

## Dual Band 2-Way SMT Power Divider

1700~2300MHz PCS, WCDMA & TD-SCDMA

### Device Features and Description

- 23dB Typical Isolation
- 0.4dB Typical Insertion Loss
- Small Size and Low Profile
- MSL 1 moisture rating
- Lead-free/Green/RoHS compliant package
- Industry Standard SOIC-8 SMT Plastic Package with exposed back side ground pad
- Chip is fully passivated for enhanced performance and reliability
- Can be used without back side ground soldering  
(This may degrade the performance at the high frequency edge. Refer to the following typical test data)



### Electrical specifications

Parameters	Unit	Min	Typ	Max
Frequency Range	MHz	1700		2300
Insertion Loss	dB		0.4	0.8
Isolation	dB	15	23	
IRL(S11)	dB		-20	-15
ORL(S22,S33)	dB		-25	-15
Amplitude Balance	dB		1.0	2.0

All specifications apply with the following test conditions,

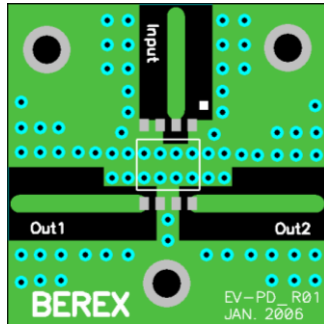
1. Device performance is measured on BeRex evaluation board at 25C, 50 ohm system
2. Insertion Loss: Above 3.0dB
3. Back side ground was soldered

### Absolute Maximum Ratings

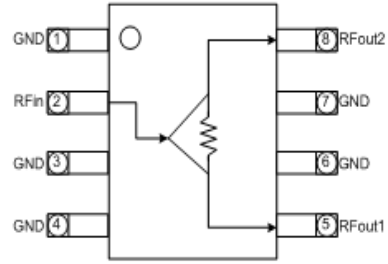
Parameters	Rating
Input Power	1W CW
Storage Temperature	-55 to +155°C
Operating Temperature	-40C to +85°C

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

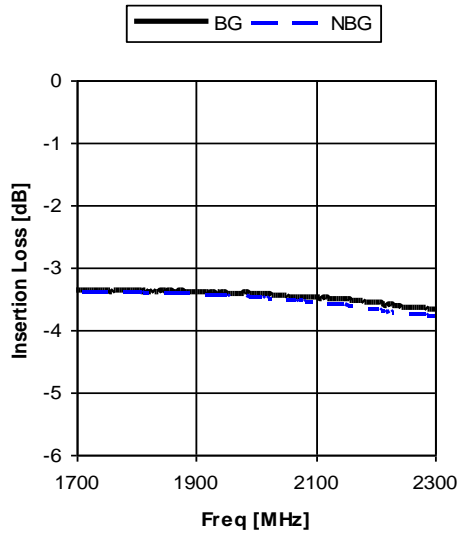
## With Back Side Ground Soldering

Parameters	Unit	<i>PCS, WCDMA &amp; TD-SCDMA</i>					
Frequency Range	MHz	1700	1800	1900	1900	2075	2250
Insertion Loss	dB	0.35	0.37	0.38	0.38	0.47	0.64
Isolation	dB	20.4	22.1	24.4	24.4	30.1	20.6
IRL(S11)	dB	-22.3	-24.4	-24.1	-24.1	-19.3	-15.1
ORL(S22,S33)	dB	-27.1	-36.4	-34.1	-34.1	-27.4	-26.4
Phase Diff.	deg	0.2	0.2	0.3	0.3	0.5	0.8
Amplitude Balance	dB	0.03	0.04	0.04	0.04	0.06	0.07

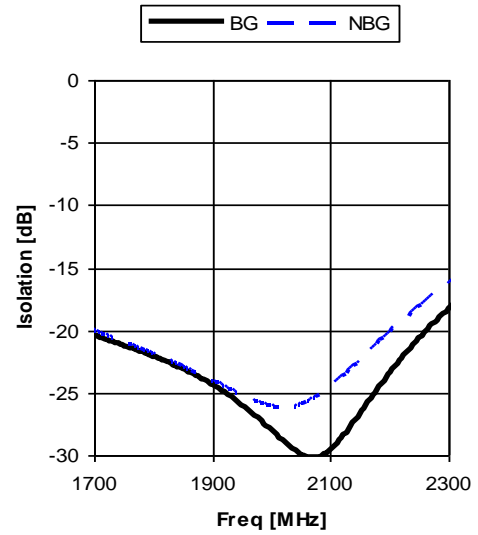
## Without Back Side Ground Soldering

Parameters	Unit	<i>PCS, WCDMA &amp; TD-SCDMA</i>					
Frequency Range	MHz	1700	1800	1900	1900	2075	2250
Insertion Loss	dB	0.38	0.40	0.43	0.43	0.54	0.75
Isolation	dB	20.0	21.9	24.1	24.1	25.4	18.1
IRL(S11)	dB	-22.0	-22.3	-20.3	-20.3	-16.0	-12.4
ORL(S22,S33)	dB	-26.4	-32.9	-29.5	-29.5	-23.8	-22.1
Phase Diff.	deg	1.0	1.0	1.0	1.0	0.9	0.8
Amplitude Balance	dB	0.06	0.06	0.06	0.06	0.05	0.04

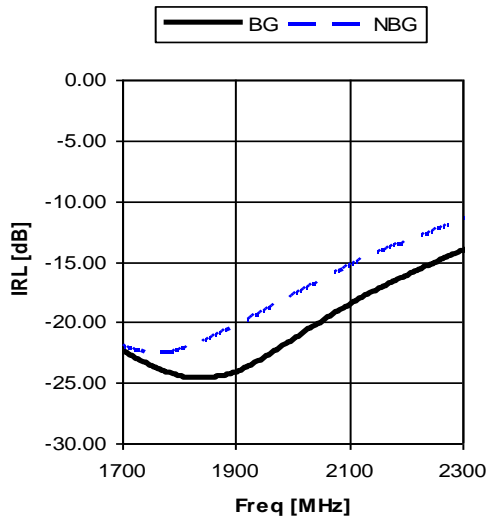
Insertion Loss vs. Frequency



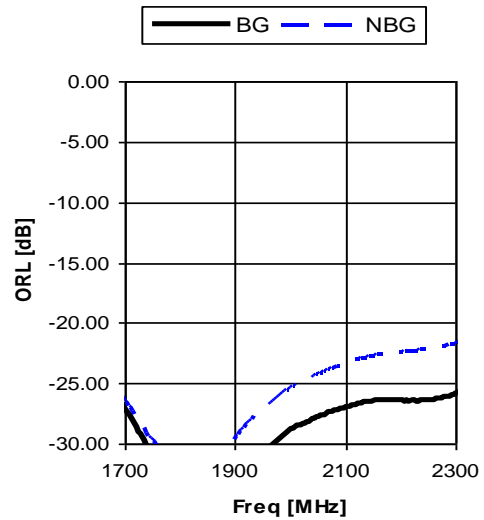
Isolation vs. Frequency



IRL vs. Frequency



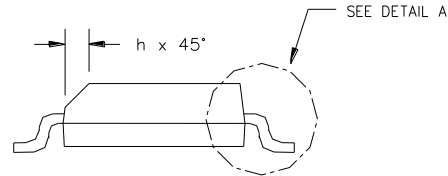
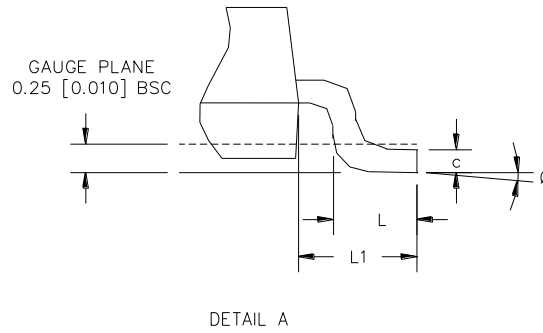
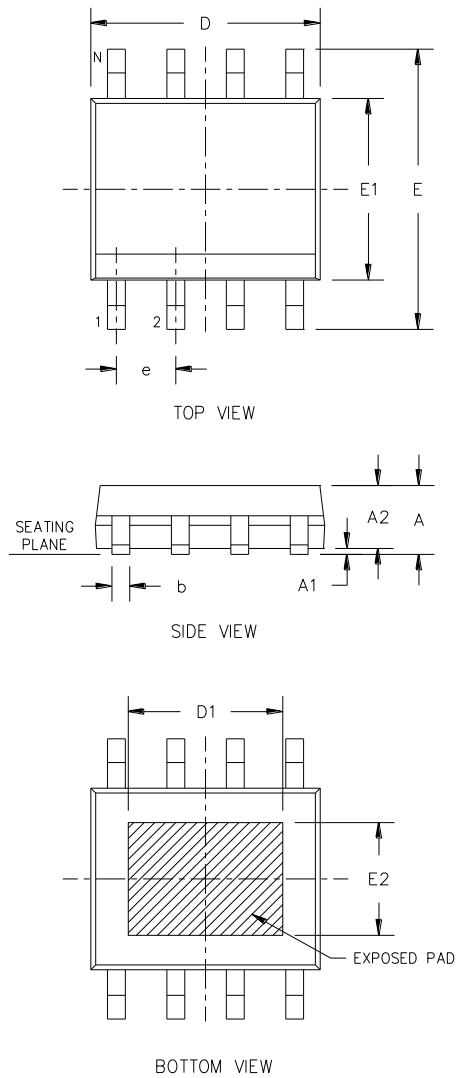
ORL vs. Frequency



Notes)

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

Package Drawing

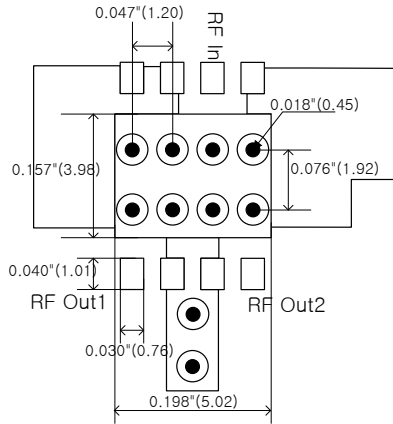


SYM	DIMENSION IN INCHES			DIMENSION IN MM		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.056	0.058	0.061	1.42	1.47	1.55
A1	0.001	0.004	0.005	0.025	0.102	0.127
A2	0.051	0.054	0.057	1.30	1.37	1.45
b	0.014	0.016	0.020	0.36	0.41	0.51
c	0.007	0.008	0.010	0.18	0.20	0.25
D	0.191	0.193	0.195	4.85	4.90	4.95
E1	0.151	0.153	0.155	3.84	3.89	3.94
E	0.234	0.240	0.244	5.94	6.10	6.20
e	0.050			1.27		
L	0.020	0.027	0.032	0.51	0.69	0.81
L1	0.042	0.044	0.046	1.07	1.12	1.17
Ø	0*	-	8*	0*	-	8*
h	0.011	0.015	0.019	0.28	0.38	0.48
D1	0.120	-	0.130	3.05	-	3.30
E2	0.085	-	0.095	2.16	-	2.41

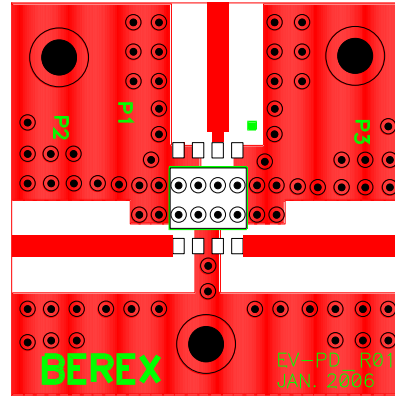
- NOTES:
1. DIMENSION D DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. DIMENSION E1 DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSIONS.
  2. COPLANARITY APPLIES TO THE TERMINALS. COPLANARITY SHALL NOT EXCEED 0.003" [0.08 mm].
  3. BASED FROM JEDEC MS-012 VARIATION AA.

### Suggested PCB Land Pattern and PAD Layout

#### PCB Land Pattern

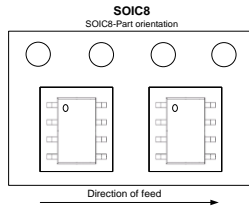


#### PCB Mounting



Visit <http://www.berex.com> for PCB layout

#### 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

#### NATO CAGE code:

2	N	9	6	F
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#### NOTICE

BeRex Corporation reserves the right to make changes of product specification or to discontinue product at any time without notice.