

Wire Bondable Chip Resistor

■ Features

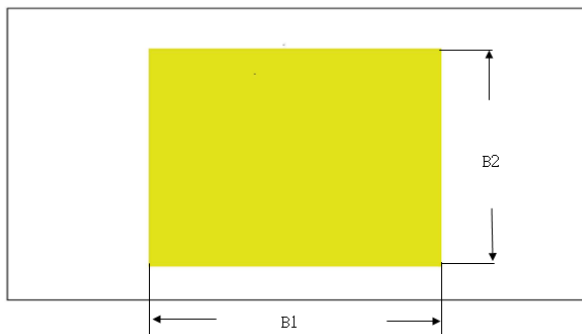
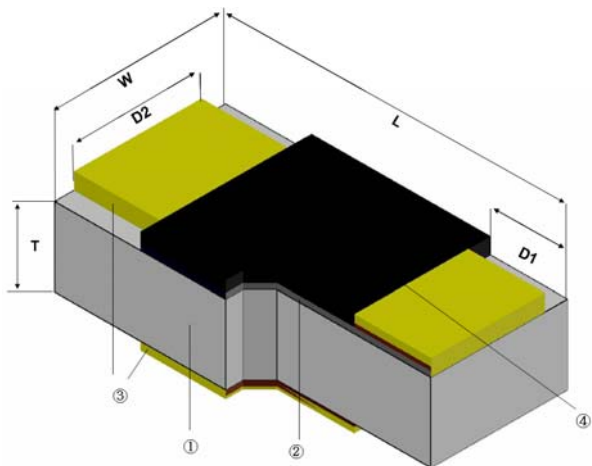
- Thin film passivated NiCr resistive element
- Tolerance of $\pm 0.1\%$
- Extremely low TCR down to $\pm 25\text{PPM}/^{\circ}\text{C}$
- Wide resistance range
- Customized bonding pattern design



■ Applications

- LED Constant Current Application
- Medical Equipment
- Testing / Measurement Equipment
- Hybrid Chip on Board Circuits
- Multi Chip Module(MCM) Package
- Integrated MMIC

■ Construction



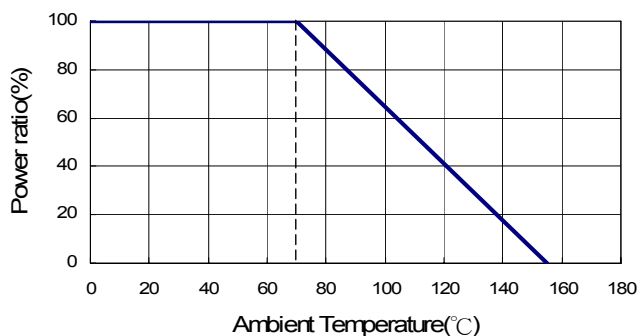
① Alumina Substrate	③ Ni/Au Plating (Bonding Pad)
② Passivated NiCr Resistive Element	④ Overcoat

■ Dimensions

Type	Size (Inch)	L	W	T	D1	D2	B1	B2	Weight (g) (1000pcs)
WB01	0201	0.58 \pm 0.05	0.29 \pm 0.05	0.20 \pm 0.05	0.12 \pm 0.05	0.20 \pm 0.05	0.40 \pm 0.1	0.20 \pm 0.1	0.124
WB02	0402	1.00 \pm 0.05	0.50 \pm 0.05	0.30 \pm 0.05	0.20 \pm 0.10	0.35 \pm 0.05	0.65 \pm 0.1	0.30 \pm 0.1	0.485
WB03	0603	1.55 \pm 0.10	0.80 \pm 0.10	0.42 \pm 0.10	0.30 \pm 0.10	0.63 \pm 0.10	1.00 \pm 0.1	0.60 \pm 0.1	1.720

Unit : mm

Derating Curve



Part Numbering

WB	02	D	T	E	1000	A	N
Product Type	Dimensions (L×W)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Resistance	Construction	Electrode
	01: 0201 02: 0402 03: 0603	B: ±0.1% D: ±0.5% F: ±1% J: ±5% K: ±10%	T: Taping Reel B: Bulk P: Panel	C: ±25 D: ±50 E: ±100	0100: 10Ω 1000: 100Ω 2201: 2200Ω 1002: 10000Ω	A: Two Bonding Pads	N: Ni / Au

Standard Electrical Specifications

<div>Item</div> <div>Type</div>	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Resistance Range					TCR (PPM/°C)
					±0.1%	±0.5%	±1%	±5%	±10%	
WB01 (0201)	1/32W	-55 ~ +155°C	15V	30V	—	49.9Ω - 33KΩ				±50 ±100
WB02 (0402)	1/16W		25V	50V	10Ω - 100KΩ				±25 ±50 ±100	
WB03 (0603)	1/16W		50V	100V	10Ω - 332KΩ				±25 ±50 ±100	

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
	Tol. < 0.1%	Tol. > 0.1%	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		MIL-STD-202 Method 304 +25/-55/+25/+125/+25°C
Short Time Overload	$\Delta R \pm 0.5\%$		JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage whichever is lower for 5 seconds
Insulation Resistance	>1000MΩ		MIL-STD-202 Method 302 Apply 100V _{DC} for 1 minute
Endurance	$\Delta R \pm 0.2\%$ >7kΩ $\Delta R \pm 0.5\%$		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	$\Delta R \pm 0.3\%$		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"
Dry Heat	$\Delta R \pm 0.2\%$	$\Delta R \pm 0.5\%$	JIS-C-5201-1 7.2 at +155°C for 1000 hrs

Dielectric Withstand Voltage	By Type	MIL-STD-202 Method 301 Apply Max. overload voltage for 1 minute
Thermal Shock	$\Delta R \pm 0.25\%$	MIL-STD-202 Method 107G -55°C ~ 150°C, 100 cycles
Low Temperature Operation	$\Delta R \pm 0.2\%$	JIS-C-5201-1 7.1 1 hour, -65°C, followed by 45 minutes of RCWV

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

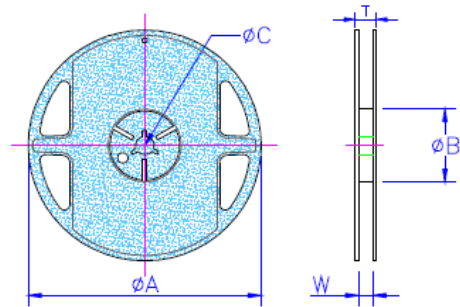
■ **Storage Temperature: 15~28°C; Humidity < 80%RH**

■ Packaging

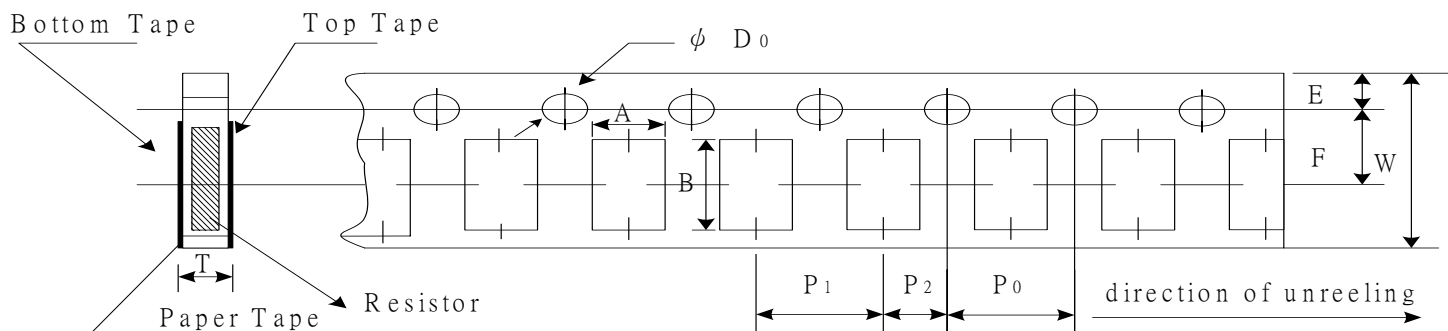
Reel Specifications & Package Quantity

Unit:mm

Type	ΦA	ΦB	ΦC	W	T	Paper Tape (EA)
WB01	178±1	60.0±1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0	10,000
WB02	178±1	60.0±1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0	10,000
WB03	178±1	60.0±1.0	13.5±0.7	9.5±1.0	11.5 ± 1.0	5,000



Paper Tape Specifications



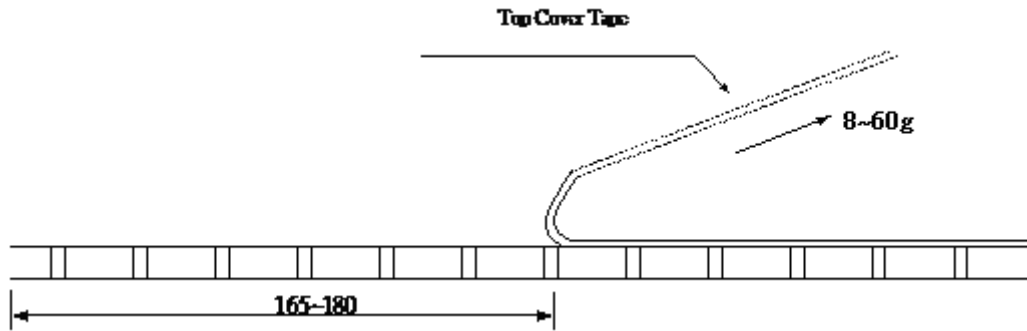
Unit :mm

Type	A	B	W	E	F	P ₀	P ₁	P ₂	ψD ₀	T
WB01	0.36±0.02	0.66±0.02	8.00±0.10	1.75±0.10	3.50±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.55±0.05	0.42±0.03
WB02	0.70±0.05	1.16±0.05	8.00±0.10	1.75±0.10	3.50±0.05	4.00±0.10	2.00±0.05	2.00±0.05	1.55±0.05	0.40±0.03
WB03	1.10±0.05	1.90±0.05	8.00±0.10	1.75±0.10	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.60±0.03

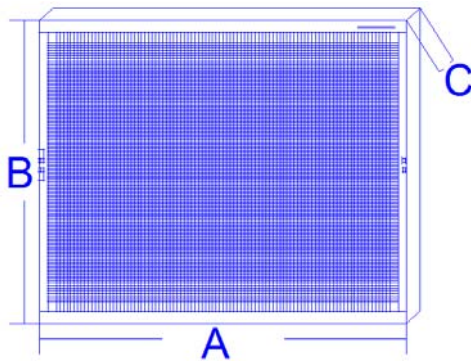
■ Peel force of top cover tape

■ The peel speed shall be about 300mm/min±5%

■ The peel force of top cover tape shall be between 8 to 60g



■ Panel Size

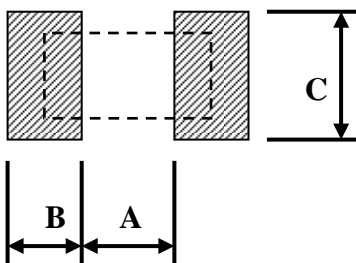


Unit:mm

Type	A	B	C	Panel (EA)
WB01	60.0±0.2	49.5±0.2	0.20±0.05	11468
WB02	60.0±0.2	49.5±0.2	0.30±0.05	4560
WB03	60.0±0.2	49.5±0.2	0.42±0.10	2166

■ Recommend Land Pattern

Unit:mm



Type	A	B	C
WB01	0.25	0.30	0.40±0.2
WB02	0.50	0.50	0.60±0.2
WB03	0.80	1.00	0.90±0.2