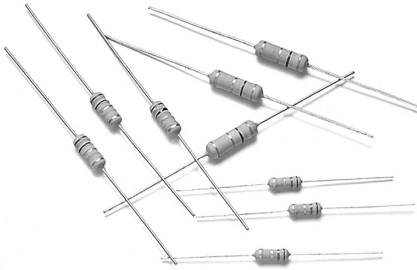


Wirewound Resistors

Flame-Proof & Non Inductive Type

Normal & Miniature Style [NKN Series]



INTRODUCTION

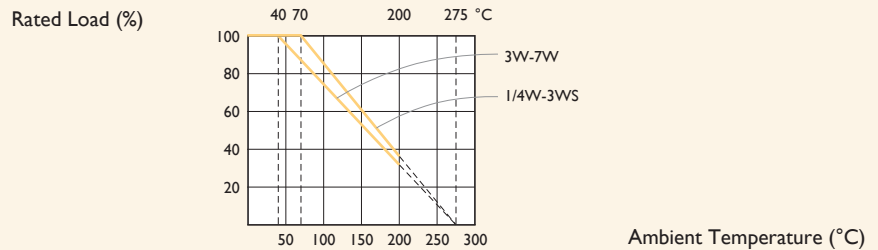
The resistor element is a resistive wire which is wound in a single layer on a ceramic rod, tinned connecting wires of electrolytic copper are welded to the end-caps. The ends of the resistance wire and the leads are connected to the caps by welding. The resistors are coated with layers of green color flame proof lacquer. The 5th color band is black to represent NKN series.

FEATURES

Power Rating	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

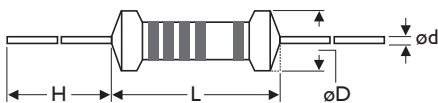
DERATING CURVE

For resistors operated in ambient temperatures above 40°C, power rating must be derated in accordance with the curve below.



DIMENSIONS

Unit: mm



5th color code: black

STYLE		DIMENSION			
Normal	Miniature	L	øD	H	ød
NKN-50	NKN1WS	9.0±0.5	3.3±0.3	26±2.0	0.55±0.05
NKN100	NKN2WS	11.5±1.0	4.5±0.5	35±2.0	0.8±0.05
NKN200	NKN3WS	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05
NKN300					
NKN400	NKN5WS	17.5±1.0	6.5±0.5	32±2.0	0.8±0.05
NKN500	NKN7WS	24.5±1.0	8.0±0.5	38±2.0	0.8±0.05

ELECTRICAL CHARACTERISTICS

NORMAL STYLE

STYLE	NKN-50	NKN100	NKN200	NKN300	NKN400	NKN500
Power Rating at 70°C	1/2W	1W	2W	3W	4W	5W
Dielectric Withstanding Voltage	250V	400V				
Resistance Range	0.1 Ω - 5 Ω	0.1 Ω - 10 Ω	0.1 Ω - 22 Ω	0.1 Ω - 27 Ω		0.1 Ω - 33 Ω
Operating Temp. Range	-40°C to +200°C					
Temperature Coefficient	± 300 ppm/°C					

MINIATURE STYLE

STYLE	NKNIWS	NKN2WS	NKN3WS	NKN5WS	NKN7WS
Power Rating at 70°C	1W	2W	3W	5W	7W
Dielectric Withstanding Voltage	250V	400V			
Resistance Range	0.1 Ω - 5 Ω	0.1 Ω - 10 Ω	0.1 Ω - 22 Ω	0.1 Ω - 27 Ω	0.1 Ω - 33 Ω
Operating Temp. Range	- 40°C to +200°C				
Temperature Coefficient	± 300 ppm/°C				

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	JIS-C-5202 5.5	2.5 times RCWV for 5 Sec.	$\pm 2.0\% + 0.05 \Omega$
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Sec.	By type
Temperature Coefficient	JIS-C-5202 5.2	-40°C to +200°C	By type
Insulation Resistance	JIS-C-5202 5.6	in V-Block	> 100M Ω
Solderability	JIS-C-5202 6.5	260 $\pm$ 5°C for 5 $\pm$ 0.5 Sec.	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	≥ 2.5 kg (24.5N)
Load Life in Humidity	JIS-C-5202 7.9	40 $\pm$ 2°C, 90-95% RH at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	$\pm 5.0\% + 0.05 \Omega$
Load Life	JIS-C-5202 7.10	20°C at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	$\pm 5.0\% + 0.05 \Omega$
Temperature Cycling	JIS-C-5202 7.4	-55°C $\Rightarrow$ Room Temp. $\Rightarrow$ +155°C $\Rightarrow$ Room Temp. (5 cycles)	$\pm 1.0\% + 0.05 \Omega$
Resistance to Soldering Heat	JIS-C-5202 6.4	350 $\pm$ 10°C for 3 $\pm$ 0.5 Sec.	$\pm 1.0\% + 0.05 \Omega$
Overload Flame Retardant	JIS-C-5202 7.12	4 times RCWV for 1 Min.	No evidence of flaming or arcing

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