

Specification Sheet for Approved

| | |
|--------------------|----------------|
| Customer Name: | |
| Customer Part No.: | |
| Ceaiya Part No: | CR4012A Series |
| Spec No: | L412A |

【For Customer Approval Only】

If you Approval, Please Stamp

【RoHS Compliant Parts】

| Approved By | Checked By | Prepared By |
|---|------------|-------------|
|  | 刘志坚 | 劳水花 |

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Http://www.szceaiya.com

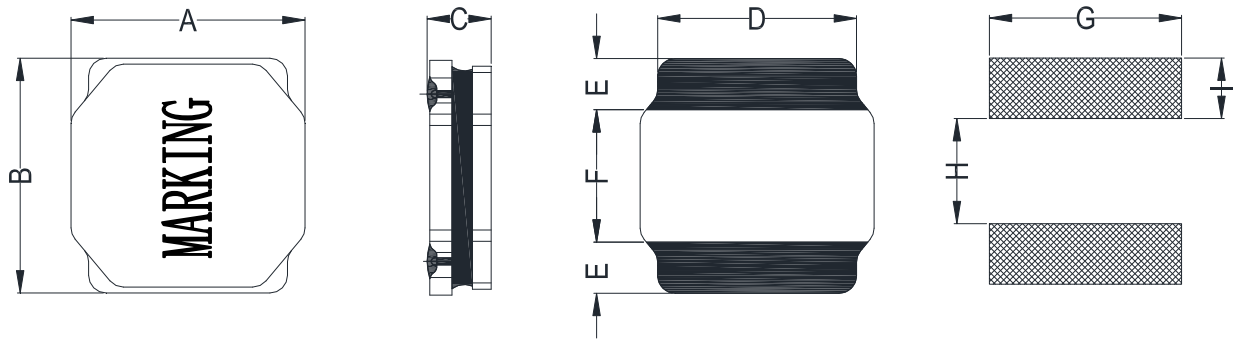
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Fax: 0769-89135519

【Version of Changed Record】

| Rev. | Effective Date | Changed Contents | Change Reasons | Approved By |
|------|----------------|------------------|----------------|-------------|
| A0 | 2023.05.25 | New release | / | Li qing hui |
| | | | | |

1. Shape and Dimension (Unit:mm)



| A | B | C | D | E | F | G | H | I |
|-----------|-----------|--------|---------|----------|---------|---------|---------|---------|
| 4.0 ± 0.2 | 4.0 ± 0.2 | 1.2Max | 3.3±0.3 | 1.05 Ref | 1.9 Ref | 3.7 Ref | 1.9 Ref | 1.1 Ref |

注：喷码尺寸长 2.5±0.5mm, 宽 2.0±0.5mm

2. Electronic Characteristics List

| Part Number | Inductance | DC Resistance | | Saturation Current | | Heat Rating Current | | Marking |
|--------------|------------|---------------|-------|--------------------|------|---------------------|------|---------|
| | 100KHz/1V | Max. | Typ. | Max. | Typ. | Max. | Typ. | |
| Units | uH | Ω | Ω | A | A | A | A | |
| Symbol | L | DCR | | Isat | | Irms | | |
| CR4012A-R24N | 0.24 ± 30% | 0.025 | 0.020 | 4.80 | 5.60 | 2.90 | 3.30 | R24 |
| CR4012A-R47N | 0.47 ± 30% | 0.040 | 0.031 | 3.90 | 4.50 | 2.40 | 2.80 | R47 |
| CR4012A-1R0N | 1.0 ± 30% | 0.055 | 0.042 | 2.80 | 3.00 | 2.00 | 2.30 | 1R0 |
| CR4012A-1R5N | 1.5 ± 30% | 0.065 | 0.051 | 2.20 | 2.35 | 1.80 | 2.00 | 1R5 |
| CR4012A-2R2M | 2.2 ± 20% | 0.100 | 0.075 | 1.76 | 2.00 | 1.32 | 1.90 | 2R2 |
| CR4012A-3R3M | 3.3 ± 20% | 0.100 | 0.075 | 1.35 | 1.65 | 1.32 | 1.90 | 3R3 |
| CR4012A-4R7M | 4.7 ± 20% | 0.163 | 0.125 | 1.15 | 1.50 | 1.00 | 1.40 | 4R7 |
| CR4012A-5R6M | 5.6 ± 20% | 0.185 | 0.150 | 1.00 | 1.60 | 1.00 | 1.20 | 5R6 |
| CR4012A-6R8M | 6.8 ± 20% | 0.228 | 0.175 | 1.15 | 1.30 | 0.85 | 1.10 | 6R8 |
| CR4012A-100M | 10 ± 20% | 0.234 | 0.180 | 0.85 | 0.95 | 0.80 | 1.00 | 100 |
| CR4012A-150M | 15 ± 20% | 0.400 | 0.310 | 0.68 | 0.80 | 0.65 | 0.80 | 150 |
| CR4012A-180M | 18 ± 20% | 0.550 | 0.430 | 0.60 | 0.75 | 0.55 | 0.80 | 180 |
| CR4012A-220M | 22 ± 20% | 0.690 | 0.530 | 0.50 | 0.70 | 0.49 | 0.75 | 220 |
| CR4012A-330M | 33 ± 20% | 1.00 | 0.780 | 0.50 | 0.60 | 0.42 | 0.52 | 330 |
| CR4012A-470M | 47 ± 20% | 1.43 | 1.10 | 0.35 | 0.45 | 0.37 | 0.50 | 470 |

※ All test data is referenced to 25°C ambient;

Isat (A) : DC Saturation Current that will cause initial inductance to drop approximately 30% max.

Irise(A): DC Current that will cause an approximate ΔT of 40 °C

Measuring Instrument :

L:HIOKI3532-50

DCR:HIOKI 3540

Isat / Irise:HP4284+42841A

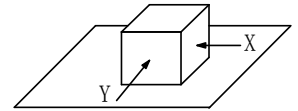
3. General Characteristics

3-1. Storage Temperature range : $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$

3-2. Operating temperature range: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ (Including coil's self temperature rise)

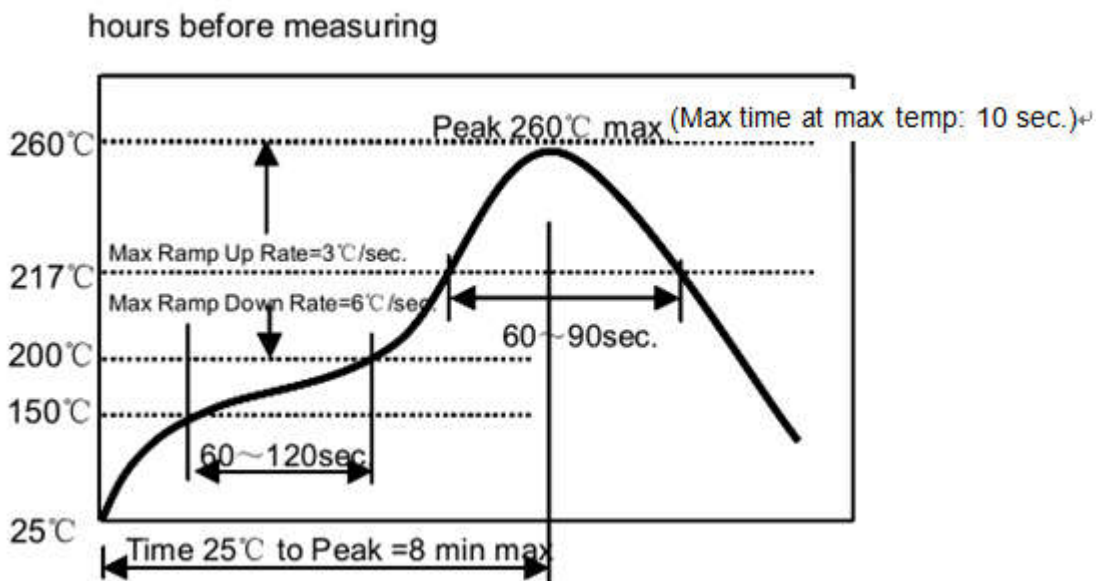
3-3. External appearance : No external defects can be found in the visual inspection.

3-4. Electrode strength : No electrode detachment should be found when the device is pushed in two directions of X and Y with the force of 10.0N for 10 ± 2 seconds after soldering between copper plate and the electrodes.
(Refer to figure at right)



3-5. Vibration test : Inductance deviation is within $\pm 10.0\%$ after 1 hour sweeping vibration in each three directions, namely, forward and backward, up and down, right and left. The frequency is $10 \sim 55 \sim 10\text{Hz}$ and the amplitude of 1 minute cycle is 1.5mm PP.

3-6. Recommended reflow condition:

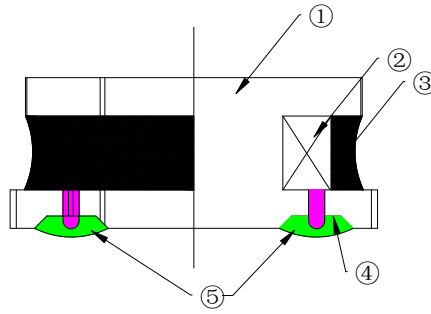


3-7. Humidity test : Inductance deviation is within $\pm 5.0\%$ after 96 ± 4 hours test under the condition of relative humidity of $90 \sim 95\%$ and temperature of $60 \pm 2^{\circ}\text{C}$, and 1 hour storage under room ambient conditions after the device is wiped with dry cloth.

LEAD-FREE



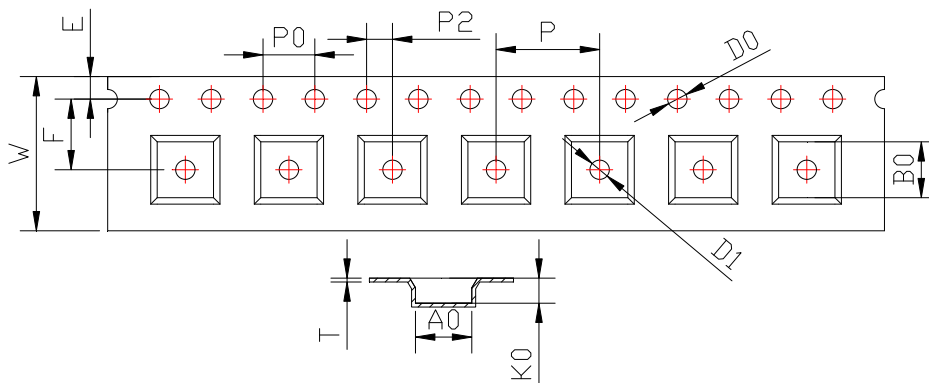
4. Construction and materials



| No. | Part name | Material | Ceaiya P/N |
|-----|--------------------|---|------------|
| ① | Drum Core | Ni-Zn Ferrite Core | MT/CY |
| ② | Wire | Polyurethane enameled copper wire | YLSL |
| ③ | Adhesive | Epoxy Resin Magnetic Powder | |
| ④ | Plating Electrodes | Plating: Ag 3-7 μ m Ni 1-3 μ m Sn 3-7 μ m | |
| ⑤ | Outer Electrodes | Top surface solder coating Sn99%、 Ag0.3%、Cu0.7% | YX |

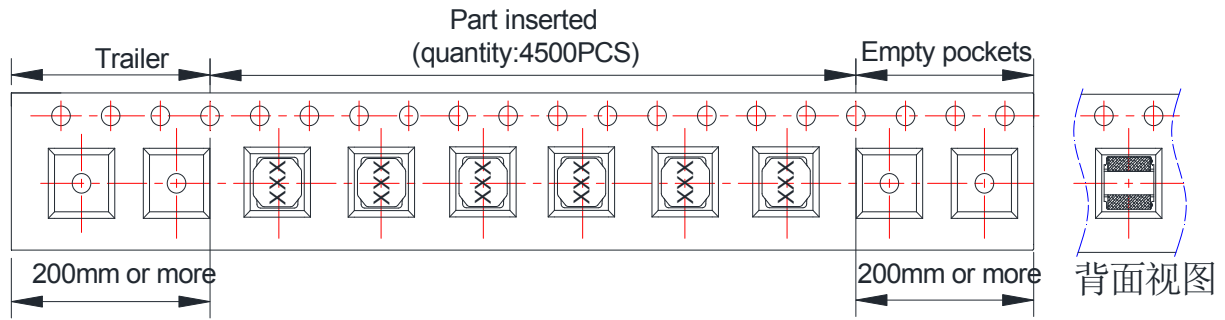
5.Packaging and Marking:

5-1.Carrier Tape Dimensions:

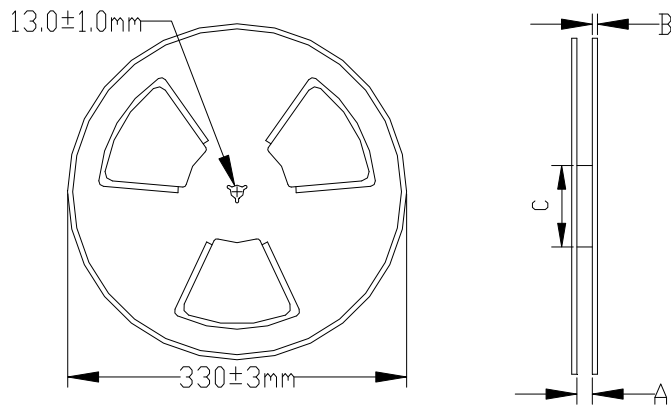


| ITEM | W | A0 | B0 | K0 | P | F | E | D0 | D1 | P0 | P2 | T |
|------|----------------|------|------|------|------|------|------|------|------|------|------|-------|
| DIM | 12.00 | 4.3 | 4.3 | 1.6 | 8.00 | 5.50 | 1.75 | 1.50 | 1.50 | 4.00 | 2.00 | 0.30 |
| TOLE | +0.30 -0.10 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | +0.1 | +0.1 | ±0.1 | ±0.1 | ±0.05 |

5-2.Taping Dimensions:



5-3.Reel Dimensions:



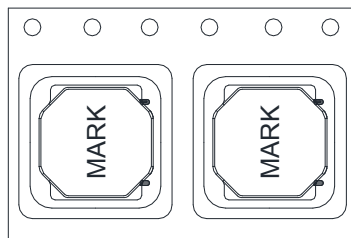
Unit: mm

| Type | A | B | C |
|------|--------------|-------------|-------------|
| 12mm | 12.5 ± 1 | 2.2 ± 1 | 100 ± 1 |

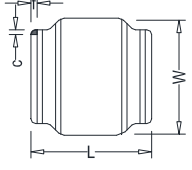
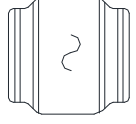
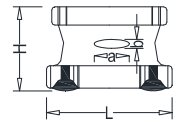
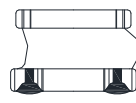
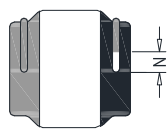
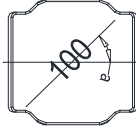
6. PACKAGE SPECIFICATION:

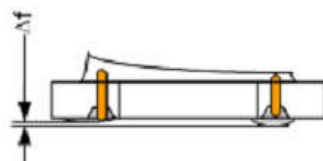
4.5KPCS/ Reel 13.5KPCS/ Inner Box 40.5KPCS/ Outer Box

编带方向 , 如右图所示



Visual Inspection Standard of Product

| No. | Defect Item | Figure | Rejection Identification | Acceptance |
|-----|----------------|---|---|------------|
| 1 | Core Defect |  | The defect length(c or f) more than L/6 or W/6 , NG | AQL=0.65 |
| 2 | Core Crack |  | Visual cracks , NG | AQL=0.65 |
| 3 | Starvation |  | (1)Resin starved length a more than L/2, NG (2)When $L > 2\text{mm}$, $b > H/2$, NG (3)When $L \leq 2\text{mm}$, b don't control | AQL=0.65 |
| 4 | Excessive glue |  | The length, width or height of product beyond specified value, NG | AQL=0.65 |
| 5 | Cold Solder |  | (1)For CR2520** Series , cold solder $N > 0.5\text{mm}$, NG (2)For other series, cold solder $N > 1\text{mm}$, NG | AQL=0.65 |
| 6 | Marking Defect |  | The marking angle $a > 45^\circ$, NG | AQL=0.65 |



Δf : Clearance between terminal and the surface of plate must be 0.1mm max when coil is placed on a flat plate.

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