

Quadruple Band 2-Way SMT Power Divider

1700~2500MHz USPCS & PCS, WCDMA & TD-SCDMA, WiBro

Device Features

- Typical Isolation = 23 dB
- Typical Insertion Loss = 0.5 dB
- MSL 3 moisture rating
- Lead-free/RoHS-compliant SOIC-8 Plastic Package
With exposed back side ground pad



Product Description

BeRex's Divider BD25B is designed for PCS, WCDMA & TD-SCDMA and WiBro band with low Insertion Loss and Isolation. This chip is fully passivated for enhanced performance and reliability and packaged in RoHS-compliant with SOIC-8 surface mount package. It can be used without back side ground soldering. (This may degrade the performance at the high frequency edge.)

Typical Performance¹

Parameter	Min	Typical	Max	Unit
Frequency Range	1700		2500	MHz
Insertion Loss		0.5	0.8	dB
Isolation	15	23		dB
IRL(S11)		-20	-15	dB
ORL(S22/S33)		-23	-15	dB
Amplitude Balance		0.05	0.2	dB
Phase Balance		0.7	2.0	deg

*All specifications apply to the following test conditions,

1. Device performance _ measured on BeRex E/B at 25°C, 50ohm system.
2. Insertion Loss: Above 3.0dB.
3. Back side ground _ soldered.

Applications

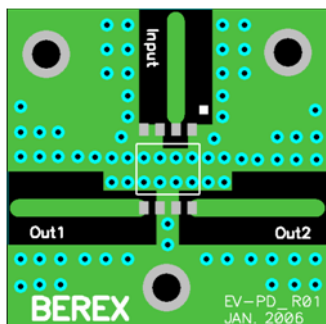
- Base station Infrastructure
- Commercial/Industrial/Military wireless system

Absolute Maximum Ratings

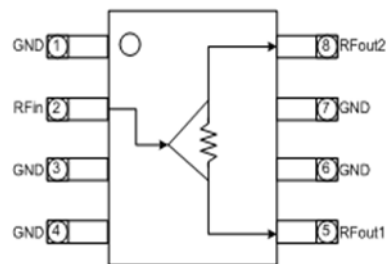
Parameter	Rating
Input Power	1W CW dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

Operation of this device above any of these parameters may result in permanent damage.

Evaluation Board Drawing



Function Block Diagram



Pins 1,3,4,6 and 7 must be DC and RF grounded.

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Typical Test Data
With Back Side Ground Soldering

Parameters	Unit	USPCS & PCS			TD-SCDMA WCDMA			WiBro		
		1700	1800	1900	1900	2075	2250	2200	2350	2500
Frequency Range	MHz	1700	1800	1900	1900	2075	2250	2200	2350	2500
Insertion Loss	dB	0.37	0.38	0.38	0.38	0.42	0.53	0.48	0.60	0.75
Isolation	dB	19.6	20.8	21.9	21.9	25.7	28.9	30.6	22.2	15.5
IRL(S11)	dB	-21.3	-23.7	-25.4	-25.4	-22.0	-17.3	-18.5	-15.2	-12.6
ORL(S22,S33)	dB	-24.4	-32.2	-33.9	-33.9	-24.7	-22.4	-22.6	-22.5	-22.7
Phase Diff.	deg	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	0.7
Amplitude Balance	dB	0.07	0.07	0.07	0.08	0.09	0.10	0.10	0.12	0.10

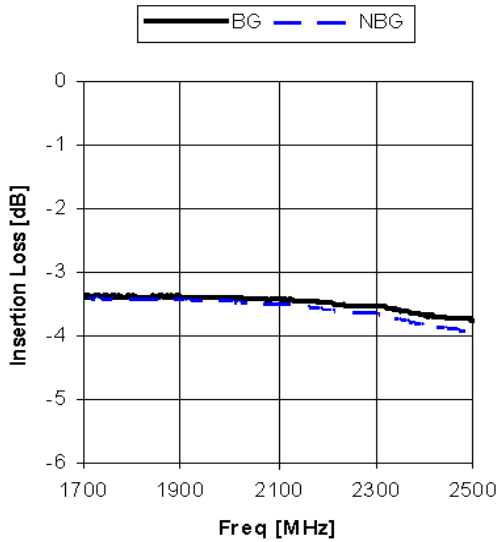
Without Back Side Ground Soldering

Parameters	Unit	USPCS & PCS			TD-SCDMA			WiBro		
		1700	1800	1900	1900	2075	2250	2200	2350	2500
Frequency Range	MHz	1700	1800	1900	1900	2075	2250	2200	2350	2500
Insertion Loss	dB	0.40	0.41	0.42	0.42	0.49	0.64	0.59	0.75	0.94
Isolation	dB	19.5	21.1	22.7	22.7	26.3	23.6	25.7	19.0	13.7
IRL(S11)	dB	-20.8	-21.7	-21.1	-21.1	-17.8	-14.3	-15.2	-12.4	-10.2
ORL(S22,S33)	dB	-25.9	-37.8	-31.5	-31.5	-22.8	-20.3	-20.6	-19.9	-19.4
Phase Diff.	deg	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.7	2.0
Amplitude Balance	dB	0.08	0.08	0.09	0.09	0.11	0.10	0.11	0.10	0.08

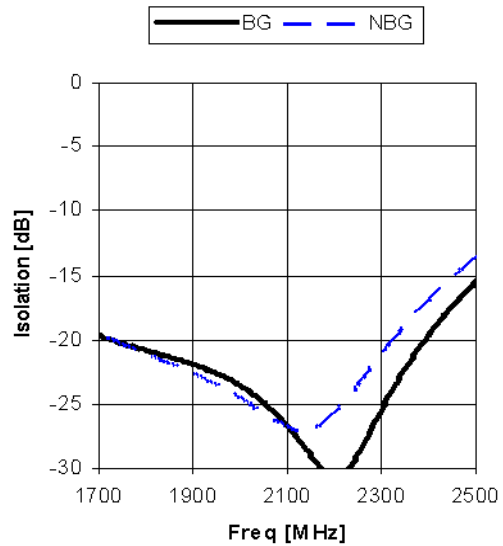
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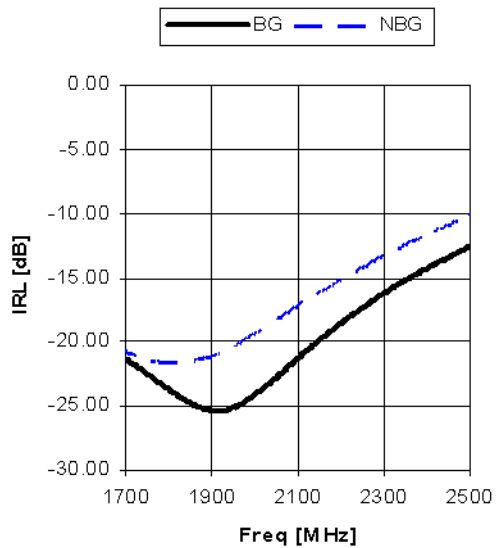
Insertion Loss vs. Frequency



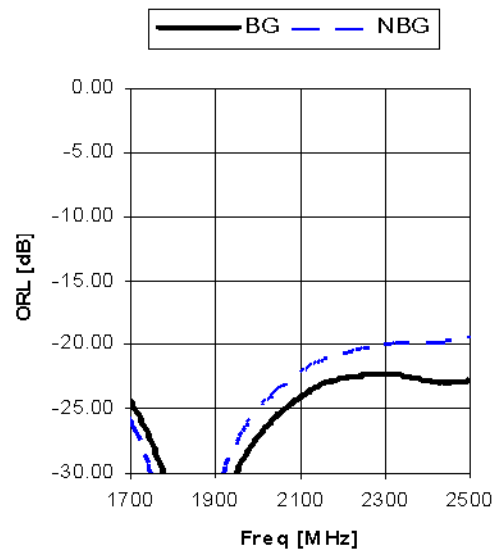
Isolation vs. Frequency



IRL vs. Frequency

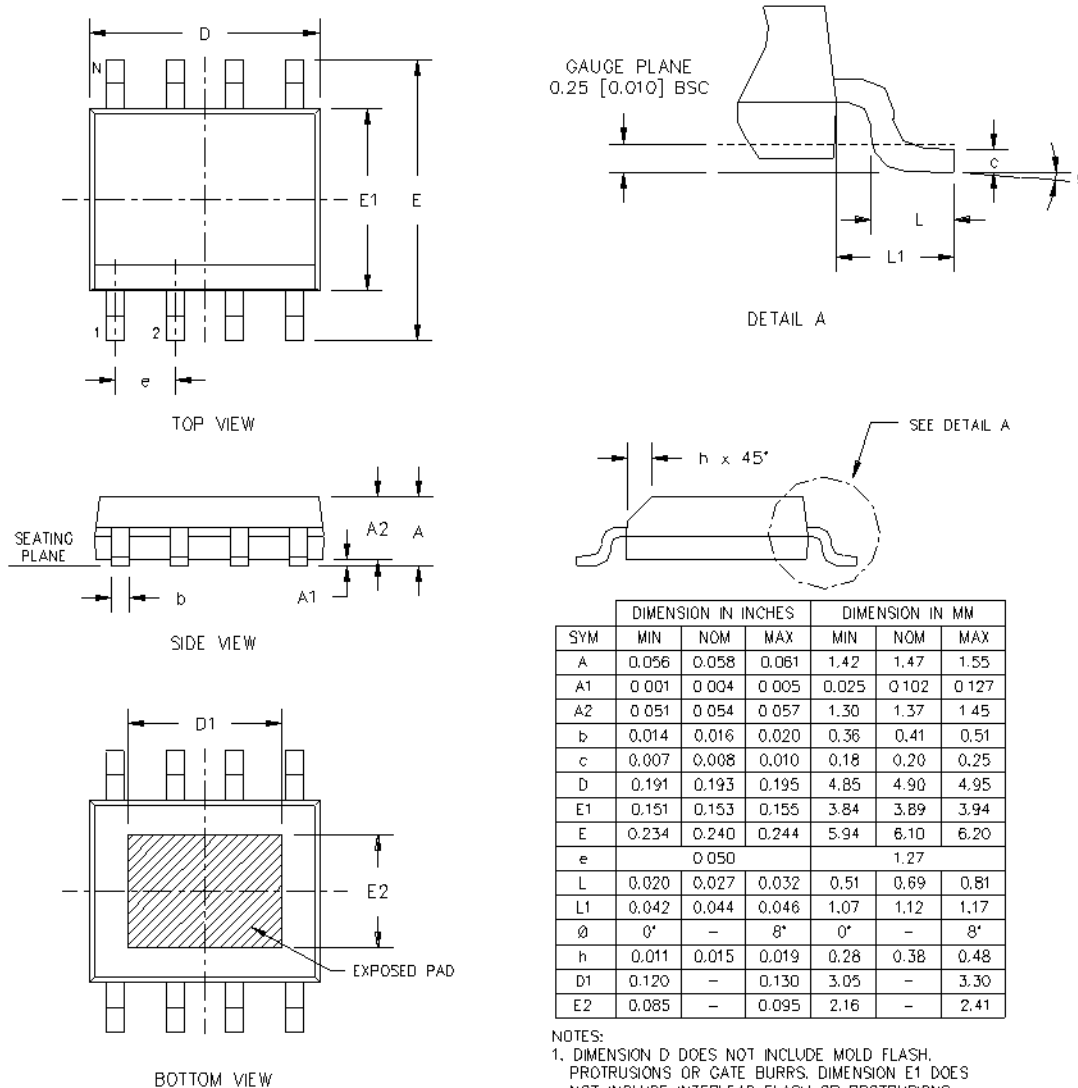


ORL vs. Frequency



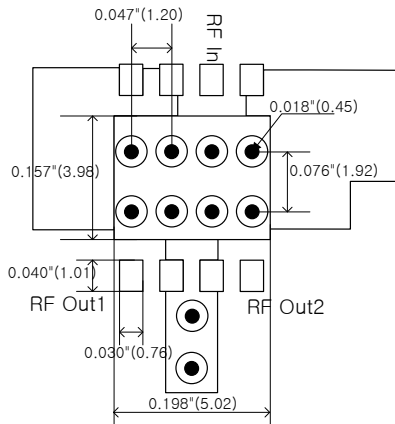
Notes)

- BG: Data taken with backside ground soldering
- NBG: Data taken without backside ground soldering

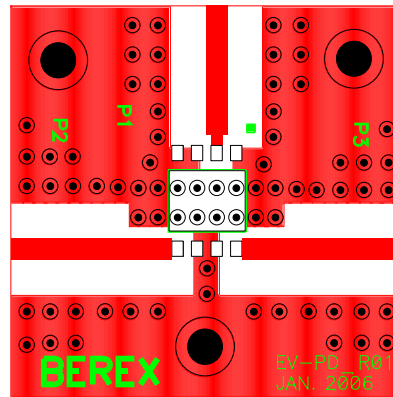
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Package Outline Drawing


Suggested PCB Land Pattern and PAD Layout

PCB Land Pattern



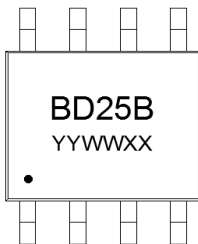
PCB Mounting



Note : All dimension _ millimeters

PCB lay out _ on BeRex website

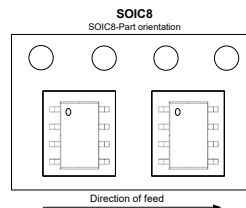
Package Marking



Pin 1

YY = Year, WW = Working Week,
XX = Wafer No.

Tape & Reel



Packaging information:

- Tape Width (mm): 12
- Reel Size (inches): 7
- Device Cavity Pitch (mm): 8
- Devices Per Reel: 1000

Lead plating finish

100% Tin Matte finish

(All BeRex products undergoes a 1 hour, 150 degree C, Anneal bake to eliminate thin whisker growth concerns.)

MSL / ESD Rating**MSL Rating:** Level 3 at +265°C convection reflow**Standard:** JEDEC Standard J-STD-020

Proper ESD procedures should be followed when handling this device.

NATO CAGE code:

2	N	9	6	F
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