

Data Sheet

Customer:

Product: Thick Film High Power Chip Resistor
(Aluminum Nitride Substrate)- CRP Series

Size : 2512/1206

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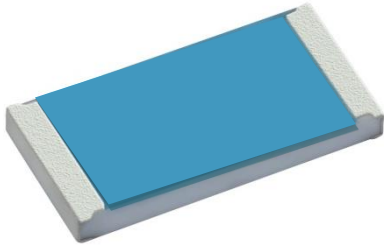
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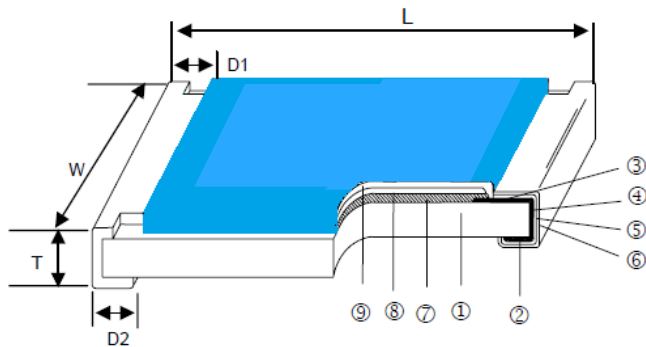
Thick Film High Power Chip Resistor Aluminum Nitride Substrate



■ Features

- Thick film resistive element on an aluminum nitride (AlN) substrates
- Lead (Pb)-free wraparound termination over nickel barrier.

■ Construction



■ Applications

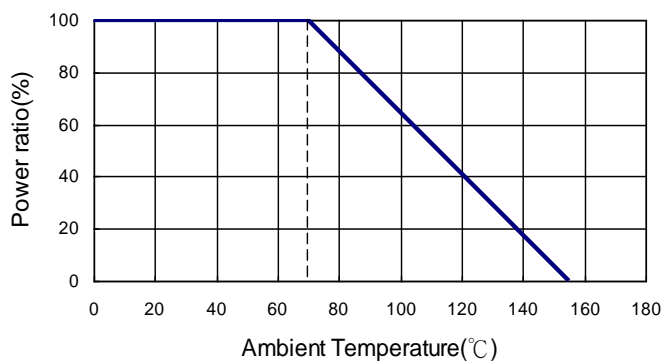
- Industrial
- Telecom markets

① Aluminum Nitride Substrate	④ Edge Electrode	⑦ Resistor Layer
② Bottom Electrode	⑤ Barrier Layer	⑧ Primary Overcoat
③ Top Electrode	⑥ External Electrode	⑨ Secondary Overcoat

■ Dimensions

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	D1 (mm)	D2 (mm)
CRP06	1206	3.10±0.13	1.52±0.13	0.51±0.13	0.38±0.13	1.22±0.13
CRP12	2512	6.35±0.13	3.15±0.13	0.51±0.13	0.60±0.25	2.70±0.10

■ Derating Curve



■Part Numbering

CRP	12	F	L	4	----1K
Product Type	Dimensions	Resistance Tolerance	Function Code	Packaging Code	Resistance
CRP	06: 1206 12: 2512	F: ±1% J: ±5%	L: Standard	4: 7" Reel 4Kpcs 7: 7" Reel 5Kpcs	----1K: 1KΩ ---10R: 10Ω “-“ to fill up 6 spaces

■Electrical Specifications

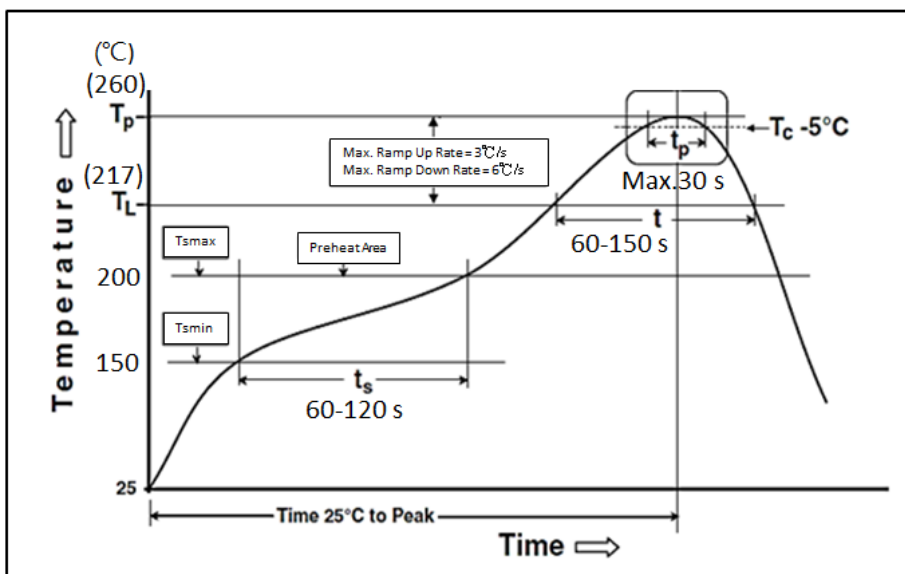
Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Resistance Range (Ω)		TCR (PPM/°C)
				±1%(E24、E96)	±5%(E24)	
CRP06	2.4W	-55 ~ +155°C	200	10Ω – 2KΩ		±150
CRP12	3.5W	-55 ~ +155°C	200	3Ω – 2KΩ		±150

Operating Voltage= $\sqrt{P \cdot R}$ or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$ or Max. overload voltage listed above, whichever is lower.

The power rating depends on the maximum temperature of the resistive element. The maximum power rating only applies if the temperature of the resistive element is maintained below 155°C.

■Soldering Condition (IPC/JEDEC J-STD-020)



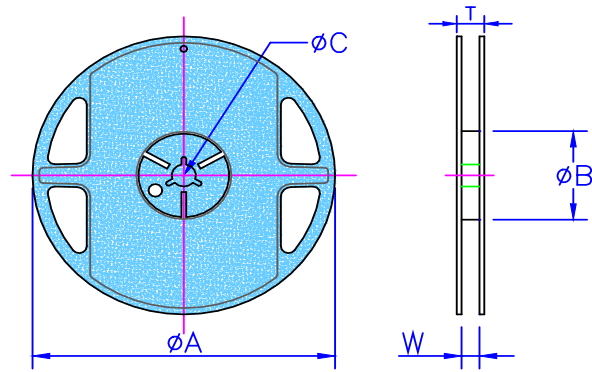
■ Environmental Characteristics

Item	Requirement	Typical	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	± 120 ppm	JIS-C-5201-1 4.8 IEC-60115-1 4.8 At 25°C/-55°C and 25°C/+125°C, 25°C is the reference temperature
Short Time Overload	± 0.50 %	± 0.10 %	CRP06:4.7W applied for 5s CRP12:7.7W applied for 5s
Endurance	± 0.50 %	± 0.20 %	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"
High Temperature Exposure	± 0.50 %	± 0.10 %	MIL-STD-202 Method 108 +150°C for 100hrs
Solderability	95% min. coverage	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17 245±5°C for 3 seconds
Terminal Strength	No evidence of mechanical damage	No evidence of mechanical damage	CRP06:2kg force applied CRP12:3kg force applied
Moisture Resistance	± 0.50 %	± 0.15 %	≥ 80% RH, 240 hrs
Resistance to Soldering Heat	± 0.50 %	± 0.20 %	MIL-STD-202 Method 210 260±5°C for 10 seconds

RCWV(Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.

■ Storage Temperature: 15~28°C; Humidity < 80%RH

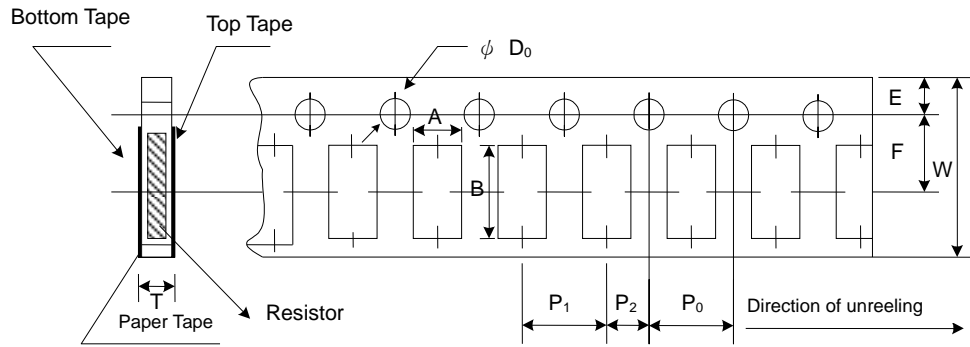
■Packaging



Reel Specifications & Packaging Quantity

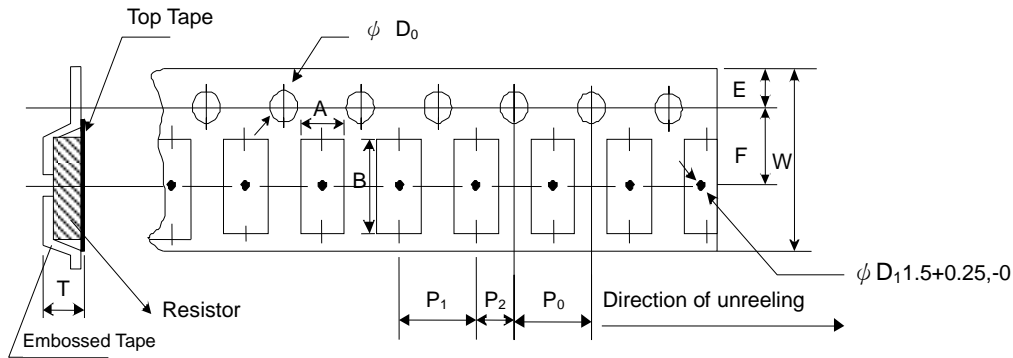
Type	Packaging Quantity		Tape Width	Reel Diameter	ϕA (mm)	ϕB (mm)	ϕC (mm)	W (mm)	T (mm)
1206	Paper	5K	8mm	7 inch	178.5±1.5	60 ^{+1/-0}	13.0±0.2	9.0±0.5	12.5±0.5
2512	Embossed	4K	12mm	7 inch	178.5±1.5	60 ^{+1/-0}	13.0±0.5	13.0±0.5	15.5±0.5

Paper Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD ₀ (mm)	T (mm)
1206	1.90±0.10	3.50±0.20	8.0±0.20	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.05	2.00±0.05	1.50+0.1,-0	0.85±0.10

Embossed Plastic Tape Specifications

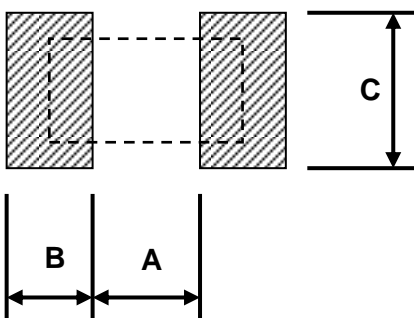


Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD ₀ (mm)	T (mm)
2512	3.50±0.10	6.70±0.10	12.0±0.30	1.75±0.10	5.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.50+0.1,-0	1.2 ⁺⁰

■ Marking

No Marking

■ Recommend Land Pattern



Type	A (mm)	B (mm)	C (mm)
CRP06	0.46	1.73	1.68
CRP12	0.61	3.40	3.30

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version A	Mar 10, 2021	-	- New product release
