

# 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 94-V-0
- Operating temperature :  $-55^{\circ}\text{C} \sim +275^{\circ}\text{C}$

## Material

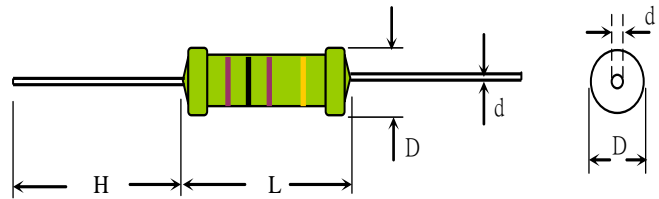
Element: Alloy Resistance Wire

Core: High purity ceramic Al<sub>2</sub>O<sub>3</sub>

Termination: Standard solder-plated copper lead

Coating: Green silicone

## Dimension



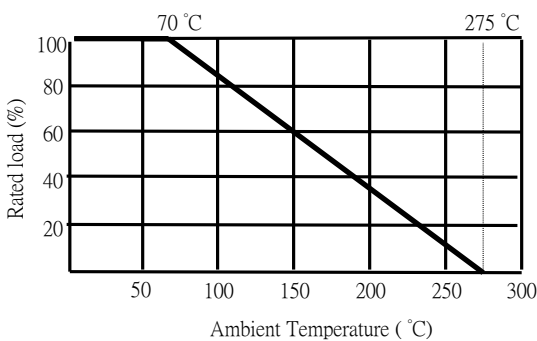
## General Specification

TYPE	DIMENSION(mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	RESISTANCE	
	L	D	H	d $\pm 0.05$			STANDARD	MAXIMUM
KNP025	6.3 $\pm 1.0$	2.5 $\pm 0.3$	27 $\pm 3.0$	0.55	1/4W	$E = \sqrt{P * R}$	0.1 $\Omega$ - 27 $\Omega$	
KNP050	9.0 $\pm 1.0$	3.2 $\pm 1.0$	27 $\pm 3.0$	0.65	1/2W		0.1 $\Omega$ - 80 $\Omega$	220 $\Omega$
KNP100S	9.0 $\pm 1.0$	3.2 $\pm 1.0$	27 $\pm 3.0$	0.65	1WS		0.1 $\Omega$ - 80 $\Omega$	220 $\Omega$
KNP100	11.0 $\pm 2.0$	4.0 $\pm 1.0$	33 $\pm 3.0$	0.80	1W		0.1 $\Omega$ - 100 $\Omega$	470 $\Omega$
KNP200S	11.0 $\pm 2.0$	4.0 $\pm 1.0$	33 $\pm 3.0$	0.80	2WS		0.1 $\Omega$ - 100 $\Omega$	470 $\Omega$
KNP200	15.0 $\pm 2.0$	5.0 $\pm 1.0$	33 $\pm 3.0$	0.80	2W		0.1 $\Omega$ - 100 $\Omega$	1K $\Omega$
KNP300S	15.0 $\pm 2.0$	5.0 $\pm 1.0$	33 $\pm 3.0$	0.80	3WS		0.1 $\Omega$ - 100 $\Omega$	1K $\Omega$
KNP300	17.0 $\pm 2.0$	6.0 $\pm 1.0$	33 $\pm 3.0$	0.80	3W		0.1 $\Omega$ - 150 $\Omega$	1K $\Omega$
KNP500S	17.0 $\pm 2.0$	6.0 $\pm 1.0$	33 $\pm 3.0$	0.80	5WS		0.1 $\Omega$ - 150 $\Omega$	1K $\Omega$
KNP500	25.0 $\pm 2.0$	8.0 $\pm 2.0$	38 $\pm 3.0$	0.80	5W		0.1 $\Omega$ - 150 $\Omega$	1K $\Omega$

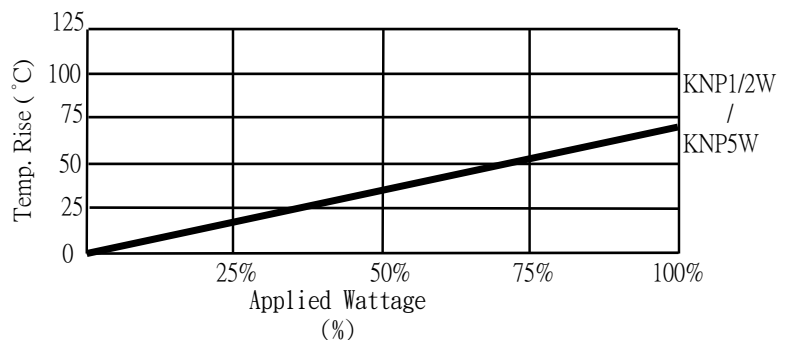
\* Maximum overload voltage equals to  $\sqrt{P * R \times 10}$

\*\* 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: $\geq 2.5$ 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

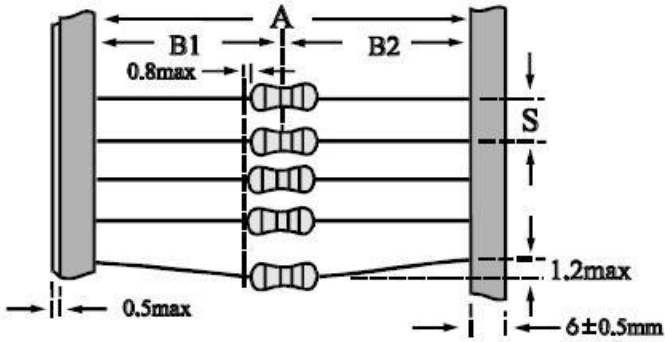
<u>KNP025</u>	<u>J</u>	<u>TB</u>	<u>10R</u>
↓	↓	↓	↓
Type/Power	Tol.	Package	Resistance
KNP025	F= $\pm$ 1%	B=Bulk	0R1 = 0.1 $\Omega$
KNP050	J= $\pm$ 5%	TB=Tape/box	10R = 10 $\Omega$
KNP100		TR=Tape/reel	1KR = 1K $\Omega$
KNP200		Lead forming	
KNP300		M	
KNP500		F	

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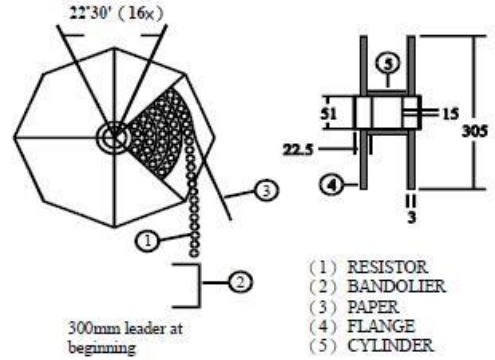
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## Taping/Packing Specification

Packing Methods

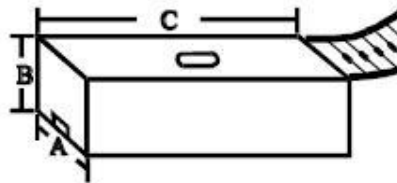


Reel Packing



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