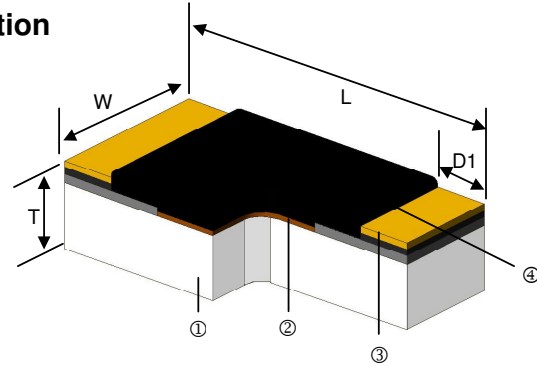
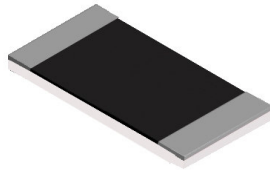


Wire Bondable Chip Resistor – WB Series

Construction



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

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

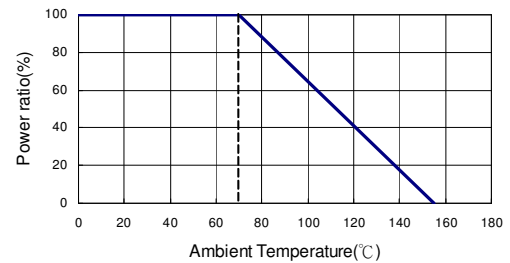
- LED Constant Current Application
- Medical Equipment
- Testing / Measurement Equipment
- Hybrid Chip on Board Circuits
- Multi Chip Module(MCM) Package
- Integrated MMIC

Dimensions

Unit: mm

Type	Size (Inch)	L	W	T	D1	Weight (g) (1000pcs)
WB01	0201	0.58 ± 0.05	0.29 ± 0.05	0.23 ± 0.05	0.12 ± 0.05	1
WB02	0402	1.00 ± 0.05	0.50 ± 0.05	0.30 ± 0.05	0.20 ± 0.10	1.8
WB03	0603	1.55 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	2.7

Derating Curve



Part Numbering

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

Standard Electrical Specifications

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

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

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

Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	+25/-55/+25/+125/+25°C
Short Time Overload	$\Delta R \pm 0.5\%$	RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	>1000M Ω	Apply 100V _{DC} for 1 minute
Endurance	$\Delta R \pm 0.2\%$	70 ± 2 °C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
	>7k Ω $\Delta R \pm 0.5\%$	
Damp Heat with Load	$\Delta R \pm 0.3\%$	40 ± 2 °C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry Heat	$\Delta R \pm 0.2\%$	at +155°C for 1000 hrs
Bending Strength	$\Delta R \pm 0.2\%$	Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage	245 ± 5 °C for 3 seconds
Resistance to Soldering Heat	$\Delta R \pm 0.2\%$	260 ± 5 °C for 10 seconds
Dielectric Withstand Voltage	By Type	Apply Max. overload voltage for 1 minute
Thermal Shock	$\Delta R \pm 0.25\%$	-55°C ~150°C, 100 cycles
Low Temperature Operation	$\Delta R \pm 0.2\%$	1 hour, -65°C, followed by 45 minutes of RCWV

■ Reference Standards: MIL-STD-202, JIS-C 5201-1

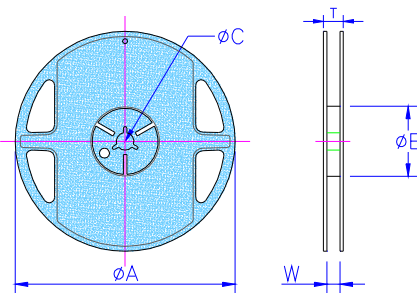
■ Storage Temperature: 25 ± 3 °C; Humidity < 80%RH

Packaging

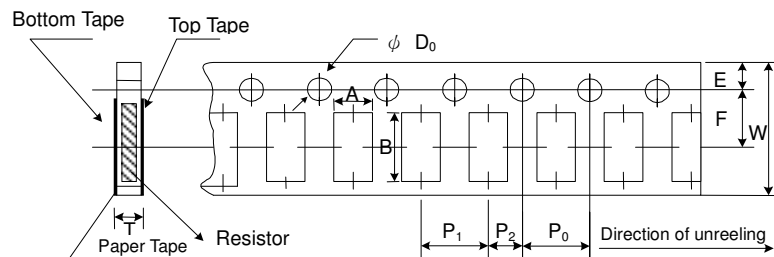
Reel Specifications & Packaging Quantity

Unit: mm

Type	ΦA	ΦB	ΦC	W	T	Paper Tape (EA)
WB01	178.0 ± 1.0	60.0 ± 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	10,000
WB02	178.0 ± 1.0	60.0 ± 1.0	13.5 ± 0.7	9.5 ± 1.0	11.5 ± 1.0	10,000
WB03	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
WB01	0.40 ± 0.05	0.70 ± 0.05	8.00 ± 0.10	1.75 ± 0.05	3.50 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	2.00 ± 0.05	1.55 ± 0.05	0.265 ± 0.05
WB02	0.70 ± 0.05	1.16 ± 0.05	8.00 ± 0.10	1.75 ± 0.05	3.50 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	2.00 ± 0.05	1.55 ± 0.03	0.40 ± 0.03
WB03	1.10 ± 0.05	1.90 ± 0.05	8.00 ± 0.10	1.75 ± 0.05	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.55 ± 0.03	0.40 ± 0.03