

# 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

## Shenzhen Ceaiya Electronics Co., Ltd.

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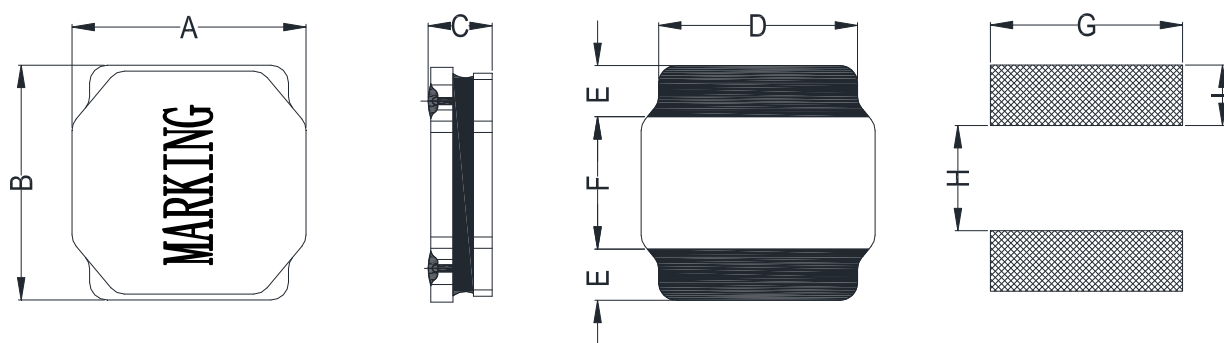
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## 1. Shape and Dimension ( Unit:mm )



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

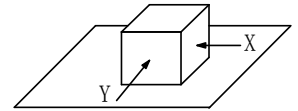
### 3. General Characteristics

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)

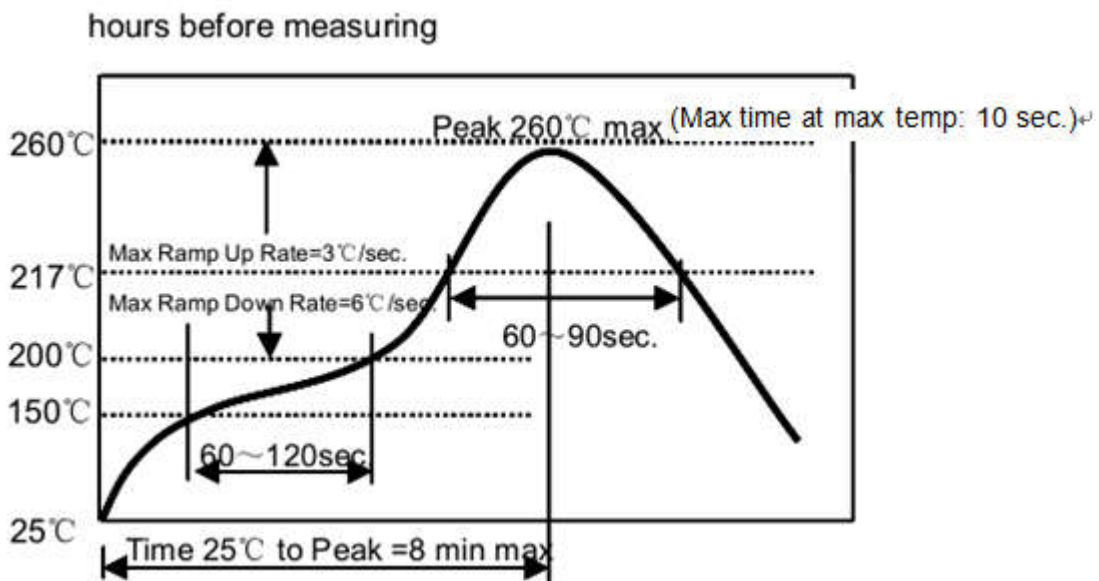
3-3. External appearance : No external defects can be found in the visual inspection.

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  $10 \pm 2$  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:

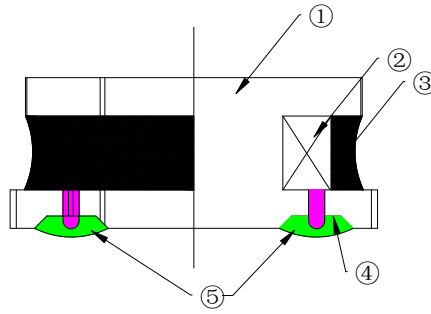


3-7. Humidity test : Inductance deviation is within  $\pm 5.0\%$  after  $96 \pm 4$  hours test under the condition of relative humidity of  $90 \sim 95\%$  and temperature of  $60 \pm 2^{\circ}\text{C}$ , and 1 hour storage under room ambient conditions after the device is wiped with dry cloth.

**LEAD-FREE**



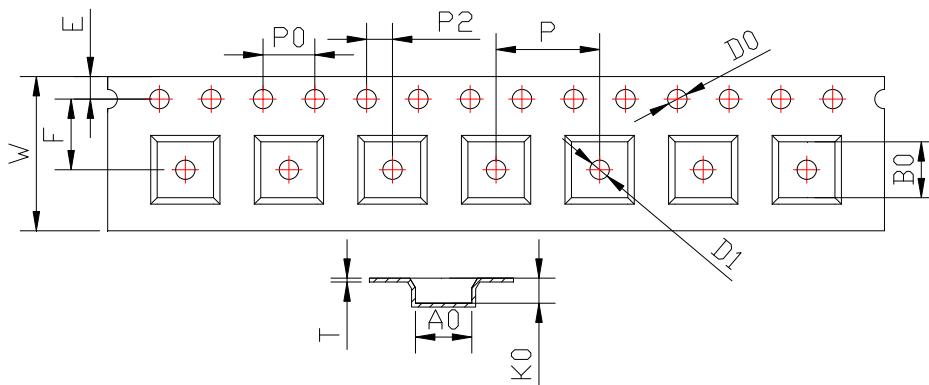
#### 4. Construction and materials



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 $\mu$ m Ni 1-3 $\mu$ m Sn 3-7 $\mu$ m	
⑤	Outer Electrodes	Top surface solder coating Sn99%、 Ag0.3%、Cu0.7%	YX

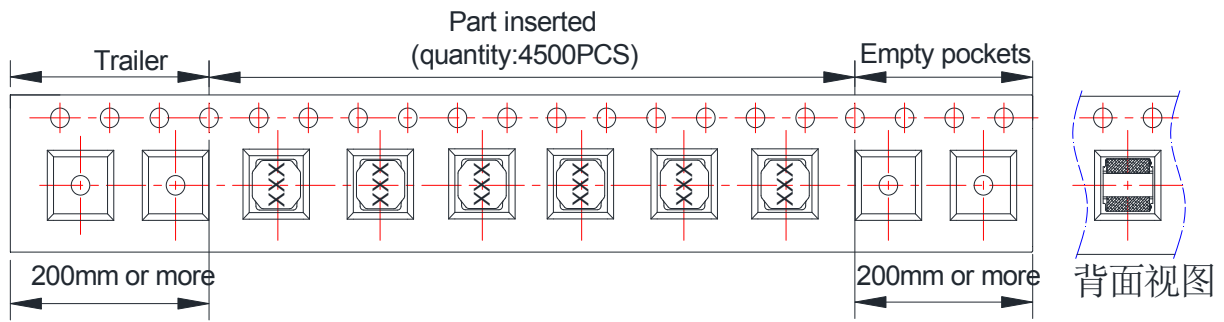
#### 5.Packaging and Marking:

5-1.Carrier Tape Dimensions:

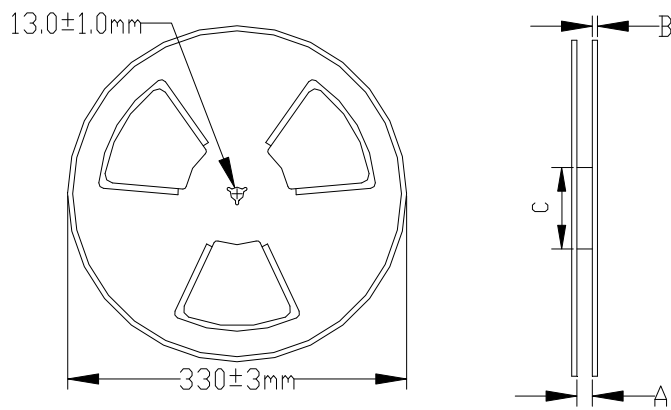


ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12.00	4.3	4.3	1.6	8.00	5.50	1.75	1.50	1.50	4.00	2.00	0.30
TOLE	+0.30 -0.10	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	+0.1	+0.1	±0.1	±0.1	±0.05

5-2.Taping Dimensions:



5-3.Reel Dimensions:



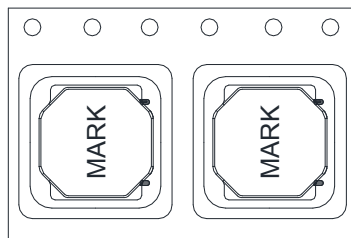
Unit: mm

Type	A	B	C
12mm	$12.5 \pm 1$	$2.2 \pm 1$	$100 \pm 1$

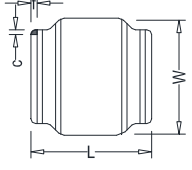
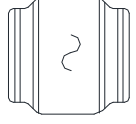
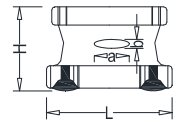
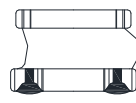
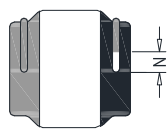
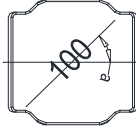
6. PACKAGE SPECIFICATION:

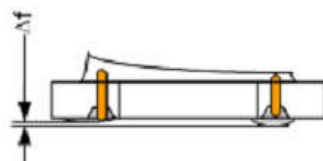
4.5KPCS/ Reel    13.5KPCS/ Inner Box    40.5KPCS/ Outer Box

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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