

### 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 BD09B is designed for Cellular & GSM 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.)

### Applications

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

### Typical Performance<sup>1</sup>

Parameter	Min	Typical	Max	Unit
Frequency Range	700		1000	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		0.2	0.5	deg

\*All specifications apply to the following test conditions,

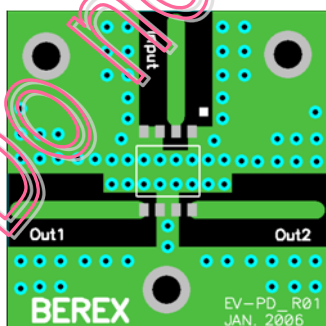
1. Device performance \_ measured on BeRex E/B at 25°C, 50ohm system.
2. Insertion Loss: Above 3.0dB.
3. Back side ground \_ soldered.

### Absolute Maximum Ratings

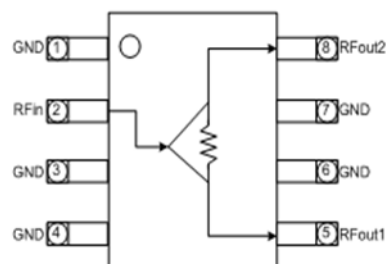
Parameter	Rating
Input Power	1W CW dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

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.

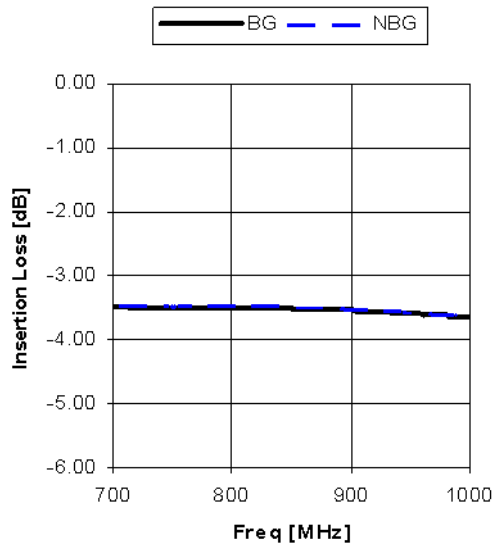
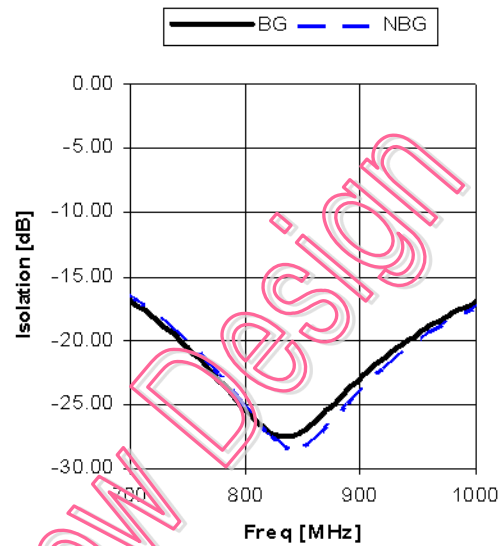
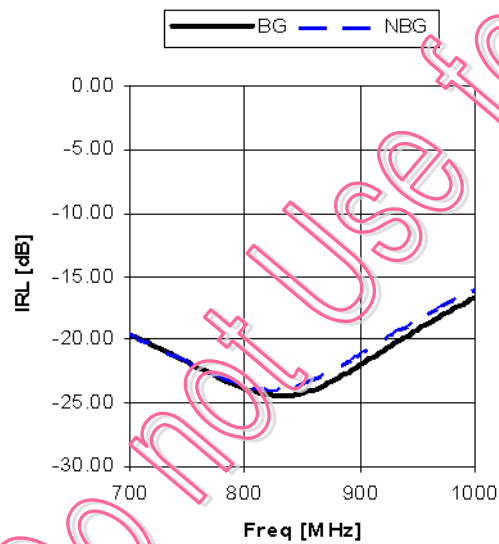
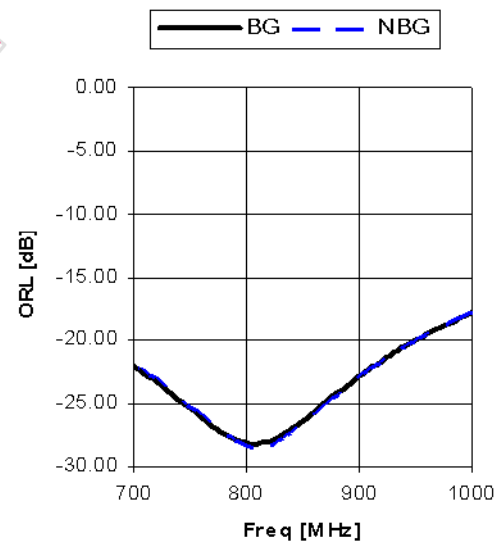
### Typical Test Data

#### With Back Side Ground Soldering

Parameters	Unit	Cellular & GSM900						
Frequency Range	MHz	700	750	800	850	900	950	1000
Insertion Loss	dB	0.48	0.50	0.49	0.52	0.54	0.59	0.65
Isolation	dB	16.7	20.6	25.4	27.0	22.9	19.5	17.1
IRL(S11)	dB	-19.5	-21.8	-23.8	-24.2	-22.0	-19.2	-16.8
ORL(S22,S33)	dB	-21.9	-25.4	-28.1	-26.2	-22.8	-20.0	-17.9
Phase Diff.	deg	0.1	0.2	0.2	0.2	0.3	0.4	0.4
Amplitude Balance	dB	0.00	0.00	0.01	0.01	0.02	0.01	0.01

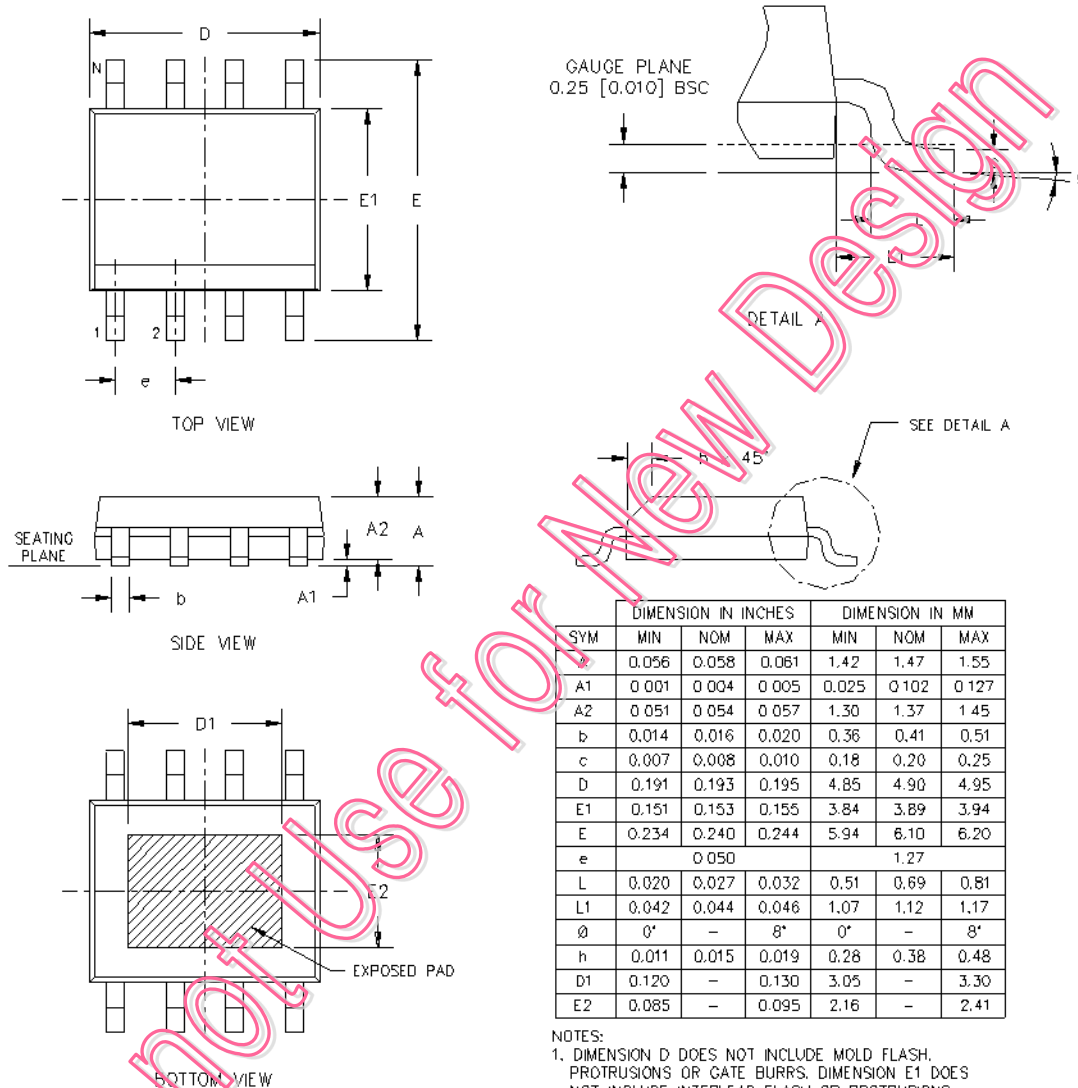
#### Without Back Side Ground Soldering

Parameters	Unit	Cellular & GSM900						
Frequency Range	MHz	700	750	800	850	900	950	1000
Insertion Loss	dB	0.46	0.49	0.48	0.49	0.52	0.58	0.64
Isolation	dB	16.4	20.2	25.1	28.3	23.9	20.1	17.5
IRL(S11)	dB	-19.5	-21.8	-23.8	-23.5	-21.2	-18.5	-16.1
ORL(S22,S33)	dB	-21.8	-25.3	-28.3	-26.5	-22.9	-20.1	-17.9
Phase Diff.	deg	0.4	0.5	0.6	0.5	0.7	0.6	0.6
Amplitude Balance	dB	0.01	0.02	0.02	0.02	0.02	0.03	0.03

**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

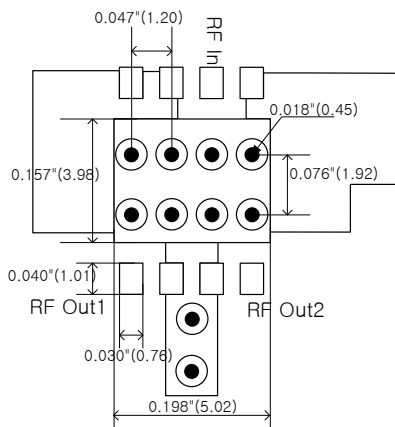


NOTES:

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

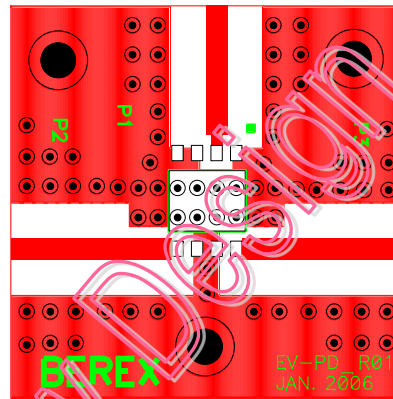
#### PCB Land Pattern



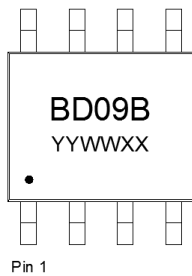
Note : All dimension \_ millimeters

PCB lay out \_ on BeRex website

#### PCB Mounting

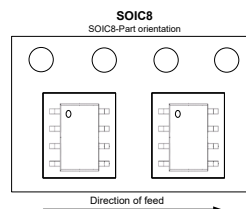


#### Package Marking



YY = Year, WW = Working Week,  
XX = Water 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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