

## 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
- RoHS2-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 RoHS2-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 Performance<sup>1</sup>

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

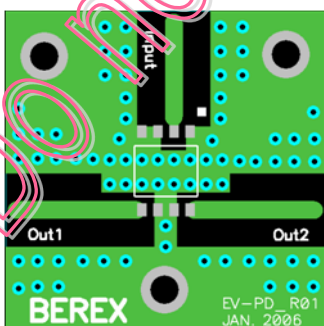
- Base station Infrastructure
- Commercial/Industrial/Military wireless system

### Absolute Maximum Ratings

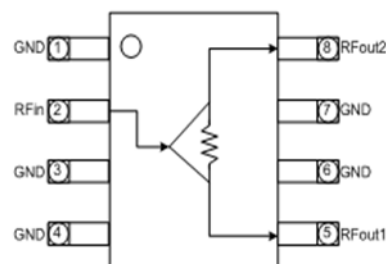
Parameter	Rating
Input Power	1W CW dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

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.

**Quadruple Band 2-Way SMT Power Divider**
*1700~2500MHz USPCS & PCS, WCDMA & TD-SCDMA, WiBro*
**Typical Test Data**
**With Back Side Ground Soldering**

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

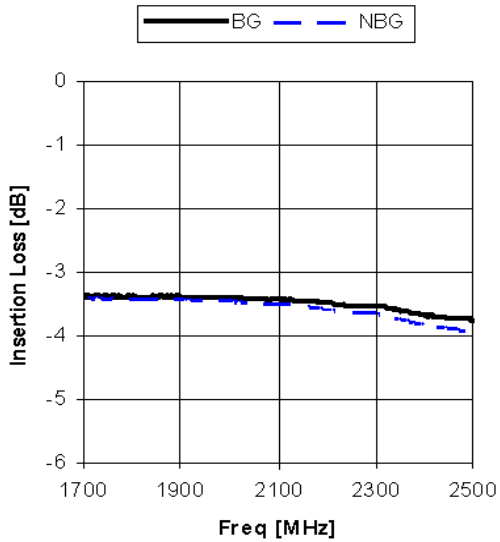
**Without Back Side Ground Soldering**

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

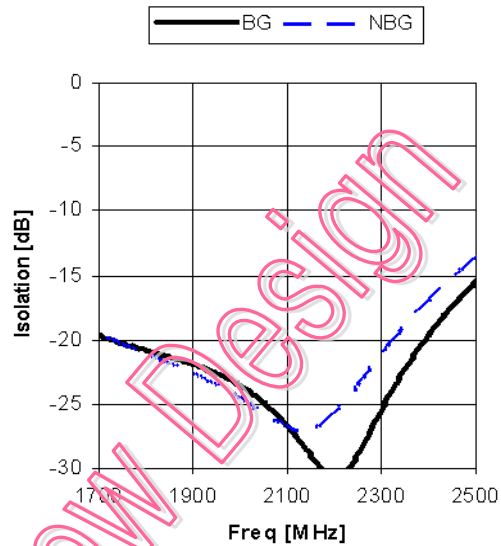
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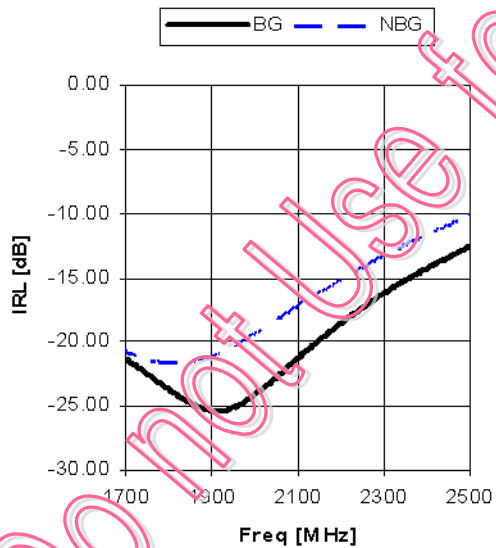
### Insertion Loss vs. Frequency



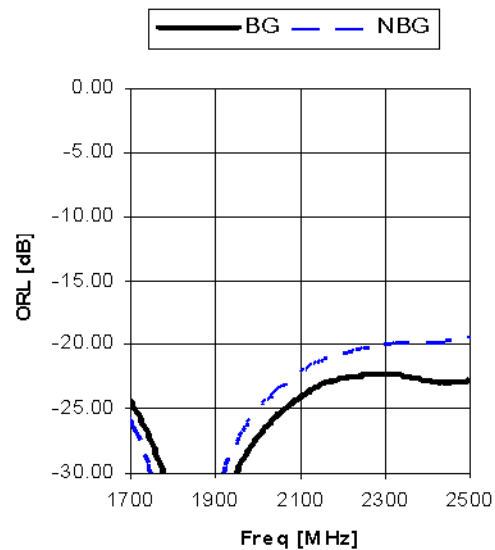
### Isolation vs. Frequency



### IRL vs. Frequency

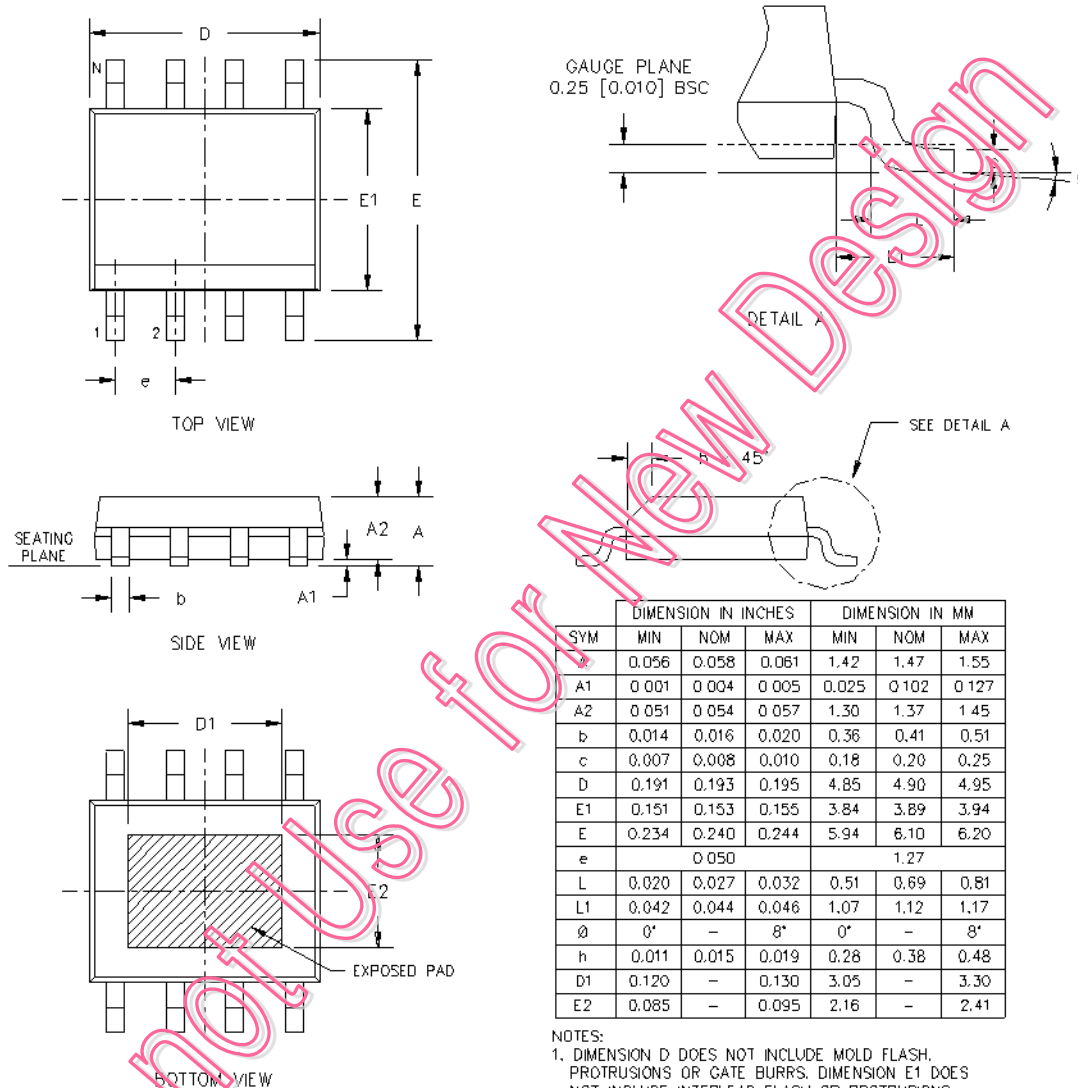


### ORL vs. Frequency



#### Notes)

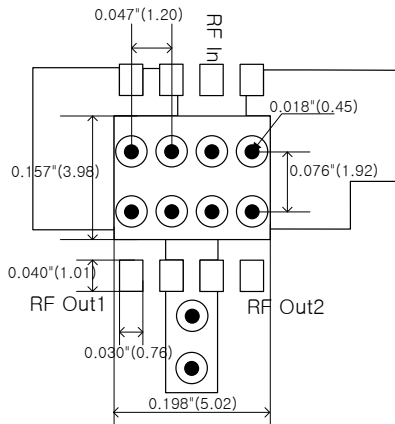
- BG: Data taken with backside ground soldering
- NBG: Data taken without backside ground soldering

**Package Outline Drawing**

**NOTES:**

1. DIMENSION D DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. DIMENSION E1 DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSIONS.
2. COPLANARITY APPLIES TO THE TERMINALS. COPLANARITY SHALL NOT EXCEED 0.003" [0.08 mm].
3. BASED FROM JEDEC MS-012 VARIATION AA.

### Suggested PCB Land Pattern and PAD Layout

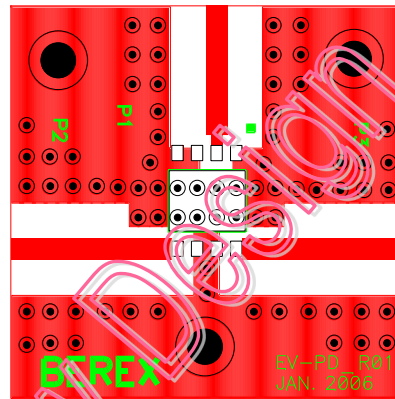
#### PCB Land Pattern



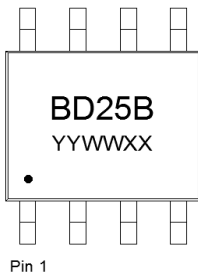
Note : All dimension \_ millimeters

PCB lay out \_ on BeRex website

#### PCB Mounting

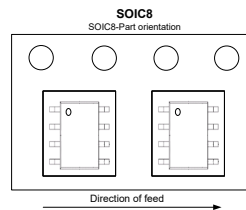


#### Package Marking



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 +260°C convection reflow  
**Standard:** JEDEC Standard J-STD-020



Proper ESD procedures should be followed when handling this device.

**RoHS Compliance**

This part is compliant with Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive 2011/65/EU as amended by Directive 2015/863/EU.

This product also is compliant with a concentration of the Substances of Very High Concern (SVHC) candidate list which are contained in a quantity of less than 0.1%(w/w) in each components of a product and/or its packaging placed on the European Community market by the BeRex and Suppliers.

**NATO CAGE code:**

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