

## Specification Sheet for Approved

Customer Name:	
Customer Part No.:	
Ceaiya Part No:	CR4020 Series
Spec No:	L117

### 【For Customer Approval Only】

If you Approval, Please Stamp

### 【RoHS Compliant Parts】

Approved By	Checked By	Prepared By
李庆辉	刘志坚	劳水花

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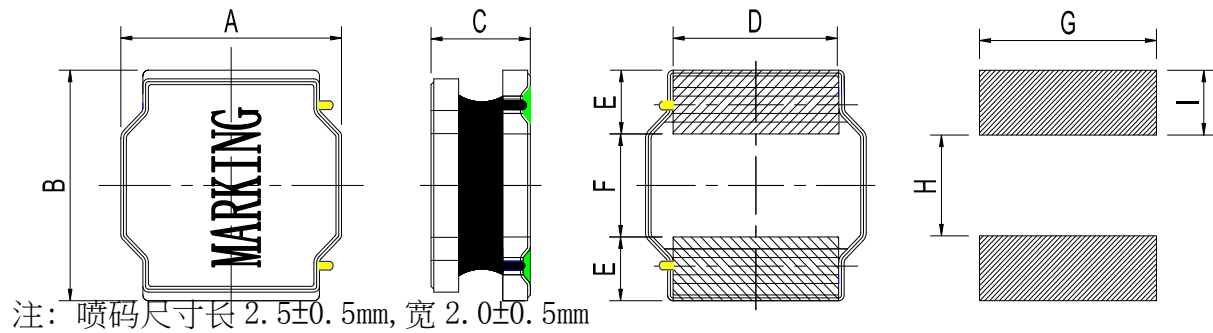
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**【Version of Changed Record】**

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
$4.0 \pm 0.2$	$4.0 \pm 0.2$	2.1Max	$3.3 \pm 0.3$	$1.0 \pm 0.2$	$2.0 \pm 0.3$	3.7 Ref	1.9 Ref	1.1 Ref

## 2. Electronic Characteristics List

Part Number	Inductance (uH)	Tolerance ( $\pm$ %)	DCR(m $\Omega$ ) $\pm 30\%$	Isat (A)	Irise (A)	Test Condition	Marking
CR4020-R33N	0.33	30	13	7.50	3.30	100KHz /0.25V	R33
CR4020-R47N	0.47	30	18	7.50	3.30	100KHz /0.25V	R47
CR4020-R68N	0.68	30	24	7.00	3.20	100KHz /0.25V	R68
CR4020-1R0N	1.0	30	28	5.10	2.15	100KHz /0.25V	1R0
CR4020-1R2N	1.2	30	29	4.70	2.10	100KHz /0.25V	1R2
CR4020-1R5N	1.5	30	35	4.45	1.98	100KHz /0.25V	1R5
CR4020-1R8N	1.8	30	45	4.00	1.90	100KHz /0.25V	1R8
CR4020-2R2M	2.2	20	45	3.40	1.85	100KHz /0.25V	2R2
CR4020-2R7M	2.7	20	53	3.30	1.60	100KHz /0.25V	2R7
CR4020-3R3M	3.3	20	70	3.20	1.40	100KHz /0.25V	3R3
CR4020-4R7M	4.7	20	80	2.35	1.34	100KHz /0.25V	4R7
CR4020-5R6M	5.6	20	95	2.20	1.22	100KHz /0.25V	5R6
CR4020-6R8M	6.8	20	125	2.00	1.04	100KHz /0.25V	6R8
CR4020-8R2M	8.2	20	150	1.75	1.00	100KHz /0.25V	8R2
CR4020-100M	10	20	165	1.60	0.90	100KHz /0.25V	100
CR4020-120M	12	20	175	1.50	0.88	100KHz /0.25V	120
CR4020-150M	15	20	230	1.35	0.77	100KHz /0.25V	150
CR4020-220M	22	20	350	1.05	0.62	100KHz /0.25V	220
CR4020-270M	27	20	476	1.05	0.56	100KHz /0.25V	270
CR4020-330M	33	20	500	0.85	0.49	100KHz /0.25V	330
CR4020-470M	47	20	710	0.74	0.44	100KHz /0.25V	470
CR4020-560M	56	20	800	0.68	0.40	100KHz /0.25V	560
CR4020-680M	68	20	1250	0.60	0.35	100KHz /0.25V	680

※ 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  $\Delta T$  of 40 °C

**Measuring Instrument :**

L:HIOKI3532-50

DCR:HIOKI 3540

Isat / Irise:HP4284+42841A

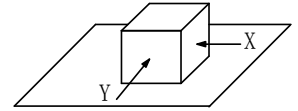
### 3. General Characteristics

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)

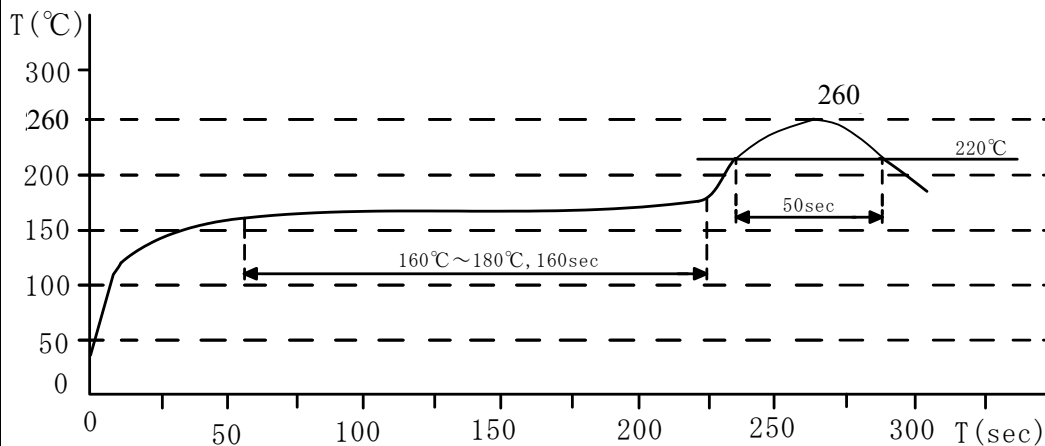
3-3. External appearance : No external defects can be found in the visual inspection.

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:

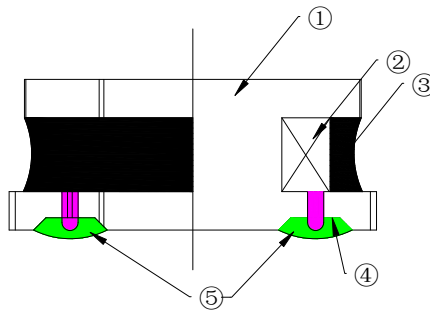


3-7. Humidity test : Inductance deviation is within  $\pm 5.0\%$  after  $96 \pm 4$  hours test under the condition of relative humidity of  $90 \sim 95\%$  and temperature of  $60 \pm 2^{\circ}\text{C}$ , and 1 hour storage under room ambient conditions after the device is wiped with dry cloth.

**LEAD-FREE**



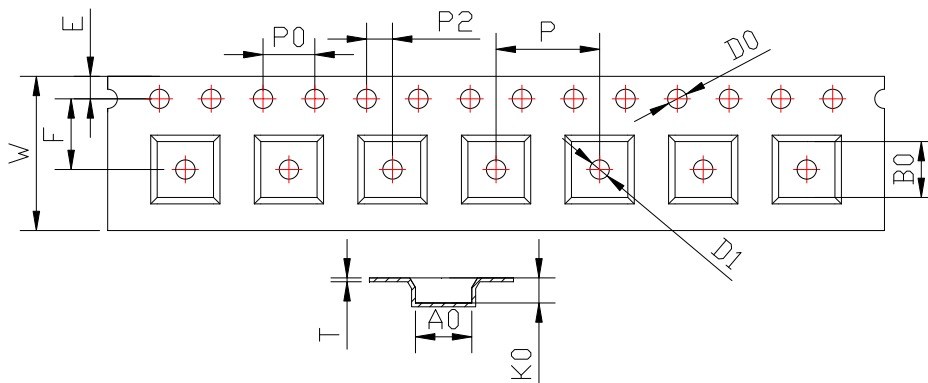
## 4. Construction and materials



No.	Part name	Material	Ceaiya P/N
①	Drum Core	Ni-Zn Ferrite Core	CY/MT
②	Wire	Polyurethane enameled copper wire	3210200
③	Adhesive	Epoxy Resin Magnetic Powder	7001007
④	Plating Electrodes	Plating: Ag 3-7 $\mu\text{m}$ Ni 1-3 $\mu\text{m}$ Sn 3-7 $\mu\text{m}$	
⑤	Outer Electrodes	Top surface solder coating Sn99%、 Ag0.3%、Cu0.7%	YX

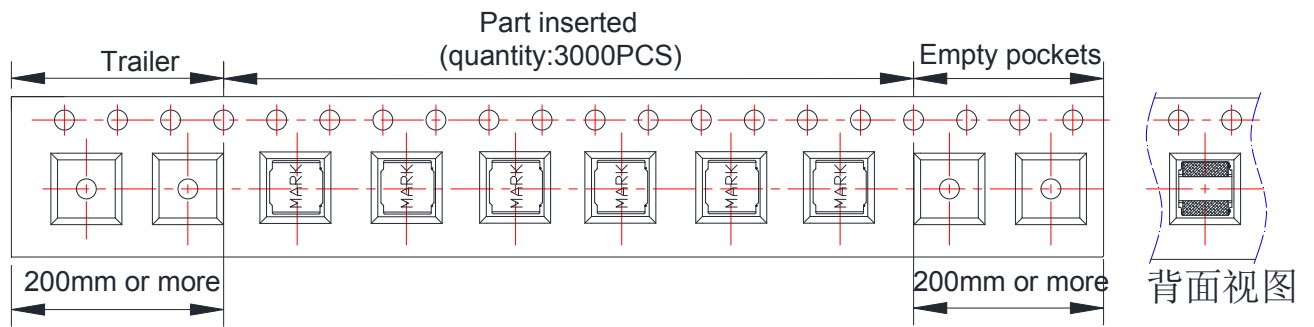
## 5. Packaging and Marking:

5-1. Carrier Tape Dimensions:

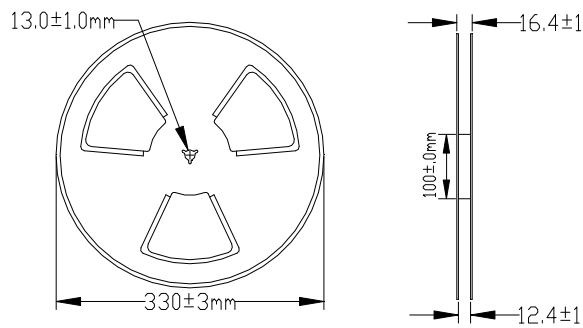


ITEM	W	A0	B0	K0	P	F	E	D0	D1	P0	P2	T
DIM	12.00	4.3	4.3	2.25	8.00	5.50	1.75	1.50	1.50	4.00	2.00	0.30
TOLE	+0.30 -0.10	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	+0.1	+0.1	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$

5-2. Taping Dimensions:



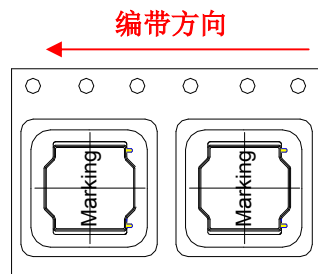
5-3. Reel Dimensions:



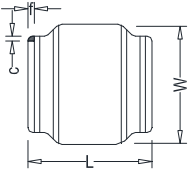
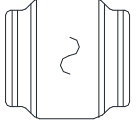
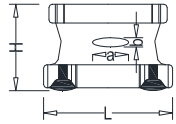
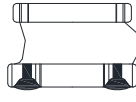
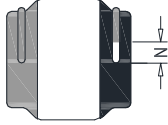
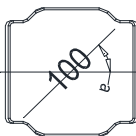
6. PACKAGE SPECIFICATION:

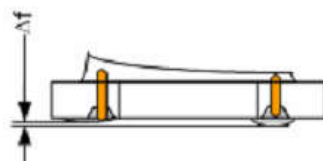
3KPCS/ Reel    9KPCS/ Inner Box    27KPCS/ Outer Box

编带方向，如下图所示



## 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



$\Delta f$ : Clearance between terminal and the surface of plate must be 0.15mm max when coil is placed on a flat plate.

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