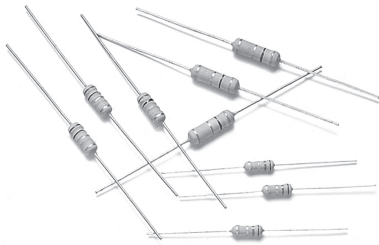


Wire Wound Resistors

Flame-Proof Type

Normal & Miniature Style [KNP Series]



INTRODUCTION

The resistor element is a resistive wire which is wound in a single layer on a ceramic rod or fiber-glass, tinned connecting wires of electrolytic copper are welded to the end-caps. The ends of the resistance wire and the leads are connected to the caps by welding. The resistors are coated with layers of green color flame proof lacquer.

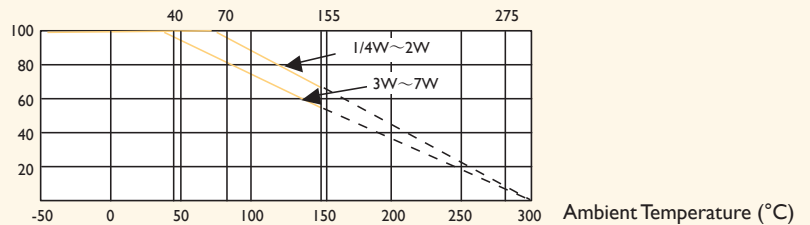
FEATURES

Power Rating	1/4W, 1/2W, 1W, 2W, 3W, 4W, 5W, 7W
Resistance Tolerance	±1%, ±5%
T.C.R.	±300ppm/°C
Flameproof Multi-layer Coating Meets	UL-94V-0
Flameproof Feature Meets Overload Test	UL-1412

DERATING CURVE

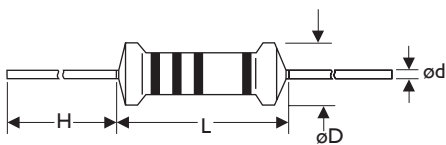
For resistors operated in ambient temperatures above 20°C, power rating must be derated in accordance with the curve below.

Rated Load (%)



DIMENSIONS

Unit : mm



STYLE		DIMENSION			
Normal	Miniature	L	øD	H	ød
KNP-25	KNP50S	6.3±0.5	2.4±0.2	28±2.0	0.55±0.05
KNP-50	KNP1WS	9.0±0.5	3.3±0.3	26±2.0	0.55±0.05
KNP100	KNP2WS	11.5±1.0	4.5±0.5	35±2.0	0.8±0.05
KNP200	KNP3WS	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05
KNP300	KNP5WS	17.5±1.0	6.5±0.5	32±2.0	0.8±0.05
KNP400					
KNP500	KNP7WS	24.5±1.0	8.0±0.5	38±2.0	0.8±0.05
KNP700	-	24.5±1.0	8.0±0.5	38±2.0	0.8±0.05

* KNP1WS (for MB Type) ød = 0.8±0.05 mm

ELECTRICAL CHARACTERISTICS

NORMAL STYLE

STYLE	KNP-25	KNP-50	KNP100	KNP200	KNP300	KNP400	KNP500	KNP700
Power Rating at 70 °C	1/4W	1/2W	1 W	2 W	3W	4W	5 W	7W
Dielectric Withstanding Voltage	250V	300V	400V					
Resistance Range	0.1 Ω ~47 Ω		0.1 Ω ~100 Ω	0.1 Ω ~330 Ω	0.1 Ω ~560 Ω	0.1 Ω ~1K Ω		
Operating Temp. Range	- 40°C to + 200°C							
Temperature Coefficient	±300ppm/°C							

MINIATURE STYLE

STYLE	KNP50S	KNP1WS	KNP2WS	KNP3WS	KNP5WS	KNP7WS
Power Rating at 70 °C	1/2W	1 W	2 W	3 W	5 W	7 W
Dielectric Withstanding Voltage	200V	300V	400V			
Resistance Range	0.1 Ω ~47 Ω		0.1 Ω ~100 Ω	0.1 Ω ~330 Ω	0.1 Ω ~560 Ω	0.1 Ω ~1K Ω
Operating Temp. Range	- 40°C to + 200°C					
Temperature Coefficient	±300ppm/°C					

* Below or over this resistance range on request.

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	JIS-C-5202 5.5	2.5 Times RCWV for 5 Seconds	±(2%+0.05 Ω)
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Seconds	by Type
Temperature Coefficient	JIS-C-5202 5.2	-55°C to +155°C	by Type
Insulation Resistance	JIS-C-5202 5.6	in V-Block	>100M Ω
Solderability	JIS-C-5202 6.5	260°C ±5°C for 5 ±0.5 Seconds	95% Min. Coverage
Resistance to Solvent	JIS-C-5202 6.9	IPA for 1 Min. with Ultrasonic	No deterioration of Coatings and Markings
Terminal Strength	JIS-C-5202 6.1	Direct load for 10 Sec. In the Direction of the Terminal Leads	≥2.5kg (24.5N)
Load Life in Humidity	JIS-C-5202 7.9	40±2°C , 90~95% RH at RCWV for 1,000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	±5%+0.05 Ω
Load Life	JIS-C-5202 7.10	70°C at RCWV for 1,000 Hrs. (1.5 Hrs. on 0.5 Hrs. off)	±5%+0.05 Ω
Temperature Cycling	JIS-C-5202 7.4	-55°C→Room Temp.→+155°C→Room Temp. for 5 Cycles	±1.0%+0.05 Ω
Resistance to Soldering Heat	JIS-C-5202 6.4	350°C ±10°C for 3±0.5 Seconds	±1.0%+0.05 Ω
Overload Flame Retardant	JIS-C-5202 7.12	4 Times RCWV for 1 Minute	No evidence of flaming or arcing

* Rated Continuous Working Voltage (RCWV)= $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$