

Dual Band 2-Way SMT Power Divider

1900~2500MHz PCS, WCDMA & TD-SCDMA, WiBro

Device Features

- Typical Isolation = 25 dB
- Typical Insertion Loss = 0.4 dB
- MSL 3 moisture rating
- RoHS2-compliant SOIC-8 Plastic Package
With exposed back side ground pad



Product Description

BeRex's Divider BD23B 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 Performance¹

Parameter	Min	Typical	Max	Unit
Frequency Range	1900		2500	MHz
Insertion Loss		0.4	0.8	dB
Isolation	15	25		dB
IRL(S11)		-23	-15	dB
ORL(S22/S33)		-25	-15	dB
Amplitude Balance		0.05	0.2	dB
Phase Balance		0.5	1.0	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

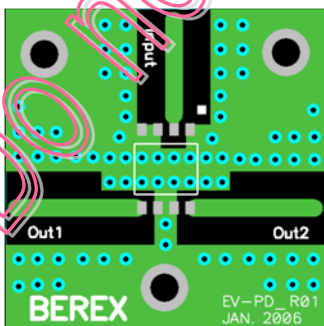
- Base station Infrastructure
- Commercial/Industrial/Military wireless system

Absolute Maximum Ratings

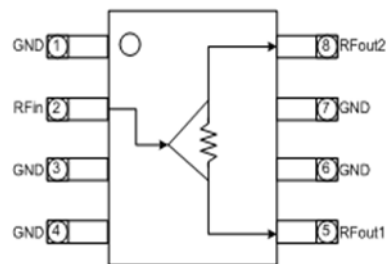
Parameter	Rating
Input Power	1W CW dBm
Storage Temperature	-55 to +155°C
Operating Temperature	-40 to +85°C

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.

Typical Test Data

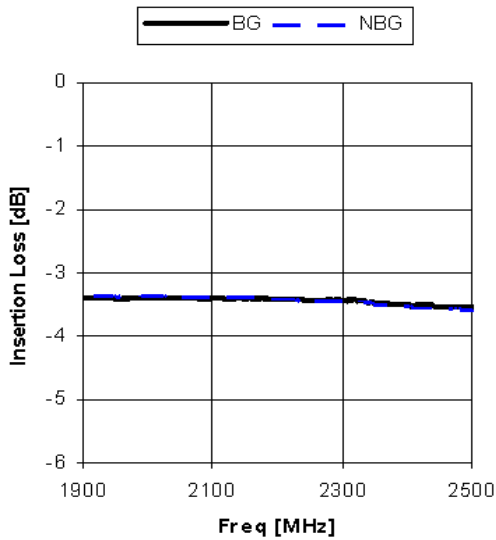
With Back Side Ground Soldering

Parameters	Unit	WCDMA & TD-SCDMA			WiBro		
Frequency Range	MHz	1900	2075	2250	2200	2350	2500
Insertion Loss	dB	0.38	0.39	0.44	0.42	0.46	0.54
Isolation	dB	18.7	21.6	25.8	24.2	28.5	23.8
IRL(S11)	dB	-21.4	-26.7	-25.2	-27.0	-21.6	-17.4
ORL(S22,S33)	dB	-20.9	-24.5	-23.0	-23.7	-21.6	-20.8
Phase Diff.	deg	0.0	0.2	0.3	0.3	0.5	0.7
Amplitude Balance	dB	0.03	0.04	0.06	0.05	0.06	0.09

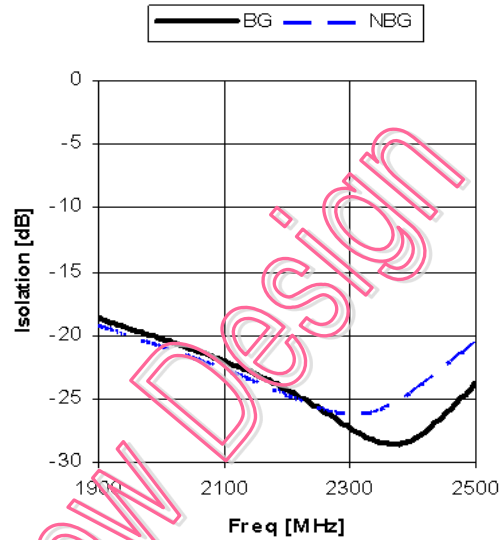
Without Back Side Ground Soldering

Parameters	Unit	WCDMA & TD-SCDMA			WiBro		
Frequency Range	MHz	1900	2075	2250	2200	2350	2500
Insertion Loss	dB	0.36	0.38	0.45	0.42	0.49	0.6
Isolation	dB	19.2	22.2	25.7	24.7	25.8	20.5
IRL(S11)	dB	-24.2	-26.0	-20.4	-22.1	-17.6	-14.2
ORL(S22,S33)	dB	-22.3	-25.0	-21.9	-22.8	-20.4	-19.3
Phase Diff.	deg	1.7	1.6	1.7	1.7	1.7	1.8
Amplitude Balance	dB	0.07	0.06	0.07	0.07	0.06	0.06

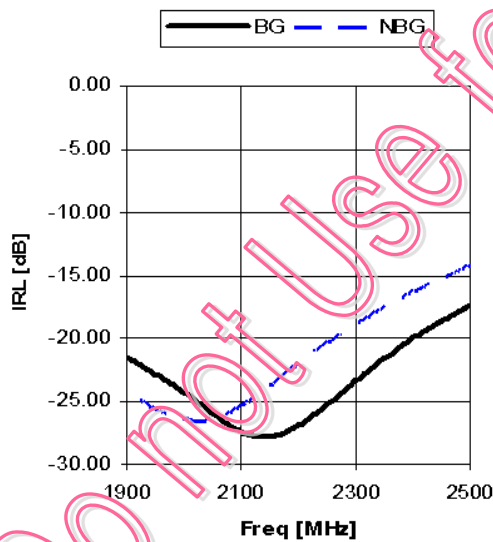
Insertion Loss vs. Frequency



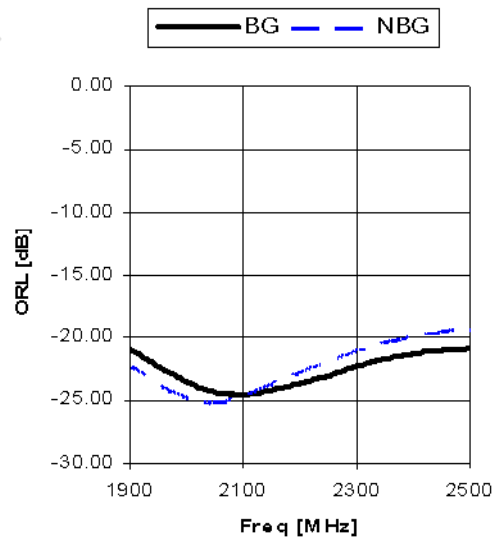
Isolation vs. Frequency



IRL vs. Frequency

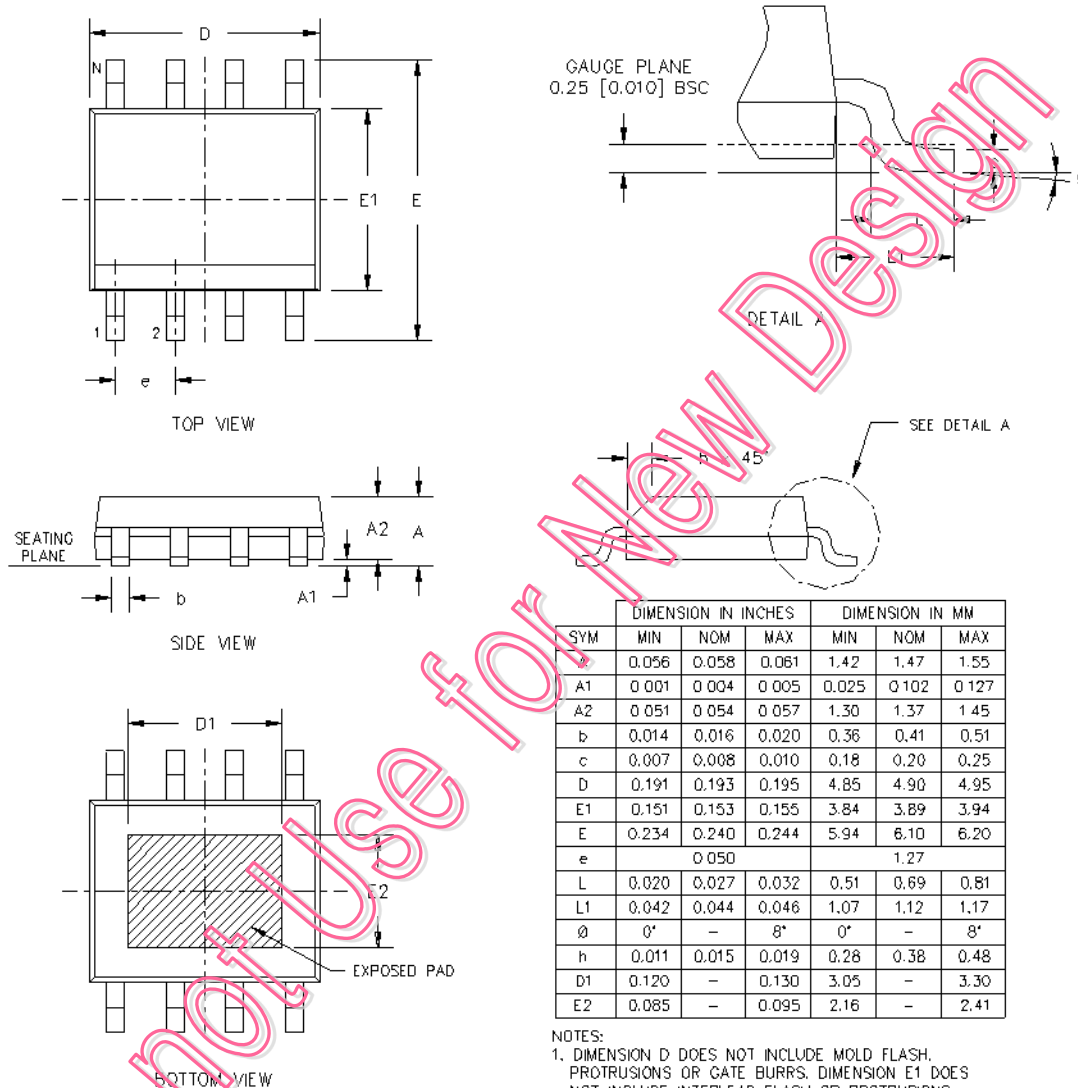


ORL vs. Frequency



Notes)

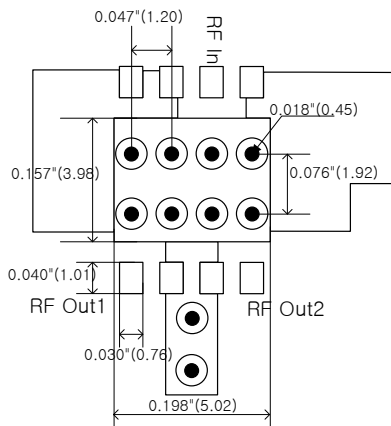
- BG: Data taken with backside ground soldering
- NBG: Data taken without backside ground soldering

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

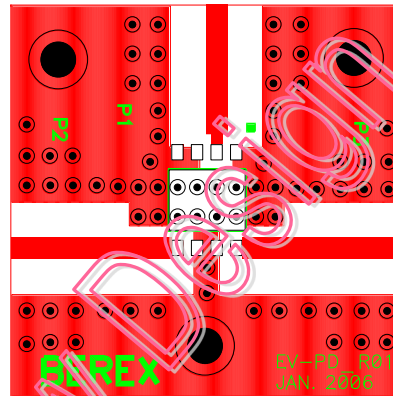
PCB Land Pattern



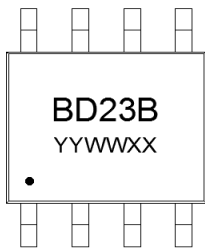
Note : All dimension _ millimeters

PCB lay out _ on BeRex website

PCB Mounting



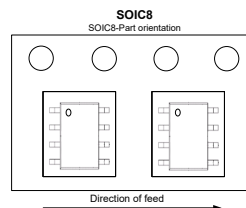
Package Marking



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 +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:

2	N	9	6	F
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