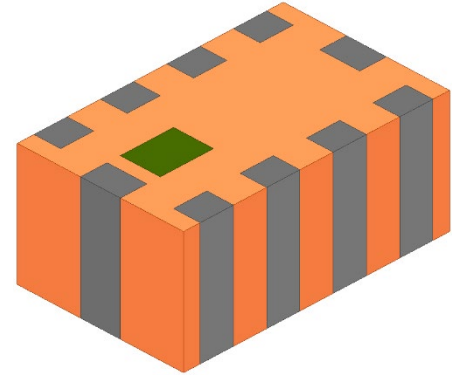


862 – 928 MHz, 2.4 – 2.5GHz Impedance-matched Balun-filter for Texas Instruments CC1352R and 1352P Wireless MCUs, External Bias Only

- 868, 915 MHz and 2.4GHz ISM bands
- SMD, EIA 0805
- Complete front-end solution
 - Integrated impedance-matching balun
 - Integrated harmonic filter for regulatory compliance
- Designed for use with Texas Instruments MCU part numbers:
 - CC1352R
 - CC1352P
- External bias configuration only



General Specifications¹

Passband Frequency (MHz)	862 – 928 2400 – 2500	
	Unbalanced Impedance, Antenna-side (Ω)	50
Balanced Impedance, Transceiver-side (Ω)	Impedance match to Texas Instruments CC1352R, CC1352P	
Frequency Bands (MHz)	862 – 928	2400 – 2500
Insertion Loss (dB)	1.8 Typ. (2.0 Max.)	1.3 Typ. (1.6 Max.)
Return Loss (dB)	14 Typ. (10 Min.)	14 Typ. (10 Min.)
Phase Difference (Degree)	180 \pm 15	180 \pm 15
Amplitude Difference (dB)	0.8 Typ. (1.5 Max.)	1.0 Typ. (2.0 Max.)
Attenuation		
Frequency Range (MHz)	1736 – 1856	4800 – 5000
Attenuation (dB)	25 Typ. (17 Min.)	40 Typ. (20 Min.)
Frequency Range (MHz)	2604 – 2784	7200 – 7500
Attenuation (dB)	42 Typ. (40 Min.)	44 Typ. (40 Min.)

¹ Typical value represents average measurement at 25°C. Min./Max. values represent measurements within the operating temperature specification unless stated otherwise.

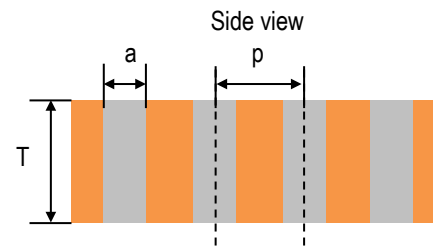
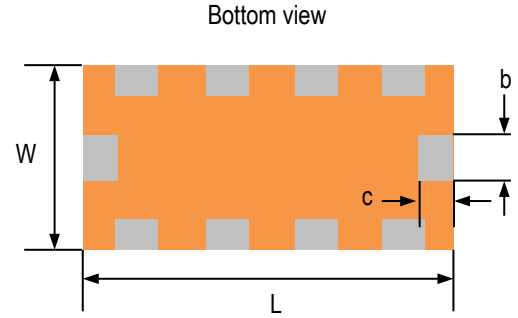
Maximum Ratings

Power Capacity (W)	3 Max. (CW)
Operating Temperature (°C)	-40 to +85
Recommended Storage Conditions post-installation (°C)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product ²	45% - 75% RH +5 to +35 °C 18 Months Max. Vacuum Sealed Bag

² This is a silver-leaded part. Storage period is 18 months in vacuum sealed bag and 1 week after opened. Please keep un-used parts in vacuum sealed bags. SAC 305 solder is recommended. For more information go to: <https://www.johansontechnology.com/silverleads-profile>

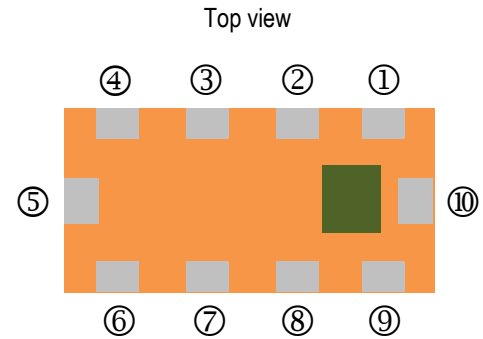
Mechanical Dimensions

	Inches			Millimeters		
L	0.079	± 0.004	2.00	± 0.10		
W	0.049	± 0.004	1.25	± 0.10		
T	0.039	Max.	1.00	Max.		
a	0.010	± 0.004	0.25	± 0.10		
b	0.012	± 0.006	0.30	± 0.15		
c	0.008	+0.004/-0.006	0.20	+0.10/-0.15		
p	0.020	± 0.004	0.50	± 0.10		

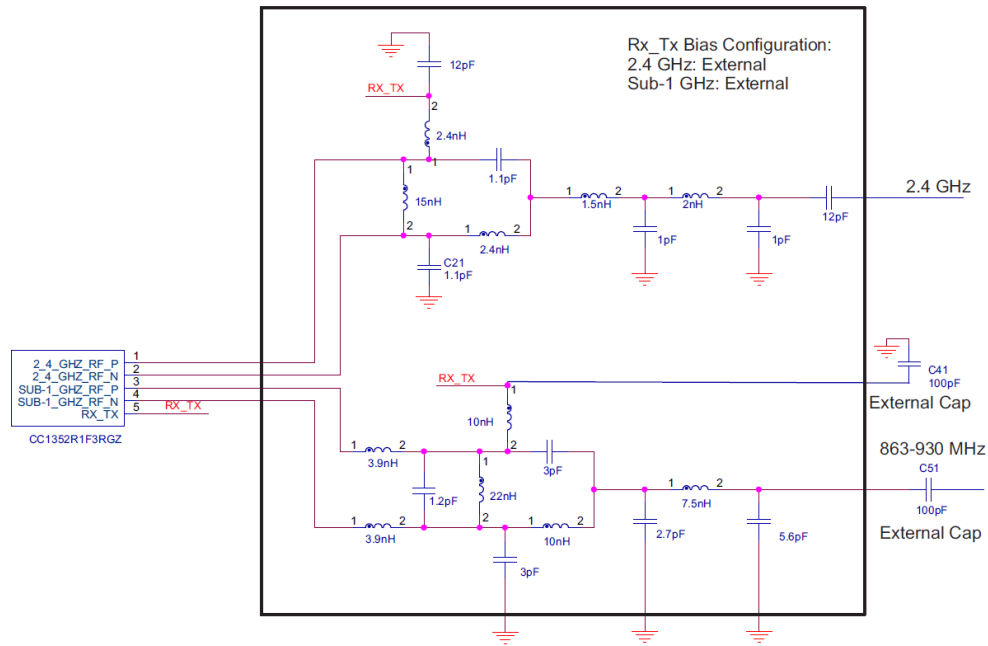


Terminal Configuration

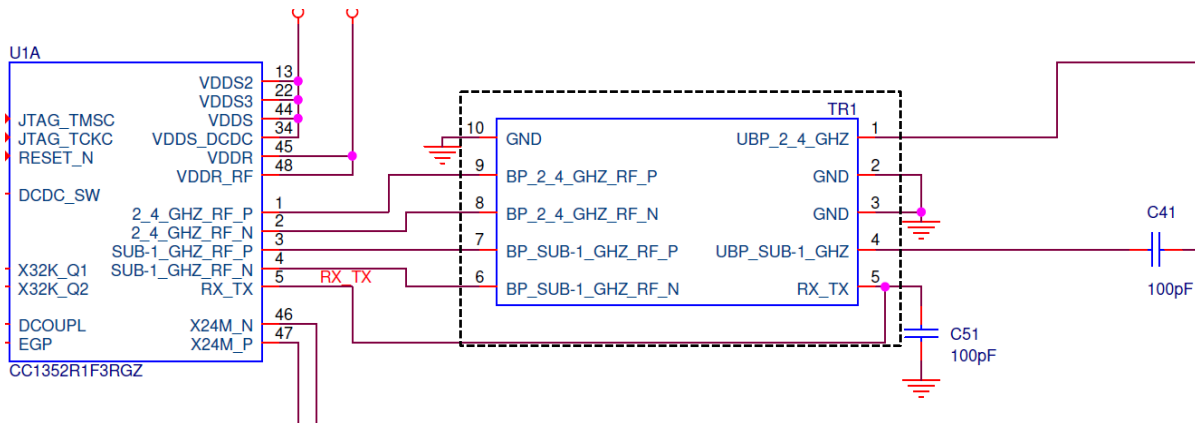
Pin Number	Function
1	Unbalanced (2.4GHz)
2	GND
3	GND
4	Unbalanced (Sub-GHz)
5	RXTX
6	Sub-GHz (RF_N)
7	Sub-GHz (RF_P)
8	2.4GHz (RF_N)
9	2.4GHz (RF_P)
10	GND



0900PC15A0036001E Equivalent Integrated Circuit³

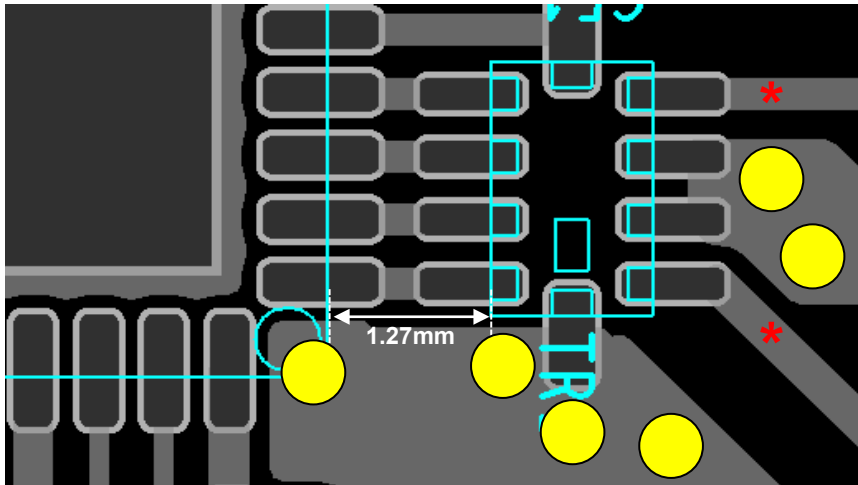


CC1352R/P Reference Design Schematic with 0900PC15A0036001E




³ From Texas Instruments Application Note SWRA629

PCB Reference Design Layout



 Component Layer

 Solder Pads

 GND Via

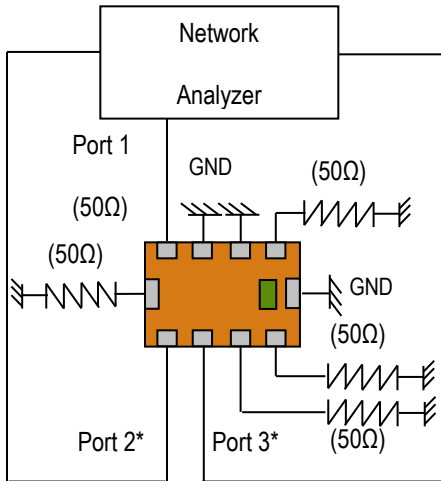
NOTE: GND via placement is crucial to the harmonic attenuation capability of the filter.

* Transmission line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

If you would like the full reference design package or have any questions, contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

Measuring Diagram

Sub-GHz Path

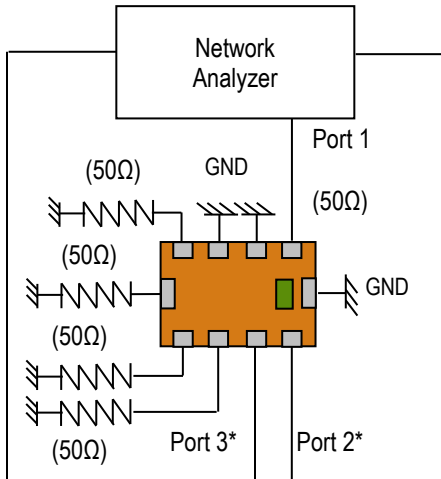


Port 1: Unbalanced

Ports 2 and 3*: Balanced

*Balanced impedance = conjugate match to TI
CC1352R and CC1352P

2.4GHz Path



Port 1: Unbalanced

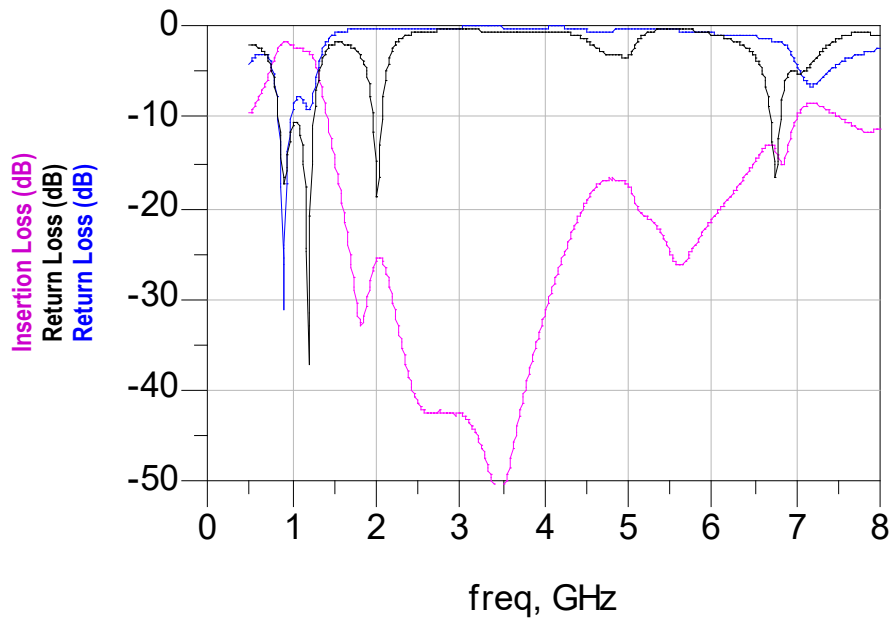
Ports 2 and 3*: Balanced

*Balanced impedance = conjugate match to TI
CC1352R and CC1352P

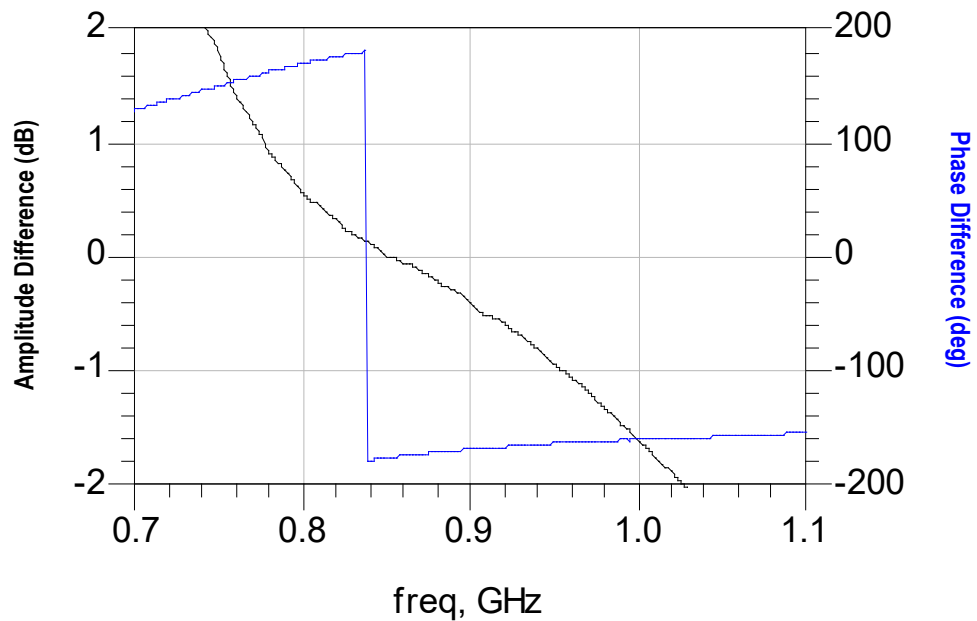


RF Measurement, Sub-GHz

Insertion Loss, Return Loss



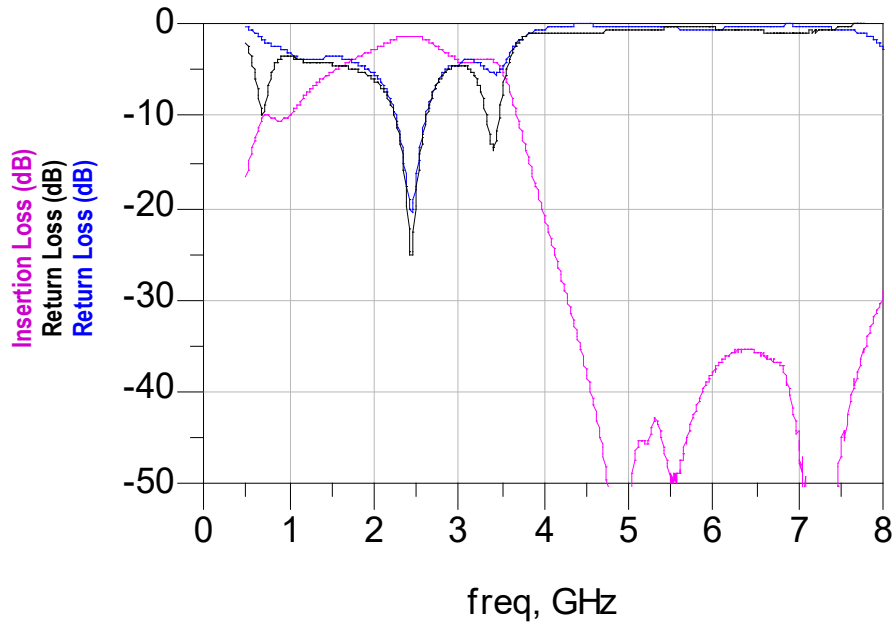
Phase Difference, Amplitude Difference



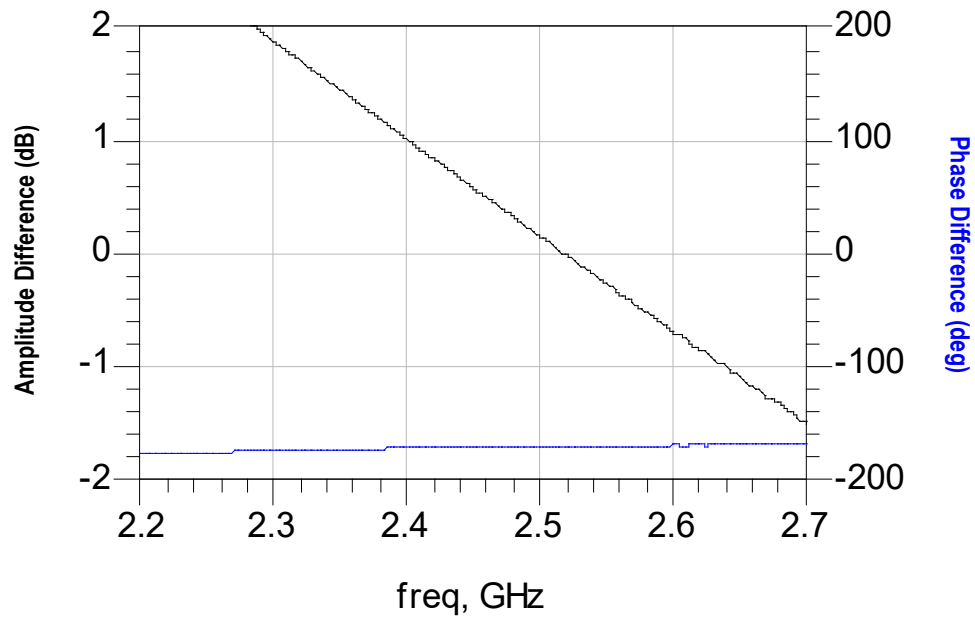


RF Measurement, 2.4GHz

Insertion Loss, Return Loss



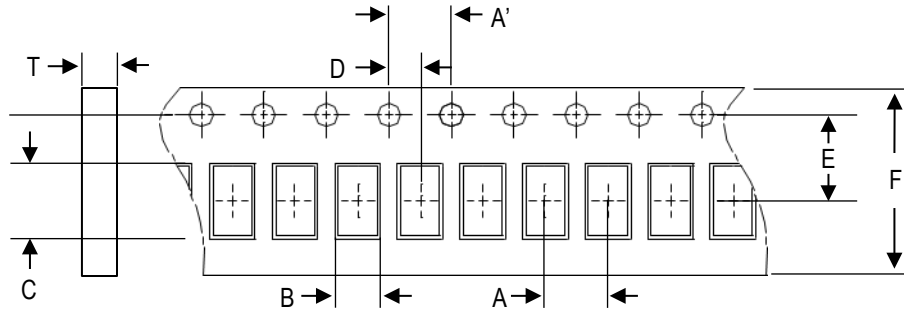
Phase Difference, Amplitude Difference



S-parameter and layout files available upon request. Please contact <https://www.johansontechnology.com/ask-a-question>

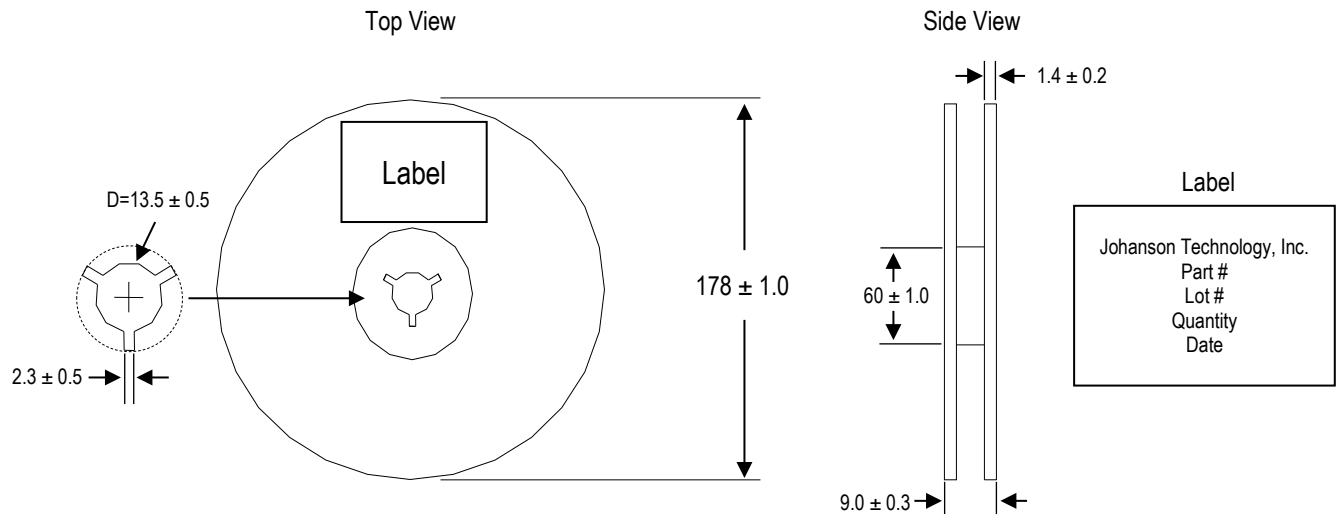
Tape and Reel Specification (Units in mm)

Tape Dimensions

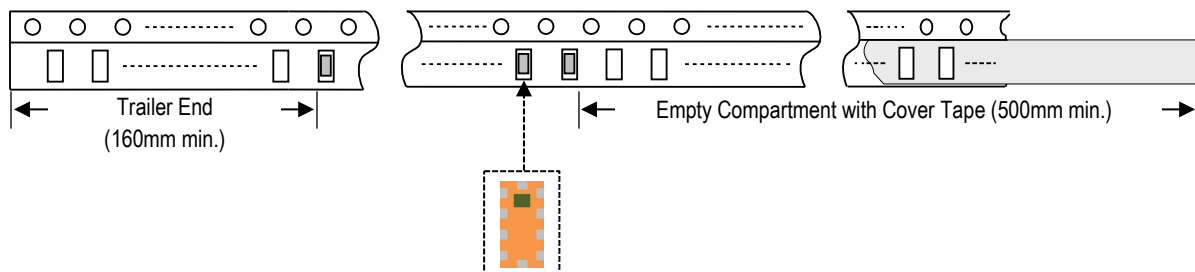


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	1.35±0.05	2.15±0.05	2.0±0.05	3.5±0.1	8.0±0.1	1.08±0.05	4,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number
Bulk (loose pcs.)	0900PC15A0036001B
T & R (7" Reel Plastic Tape)	0900PC15A0036001E (Qty: 4,000 pcs./reel)

Important Links

[0900PC15A0036001E Product Page](#)

[Texas Instruments Application Note SWRA629](#)

[Sub-GHz and 2.4GHz Chip Antennas](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)