

Data Sheet

Customer :

Product : Thin Film Precision Chip Resistor – ARN Series

Size: 1206

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VIKING TECH CORPORATION
光頡科技股份有限公司

No.70, Guangfu N. Rad.,
Hsin Chu Industrial Park,
Hukou Hsiang, Hsin Chu Hsien,
303, Taiwan

TEL:886-3-5972931

FAX:886-3-5972935•886-3-5973494

E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH
光頡科技股份有限公司高雄分公司

No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,
806, Taiwan

TEL:886-7-8217999

FAX:886-7-8228229

E-mail:sales@viking.com.tw

WUXI TMTEC CO., LTD.
無錫泰銘電子有限公司

No.1A,(Xixia Road),Machinery & Industry Park,
National Hi-Tech Industrial Development Zone of
Wuxi, Wuxi, Jiangsu Province, China

Zip Code:214028

TEL:86-510-85203339

FAX:86-510-85203667•86-510-85203977

E-mail:wuxisales@tmtec.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
06-Sep-19	06-Sep-19	06-Sep-19		
Chun	Ben Chang	Ben Chang		

Thin Film Precision Chip Resistor – ARN Series



■ Features

- High thermal conductivity aluminum nitride substrate
- Power rating up to 2.0W
- Resistance 500Ω ~ 15KΩ
- Resistor tolerance to ± 0.1%
- TCR to ± 25ppm/ ° C

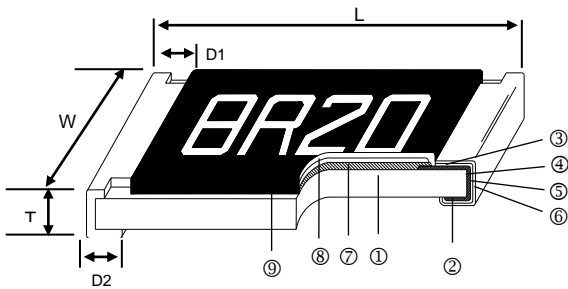
■ Applications

- Power Supplies
- Power Switching
- Braking System

■ Typical Performance

- TCR. 25 ppm/°C
- TOL. 0.1 %

■ Construction



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

■ Dimensions

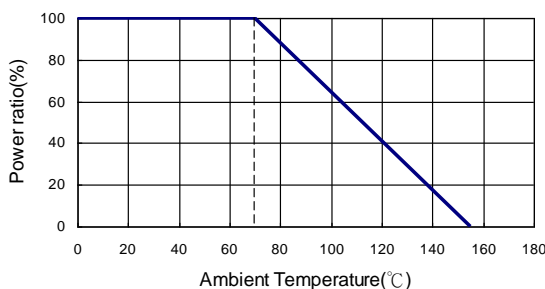
Unit: mm

Type	Size (Inch)	L	W	T	D1	D2	Weight (g) (1000pcs)
ARN06	1206	3.05±0.2	1.55±0.2	0.43±0.15	0.5±0.15	1.2±0.2	10.98

■ Part Numbering

ARN	06	C	T	C	S	1000	N
Product Type	Dimensions (LxW)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Marking Code
	06: 1206	B: ±0.1% C: ±0.25% D: ±0.5% F: ±1%	T: Taping Reel B: Bulk	C: ±25 D: ±50	S : 2W	5000: 500Ω 1002: 10KΩ	:Standard Marking N: No Marking

Derating Curve



Standard Electrical Specifications

Type	Item	Power Rating at 70°C	Operating Temp. Range	Max Operating Voltage	Max Overload Voltage	Resistance Range				TCR (PPM/°C)
						±0.1%	±0.25%	±0.5%	±1%	
ARN06 (1206)		2W ⁽¹⁾	-55°C ~ +150°C	100V	200V	500Ω~15KΩ				±25 ±50

(1) Dependant on component mounting by user.

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.

■ Viking is capable of manufacturing the optional spec based on customer's requirement.

Environmental Characteristics

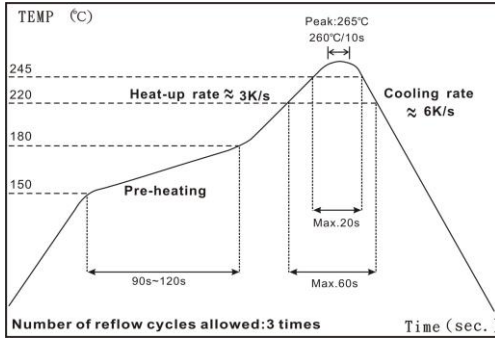
Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	MIL-STD-202 Method 304 +25/-55/+25/+125/+25°C
Short Time Overload	$\Delta R \pm 0.25 \%$	JIS-C-5201-1 4.13 RCWV*2.5 or Max. overload voltage whichever is lower for 5 seconds
Insulation Resistance	>9999MΩ	MIL-STD-202 Method 302 Apply 100V _{DC} for 1 minute
Endurance	$\Delta R \pm 0.4 \%$	MIL-STD-202 Method 108A 70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	$\Delta R \pm 0.4 \%$	MIL-STD-202 Method 103B 40±2°C, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Solderability	95% min. coverage	MIL-STD-202 Method 208H 245±5°C for 3 seconds
Resistance to Soldering Heat	$\Delta R \pm 0.2 \%$	MIL-STD-202 Method 210E 260±5°C for 10 seconds
Low Temperature Operation	$\Delta R \pm 0.2 \%$	JIS-C-5201-1 4.36 1 hour, -65°C, followed by 45 minutes of RCWV
High Temperature Exposure	$\Delta R \pm 1.0 \%$	MIL-STD-202 Method 108 At + 155°C for 1000hrs

RCWV(Rated continuous working voltage)= $\sqrt{P \cdot R}$ or Max. Operating voltage whichever is lower

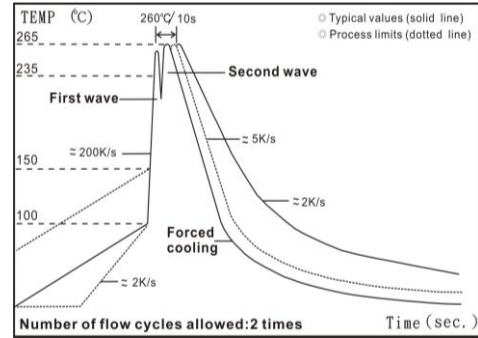
■ Reference Standards: MIL-STD-202, JIS-C 5201

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

■ Soldering Condition



IR Reflow Soldering



Wave Soldering (Flow Soldering)

- (1) Time of IR reflow soldering at maximum temperature point 260°C : 10s
- (2) Time of wave soldering at maximum temperature point 260°C : 10s
- (3) Time of soldering iron at maximum temperature point 410°C : 5s

■ Marking

1206 4digit marking

Example

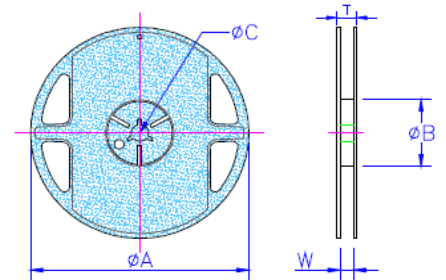
Resistance	500Ω	2.2KΩ	10KΩ	12.5KΩ
marking	5000	2201	1002	1252

■ Packaging

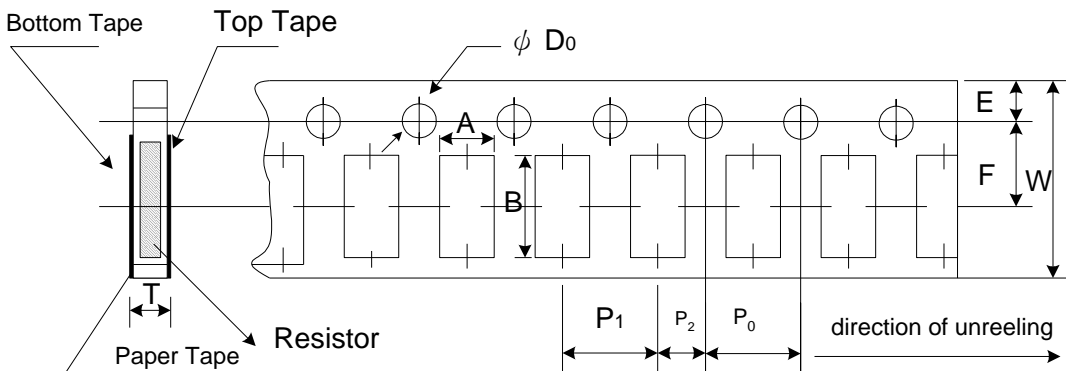
Packing Quantity & Reel Specifications

Unit :mm

Type	ØA	ØB	ØC	W	T	Paper Tape (EA)	Emboss Plastic Tape (EA)
ARN06	178.0±1.0	60.0±1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	-



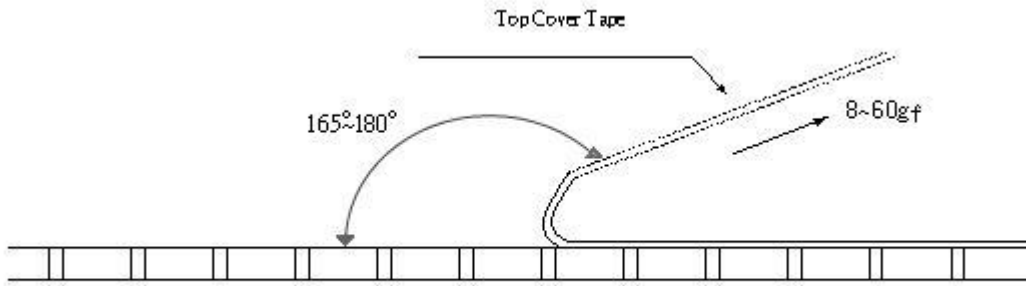
Paper Tape Specifications



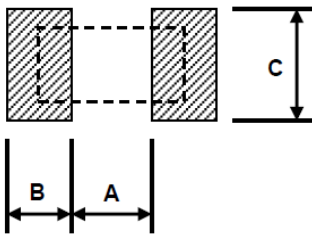
Unit: mm

Type	A	B	W	E	F	P ₀	P ₁	P ₂	ΦD ₀	T
ARN06	2.00±0.05	3.55±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05

- Peel force of top cover tape
- The peel speed shall be about 300mm/min±5%
- The peel force of top cover tape shall be between 8gf to 60gf



Recommend Land Pattern



Unit: mm

Type	A	B	C
ARN06	0.6±0.1	1.9±0.1	1.8±0.1