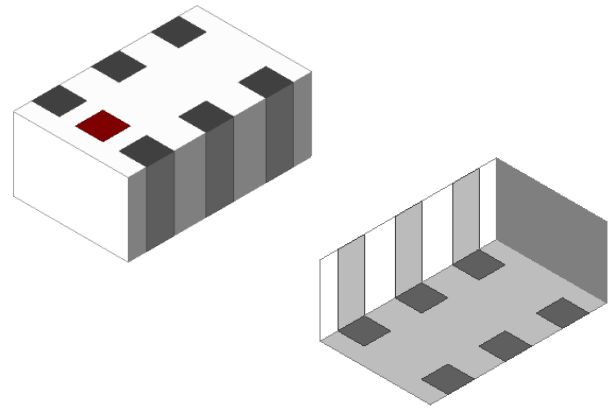


Impedance-matched Integrated Passive Device (IPD) Balun + Filter for Texas Instruments (TI) +20dBm Transmit Mode

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



General Specifications¹

Passband Frequency (GHz)	2.4 – 2.5
Balanced Impedance (Ω)	Impedance-matched to TI CC1352P, CC1352P7, CC1354P10, CC1311P3, and CC1312P
Unbalanced Impedance (Ω)	50
Insertion Loss (dB)	1.4 Typ. (1.8 Max.)
Return Loss (dB)	9.5 Min.
Phase Difference (degree)	180 \pm 10 Typ. (180 \pm 20 Max.)
Amplitude Difference (dB)	0.9 Typ. (2.0 Max.)
Attenuation	
Frequency Range (MHz) Attenuation (dB)	4800 – 5000 47 Typ. (40 Min.)
Frequency Range (MHz) Attenuation (dB)	7200 – 7500 38 Typ. (30 Min.)
Frequency Range (MHz) Attenuation (dB)	9600 – 10000 39 Typ. (20 Min.)
Frequency Range (MHz) Attenuation (dB)	1200 - 12500 17 Typ. (10 Min.)

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

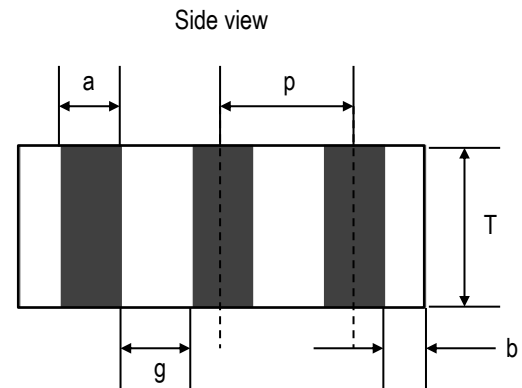
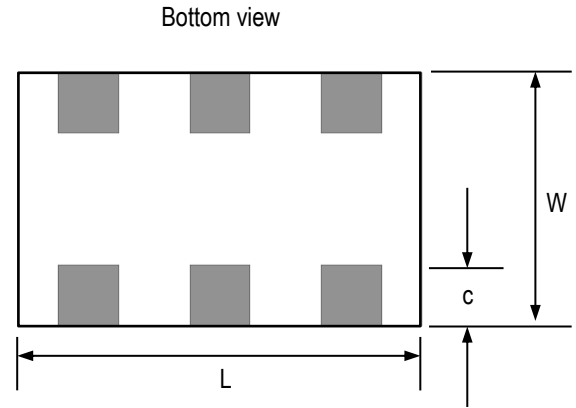
Maximum Ratings

Power Capacity (W)	1 Max. (CW)
Operating Temperature (°C)	-40 to +85
Recommended Storage Conditions post-installation (°C)	-40 to +85
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>.

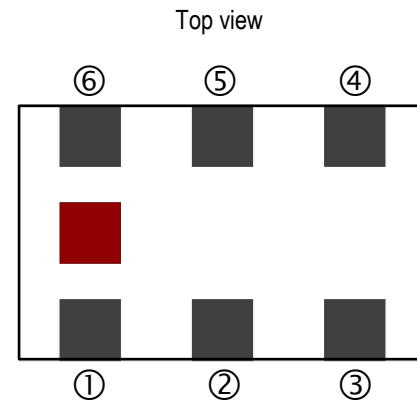
Mechanical Dimensions

	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		+0.004/-0.008	0.30		+0.10/-0.20
g	0.014	±	0.004	0.35	±	0.10
p	0.026	±	0.002	0.65	±	0.05



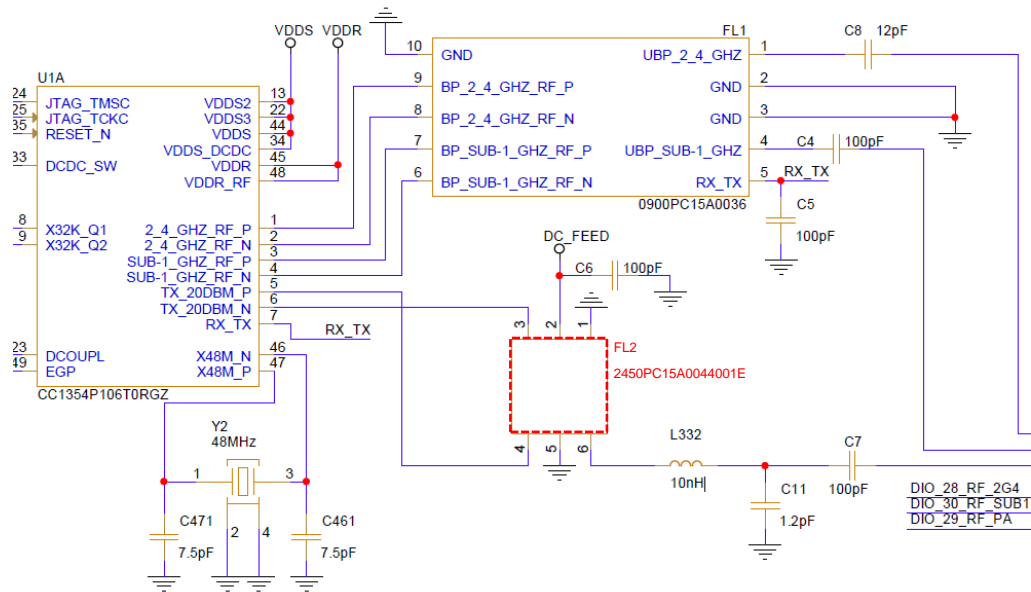
Terminal Configuration³

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



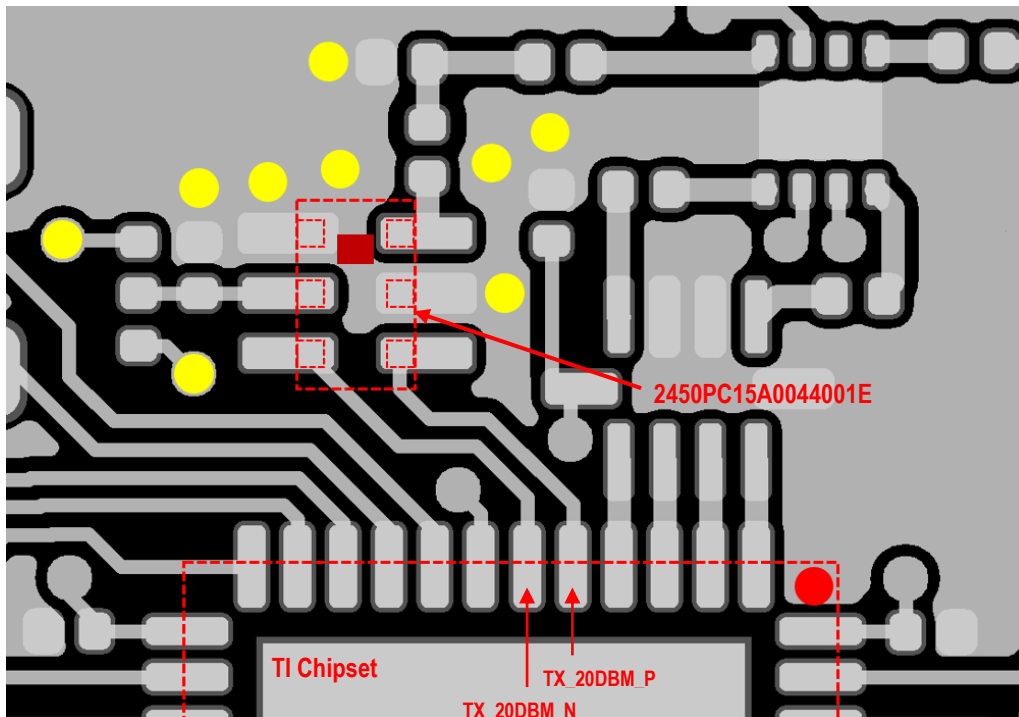
³ The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/ipcsoldering-profile> for Typical Soldering Profile.

Reference Schematic



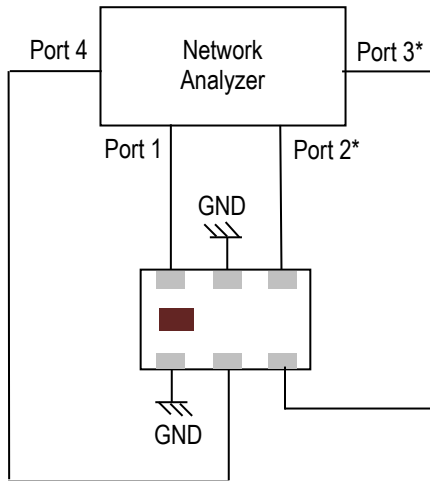
For the 900MHz IPD, go to: [0900PC15D0043001E](#) and [0900PC15A0036001E](#)

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

$$IL=S_{ds21}$$

$$RL=S_{ss11}$$

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

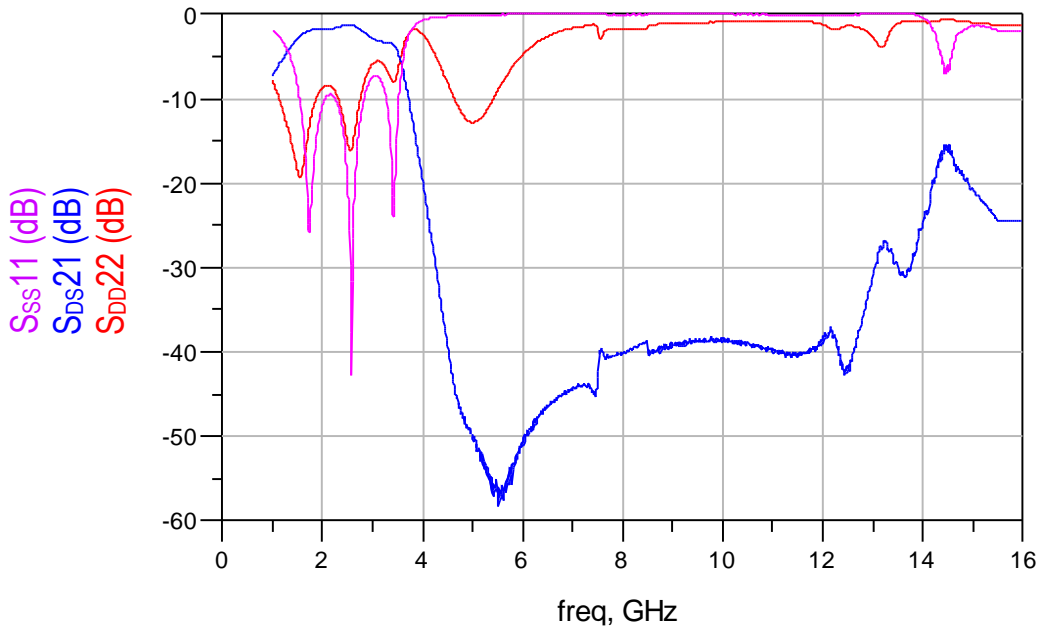
$$\text{Phase balance} = \text{Phase}(S(2,1)/S(3,1))$$

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

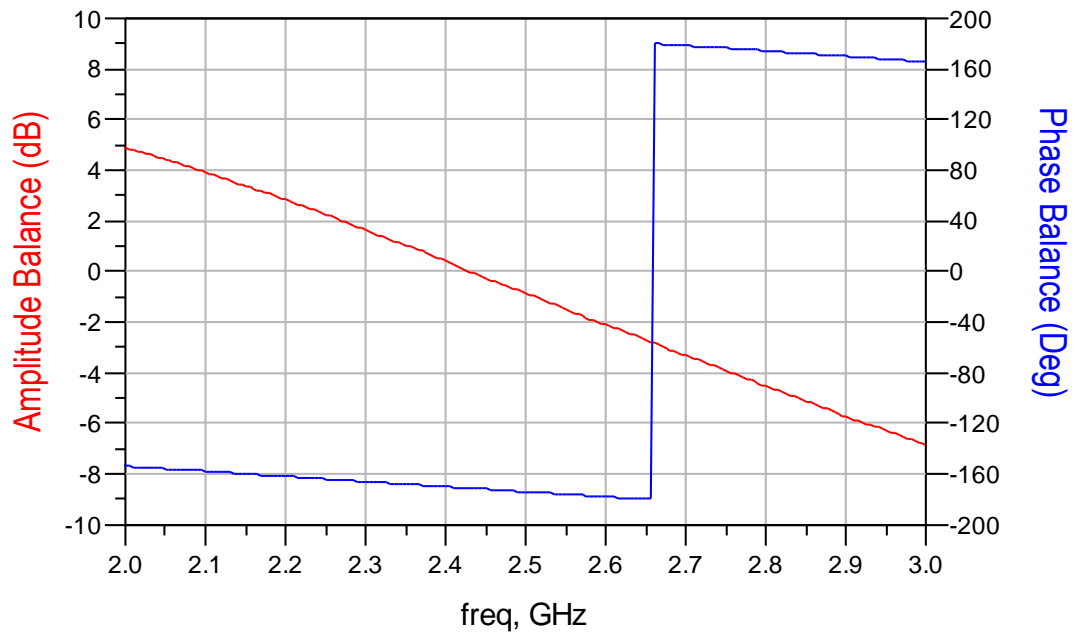


RF Measurement (T = 25°C)

Insertion Loss, Return Loss, Attenuation



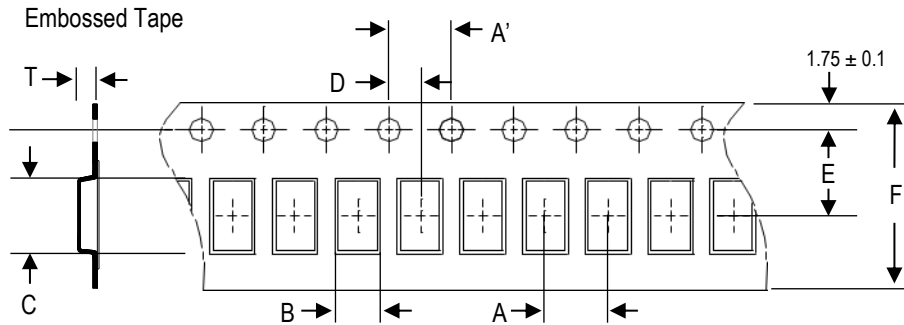
Amplitude and Phase Balance



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

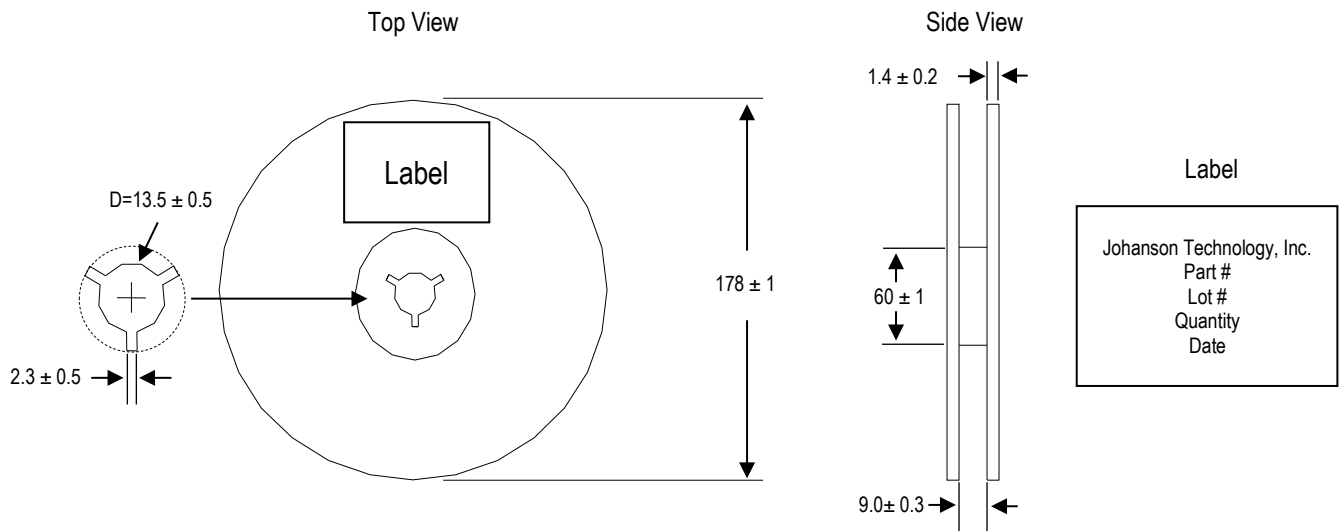
Tape and Reel Specification (Units in mm)

Tape Dimensions

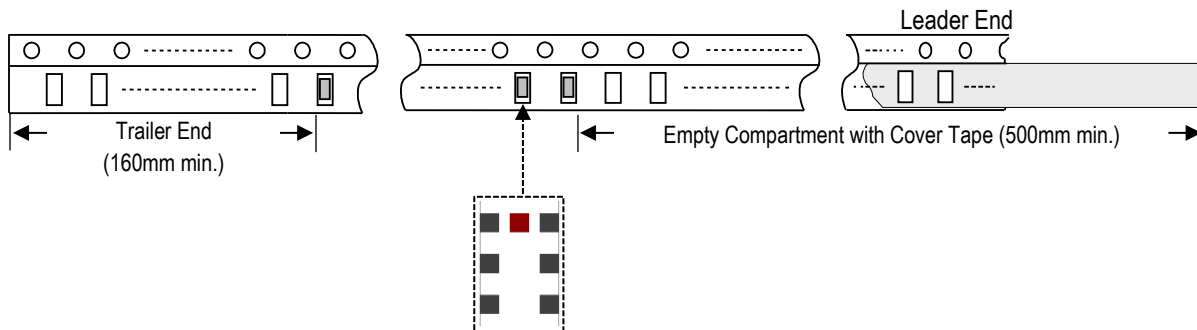


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	1.35±0.05	2.15±0.05	2.0±0.05	3.5±0.1	8.0±0.1	1.00±0.05	4,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	2450PC15A0044001B	Ni/Sn
T & R (7" Reel Embossed Tape)	2450PC15A0044001E (Qty: 4,000 pcs./reel)	

Important Links

[2450PC15A0044001E Product Page](#)

[More Texas Instruments](#)

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

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

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

[RoHS Compliance](#)

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