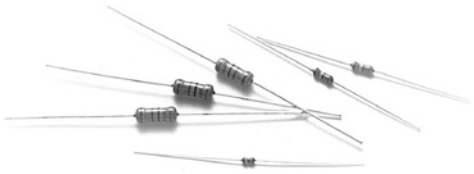
Wirewound Resistors

Fusible & Flame-Proof Type

Normal & Miniature Style [FKN Series]



INTRODUCTION

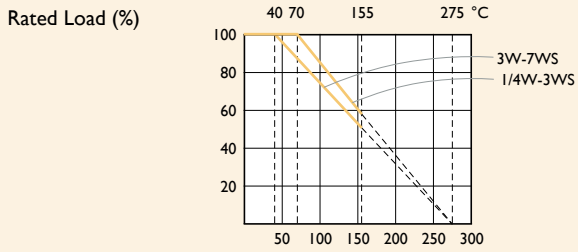
The resistor element is a resistive wire which is wound in a single layer on a ceramic rod, with tinned connecting wires of electrolytic copper welded to the end-caps. The ends of the resistive wire and the leads are connected to the caps by welding. The resistors are coated with layers of green color flame-proof lacquer. Overload protection without risk of fire. Wide range of overload currents.

FEATURES

Power Rating	1/4W, 1/2W, 1W, 2W, 3W, 4W, 5W, 7W
Resistance Tolerance	±1%, ±5%
T.C.R.	±350ppm/°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.



FUSING CHARACTERISTICS

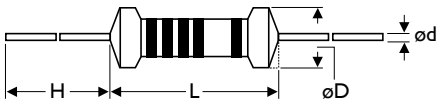
R≤2.0 Ω Fusing time within 60 seconds at 36 times of rated power

R>2.0 Ω Fusing time within 60 seconds at 25 times of rated power

Fusing residual resistive value at least 100 times rated resistance

DIMENSIONS

Unit: mm



5th color code: white

STYLE		DIMENSION			
Normal	**Miniature**	**L**	**øD**	**H**	**ød**
FKN-25	FKN50S	6.3±0.5	2.4±0.2	28±2.0	0.55±0.05
FKN-50	FKN1WS	9.0±0.5	3.3±0.3	26±2.0	0.55±0.05
FKN100	FKN2WS	11.5±1.0	4.5±0.5	35±2.0	0.8±0.05
FKN200	FKN3WS	15.5±1.0	5.0±0.5	33±2.0	0.8±0.05
FKN300	FKN5WS	17.5±1.0	6.5±0.5	32±2.0	0.8±0.05
FKN400					
FKN500	FKN7WS	24.5±1.0	8.0±0.5	38±2.0	0.8±0.05

Note: FKN1WS (for MB Type) ød = 0.8±0.05 mm

ELECTRICAL CHARACTERISTICS

NORMAL STYLE

STYLE	FKN-25	FKN-50	FKN100	FKN200	FKN300	FKN400	FKN500
Power Rating at 40°C					3W	4W	5W
Power Rating at 70°C	1/4W	1/2W	1W	2W			
Voltage Proof	200V	300V					
Resistance Range (±1%)			0.5 Ω - 100 Ω	0.47 Ω - 150 Ω	0.56 Ω - 330 Ω		1 Ω - 620 Ω
Resistance Range (±5%)	2.5 Ω - 22 Ω	0.5 Ω - 47 Ω	0.5 Ω - 100 Ω	0.47 Ω - 150 Ω	0.56 Ω - 330 Ω		1 Ω - 620 Ω
Operating Temp. Range	-40°C to +155°C						
Temperature Coefficient	±350ppm/°C						

Note: Special value is available on request

MINIATURE STYLE

STYLE	FKN50S	FKN1WS	FKN2WS	FKN3WS	FKN5WS	FKN7WS
Power Rating at 40°C					5W	7W
Power Rating at 70°C	1/2W	1W	2W	3W		
Voltage Proof	200V	300V				
Resistance Range (±1%)		0.47 Ω - 62 Ω	0.47 Ω - 150 Ω	0.47 Ω - 240 Ω	0.56 Ω - 330 Ω	1 Ω - 620 Ω
Resistance Range (±5%)	2.5 Ω - 22 Ω	0.47 Ω - 62 Ω	0.47 Ω - 150 Ω	0.47 Ω - 240 Ω	0.56 Ω - 330 Ω	1 Ω - 620 Ω
Operating Temp. Range	-40°C to +155°C					
Temperature Coefficient	±350ppm/°C					

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	IEC 60115-1 4.13	10 times rated power for 5 Sec.	±2.0%+0.05 Ω
Voltage Proof	IEC 60115-1 4.7	in V-block for 60 Sec., test voltage by type	By type
Temperature Coefficient	IEC 60115-1 4.8	-55°C to +155°C	By type
Insulation Resistance	IEC 60115-1 4.6	in V-block for 60 Sec.	>100M Ω
Solderability	IEC 60115-1 4.17	235±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	≥2.5kg (24.5N)
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV	±5.0%+0.05 Ω
Endurance at 70°C	IEC 60115-1 4.25	70±2°C at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	±5.0%+0.05 Ω
Temperature Cycling	IEC 60115-1 4.19	-55°C ⇨ Room Temp. ⇨ +155°C ⇨ Room Temp. (5 cycles)	±1.0%+0.05 Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±1.0%+0.05 Ω
Accidental Overload Test	IEC 60115-1 4.26	4 times RCWV for 1 Min.	No evidence of flaming or arcing

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