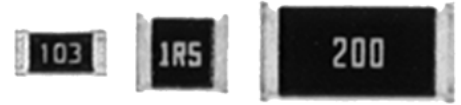


- Features:
- Thin film passivated NiCr resistive element with Ni/Au plated terminations
  - Tolerance as low as 0.1%
  - Extremely low TCR down to  $\pm 25 \text{ ppm}/^\circ\text{C}$
  - Power derating from 100% at  $70^\circ\text{C}$  to zero at  $+155^\circ\text{C}$
  - Customized bonding pattern design
  - RoHS compliant / lead-free

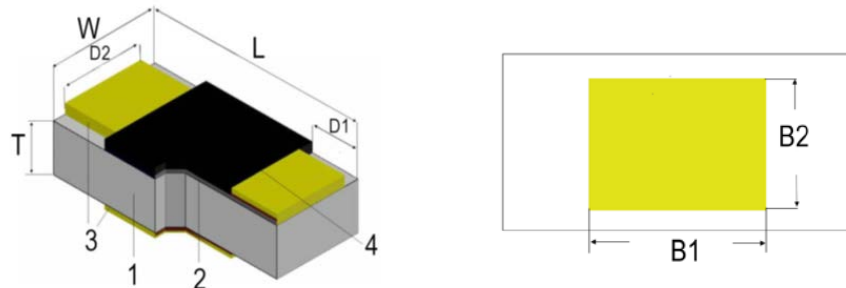


Electrical Specifications							
Type / Code	Power Rating (Watts) @ $70^\circ\text{C}$	Maximum Working Voltage <sup>(1)</sup>	Maximum Overload Voltage <sup>(2)</sup>	Resistance Temperature Coefficient	Ohmic Range ( $\Omega$ ) and Tolerance		
					0.1%	0.5%	1%
RNCW0201	0.031W	15V	30V	$\pm 50 \text{ ppm}/^\circ\text{C}$ $\pm 100 \text{ ppm}/^\circ\text{C}$	-	49.9 - 33K	
RNCW0402	0.063W	25V	50V	$\pm 25 \text{ ppm}/^\circ\text{C}$ $\pm 50 \text{ ppm}/^\circ\text{C}$ $\pm 100 \text{ ppm}/^\circ\text{C}$	10 - 100K		
RNCW0603	0.063W	50V	100V	$\pm 25 \text{ ppm}/^\circ\text{C}$ $\pm 50 \text{ ppm}/^\circ\text{C}$ $\pm 100 \text{ ppm}/^\circ\text{C}$	10 - 332K		

Operating Temperature Range:  $-55 \sim +155^\circ\text{C}$

Note: (1) Operating Voltage =  $\sqrt{P \cdot R}$  or Max Operating Voltage listed above, whichever is lower  
 (2) Overload Voltage =  $2.5 \cdot \sqrt{P \cdot R}$  or Max Overload Voltage listed above, whichever is lower  
 Operating Temperature Range:  $-55 \sim +155^\circ\text{C}$

### Mechanical Specifications

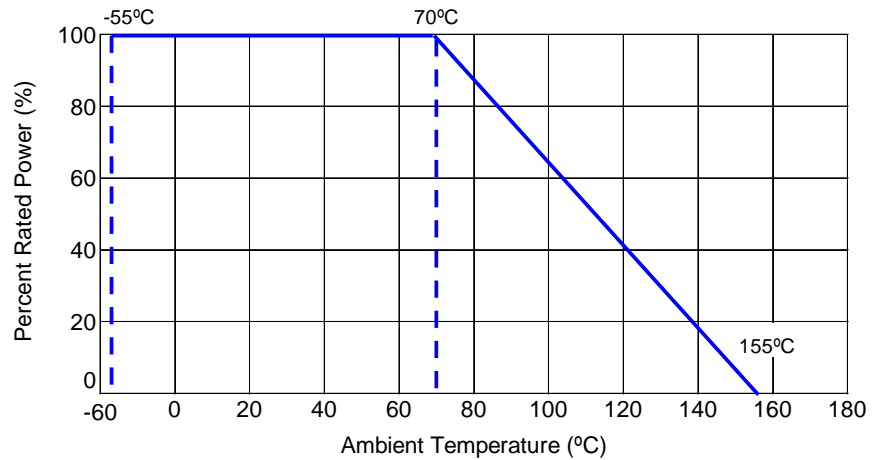


Type / Code	Weight (g) (1000 pc)	L	W	T	D1	D2	B1	B2	Unit
RNCW0201	0.124	$0.023 \pm 0.002$ $0.58 \pm 0.05$	$0.011 \pm 0.002$ $0.29 \pm 0.05$	$0.008 \pm 0.002$ $0.20 \pm 0.05$	$0.005 \pm 0.002$ $0.12 \pm 0.05$	$0.008 \pm 0.002$ $0.20 \pm 0.05$	$0.016 \pm 0.004$ $0.40 \pm 0.10$	$0.008 \pm 0.004$ $0.20 \pm 0.10$	inches mm
RNCW0402	0.485	$0.039 \pm 0.002$ $1.00 \pm 0.05$	$0.020 \pm 0.002$ $0.50 \pm 0.05$	$0.012 \pm 0.002$ $0.30 \pm 0.05$	$0.008 \pm 0.004$ $0.20 \pm 0.10$	$0.014 \pm 0.002$ $0.35 \pm 0.05$	$0.026 \pm 0.004$ $0.65 \pm 0.10$	$0.012 \pm 0.004$ $0.30 \pm 0.10$	inches mm
RNCW0603	1.72	$0.061 \pm 0.004$ $1.55 \pm 0.10$	$0.031 \pm 0.004$ $0.80 \pm 0.10$	$0.017 \pm 0.004$ $0.42 \pm 0.10$	$0.012 \pm 0.008$ $0.30 \pm 0.20$	$0.025 \pm 0.004$ $0.63 \pm 0.10$	$0.039 \pm 0.004$ $1.00 \pm 0.10$	$0.024 \pm 0.004$ $0.60 \pm 0.10$	inches mm

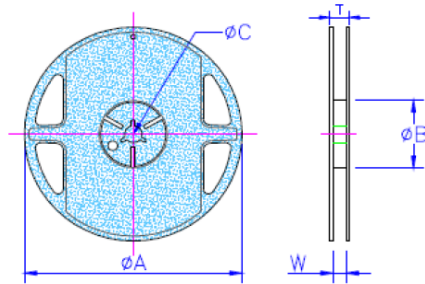
Performance Characteristics			
Test	Test Method	Test Specification	Test Condition
Short time overload	JIS-C-5201-1 5.5	$\Delta R \pm 0.5\%$	RCWV*2.5 or max. overload voltage whichever is lower for 5 seconds
Insulation resistance	MIL-STD-202 Method 302	$>1000M\Omega$	Apply 100 V <sub>DC</sub> for 1 minute
Endurance	MIL-STD-202 Method 108A	$\Delta R \pm 0.2\%$ $>7k\Omega \Delta R \pm 0.5\%$	70°C $\pm 2^\circ\text{C}$ , RCWV for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Damp heat with load	MIL-STD-202 Method 103B	$\Delta R \pm 0.3\%$	40°C $\pm 2^\circ\text{C}$ , 90-95% R.H., RCWV for 1000 hours with 1.5 hours "ON" and 0.5 hours "OFF"
Dry heat	JIS-C-5201-1 7.2	$\Delta R \pm 0.2\%$	at +155°C for 1000 hours
Bending strength	JIS-C-5201-1 6.1.4	$\Delta R \pm 0.2\%$	Bending amplitude 3mm for 10 seconds
Solderability	MIL-STD-202 Method 208H	95% min. coverage	245°C $\pm 5^\circ\text{C}$ for 3 seconds
Resistance to soldering heat	MIL-STD-202 Method 210E	$\Delta R \pm 0.2\%$	260°C $\pm 5^\circ\text{C}$ for 10 seconds
Dielectric withstand voltage	MIL-STD-202 Method 301	by type	Apply max. overload voltage for 1 minute
Thermal shock	MIL-STD-202 Method 107G	$\Delta R \pm 0.25\%$	-55°C ~ 150°C, 100 cycles
Low temperature operation	JIS-C-5201-1 7.1	$\Delta R \pm 0.2\%$	1 hour, -65°C, followed by 45 minutes of RCWV

RCWV (Rated continuous working voltage) =  $v(P^*R)$  or max. operating voltage whichever is lower  
Storage temperature: 25°C  $\pm 3^\circ\text{C}$ ; humidity < 80% R.H.

**Power Derating Curve:**

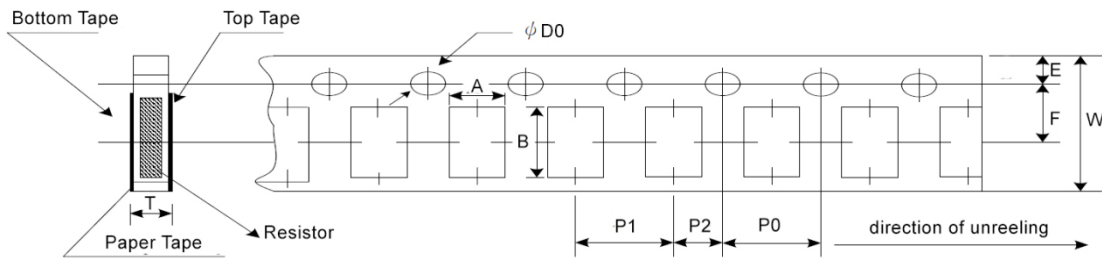


### Reel Specifications



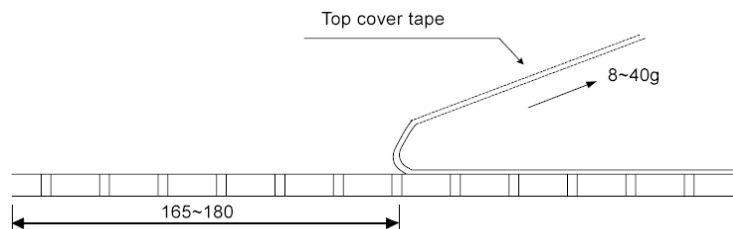
Type / Code	A	B	C	W	T	Unit
RNCW0201	7.008 ± 0.039	2.362 ± 0.039	0.531 ± 0.028	0.374 ± 0.039	0.453 ± 0.039	inches
	178.00 ± 1.00	60.00 ± 1.00	13.50 ± 0.70	9.50 ± 1.00	11.50 ± 1.00	mm
RNCW0402	7.008 ± 0.039	2.362 ± 0.039	0.531 ± 0.028	0.374 ± 0.039	0.453 ± 0.039	inches
	178.00 ± 1.00	60.00 ± 1.00	13.50 ± 0.70	9.50 ± 1.00	11.50 ± 1.00	mm
RNCW0603	7.008 ± 0.039	2.362 ± 0.039	0.531 ± 0.028	0.374 ± 0.039	0.453 ± 0.039	inches
	178.00 ± 1.00	60.00 ± 1.00	13.50 ± 0.70	9.50 ± 1.00	11.50 ± 1.00	mm

### Paper Tape Specifications

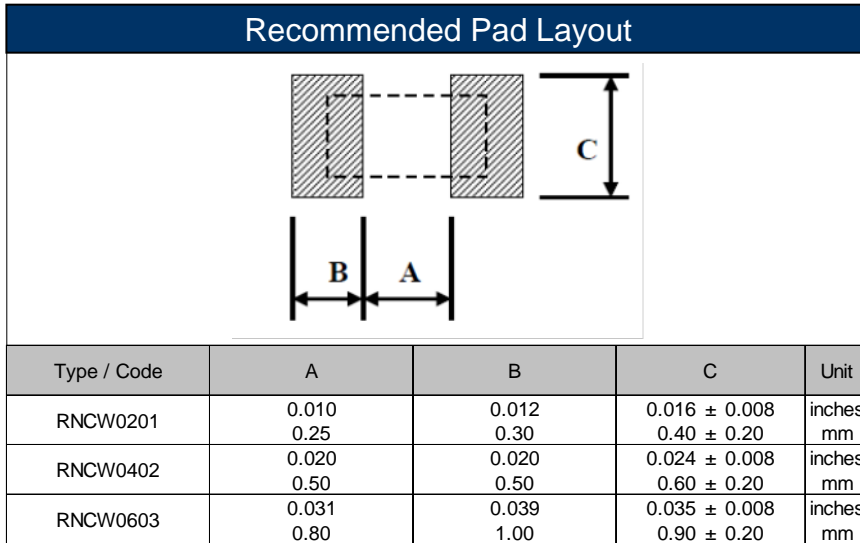


Type / Code	A	B	W	E	F	P0	P1	P2	D0	T	Unit
RNCW0201	0.016 ± 0.002	0.028 ± 0.002	0.315 ± 0.004	0.138 ± 0.002	0.069 ± 0.002	0.079 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.061 ± 0.002	0.010 ± 0.002	inches
	0.40 ± 0.05	0.70 ± 0.05	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.05	2.00 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	1.55 ± 0.05	0.27 ± 0.05	mm
RNCW0402	0.028 ± 0.002	0.046 ± 0.002	0.315 ± 0.004	0.138 ± 0.002	0.069 ± 0.002	0.079 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.061 ± 0.001	0.016 ± 0.001	inches
	0.70 ± 0.05	1.16 ± 0.05	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.05	2.00 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	1.55 ± 0.03	0.40 ± 0.03	mm
RNCW0603	0.043 ± 0.002	0.075 ± 0.002	0.315 ± 0.004	0.138 ± 0.002	0.069 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.157 ± 0.004	0.061 ± 0.001	0.016 ± 0.012	inches
	1.10 ± 0.05	1.90 ± 0.05	8.00 ± 0.10	3.50 ± 0.05	1.75 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	1.55 ± 0.03	0.40 ± 0.30	mm

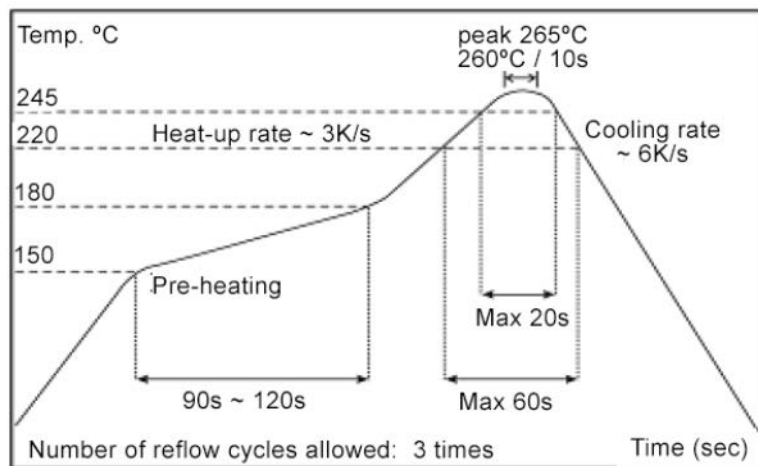
### Peel Force Specifications



- 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 40g



Reflow chart:



### How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
R	N	C	W	0	2	0	1	F	T	D	4	K	7	0

Product Series	Size	Power	Tolerance			Packaging				TCR		Resistance Value
RNCW Wirebondable	0201	0.031W	Code	Tol	Value	Code	Description	Size	Quantity	Code	ppm	Four characters with the multiplier used as the decimal holder.  50 ohm = 50R0 10 Kohm = 10K0
	0402	0.063W	B	0.1%	E96	T	7" Reel	0201, 0402	10,000	E	25	
	0603	0.125W	D	0.5%	E24		Paper Tape	0603	5,000	C	50	
			F	1%	E24					D	100	