

# High Frequency Ceramic Solutions

Preliminary

## Impedance-Matched Highly Integrated Ceramic Passive Component for Atheros Qualcomm AR6004 Chipset

P/N 2450PC14A0017

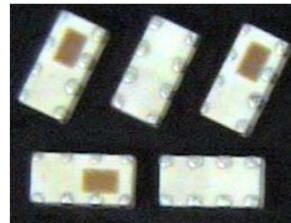
Detail Specification: 08/07/12

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### General Specifications

<b>Part Number</b>	2450PC14A0017	
<b>Frequency</b>	2400 ~ 2500	5150 ~ 5850
<b>Insertion Loss</b>	3.8 dB max.	2.6 dB max.
<b>Unbalanced Impedance</b>	50 $\Omega$	50 $\Omega$
<b>Balanced Impedance</b>	Conjugate match to AR6004 _Rx BGA	
<b>Phase Diff. (degree)</b>	180 $\pm$ 15	-135 $\pm$ 20 @ 5.15GHz 165 $\pm$ 20 @ 5.85GHz
<b>Amp. Diff.</b>	-1.5 +/- 2.0	0 $\pm$ 2 @ 5.15GHz -4.0 $\pm$ 2 @ 5.85GHz

<b>Reel Quantity</b>	4,000
<b>Operating Temperature</b>	-40 to +85°C
<b>Recommended Storage Conditions</b>	+5 ~ +35°C, Humidity: 45~75%RH, 18 mos. Max
<b>Power Capacity</b>	2W max.

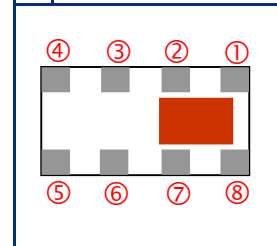
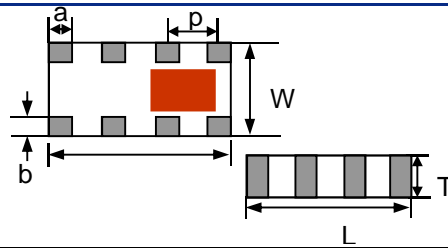


### Terminal Configuration

No.	Function
1	GND
2	Rx5
3	GND
4	Rx2
5	Rx2_a
6	Rx2_b
7	Rx5_a
8	Rx5_b

### Mechanical Dimensions

	In	mm
L	0.063 $\pm$ 0.004	1.60 $\pm$ 0.10
W	0.031 $\pm$ 0.004	0.80 $\pm$ 0.10
T	0.039 max.	0.7 max.
a	0.008 +.004/-0.006	0.20 +0.1/-0.05
b	0.006 +.004/-0.006	0.15 +0.1/-0.05
p	0.020 $\pm$ 0.004	0.50 $\pm$ 0.10



### Mounting Considerations

\* Line width should be designed to provide 50 ohm impedance, depending on PCB material and thickness

Units: mm

AR6004

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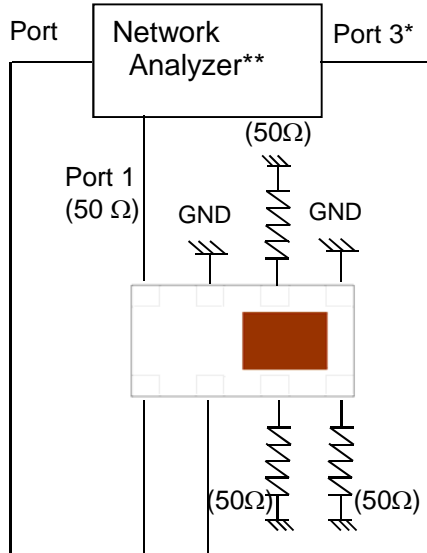
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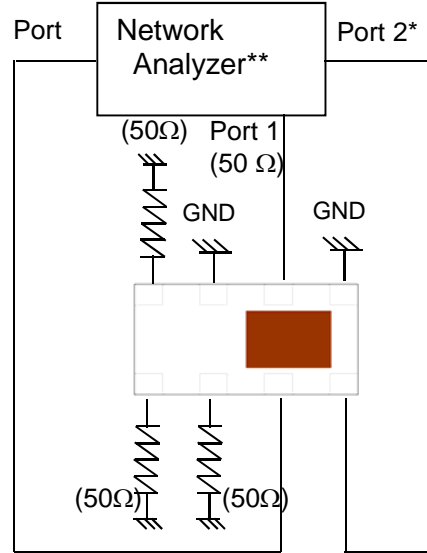
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## Circuit Application

Rx2



Rx5



Port 1: Unbalanced Port  
Ports 2 and 3: Balanced Port  
 $IL = S_{ds21}$   
 $RL = S_{ss11}$   
 $Amp\_balance = dB(S(2,1)/S(3,1))$   
 $Phase\_balance = Phase(S(2,1)/S(3,1))$

\*Impedance for ports 2 and 3 = Conjugate to Balanced Impedance/2

\*\*E5071B / C from Agilent

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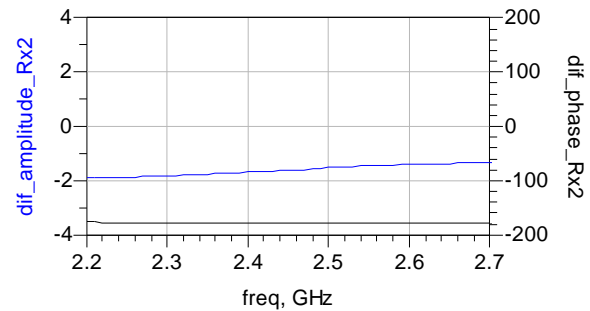
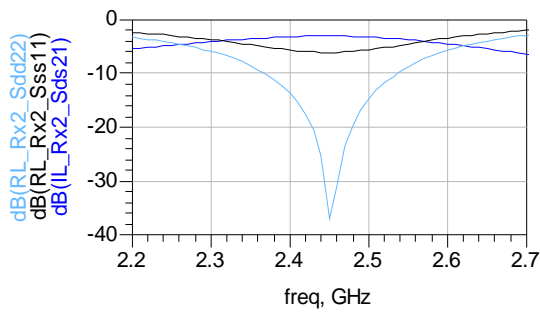
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## Typical Electrical Performance (T=25°C)

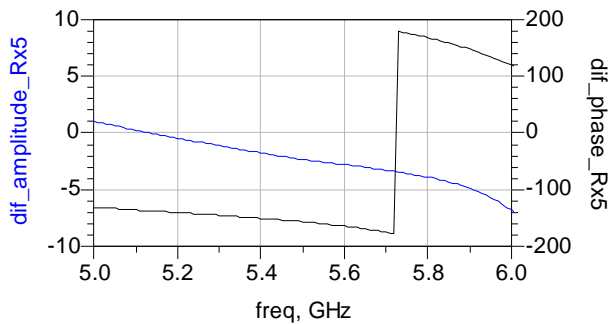
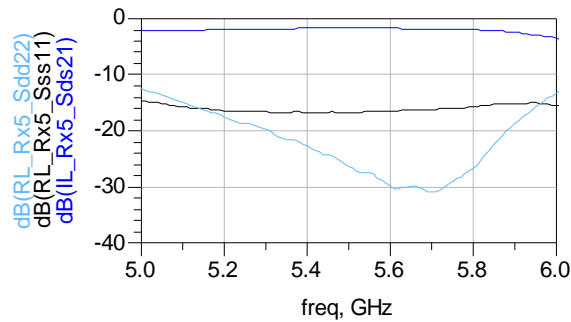
### Insertion & Return Loss

### Amplitude & Phase Balance

#### 2.4GHz Band Path



#### 5GHz Band Path



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