

SPECIFICATION SHEET NO.	T0112- CRCP03JB10KS01	
ORIGINAL MFG/PART NO.	Aillen Capacitors/CP03JB10K	
NEXTGEN PART CODE	CRCP03JB10KS01	Indicate This Code For <a href="#">RFQ</a> /Order
DATE	Jan. 12, 2026	
REVISION	A5	Updated With Most Recent Data
DESCRIPTION AND MAIN PARAMETRICS	<p>High power Chip Resistors, 0603 (1608 Metric), CP03 Series,            Dimension L1.60*W0.80*H0.45mm, 2 Terminations, Tolerance: <math>\pm 5.0\%</math>,            Resistance 10K ohm, Dissipation Max. 1/8W @ 70°C,            Temperature Coefficient Rate (TCR) Max. <math>\pm 100\text{ppm}/^\circ\text{C}</math>            Operating Temp. Range -55°C ~+155°C            Package in Tape/Reel, 5,000pcs/Reel            RoHS/RoHS III Compliant and HF</p>	
CUSTOMER		
CUSTOMER PART NUMBER		
CROSS REF. PART NUMBER		
MEMO		

VENDOR APPROVE		
Issued/Checked/Approved		
		
Date: Jan. 12, 2026		

CUSTOMER APPROVE
DATE:

## DESCRIPTION

The resistors are constructed in a high-grade ceramic body (aluminum oxide). Internal metal electrodes are added at each end and connected by a resistive paste that is applied to the top surface of the substrate. The composition of the paste is adjusted to give the approximate resistance required and the value is trimmed to within tolerance by laser cutting of this resistive layer. The resistive layer is covered with a protective coat. Finally, the two external end terminations are added. For ease of soldering the outer layer of these end terminations is a Tin (lead free) alloy.



*Image shown is a representation only. Exact specifications should be obtained from the product dimension.*

## MAIN FEATURE

- High power rating and compact size
- High reliability and stability
- Reduced size of final equipment
- Flame Retardant
- RoHS III Compliant And Halogen Free Products



## APPLICATION

- Power supply / PDA
- Digital meter / PC
- Automotives / Battery charger
- DC-DC power converter

## ELECTRICAL CHARACTERISTICS

- See Page 5 ~page 6
- All Products Parameters are Subject To NextGen Components' Final Confirmation.

HOW TO ORDER

- Please Follow Up Part Code Guide And Indicate Part Code CRCP03JB10KS01 For RFQ/Order.

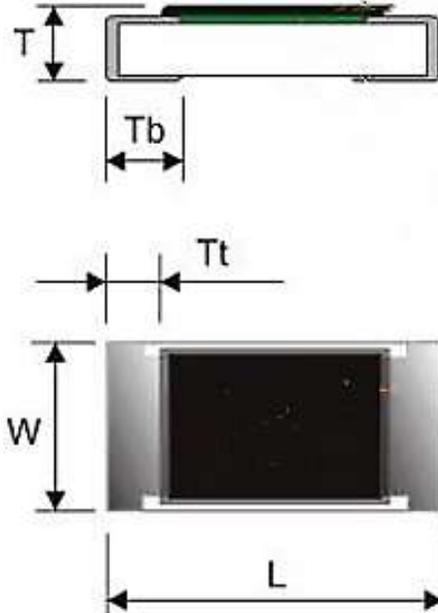
PART CODE GUIDE

**RFQ**  
Request For Quotation

CODE	NAME	KEY SPECIFICATION OPTION
CRCP	Product Index	High power Chip Resistors
03	Case Size	03: 0603 ( 1608 Metric ), L1.60*W0.80*H0.45mm
J	Resistance Tolerance	P: Jumper; B: +/-0.1%; D: +/-0.5%; F: +/-1%; J: +/-5%
B	Quantity Per Reel	A: 4Kpcs/7" Reel B: 5kpcs/7" Reel C: 10kpcs/7" Reel D: 10kpcs/10" Reel M: 15kpcs/7" Reel E: 20kpcs/7" Reel
10K	Resistance Value	1R2: 1.2ohm; 10R: 10ohm; 330R: 330ohm; 1K: 1Kohm; 10K: 10Kohm; 2K7: 2.7kohm; 100K: 100Kohm; 820K: 820Kohm 1M: 1.0Mohm; 1M2: 1.2Mohm
S01	Suffix	Blank: N/A XX: Internal Control Code, Letter A~Z, a~z or digits (0~9) for Special/Custom Parameters

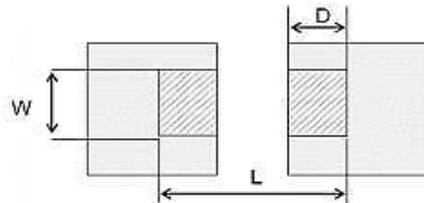
DIMENSION (Unit: mm)

Case Size: 0603 (1608 metric)  
L1.60\*W0.80\*H0.45mm



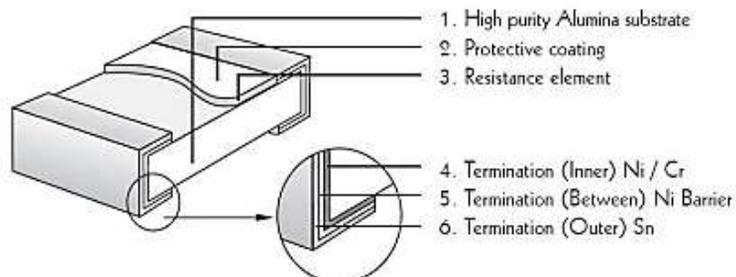
ITEM	DIMENSION
L	1.60±0.10
W	0.80±0.10
T	0.45±0.15
T b	0.30±0.15
T t	0.30±0.10

Recommended  
Solder Pad



ITEM	DIMENSION
W	0.7~0.9
L	2.0~2.2
D	0.8~1.0

Construction



TEST CONDITIONS - FOR JUMPER (0 ohm)

ITEM	UNIT	SYMBOL	CHARACTERISTIC	CONDITION
Power Rating	W		1/8	@ 70°C
Max. Resistance	mRΩ		20	
Rated Current	A		2	
Peak Current	A		5	

GENERAL CONDITIONS - FOR DIFFERENT PART CODE

ITEM	UNIT	SYMBOL	CHARACTERISTIC	CONDITION
Operating Temperature Range	°C		-55 ~+155	
Storage Temperature Range	°C		5~+40	

Note

- 1) This is the maximum voltage that may be continuously supplied to the resistor element, "IEC publication 60115-8"
- 2) Max. Operation Voltage : So called RCWV (Rated Continuous Working Voltage) is determined by  

$$RCWV = \sqrt{\text{Rated Power} \times \text{Resistance Value}}$$
or Max. RCWV listed above, whichever is lower.
- 3) 2W loading with total solder-pad and trace size of 300 mm<sup>2</sup>

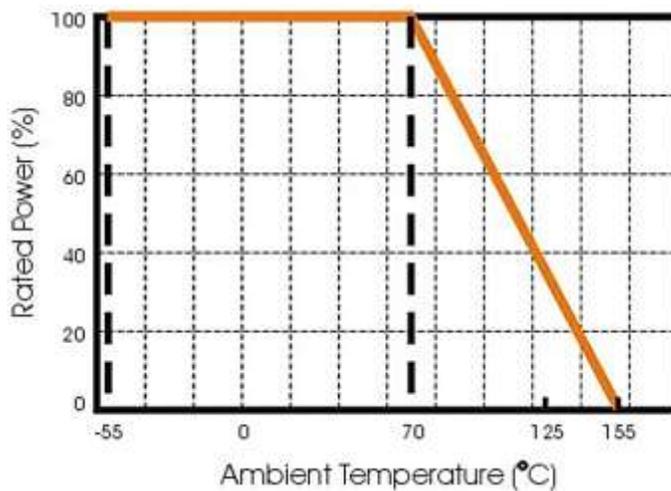


## PRODUCT CHARACTERIZATION

Standard values of nominal resistance are taken from the E24 & E96 series for resistors with a tolerance of  $\pm 0.1\%$ ,  $\pm 0.5\%$ ,  $\pm 1\%$  &  $\pm 5\%$ . The values of the E24/E96 series are in accordance with "IEC publication 60063"

## DERATING

The power that the resistor can dissipate depends on the operating temperature; see the figure below:



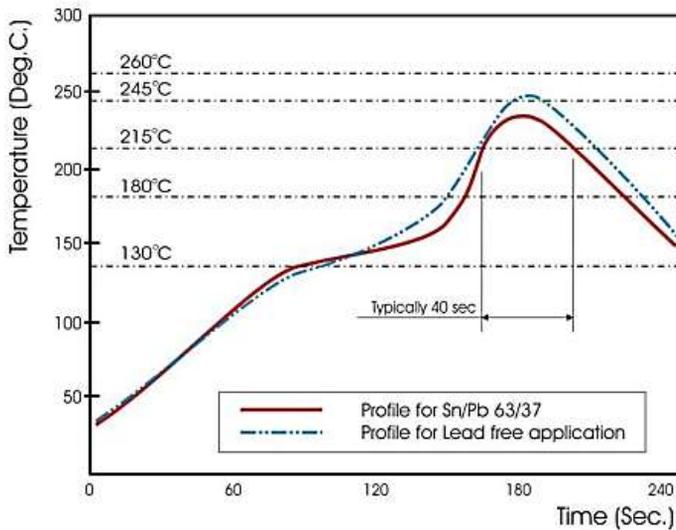
Maximum dissipation in percentage of rated power as a function of the ambient temperature

## MOUNTING

Due to their rectangular shapes and small tolerances, Surface Mountable Resistors are suitable for handling by automatic placement systems. Chip placement can be on ceramic substrates and printed-circuit boards (PCBs). Electrical connection to the circuit is by individual soldering condition. The end terminations guarantee a reliable contact.

**REFLOW SOLDERING CONDITION**

The robust construction of chip resistors allows them to be completely immersed in a solder bath of 260 °C for 10 seconds. Therefore, it is possible to mount Surface Mount Resistors on one side of a PCB and other discrete components on the reverse (mixed PCBs). Surface Mount Resistors are tested for solderability at 235 °C during 2 seconds. The test condition for no leaching is 260°C for 30 seconds. Typical examples of soldering processes that provide reliable joints without any damage are given in below.



**Infrared soldering profile for Chip Resistors**

TEST AND REQUIREMENT (JIS C 5201-1 : 1998)

TEST	PROCEDURE / TEST METHOD	REQUIREMENT
Temperature Coefficient of Resistance(T.C.R) Clause 4.8	Natural resistance change per change in degree centigrade. $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^5 \text{ (ppm/}^\circ\text{C)}$ t1 : 20°C+5°C-1°C R1 : Resistance at reference temperature R2: Resistance at test temperature	Refer to quick reference data for T.C.R specification
Short time overload (S.T.O.L) Clause 4.13	5.0× Rated power or Max. Overload Voltage for 5 sec. Measure resistance after 30 minutes..	Δ R/R max. J: ≤ ±(2%+0.1Ω) B,D, F: ≤ ±(1%+0.05Ω)
Resistance to soldering heat(R.S.H) Clause 4.18	Un-mounted chips completely immersed for 10±1second in a SAC solder bath at 260°C±5°C	Δ R/R max. J: ≤ ±(1%+0.1Ω) B,D, F: ≤ ±(0.5%+0.05Ω) No visible damage
Solderability Clause 4.17	Un-mounted chips completely immersed for 2±0.5 second in a SAC solder bath at 235°C±5°C	Good tinning (>95% covered) No visible damage
Clause 4.18 Leach Test	Un-mounted chips completely immersed for 60±1second in a solder bath at 260°C±5°C	Ditto
Temperature cycling Clause 4.19	30 minutes at -55°C±3°C, 2~3 minutes at 20°C+5°C-1°C, 30 minutes at +155°C±3°C, 2~3 minutes at 20°C+5°C-1°C, total 5 continuous cycles	Δ R/R max. J ≤ ±(1%+0.1Ω) B,D,F ≤ ±(0.5%+0.05Ω ) No visible damage
Damp Heat (Load life in humidity) Clause 4.24	1000 +48/-0 hours, loaded with RCWV or Vmax in humidity chamber controller at 40°C±2°C and 90~95% relative humidity, 1.5hours on and 0.5 hours off	Δ R/R max. J ≤ ±(3%+0.1Ω) B,D,F ≤ ±(1%+0.05Ω) No visible damage
Load life (endurance) JISC5201-1: 1998 Clause 4.25	1000 +48/-0 hours, loaded with RCWV or Vmax in chamber controller 70±2°C, 1.5 hours on and 0.5 Hours off	Δ R/R max. J ≤ ±(3%+0.1Ω) B,D,F ≤ ±(1%+0.05Ω) No visible damage
Bending strength Clause 4.33	Resistors mounted on a 90mm glass epoxy resin PCB(FR4); bending : 2 mm(2512;2010) 3mm(1206), once for 10 seconds	Δ R/R max. J ≤ ±(1%+0.1Ω) B,D,F ≤ ±(0.5%+0.05Ω ) No visible damage

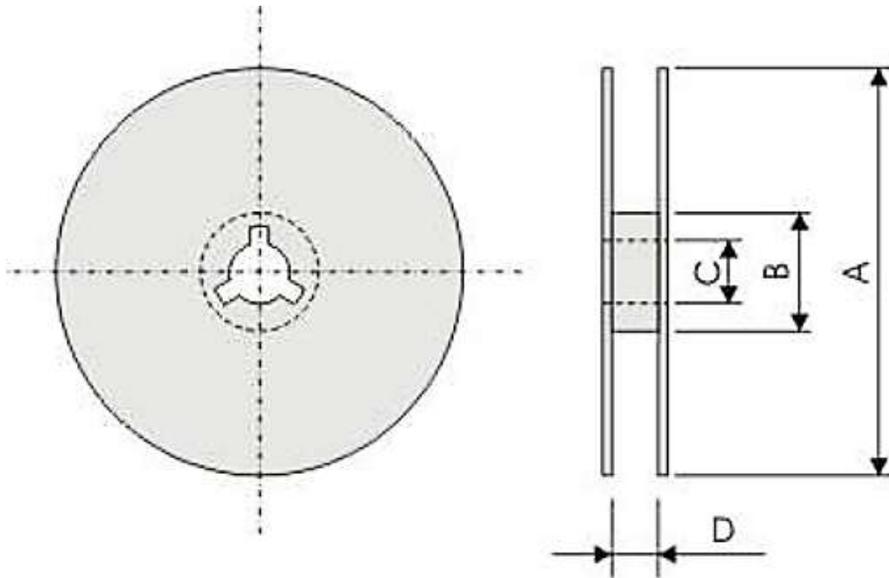
**TEST AND REQUIREMENT (JIS C 5201-1 : 1998)**

TEST	PROCEDURE / TEST METHOD	REQUIREMENT
Adhesion Clause 4.32	Pressurizing force: 5N, Test time: 10±1sec.	No remarkable damage or removal of the terminations
Insulation Resistance Clause 4.6	Apply the maximum overload voltage (DC) for 1minute	$R \geq 10G\Omega$
Dielectric Withstand Voltage Clause 4.7	Apply the maximum overload voltage (AC) for 1 minute	No breakdown or flashover

**STORAGE AND HANDLING CONDITIONS**

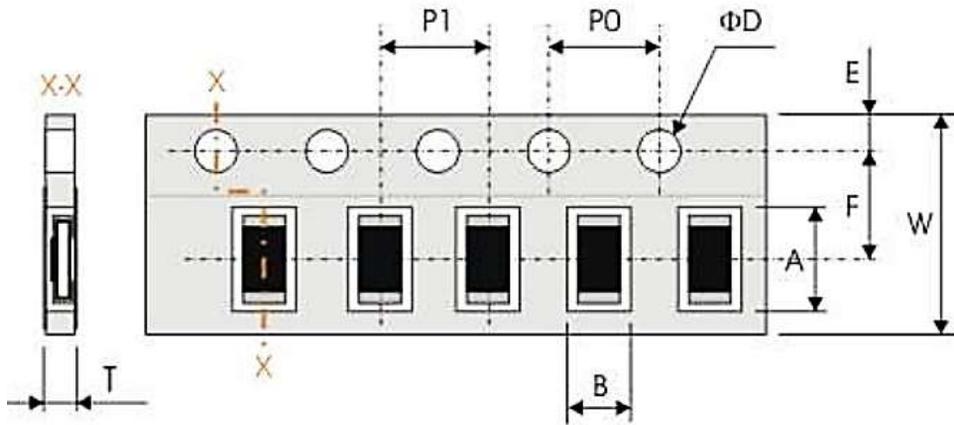
1. Products are recommended to be used up within two years since operation date as ensured shelf life. Check solderability in case shelf life extension is needed.
2. To store products with following condition: Temperature : 5 to 40°C Humidity: 20 to 70% relative humidity
3. Don't store products in a corrosive environment such as sulfide, chloride gas, or acid. It may cause oxidization of electrode, which easily be resulted in poor soldering b.To store products on the shelf and avoid exposure to moisture. Don't expose products to excessive shock, vibration, direct sunlight and so on.

REEL DIMENSION (Unit: mm),



CODE	DIMENSION 7" Reel for 12mm tape	DIMENSION 7" Reel for 8mm tape
A	$\varnothing 178.0 \pm 2.0$	$\varnothing 178.0 \pm 2.0$
B	$\varnothing 60.0 \pm 1.0$	$\varnothing 60.0 \pm 1.0$
C	$13.0 \pm 0.20$	$13.0 \pm 0.20$
D	$12.4 \pm 1.00$	$9.0 \pm 0.5$

TAPE DIMENSION (Unit: mm)



CODE	DIMENSION
A	1.90±0.20
B	1.10±0.20
W	8.00±0.30
F	3.50±0.20
E	1.75±0.10
P 1	4.00±0. 10
P0	4.00±0.10
ΦD	1.50+0.10/-0.0
T	0.65±0.05 Max.

TAPING QUANTITY

Tape	Paper Tape		
	4 mm Pitch		
Reel Size	7"	10"	13"
CP03 Series	5000	10000	20000

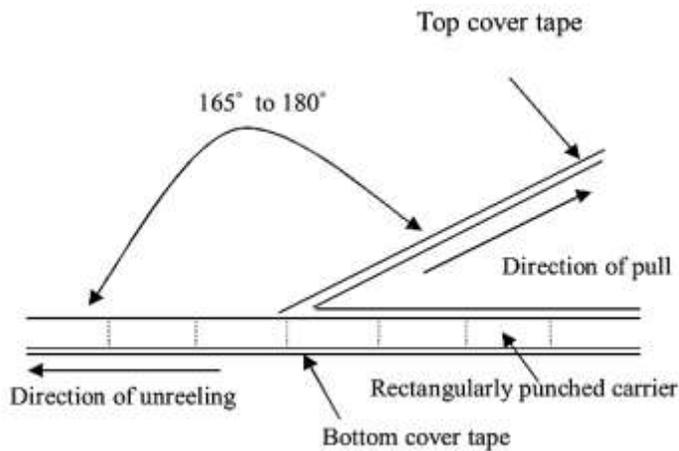
## PERFORMANCE OF TAPING

### Strength of Carrier Tape and Top Cover Tape

Carrier Tape: When a tensile force 1.02kgf is applied in the direction of unreeling the tape, the tape shall withstand this force. Top cover Tape: When a tensile force 1.02kgf is applied to the tape, the tape shall withstand this force.

### Peel Force of Top Cover Tape

Unless otherwise specified, the peel force of top cover tape shall be 10.2 to 71.4 g f when the top cover tape is pulled at a speed of 300mm/min with the angle between the taped during peel and the direction of unreeling maintained at 165 to 180° as illustrated in Fig.



## CAUTION

- Don't apply excess mechanical stress to the component and terminals at soldering. Do not use this product with bend.
- Do not clean or wash the component for it is not hermetically sealed.
- Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
- Don't be close to fire.
- This specification mentions the quality of the component as a single unit. Please insure the component is thoroughly evaluated in your application circuit
- Expire date (Shelf life) of the products is 12 months after delivery under the conditions of a sealed and an unopened package. Please use the products within 12 months after delivery. If you store the products for a long time (more than 12 months), use carefully because the products may be degraded in the solder-ability or rusty. Please confirm solder-ability and characteristics for the products regularly.
- Exposure components under soldering condition that is exceeding our recommendation will increase the failure dangerous.
- Please contact us before using the product as automobile electronic component.
- Please return one of these specifications after your signature of acceptance.
- When something gets doubtful with this specifications, we shall jointly work to get an agreement.
- For questions on technology, prices and delivery, please contact our sales offices or e-mail:  
[sales@NextGenComponent.com](mailto:sales@NextGenComponent.com) .

## IMPORTANT NOTES AND DISCLAIMER

1. **ROHS COMPLIANCE:** The levels of RoHS restricted materials in this product are below the maximum concentration values (also referred to as the threshold limits) permitted for such substances, or are used in an exempted application, in accordance with EU RoHS Directive (EU) 2015/863 EC (RoHS3). RoHS Test Report for this product can be obtained at Download Center.
2. **REACH COMPLIANCE:** REACH substances of high concern (SVHCs) information is available for this product. Since the European Chemical Agency (ECHA) has published notice of their intent to frequently revise the SVHC listing for the foreseeable future, REACH Test Report for this product can be obtained at Download Center.
3. All Product parametric performance is indicated in the Electrical Characteristics for the listed herein test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
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