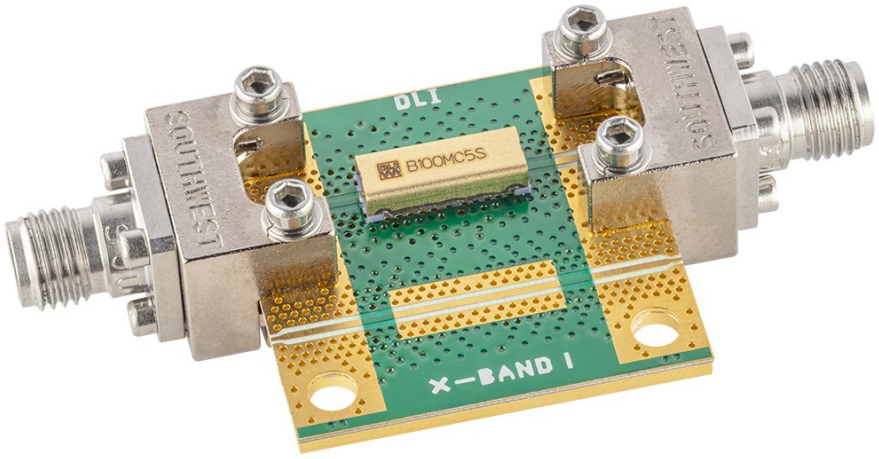
Design Evaluation Boards for Filters

The DEBs in the table below are similar to the configuration in this image with these characteristics:

- Assembled filter on a 10 mil thick Rogers RO4350B PCB with Aluminum baseplate with board dimensions 1” x 1”
- 2 x 2.92mm female connectors
- Thru-line included in some board designs per table
- DEBs without a thru-line are similar to the image but the part and connectors are centered



Filter DEB Example 1x1”

- Integrated filter shielding assembled with high melting point Pb-based solder
- Filter assembled onto DEB with SnPb Eutectic solder
- Reference the Product Datasheets for part performance here: https://www.knowlescapacitors.com/Products/Microwave-Products/Bandpass-Filters and here: https://www.knowlescapacitors.com/Products/Microwave-Products/Lowpass-Filters

Knowles Part Number	DEB Part Number	Operating Frequency (GHz)	DEB Min. RL (dB)	DEB Max. IL (dB)	Connector Style	With Thruline?
B056RC4S	DEB-B056RC4S	4-8	10	3	SMA Female	No
B080MB5S	DEB-B080MB5S	7.5-8.5	10	2.5	SMA Female	No
B083LB6S	DEB-B083LB6S	8-8.5	10	3	2.92 mm Female	Yes
B089NC4S	DEB-B089NC4S	8.1-10.1	8	2	2.92 mm Female	Yes
B094LA2S	DEB-B094LA2S	9.25-9.6	14	3.5	2.92 mm Female	Yes
B095MB1S	DEB-B095MB1S	8.9-10	10	2.5	2.92 mm Female	Yes
B096QC2S	DEB-B096QC2S	8-10	10	2.7	SMA Female	No
B100MC5S	DEB-B100MC5S	9.5-10.5	8	2.5	2.92 mm Female	Yes
B148QF0S	DEB-B148QF0S	12-15	15	2	SMA Female	No
L065XG9S	DEB-L065XG9S	DC-6	15	1.5	SMA Female	No
L095XG9S	DEB-L095XG9S	DC-9	12	1.7	2.92 mm Female	No
L185XF4S	DEB-L185XF4S	DC-18	12	3	2.92 mm Female	No
L204XF4S	DEB-L204XF4S	DC-20	12	3	2.92 mm Female	No
L288XC3S	DEB-L288XC3S	DC-27	10	3	2.92 mm Female	No

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Design Evaluation Board (DEB) Datasheet

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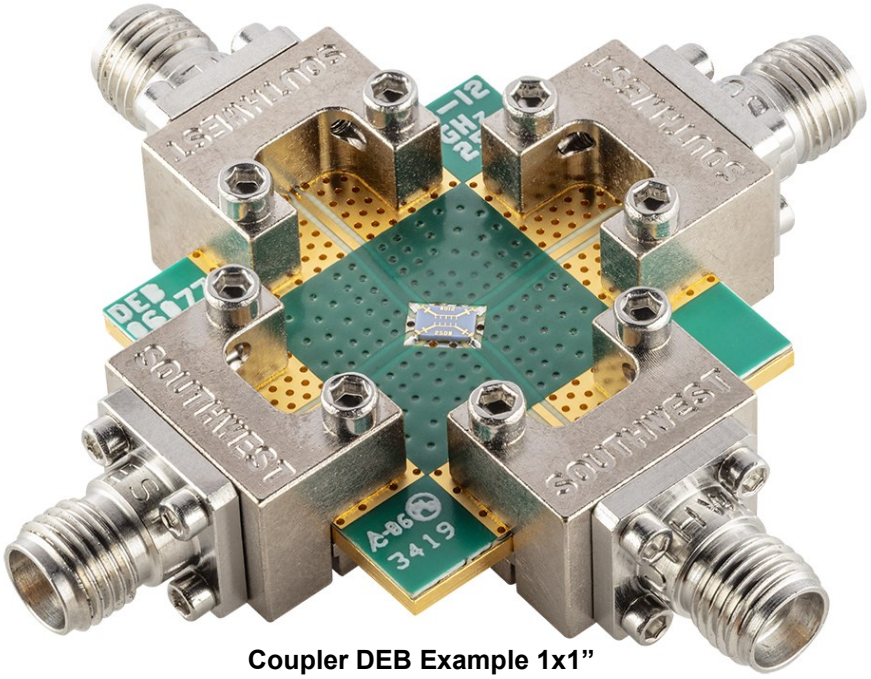
Design Evaluation Boards for Couplers



Coupler DEB Example 1x1”

The DEBs in the table below are similar to the configuration in the image above with these characteristics:

- Assembled coupler on a 10 mil thick Rogers RO4350B PCB with Aluminum baseplate with board dimensions 1” x 1” with SnPb Eutectic solder
- Reference the Product Datasheets for the performance of the couplers here: https://www.knowlescapacitors.com/Products/Microwave-Products/Couplers

Knowles Part	DEB Part Number	Part Description	DEB Min. RL	DEB Max. IL	# of Connectors	Connector Style
FPC06073	DEB06073	4 to 8GHz 10dB Directional Coupler	12	1.3	4	SMA Female
FPC06074	DEB06074	8 to 12GHz 10dB Directional Coupler	15	1.5	4	2.92 mm Female
FPC06077	DEB06077	8 to 12GHz 25dB Directional Coupler	12	1	4	2.92 mm Female
FPC07181	DEB07181	20 to 40GHz 20dB Directional Coupler	10	3	4	2.92 mm Female
FPC07182	DEB07182	20 to 40GHz 10dB Directional Coupler	10	3	4	2.92 mm Female
FPC07803	DEB07803	DC to 40GHz 20dB Resistive Coupler	10	5	3	2.92 mm Female

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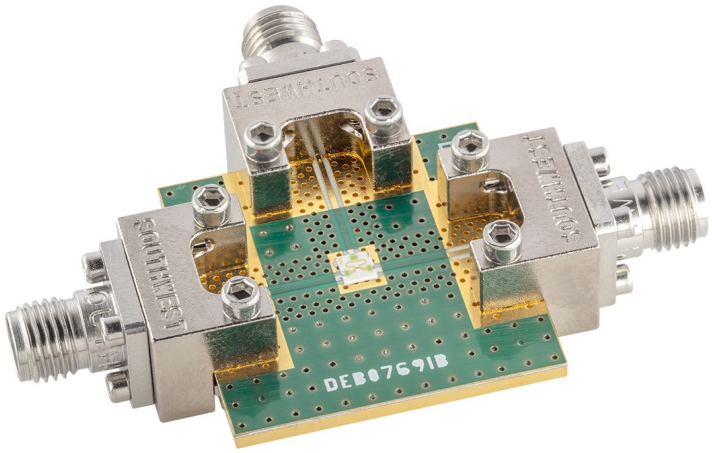
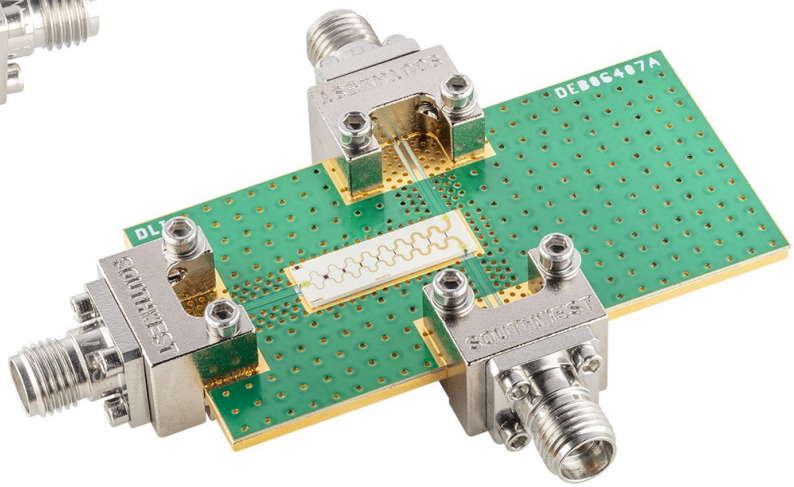
Design Evaluation Boards for Wilkinson Power Dividers



2-way PDW Example 1x1”



2-way PDW Example 2x1”

The DEBs in the table below are similar to the configurations in the images above with these characteristics:

- Assembled power divider on a 10 mil thick Rogers RO4350B PCB with Aluminum baseplate
- 2.92mm female connectors
- Power divider assembled onto DEB with SnPb Eutectic solder
- Reference the Product Datasheets for the performance of the PDW along here: https://www.knowlescapacitors.com/Products/Microwave-Products/Power-Dividers

Knowles Part Number	DEB Part Number	Part Description	DEB Min. RL (dB)	DEB Max. IL (dB)	Board Dimensions (in)	# of Connectors
PDW05758	DEB05758	6-18GHz 2-way Power Divider	15	2	1x1	3
PDW06399	DEB06399	9-11GHz 2-way Power Divider	15	1	1x1	3
PDW07691	DEB07691	18-20GHz 2-way Power Divider	12	2	1x1	3
PDW06407	DEB06407	2-18GHz 2-way Power Divider	14	3	2x1	3
PDW06089	DEB06089	6 - 18GHz 4-way Power Divider	10	3	2x1	5

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