

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	2024-6-25	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% Leas (Pb) & Halogen-Free and RoHs compliant.

2. Product Description and Identification (Part Number)

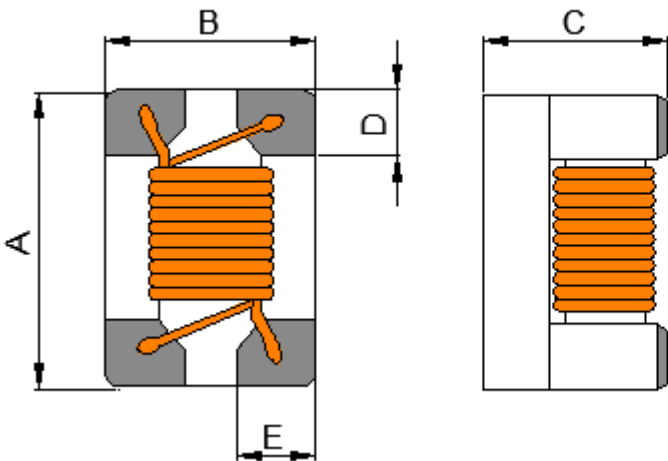
CCM 4532 - 220 T
① ② ③ ④

- 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:

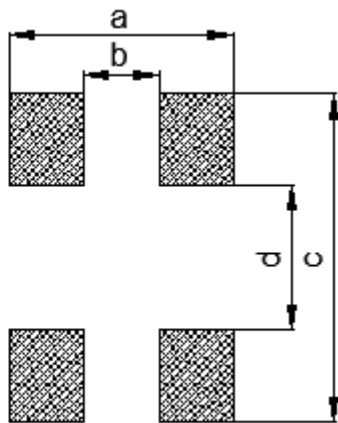


Fig4-1.

Table 4-1.

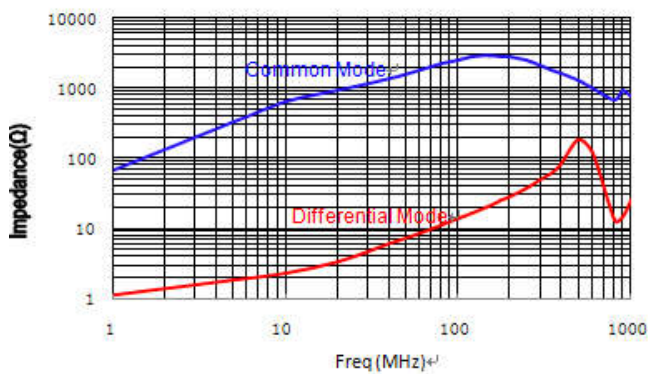
A	B	C	D	E	a	b	c	d
4.5±0.2	3.2±0.2	2.6±0.2	1.0 Ref	1.2 Ref	3.6 Ref	0.4 Ref	4.9 Ref	2.1 Ref

4. Electrical Characteristics

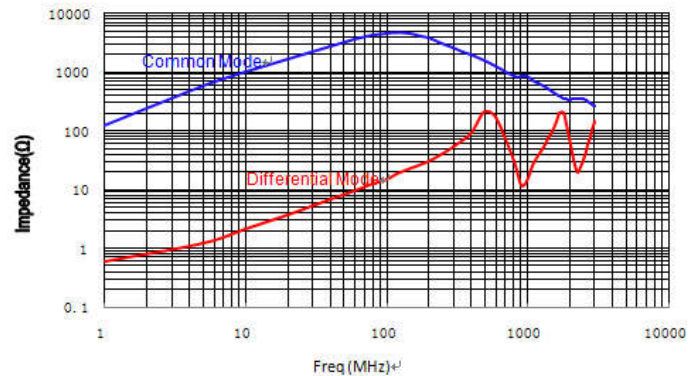
Part Number	Common mode Impedance(Ω) At 10MHz		Inductance(μ H) +50%/-30% One winding	DC Resistance (Ω) Max.	Rated Current (mA)	Rated Volt. (Vdc)	IR (M Ω) Min.
	Min	Typ					
CCM4532-110T	300	650	11 (@ 100KHz/0.1V)	0.5	360	50	10
CCM4532-220T	600	1000	22 (@ 100KHz/0.1V)	0.8	310	50	10
CCM4532-510T	1000	2900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

- Impedance: Keysight E4982A or equivalent.
- Inductance: METER 11050 or equivalent.
- DCR: Agilent HIOKI 3540 or equivalent.
- IR: 4339 or equivalent.
- Measuring circuits 2line and Frequency vs impedance curve

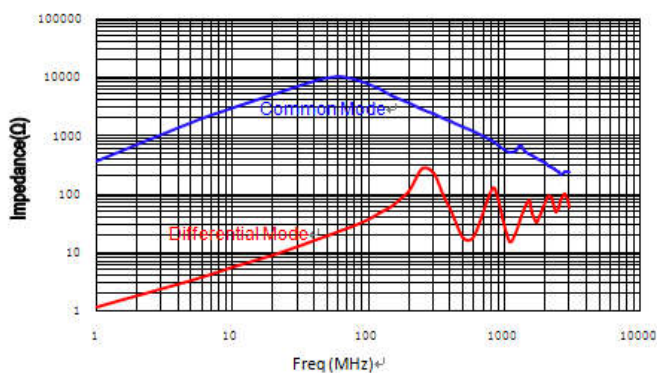
CCM4532-110T



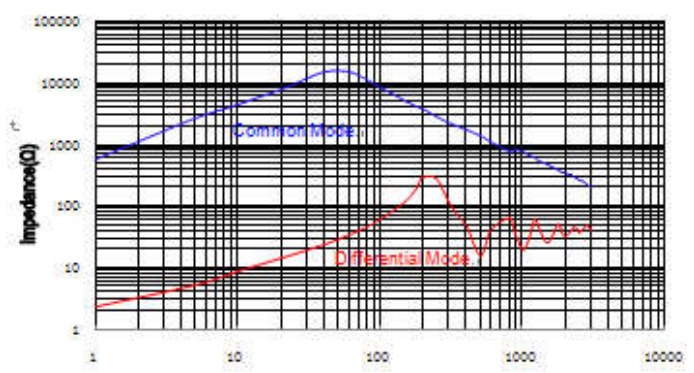
CCM4532-220T



CCM4532-510T



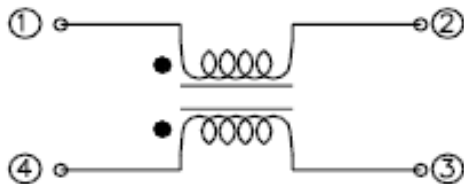
CCM4532-101T



5. Material List

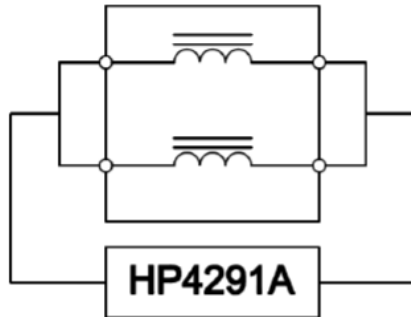
No	Part	Material
1	WIRE	Copper Wire
2	Core	Ferrite
3	Glue	Epoxy

6. Schematic Diagram

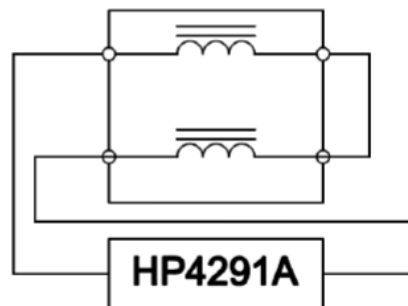


7. Measuring Circuits 2 line

Common mode

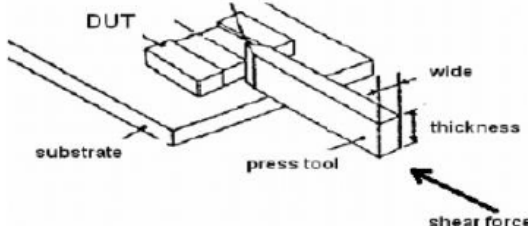


Differential mode



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)	Refer to standard electrical characteristics list.	Agilent: METER 11050 or equivalent
DCR		Agilent :HIOKI3540 or equivalent
I.R.		Agilent 4339 or equivalent
Temperature Rise Test	Rated Current < 1A ΔT 20°C Max. Rated Current \geq 1A ΔT 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 \pm 2°C Applied current: rated current Duration: 1000 \pm 12hrs Measured at room temperature after placing for 24 \pm 2hrs

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

9. Soldering and Mounting

9-1 Soldering

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

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

9-1.1 Solder re-flow:

Reecomended 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

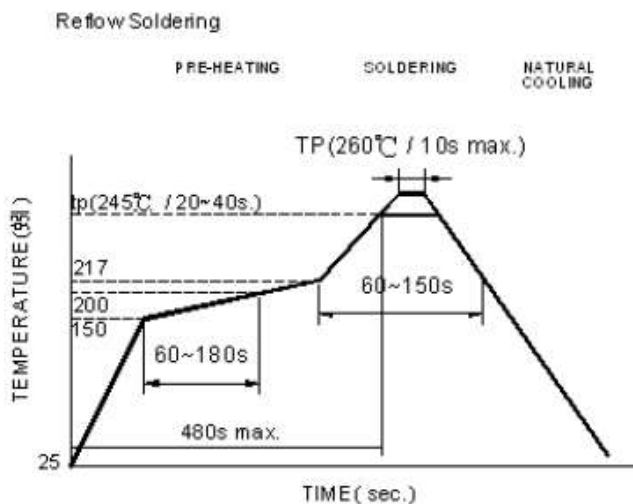
Never contact the ceramic with the iron tip

Use a 20 watt soldering iron with tip diameter of 1.0mm

355°C tip temperature (max)

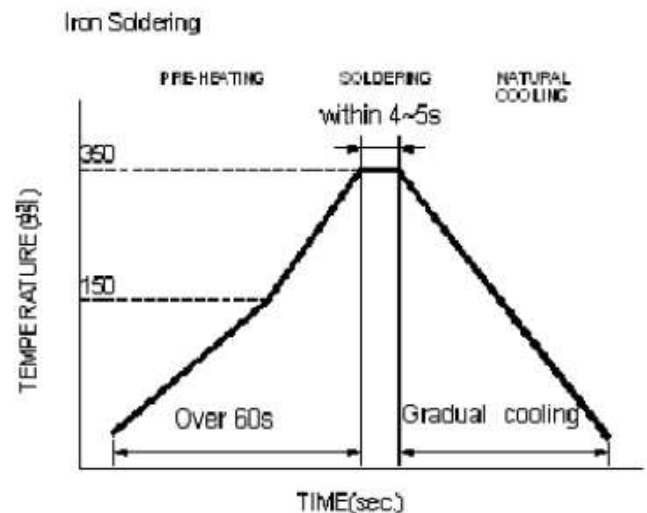
1.0mm tip diiameter (max)

Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1

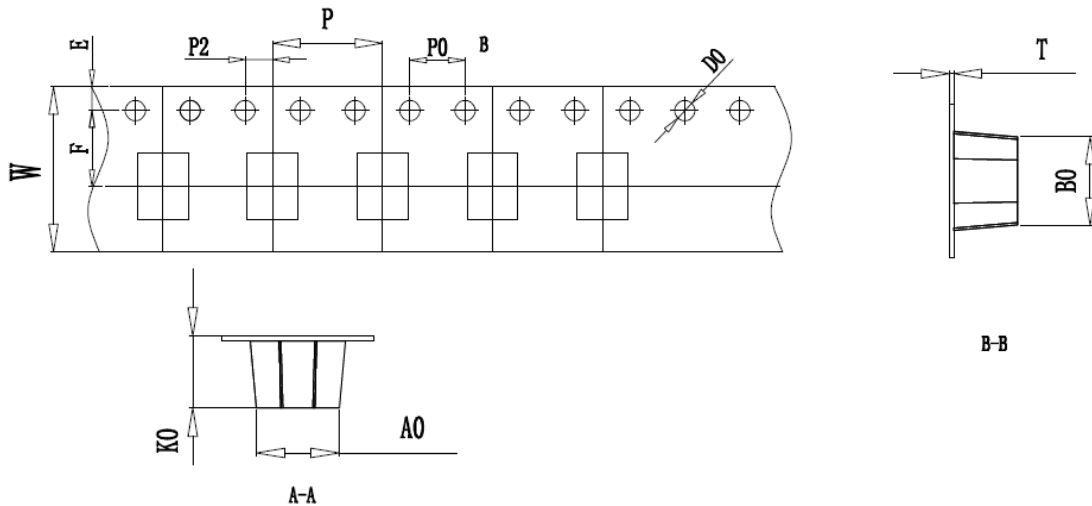


Iron Soldering times: 1 times max.

Fig.2

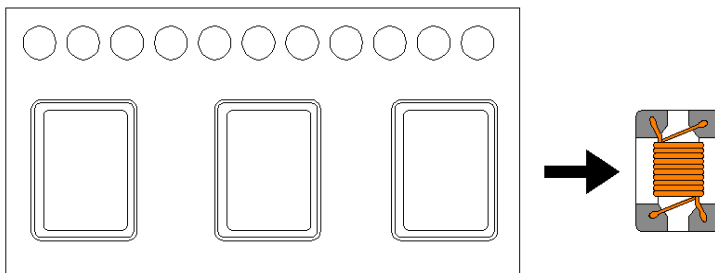
10.Packaging and Marking:

10-1.Carrier Tape Dimensions:

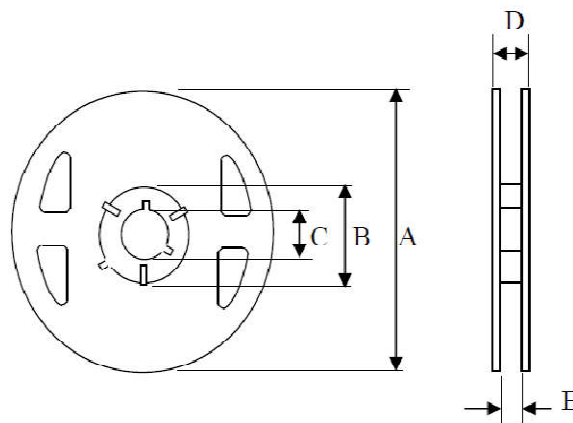


ITEM	W	A0	B0	K0	P	P0	P2	D0	T
DIM	12	3.75	4.85	3.0	8.0	4.00	2.00	1.5	0.35
TOLE	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05

10-2.Taping Dimensions:



10-3.Reel Dimensions:



Type	A	B	C	D	E
12mm	330	60±0.8	13±0.4	16	12.5

10-4. Packaging Quantity:

2.5KPCS/ Reel