

# High Frequency Ceramic Solutions

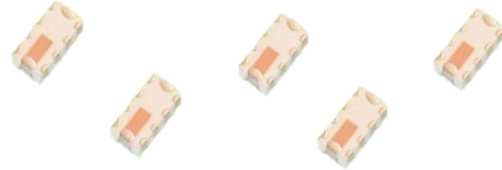
868/915MHz Impedance Matched, Multi-Function, Integrated Ceramic Passive Component for Texas Instruments CC112x, CC117x & CC12xx Chipsets

P/N 0900PC15J0013

Detail Specification: 3/17/2016

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General Specifications	
Operating Temperature	-40 to +85°C
Reel Quantity	4,000
Recommended Storage Conditions	+5 ~ +35°C, Humidity: 45~75%RH, 18 mos. Max



RF Specifications			
Tx Mode	Oper. Frequency	TX-ANT	868 ~ 928MHz
	Insertion Loss		2.0 dB max.
	Attenuation (min.)		35.0 min. @ 2 × fo MHz
	Attenuation (min.)		35.0 min. @ 3 × fo MHz
	Attenuation (min.)		35.0 min. @ 4 × fo MHz
	Attenuation (min.)		35.0 min. @ 5 × fo MHz
	Return Loss	TX & ANT	9.5 dB min.
Rx Mode	Oper. Frequency	RX-ANT	868~928 MHz
	Insertion Loss		2.5 dB max.
	Phase Diff. (deg)		180±15
	Amp. Diff.		2.0 dB max.
	Return Loss		RX & ANT

Mechanical Dimensions		
	In	mm
L	0.079 ± 0.008	2.00 ± 0.20
W	0.049 ± 0.008	1.25 ± 0.20
T	0.039 max.	1.0 max.
a	0.010 ± 0.004	0.25 ± 0.10
b	0.012 ± 0.006	0.30 ± 0.15
c	0.008 +.004/-.006	0.20 +0.1/-0.15
p	0.020 ± 0.004	0.50 ± 0.10

Terminal Configuration for CC12XX and CC112X			
No.	Function		
1	LNA_N	6	GND
2	LNA_P	7	ANT
3	TRX	8	GND
4	PA	9	GND
5	GND	10	GND

Part Number Explanation			
Packing Style	Bulk	Suffix = S	Eg. 0900PC15J0013S
	T & R	Suffix = E	Eg. 0900PC15J0013E
Termination style	T & R (Reverse)	Suffix = R	Eg. 0900PC15J0013R
	100% Tin	Suffix = None	Eg. 0900PC15J0013(E/R/S)
	Tin / Lead	Please Consult Factory	

Go to page 5 for more details

### Mounting Considerations

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

Gerbers links available for download on page 20 of CC112x, CC117x & CC12xx Design Note DN039:  
[www.johansontechnology.com/datasheets/highly-integrated-passive-components/swra407.pdf](http://www.johansontechnology.com/datasheets/highly-integrated-passive-components/swra407.pdf)

Units: mm

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Ver 4.4

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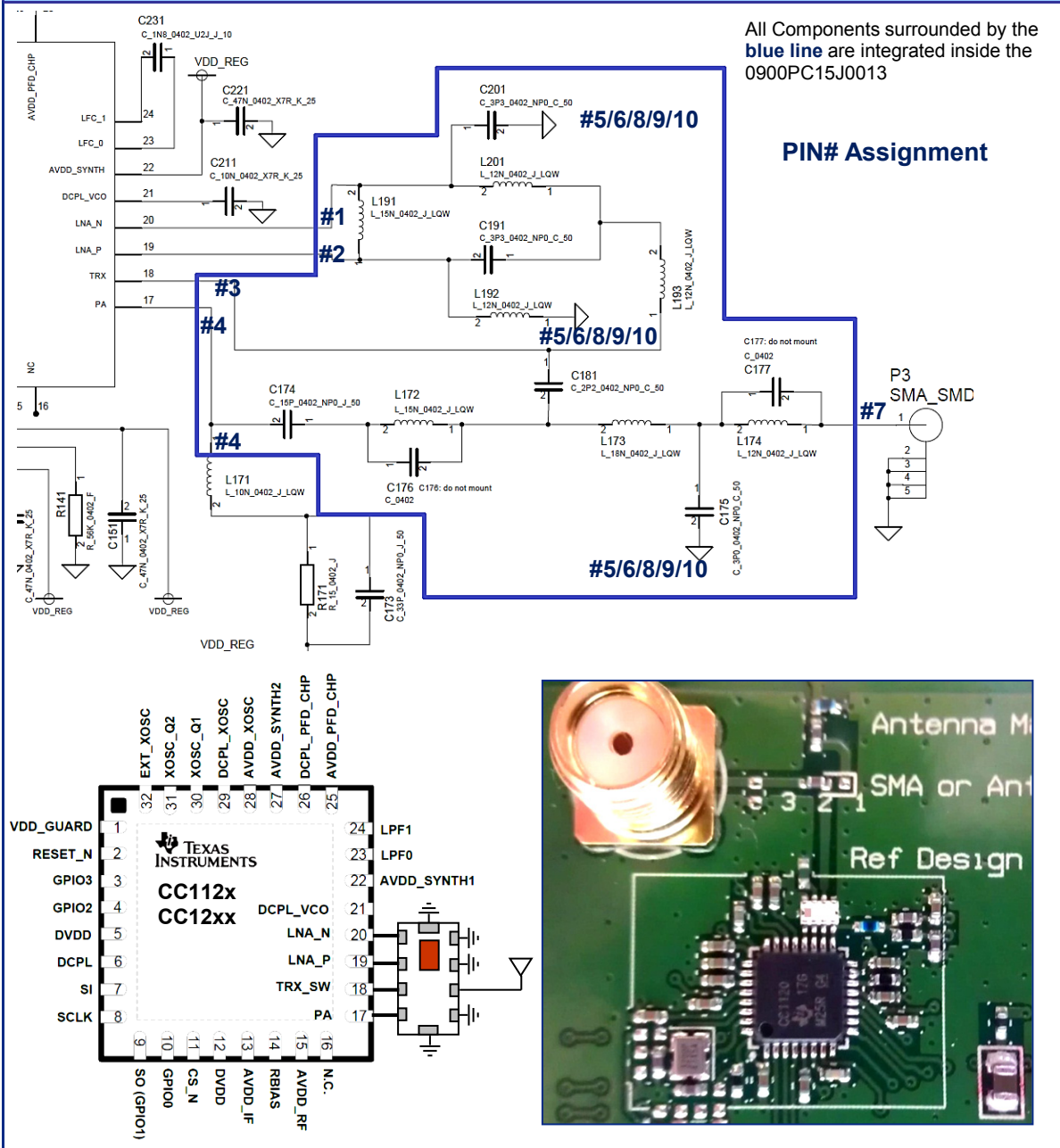
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## Circuit Schematic and Application



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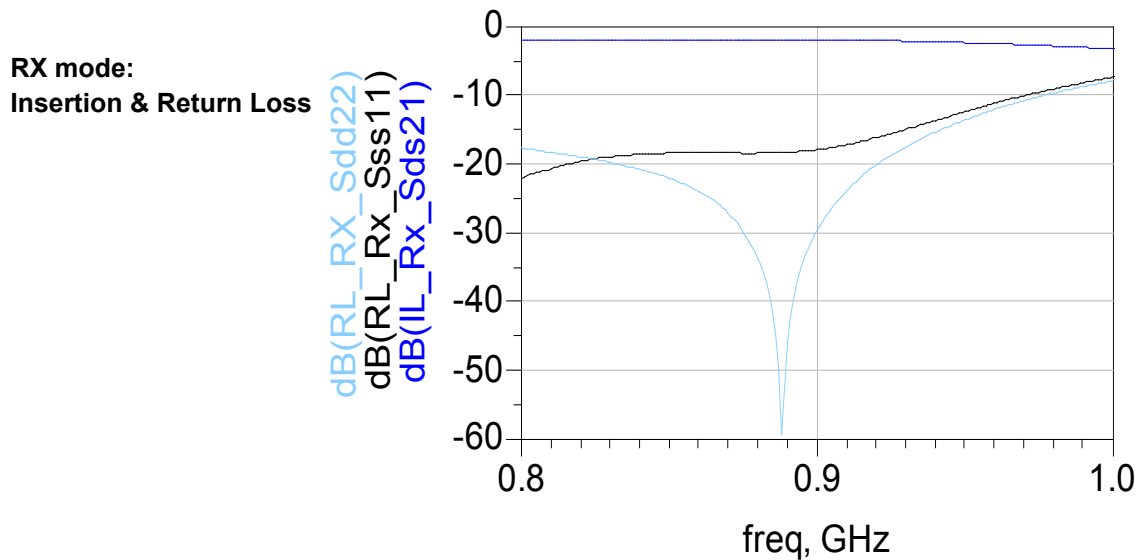
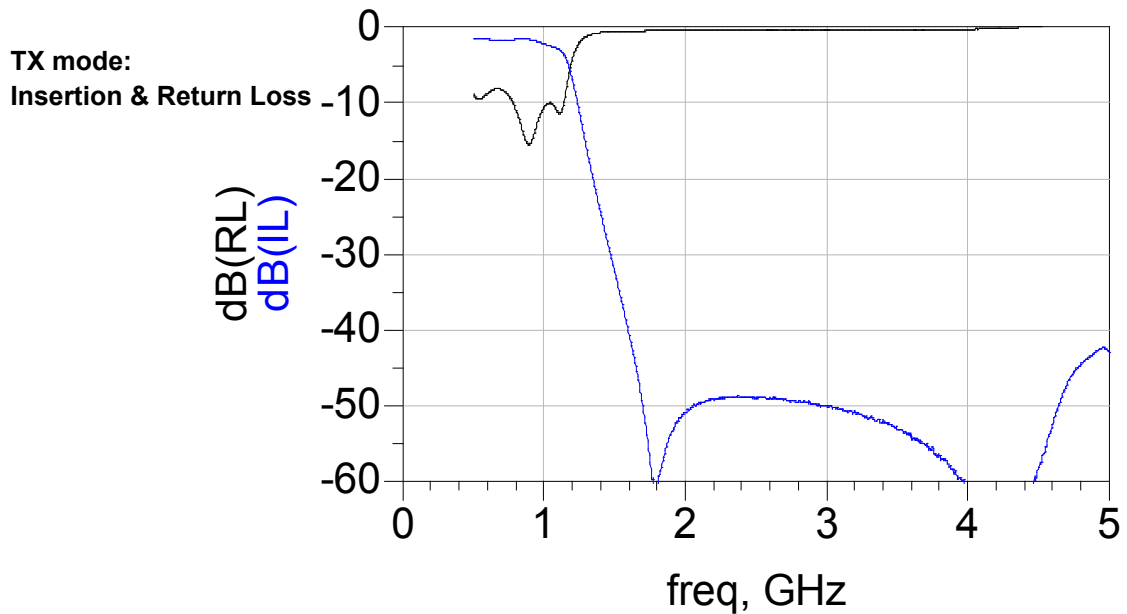
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## Typical Electrical Performance (T=25°C)



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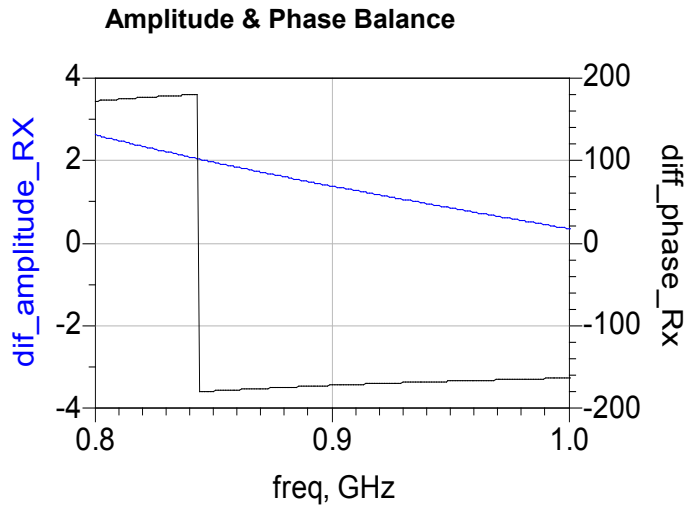
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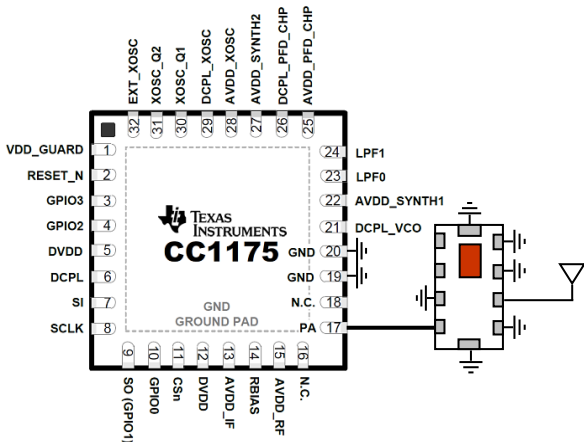
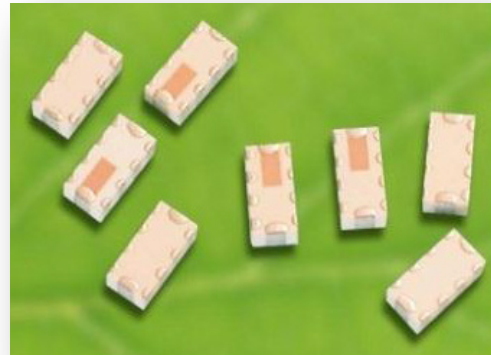
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## Typical Electrical Performance (T=25°C)



## Terminal Configuration for CC1175

No.	Function	No.	Function
1	NC or GND	6	GND
2	NC or GND	7	ANT
3	GND	8	GND
4	PA	9	GND
5	GND	10	GND



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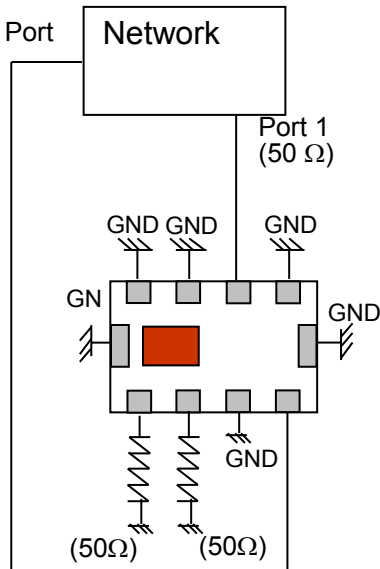
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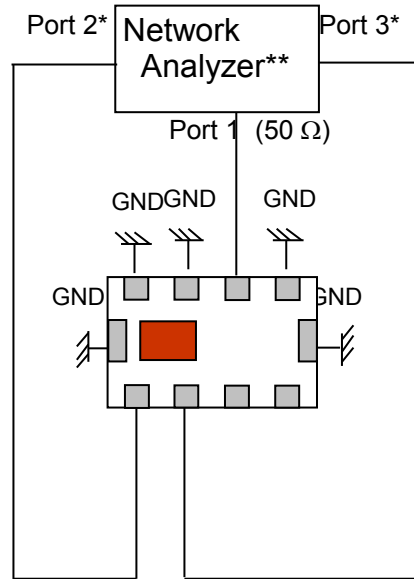
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## Measuring Diagram



Tx :  
 Port1: Antenna Port  
 Port1 Terminate impedance: 50ohm  
 Port2: PA Port  
 Port2 Terminate impedance:  
 Complex conjugate to impedance of T1  
 CC112X PA pin  
 $IL = S_{21}$   
 $RL = S_{11} / S_{22}$   
 \*\*E5071B / C from Agilent



RX:  
 Port 1: Antenna Port  
 Port1 Terminate impedance: 50ohm  
 Ports 2 and 3: Rx Balanced Port  
 \*Port 2 and 3 Terminate impedance : Complex  
 conjugate to  $1/2 \times$  (Balance impedance of T1  
 CC112X LNA\_N / LNA\_P pins)  
 $IL = S_{ds21}$   
 $RL = S_{ss11} / S_{dd22}$   
 $Amp\_balance = dB(S(3,1)/S(2,1))$   
 $Phase\_balance = Phase(S(3,1)/S(2,1))$

## Packaging information

<http://www.johansontechnology.com/tape-reel-packaging>

## Soldering Information

[www.johansontechnology.com/datasheets/highly-integrated-passive-components/swra407.pdf](http://www.johansontechnology.com/datasheets/highly-integrated-passive-components/swra407.pdf)

## RoHS Compliance

<http://www.johansontechnology.com/rohs-compliance>

## MSL Info

<http://www.johansontechnology.com/msl-rating>

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