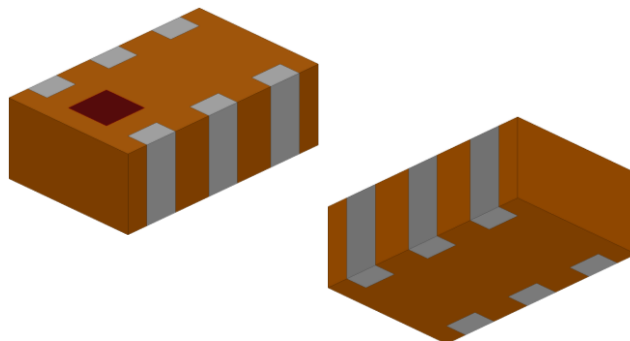




Impedance-matched Integrated Passive Device (IPD) Balun + Filter for Texas Instruments (TI) +20dBm Transmit Mode

- Designed for the following Texas Instruments chipsets in +20dBm transmit mode
 - CC1352P
 - CC1352P7
 - CC1354P10
 - CC1311P3
 - CC1312P
- Replaces complex RF front end with single integrated passive device (IPD)
- SMD, EIA 0805



General Specifications¹

Passband Frequency (MHz)	868, 902 – 928
Balanced Impedance (Ω)	Impedance-matched to TI CC1352P, CC1352P7, CC1354P10, CC1311P3, CC1312P
Unbalanced Impedance (Ω)	50
Insertion Loss (dB)	1.6 Typ. (1.8 Max.)
Return Loss (dB)	9.5 Min.
Phase Difference (degree)	180 $\pm$ 8 Typ. (180 $\pm$ 15 Min./Max.)
Amplitude Difference (dB)	1.0 Typ. (2.0 Max.)
Attenuation	
Frequency Range (MHz)	1736
Attenuation (dB)	23 Min.
Frequency Range (MHz)	1830
Attenuation (dB)	30 Min.
Frequency Range (MHz)	2604 - 2745
Attenuation (dB)	55 Min.
Frequency Range (MHz)	3472 - 3660
Attenuation (dB)	45 Min.
Frequency Range (MHz)	4340 - 4575
Attenuation (dB)	30 Min.
Frequency Range (MHz)	5208 - 5490
Attenuation (dB)	20 Min.

¹ Typical value represents average measurement at 25°C. Min./Max. values represent measurements over specified operating temperature.

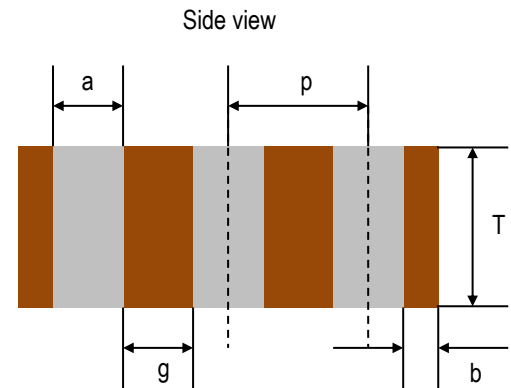
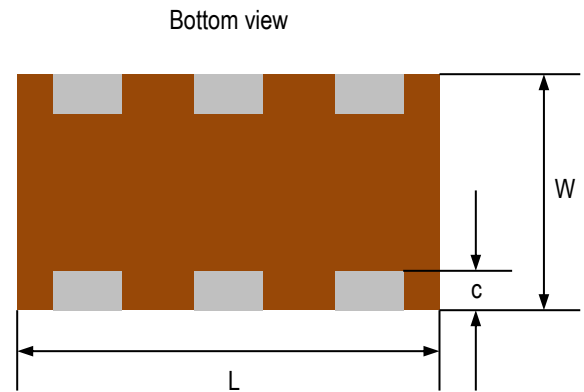
Maximum Ratings

Power Capacity (W)	1 Max. (CW)
Operating Temperature (°C)	-40 to +105
Recommended Storage Conditions post-installation (°C)	-40 to +105
Recommended Storage Conditions and Period for Unused T&R Product ²	45% - 60% RH +5 to +35°C 18 Months Max.

² 18 months max. in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags. For more info go to <https://www.johansontechnology.com/silverleads-profile>.

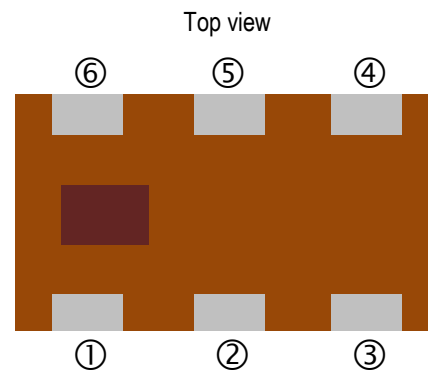
Mechanical Dimensions

	Inches			Millimeters		
L	0.079	±	0.004	2.00	±	0.10
W	0.049	±	0.004	1.25	±	0.10
T	0.031	±	0.004	0.80	±	0.10
a	0.012	±	0.004	0.30	±	0.10
b	0.008	±	0.004	0.20	±	0.10
c	0.012	+.004/-.008		0.30	+0.10/-0.20	
g	0.014	±	0.004	0.35	±	0.10
p	0.026	±	0.002	0.65	±	0.05



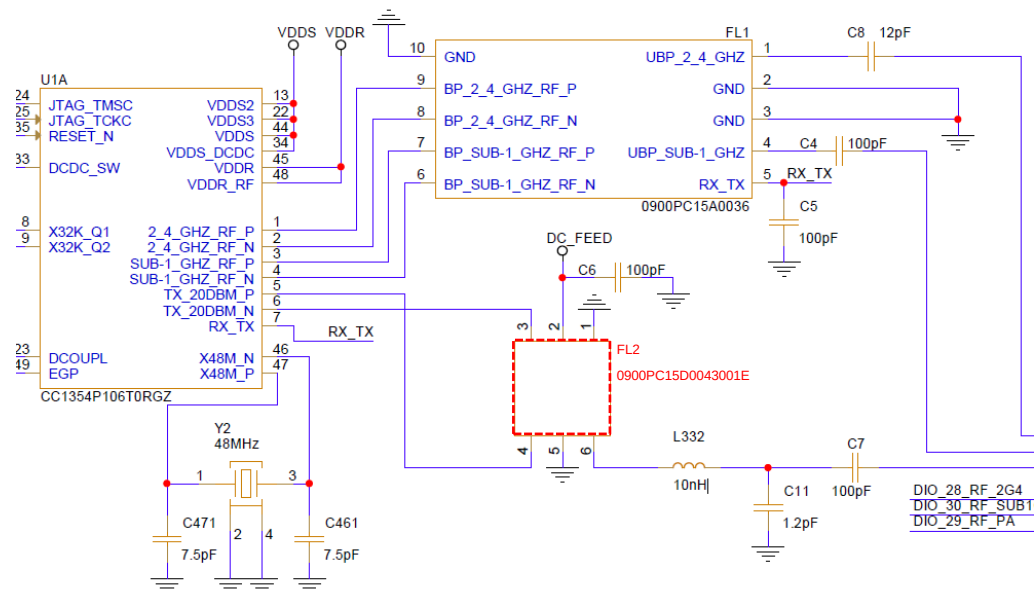
Terminal Configuration³

Pin Number	Function
1	GND
2	DC Feed
3	Balanced Port
4	Balanced Port
5	GND
6	Unbalanced Port

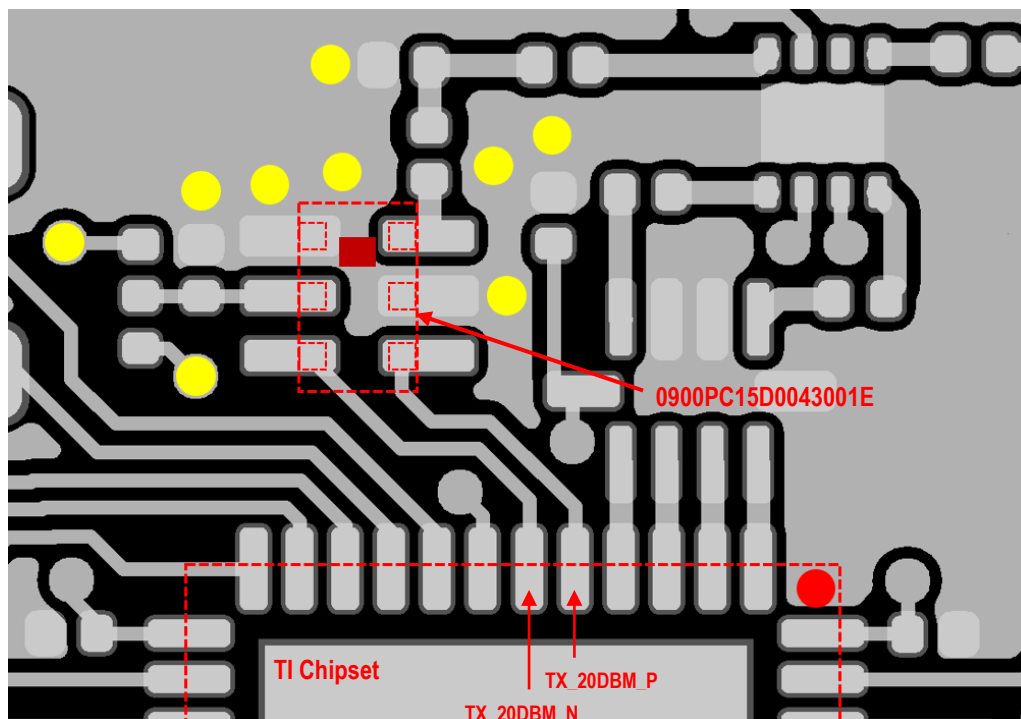


³ The termination type is Silver. Go to: <https://www.johansontechnology.com/ipcsoldering-profile> for Typical Soldering Profile. Recommended Solder Paste: SAC 305 type.

Reference Schematic

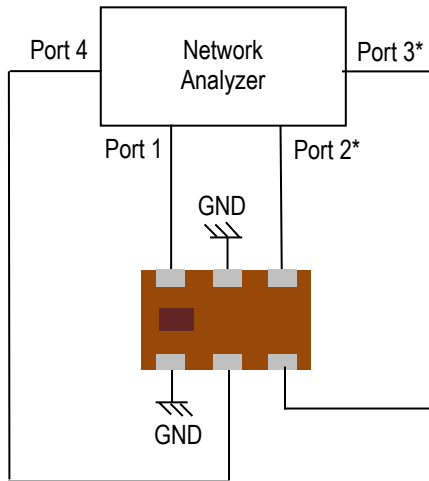


Reference Design PCB Layout



Please contact us for the full reference design files:
<https://www.johansontechnology.com/ask-a-question>

Measuring Diagram



Port 1: Unbalanced Port

Ports 2 and 3: Balanced Port

Port 4 : 100pF matching

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

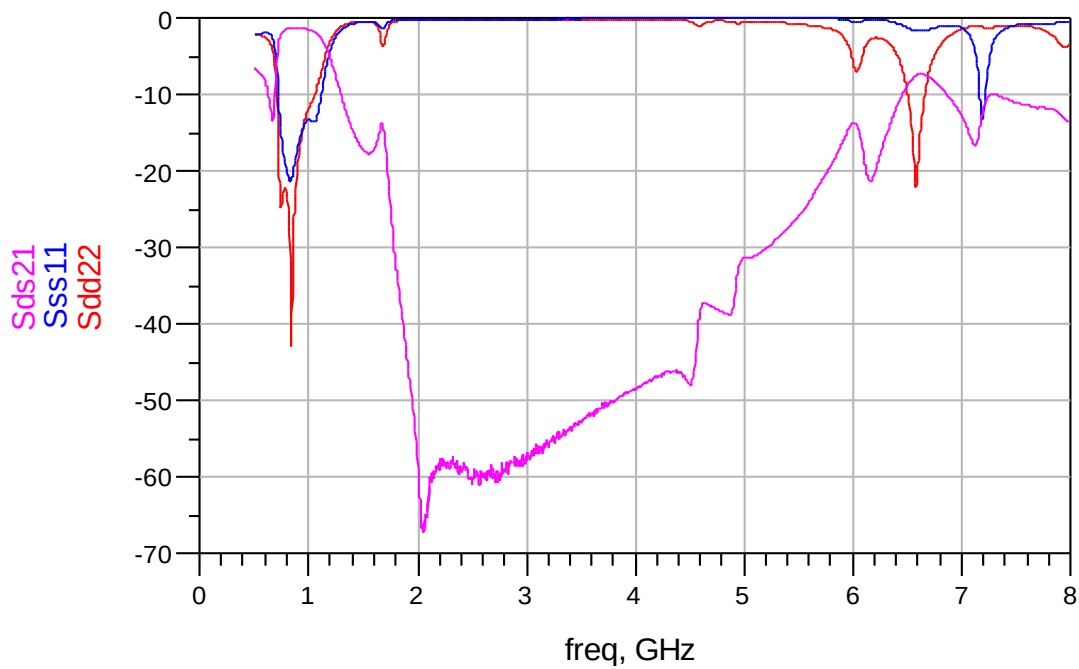
$$\text{Amplitude balance} = \text{dB}(S(2,1)/S(3,1))$$

$$\text{Phase balance} = \text{Phase}(S(2,1)/S(3,1))$$

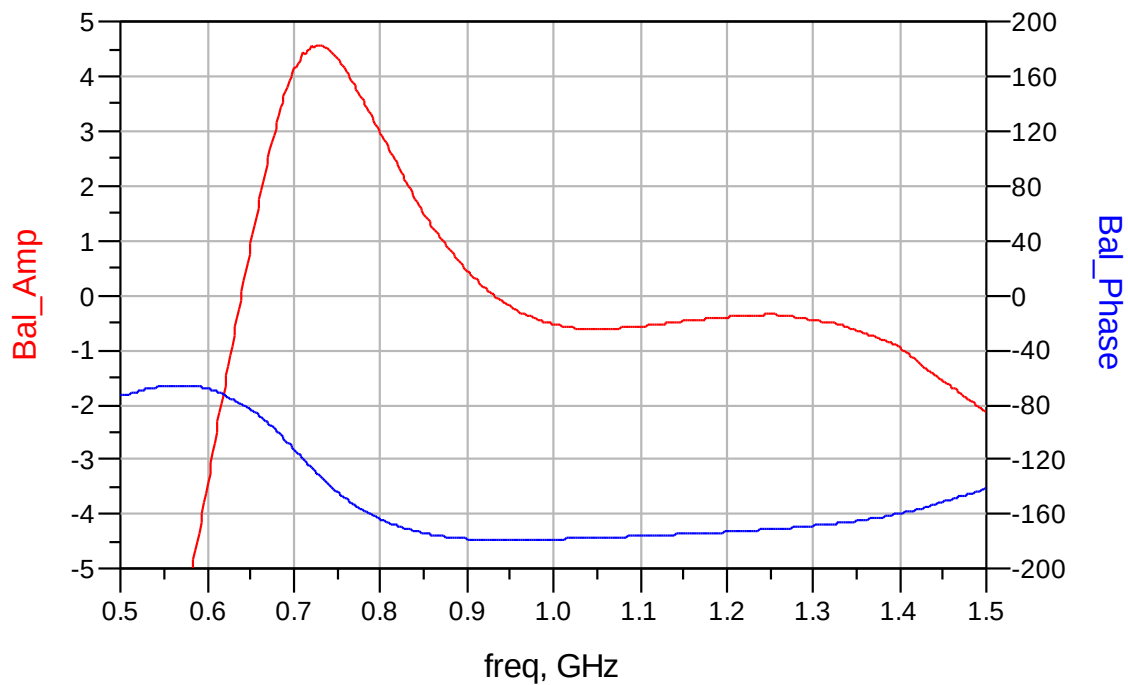
*Impedance for ports 2 and 3 = Conjugate to Balanced Impedance/2

RF Measurement (T = 25°C)

Insertion Loss, Return Loss, Attenuation



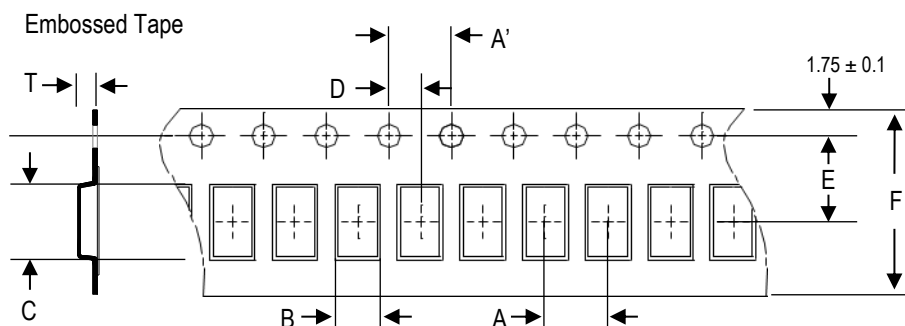
Amplitude and Phase Balance



S-parameters and layouts file available upon request. Please contact us at <https://www.johansontechnology.com/ask-a-question>

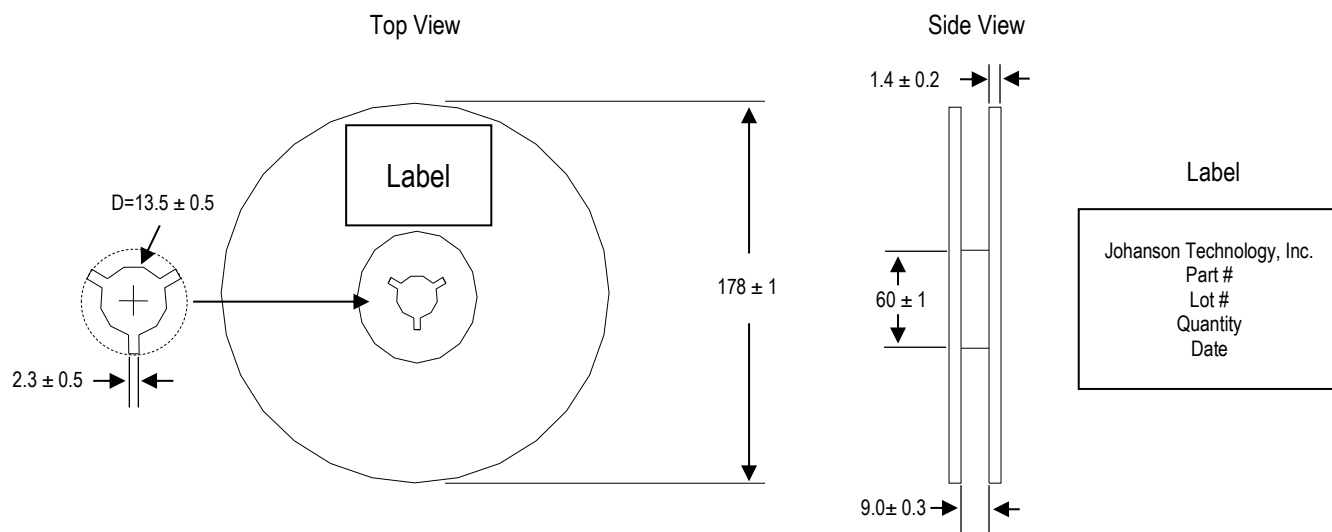
Tape and Reel Specification (Units in mm)

Tape Dimensions

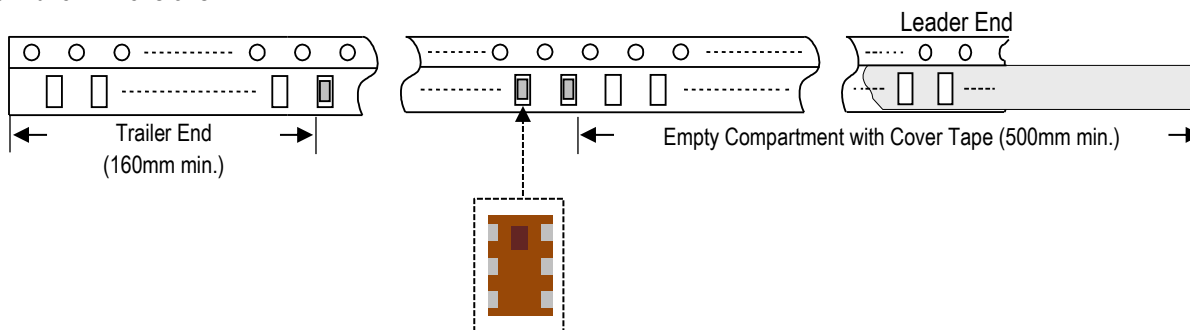


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ± 0.1	4.0 ± 0.1	1.35 ± 0.05	2.15 ± 0.05	2.0 ± 0.05	3.5 ± 0.1	8.0 ± 0.1	1.00 ± 0.05	4,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	0900PC15D0043001B	Silver
T & R (7" Reel Embossed Tape)	0900PC15D0043001E (Qty: 4,000 pcs./reel)	

Important Links

[0900PC15D0043001E Product Page](#)

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[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

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