



ISO9001 & ISO14001 & TS16949 **CHILISIN ELECTRONICS CORP.**

Lead-Free & RoHs Compliance!!

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

CUSTOMER P/N : _____

OUR DWG No : _____

QUANTITY : 0 **Pcs.** **DATE :** 2015/03/02

ITEM : MPB252012T series

SPECIFICATION ACCEPTED BY:	
COMPONENT ENGINEER	
ELECTRICAL ENGINEER	
MECHANICAL ENGINEER	
APPROVED	
REJECTED	

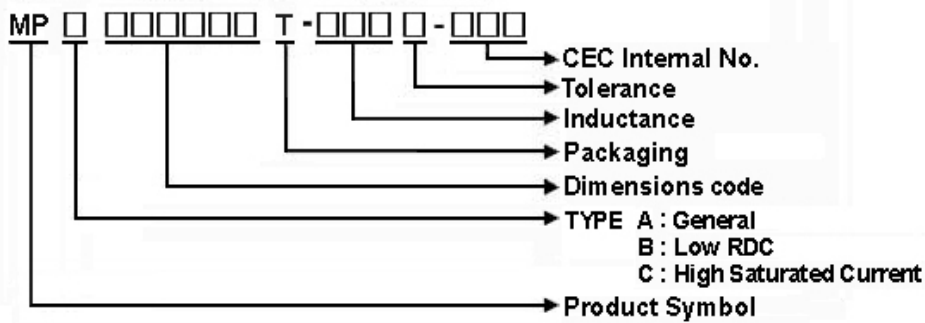
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MPB252012T Series Specification

1 Scope: This specification applies to Multilayer power inductors

2 Part Numbering: Product Identification



3 Rating:

Operating Temperature: $-5.5^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)

Storage Temperature: $-5.5^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (after PCB)

$-5^{\circ}\text{C} \sim 40^{\circ}\text{C}$, Humidity 40% ~ 70% (before PCB)

4 Marking:

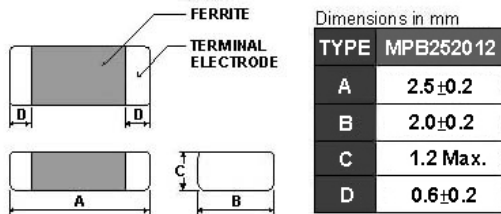


5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20±2°C
Humidity	Ordinary Humidity(25 to 85% RH)	60 to 70 % RH

MPB252012T Series Specification

6 Configuration and Dimensions:



7 ELECTRICAL CHARACTERISTICS :

Part No.	Inductance (uH)	Test Freq.	RDC (Ω)±30%	Rated Current (mA)Max.	Tolerance (±%)
MPB252012T-R47□-NA2	0.47	3MHz,200mV	0.04	1800	20,30
MPB252012T-1R0□-NA2	1	3MHz,200mV	0.05	1600	20,30
MPB252012T-1R5□-NA2	1.5	3MHz,200mV	0.07	1400	20,30
MPB252012T-2R2□-NA2	2.2	3MHz,200mV	0.1	1200	20,30
MPB252012T-3R3□-NA2	3.3	3MHz,200mV	0.12	1100	20,30
MPB252012T-4R7□-NA2	4.7	3MHz,200mV	0.14	1000	20,30
MPB252012T-6R8□-NA2	6.8	3MHz,200mV	0.16	900	20,30

NOTE: tolerance M=±20% / T=±30%

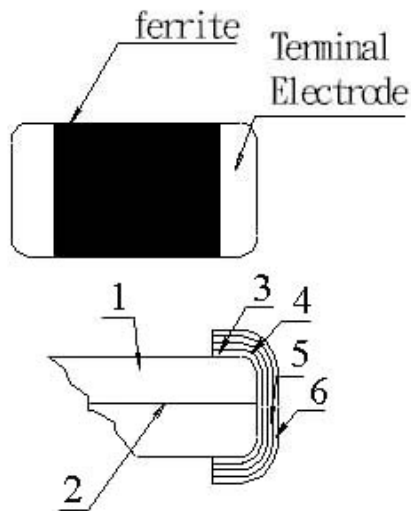
1. Operating temperature range - 5 5°C ~ 1 2 5°C (Including self - temperature rise)

2. Rate Current : Applied the current to coils, the temperature rise shall not be more than 40°C

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8 MPB252012T Series

8.1 Construction:



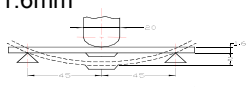
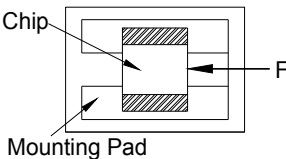
8.2 Material List:

NO	PART	MATERIAL
1	Ferrite Substance	NiO-CuO-ZnO-Ferrite
2	Silver electrode	Ag
3	Silver electrode	Ag
4	Cu plating	Cu
5	Ni plating	Ni
6	Sn plating	Sn

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9 Reliability Of Ferrite Multilayer power inductors

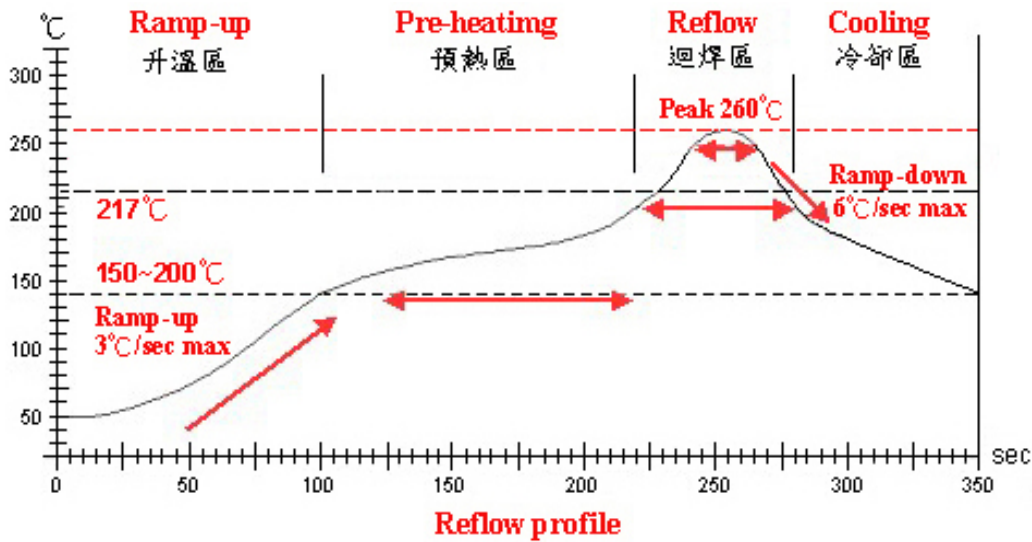
1-1.Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec 
1-1-2	Vibration		Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-3	Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal electrode should be covered with solder. Inductance: within $\pm 20\%$ of initial value	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260 \pm 5°C Immersion Time: 10 \pm 1sec
1-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150°C, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245 \pm 5°C Immersion Time: 4 \pm 1sec
1-1-5	Terminal Strength Test	No split termination 	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow. Force : 5N Keeping Time: 10 \pm 1sec

1-2.Environmental Performance

No	Item	Specification	Test Method															
1-2-1	Temperature Cycle	Appearance: No damage Inductance: within $\pm 20\%$ of initial value	One cycle:															
			<table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-55\pm3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25\pm2</td> <td>3</td> </tr> <tr> <td>3</td> <td>125\pm3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25\pm2</td> <td>3</td> </tr> </tbody> </table>	Step	Temperature (°C)	Time (min)	1	-55 \pm 3	30	2	25 \pm 2	3	3	125 \pm 3	30	4	25 \pm 2	3
			Step	Temperature (°C)	Time (min)													
			1	-55 \pm 3	30													
2	25 \pm 2	3																
3	125 \pm 3	30																
4	25 \pm 2	3																
Total: 100cycles																		
Measured after exposure in the room condition for 24hrs																		
1-2-2	Humidity Resistance		Temperature: 40 \pm 2°C Relative Humidity: 90 ~ 95% / Time: 1000hrs Measured after exposure in the room condition for 24hrs															
1-2-3	High Temperature Resistance		Temperature: 125 \pm 3°C Relative Humidity: 0% / Time: 1000hrs Measured after exposure in the room condition for 24hrs															
1-2-4	Low Temperature Resistance		Temperature: -55 \pm 3°C Relative Humidity: 0% / Time: 1000hrs Measured after exposure in the room condition for 24hrs															

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Lead-Free(LF) 標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	预热區 Pre-heating	迴焊區 Reflow	Peak Temp	冷却區 Cooling
溫度範圍 Temp.scope	R.T. ~ 150°C	150°C ~ 200°C	217°C	260±5°C	Peak Temp. ~ 150°C
標準時間 Time spec.	—	60 ~ 180 sec	60 ~ 150sec	20 ~ 40 sec	—
實際時間 Time result	—	75 ~ 100 sec	90 ~ 120sec	20 ~ 35 sec	—

NOTE :

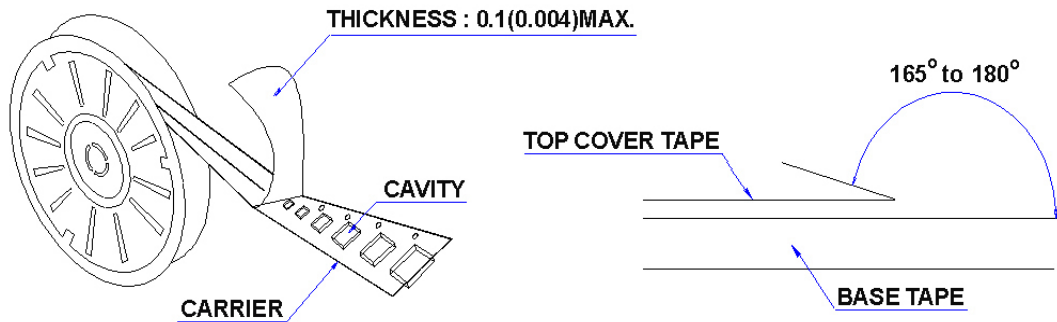
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow

MPB252012T Series Specification

11 PACKAGING

11.1 Packaging -Cover tape

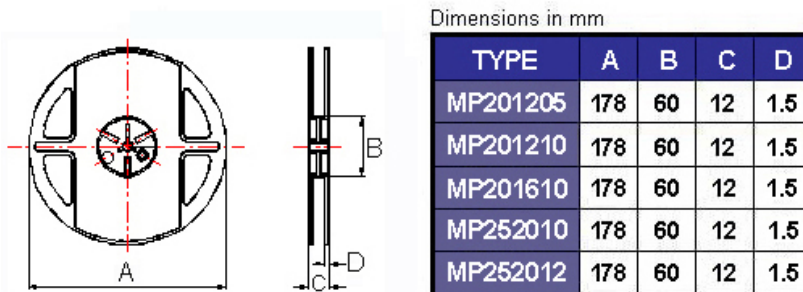
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	BULK	PCS/REEL
MP201205	✓	4000
MP201210	✓	3000
MP201610	✓	3000
MP252010	✓	3000
MP252012	✓	3000

11.3 Reel Dimensions



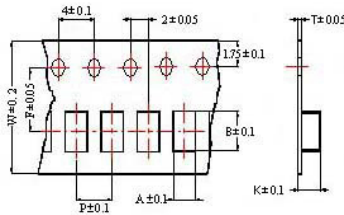
Dimensions in mm

TYPE	A	B	C	D
MP201205	178	60	12	1.5
MP201210	178	60	12	1.5
MP201610	178	60	12	1.5
MP252010	178	60	12	1.5
MP252012	178	60	12	1.5

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11 PACKAGING

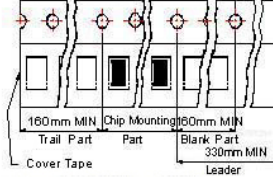
11.4 Tape Dimensions in mm



Tape Material

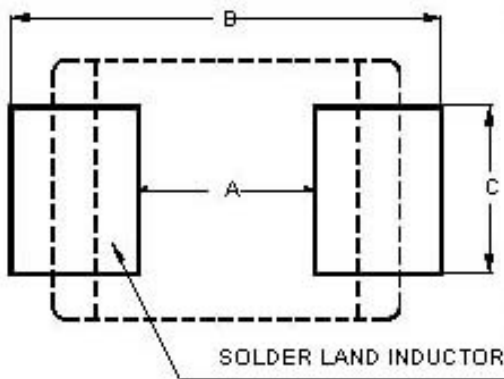
Carrier tape : Polycarbonate

Cover tape : Polyethylene



TYPE	A	B	T	W	P	F	K
MP201205	1.42	2.25	0.22	8	4	3.5	0.80
MP201210	1.45	2.25	0.22	8	4	3.5	1.04
MP201610	1.80	2.20	0.22	8	4	3.5	1.15
MP252010	2.25	2.80	0.25	8	4	3.5	1.35
MP252012	2.25	2.80	0.25	8	4	3.5	1.35

12 Recommended Pattern



Dimensions in mm

TYPE	A	B	C
MP201205	0.8~1.2	2.3~2.9	1.0~1.4
MP201210	0.8~1.2	2.3~2.9	1.0~1.4
MP201610	0.8~1.2	2.1~2.7	1.6~2.0
MP252010	1.3~1.9	2.7~3.5	2.0~2.6
MP252012	1.3~1.9	2.7~3.5	2.0~2.6

13 Note:

1. Please make sure that your product is has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
4. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)

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14 Curve:

