

# Specification Sheet for Approved

Customer Name:	
Customer Part No.:	
Ceaiya Part No:	CCM4532 Series
Spec No:	C4532

## 【For Customer Approval Only】

If you Approval, Please Stamp

## 【RoHS Compliant Parts】

Approved By	Checked By	Prepared By
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### 【Version of Changed Record】

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
A0	2025-11-06	New release	/	Li qing hui

## 1. Features

- 1) High common mode impedance at high frequency effects excellent noise suppression performance.
- 2) CCM4532 series realizes small size and low profile. 4.5\*3.2\*2.6mm
- 3) 100% Lead (Pb) & Halogen-Free and RoHS compliant.

## 2. Product Description and Identification (Part Number)

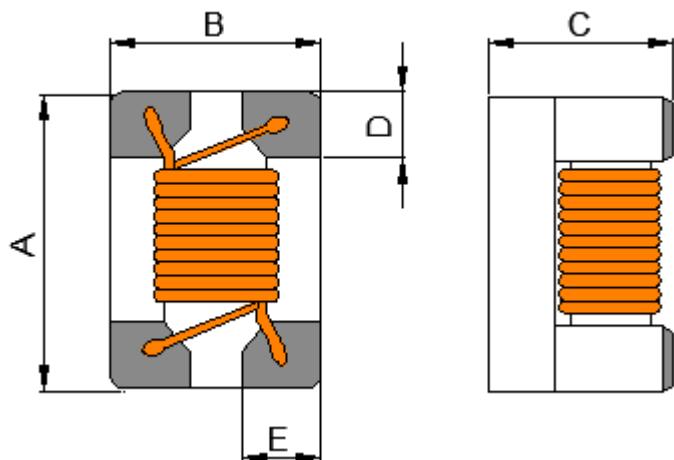
CCM 4532 - 220 T

- ① Series
- ② Dimension
- ③ Inductance 220=22uH
- ④ Taping and Reel

## 3. Shape and Dimensions (Unit:mm)

Dimensions and recommended PCB pattern for reflow soldering, please see Fig4-1 and Table4-1

### Shape and Dimensions:



### Recommended pad:

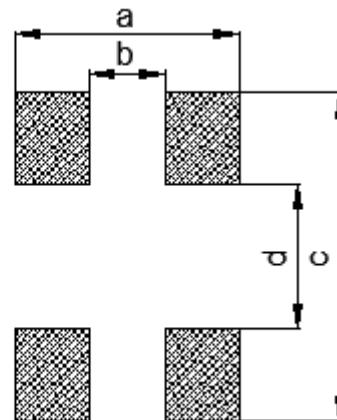


Fig4-1.

Table 4-1.

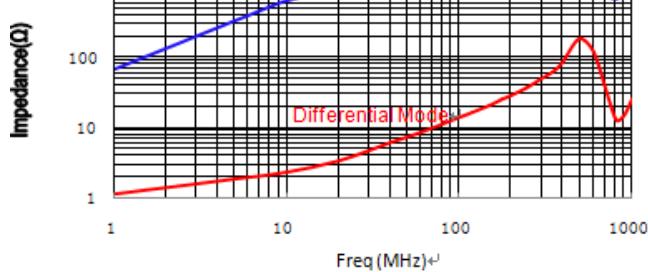
A	B	C	D	E	a	b	c	d
4.5±0.2	3.2±0.2	2.6±0.2	1.0 Ref	1.2 Ref	3.6 Ref	0.4 Ref	4.9 Ref	2.1 Ref

#### 4. Electrical Characteristics

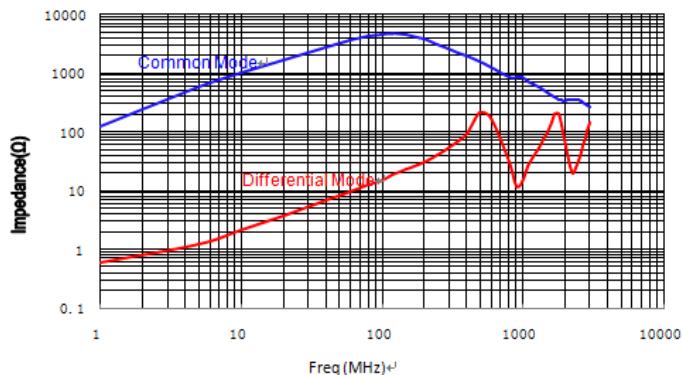
Part Number	Common mode Impedance( $\Omega$ ) At 10MHz		Inductance(uH) +50%/-30% One winding	DC Resistance ( $\Omega$ )Max.	Rated Current (mA)	Rated Volt. (Vdc)	IR (M $\Omega$ ) Min.
	Min	Typ					
CCM4532-110T	300	650	11 (@ 100KHz/0.1V)	0.5	360	50	10
CCM4532-220T	600	1000	22 (@ 100KHz/0.1V)	0.8	310	50	10
CCM4532-510T	1000	2900	51 (@ 1MHz/0.1V)	1.0	230	50	10
CCM4532-101T	2000	4800	100 (@ 1MHz/0.1V)	2.0	200	50	10

- a. Impedance: Keysight E4982A or equivalent.
- b. Inductance: METER 11050 or equivalent.
- c. DCR: Agilent HIOKI3540 or equivalent.
- d. IR: 4339 or equivalent.
- e. Measuring circuits 2line and Frequency vs impedance curve

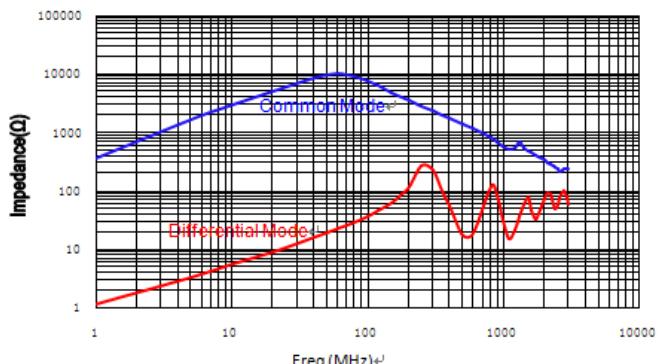
CCM4532-110T



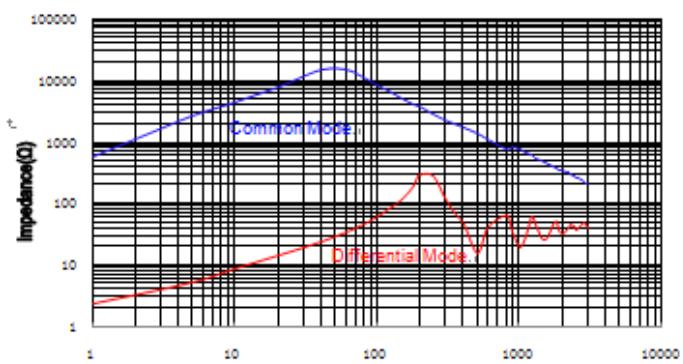
CCM4532-220T



CCM4532-510T



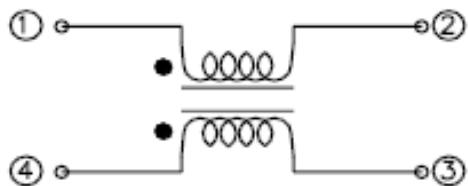
CCM4532-101T



#### 5. Material List

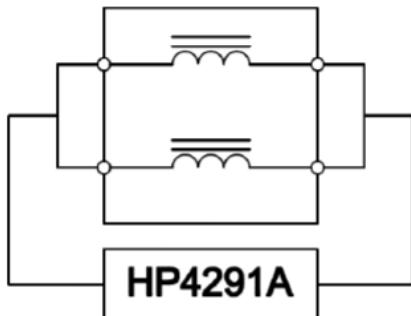
No	Part	Material
1	WIRE	Copper Wire
2	Core	Ferrite
3	Glue	Epoxy

## 6. Schematic Diagram

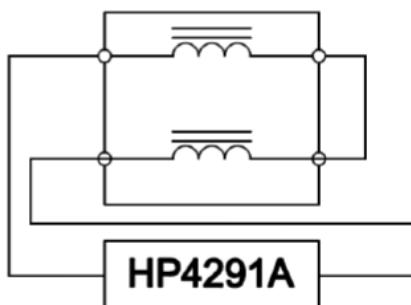


## 7. Measuring Circuits 2 line

### Common mode

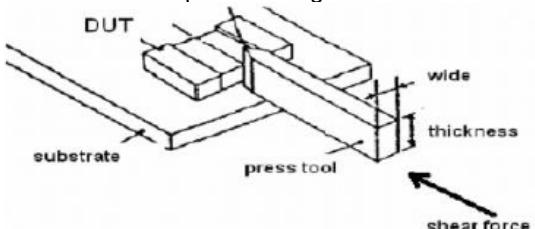


### Differential mode



## 8. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40°C~+125°C (Including self - temperature rise)	
Storage temperature	-40°C~+125°C (on board)	
Electrical Performance Test		
L(common mode)		Agilent: METER 11050 or equivalent
DCR	Refer to standard electrical characteristics list.	Agilent :HIOKI3540 or equivalent
I.R.		Agilent 4339 or equivalent
Temperature Rise Test	Rated Current < 1A $\Delta T$ 20°C Max. Rated Current $\geq$ 1A $\Delta T$ 40°C Max.	1. Applied the allowed DC current. 2.Temperature measured by digital surface thermometer.
Reliability Test		
Life Test	Appearance: No damage. Inductance: within $\pm 10\%$ of initial value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value	Preeconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles) Temperature: 125±2°C Applied current: rated current Duration: 1000±12hrs Measured at room temperature after placing for 24±2hrs

Item	Performance	Test Condition															
Load Humidity		<p>Preeconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>Humidity: 85±2°C R.H.</p> <p>Temperature: 85±2°C</p> <p>Duration: 1000hrs Min. with 100% rated current.</p> <p>Measured at room temperature after placing for 24±2hrs</p>															
Thermal shock	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>Step1: -40±2°C 30±5min</p> <p>Step2: 25±2°C ≤0.5min</p> <p>Step2: 125±2°C 30±5min</p> <p>Number of cycles: 500</p> <p>Measured at room temperature after placing for 24±2°C hrs</p>															
Vibration		<p>Oscillation Frequency: 10~2K~10Hz for 20 minutes</p> <p>Equipment: Vibration checker</p> <p>Total Amplitude: 1.52mm ±10%</p> <p>Testing Time: 12 hours (20 minutes, 12 cycles each of 3 orientations).</p>															
Shock	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<table border="1"> <thead> <tr> <th>Type</th><th>Peak value (g's)</th><th>Normal Duration(D) (ms)</th><th>Wave form</th><th>Velocity Change (Vi) ft/sec</th></tr> </thead> <tbody> <tr> <td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr> <tr> <td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr> </tbody> </table>	Type	Peak value (g's)	Normal Duration(D) (ms)	Wave form	Velocity Change (Vi) ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3
Type	Peak value (g's)	Normal Duration(D) (ms)	Wave form	Velocity Change (Vi) ft/sec													
SMD	50	11	Half-sine	11.3													
Lead	50	11	Half-sine	11.3													
Solder ability	<p>More than 95% of the terminal electrode should be covered with solder</p>	<p>Preheat: 150°C, 60sec.</p> <p>Solder: Sn99%, Ag0.3%, Cu0.7%</p> <p>Temperature: 245±5°C</p> <p>Flux for lead free: Rosin. 9.5%</p> <p>Dip time: 4 ± 1sec.</p> <p>Depth: completely cover the termination</p>															
Resistance to Soldering Heat		<p>Depth: completely cover the termination</p> <table border="1"> <thead> <tr> <th>Temperature (°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td><td>10±1</td><td>25mm/s ± 6mm/s</td><td>1</td></tr> </tbody> </table>	Temperature (°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10±1	25mm/s ± 6mm/s	1							
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260 ±5 (solder temp)	10±1	25mm/s ± 6mm/s	1														
Terminal Strength	<p>Appearance: No damage.</p> <p>Inductance: within ±10% of initial value</p> <p>RDC: within ±15% of initial value and shall not exceed the specification value</p>	<p>Preconditioning: Run through IR reflow for 2 times. (IPC/JEDECJ-STD-020D Classification Reflow Profiles)</p> <p>With the component mounted on a PCB with the device to be tested, apply a force(&gt;0805: 1kg, &lt;=0805:0.5kg) to the side of a device being tested. This force shall be applied for 60+1 a shock to the component being tested.</p> 															

## 9. Soldering and Mounting

### 9-1 Soldering

Mildly activated rosin fluxes are preferred. terminations are suitable for all wave and re-flow soldering sysyms.

If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

#### 9-1.1 Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

#### 9-1.2 Soldering Iron (Figure 2):

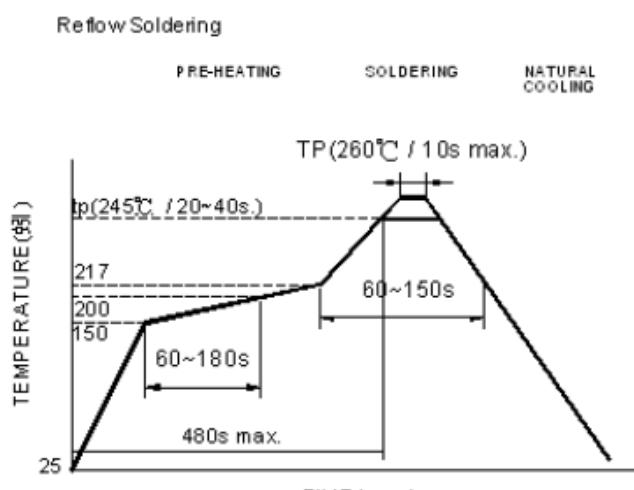
Products attachment with a soldering iron is discouraged due to the inherent process control limitations.

In the event that a soldering iron must be employed the following precautions are recommended.

Preheat circuit and products to 150°C  
355°C tip temperature (max)

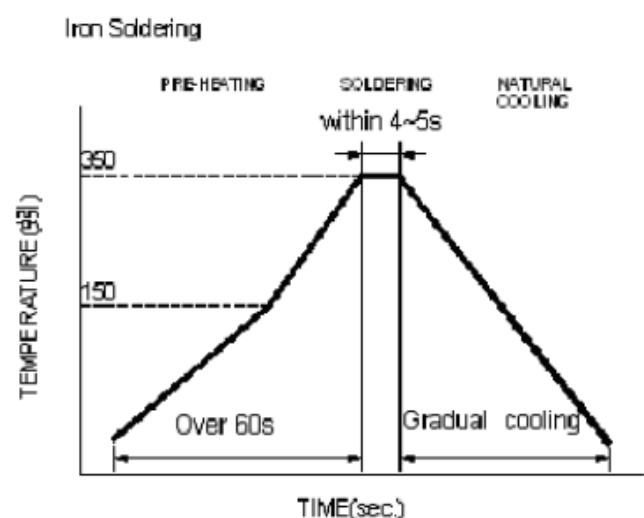
Never contact the ceramic with the iron tip  
1.0mm tip diameter (max)

Use a 20 watt soldering iron with tip diameter of 1.0mm  
Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1

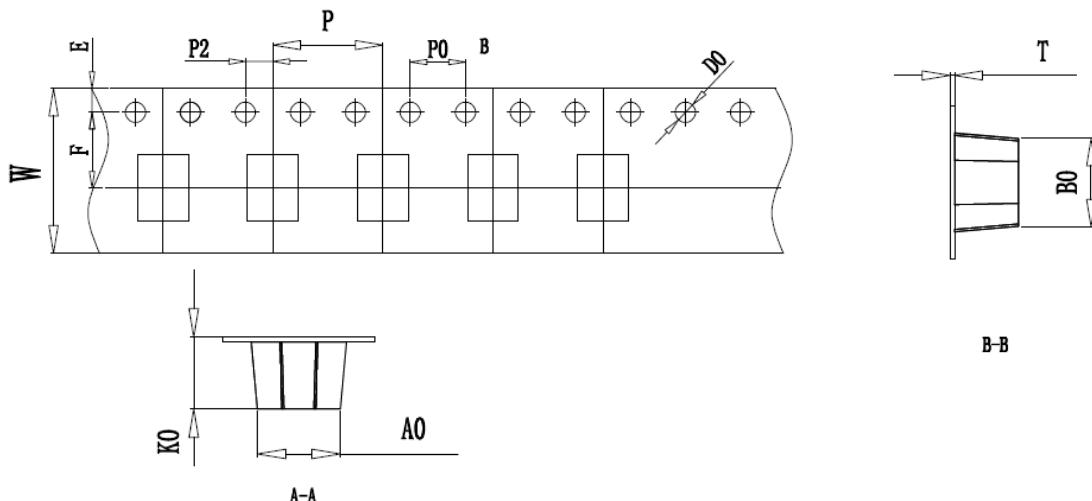


Iron Soldering times: 1 times max.

Fig.2

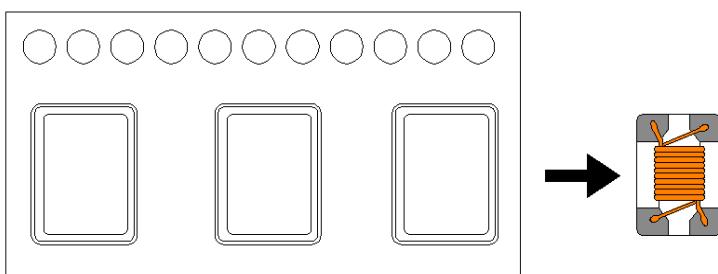
## 10.Packaging and Marking:

### 10-1.Carrier Tape Dimensions:

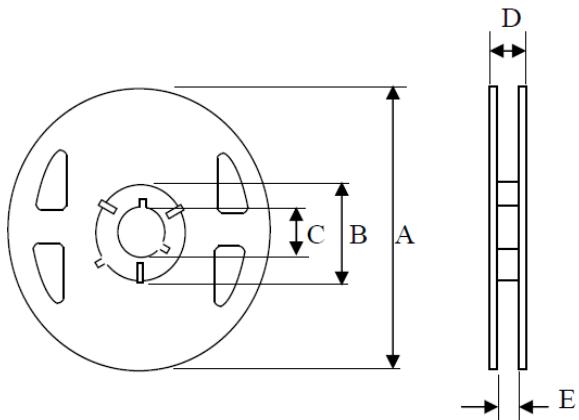


ITEM	W	A0	B0	K0	P	P0	P2	D0	T
DIM	12	3.75	4.85	3.0	8.0	4.00	2.00	1.5	0.35
TOLE	$\pm 0.3$	$\pm 0.1$	$\pm 0.05$						

### 10-2.Taping Dimensions:



### 10-3.Reel Dimensions:



Type	A	B	C	D	E
12mm	330	$60 \pm 0.8$	$13 \pm 0.4$	16	12.5

### 10-4. Packaging Quantity:

2.0KPCS/ Reel