

WIRE WOUND RESISTORS

KNP SERIES

Feature

- Small size and low cost.
- Super heat dissipation, instant overload capability.
- Standard tolerance: $\pm 1\%$, $\pm 5\%$
- Standard Value: E24 series as range below
- Miniature size available (As KNP-S type)
- Available in non-inductive style (As NKNP type)
- Flameproof coating, silicone paint meet UL 94V-0
- Operating temperature : $-40^{\circ}\text{C} \sim +200^{\circ}\text{C}$

Material

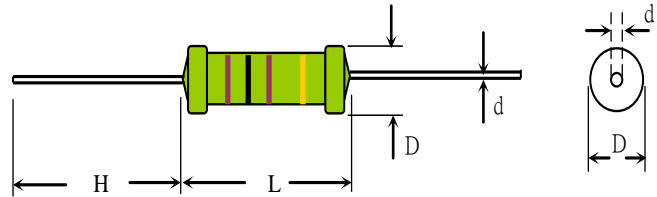
Element: Alloy Resistance Wire

Core: High purity ceramic Al₂O₃

Termination: Standard solder-plated copper lead

Coating: Green silicone

Dimension



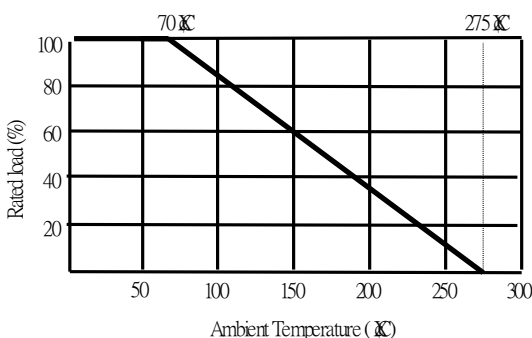
General Specification

TYPE	DIMENSION(mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	RESISTANCE	
	L	D	H	d ± 0.05			STANDARD	MAXIMUM
KNP025	6.3 ± 1.0	2.5 ± 0.3	27 ± 3.0	0.55	1/4W	$E = \sqrt{P * R}$	0.1 Ω -27 Ω	
KNP050	9.0 ± 2.0	3.0 ± 2.0	27 ± 3.0	0.70	1/2W		0.1 Ω -80 Ω	220 Ω
KNP100S	9.0 ± 2.0	3.0 ± 2.0	27 ± 3.0	0.70	1WS		0.1 Ω -80 Ω	220 Ω
KNP100	11.0 ± 2.0	4.0 ± 2.0	33 ± 3.0	0.80	1W		0.1 Ω -100 Ω	470 Ω
KNP200S	11.0 ± 2.0	4.0 ± 2.0	33 ± 3.0	0.80	2WS		0.1 Ω -100 Ω	470 Ω
KNP200	15.0 ± 2.0	5.0 ± 2.0	33 ± 3.0	0.80	2W		0.1 Ω -100 Ω	1K Ω
KNP300S	15.0 ± 2.0	5.0 ± 2.0	33 ± 3.0	0.80	3WS		0.1 Ω -100 Ω	1K Ω
KNP300	17.0 ± 2.0	6.0 ± 2.0	33 ± 3.0	0.80	3W		0.1 Ω -150 Ω	1K Ω
KNP500S	17.0 ± 2.0	6.0 ± 2.0	33 ± 3.0	0.80	5WS		0.1 Ω -150 Ω	1K Ω
KNP500	25.0 ± 2.0	8.0 ± 2.0	38 ± 3.0	0.80	5W		0.1 Ω -150 Ω	1K Ω

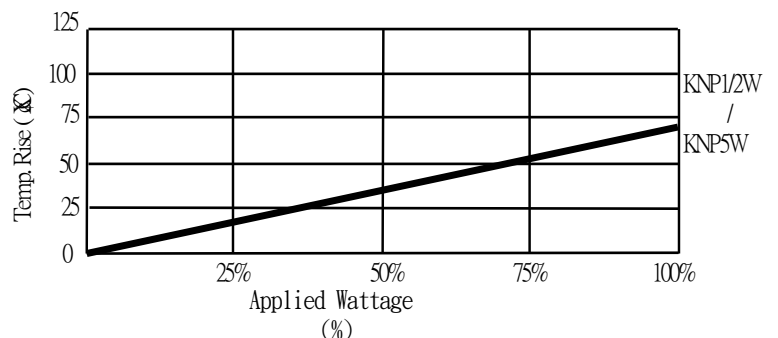
* Maximum overload voltage equals to $\sqrt{P * R \times 10}$

** Resistance values out of standard range is available on request.

Derating Curve



Temperature Rise



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Characteristics

Item	Requirement	Test Method
Short Time Overload	$\pm(2.5\%+0.05\Omega)$	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	$> 1000M\Omega$	JIS-C-5201-1 5.6 Apply 100VDC for 1 minute
Endurance	$\pm(1.5\%+0.05\Omega)$	JIS-C-5201-1 7.10 70 \pm 2 $^{\circ}$ C, Max. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Damp Heat with Load	$\pm(1.5\%+0.05\Omega)$	JIS-C-5201-1 7.9 40 \pm 2 $^{\circ}$ C, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Solder ability	90% min. Coverage	JIS-C-5201-1 6.5 245 \pm 5 $^{\circ}$ C for 3 seconds
Dielectric Withstanding Voltage	1/2W, 1W : 300V 2W, 3W, 5W : 400V	JIS-C-5201-1 5.7 Apply Max. Overload Voltage for 1 minute
Temperature Coefficient	$\pm 300PPM/^{\circ}C$	Resistance value at room temperature and room Temperature+100 $^{\circ}$ C
Pulse Overload	$\pm(1\%+0.05\Omega)$	JIS-C-5201-1 5.8 4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Resistance To Solvent	No deterioration of coatings and markings	JIS-C-5201-1 6.9 Trichroethane for 1 min. with ultrasonic
Terminal Strength	Tensile: ≥ 2.5 kg	Direct Load for 10 seconds In the direction off the terminal leads
Shelf Life	$\Delta R = \pm 0.1\%$	12 months at room temperature 25 \pm 3 $^{\circ}$ C, 80%RH Max.

***Storage Temperature : 25 \pm 3 $^{\circ}$ C ; Humidity < 80%RH**

Part Numbering

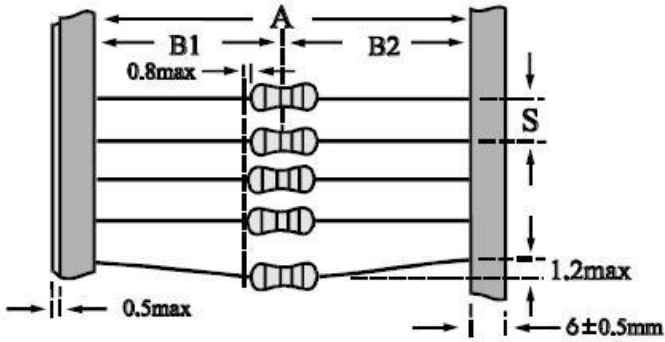
<u>KNP025</u>	<u>J</u>	<u>TB</u>	<u>10R</u>
↓	↓	↓	↓
Type/Power	Tol.	Package	Resistance
KNP025	F= \pm 1%	B=Bulk	0R1 = 0.1 Ω
KNP050	J= \pm 5%	TB=Tape/box	10R = 10 Ω
KNP100		TR=Tape/reel	1KR = 1K Ω
KNP200		Lead forming	
KNP300		M	
KNP500		F	

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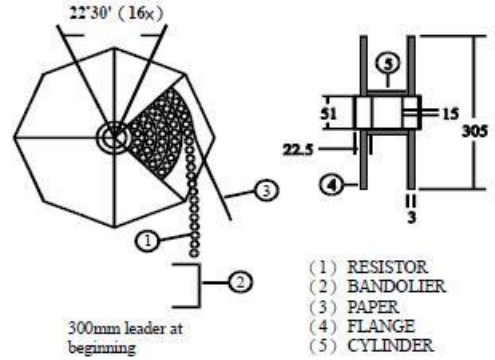
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Taping/Packing Specification

Packing Methods

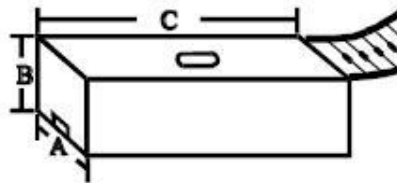


Reel Packing



TYPE	PACKING METHOD			REEL PACKING	
	A	B1-B2 Max	S	Across Flange (A)	Q'TY
KNP025/KNP050S	52+1/-0	1.2	5	72	5000
KNP050/KNP100S	52+1/-0	1.2	5	72	2500
KNP100/KNP200S	52+1/-0	1.2	5	72	1000
	73+1/-0	1.5	5	72	1000
KNP200/KNP300S	52+1/-0	1.2	5	72	1000
	73+1/-0	1.5	5	72	1000
KNP300/KNP500S	73+1/-0	1.5	10	95	1000
KNP500	88+1/-0	1.5	10	110	1000

Ammo Packing



TYPE	PACKING METHOD			AMMO PACKING			
	A	B1-B2 Max	S	A	B	C	Q'TY
KNP025/KNP050S	52+1/-0	1.2	5	85	103	263	5000
KNP050/KNP100S	52+1/-0	1.2	5	85	95	263	2000
KNP100/KNP200S	52+1/-0, 73+1/-0	1.2, 1.5	5	85,103	102,85	263	1000
KNP200/KNP300S	52+1/-0, 73+1/-0	1.2, 1.5	5	85,103	102,85	263	1000
KNP300/KNP500S	52+1/-0, 73+1/-0	1.2, 1.5	10	85,103	102,85	263	1000
KNP500	88+1/-0	1.5	10	120	75	270	250