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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

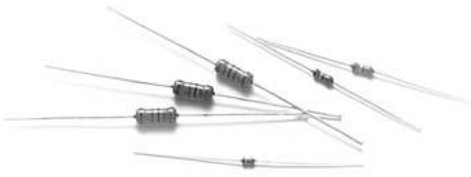
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## Wirewound Resistors

# Fusible & Flame-Proof Type

## Normal & Miniature Style [ FKN Series ]



### INTRODUCTION

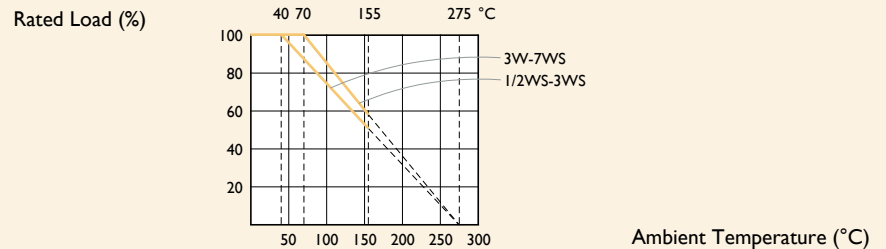
The resistor element is a resistive wire which is wound in a single layer on a ceramic rod, with tinned connecting wires of electrolytic copper welded to the end-caps. The ends of the resistive wire are connected to the caps by welding. The resistors are coated with layers of green color flame-proof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

### FEATURES

Power Rating	1/2W, 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

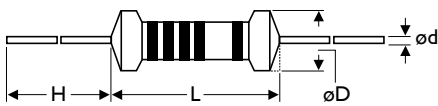
$R \leq 2.0\Omega$  Fusing time within 60 seconds at 36 times of rated power

$R > 2.0\Omega$  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
-		FKN50S	6.3±0.5	2.5±0.3	28±2.0	0.55±0.05
FKN-50		FKN1WS	9.0±0.5	3.5±0.3	26±2.0	0.55±0.05
FKN100		FKN2WS	11.5±1.0	4.6±0.5	35±2.0	0.8±0.05
FKN200		FKN3WS	15.5±1.0	5.2±0.5	33±2.0	0.8±0.05
FKN300						
FKN400		FKN5WS	17.5±1.0	6.5±0.5	32±2.0	0.8±0.05
FKN500		FKN7WS	24.5±1.0	8.5±0.5	38±2.0	0.8±0.05

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

## ELECTRICAL CHARACTERISTICS

### NORMAL STYLE

STYLE	FKN-50	FKN100	FKN200	FKN300	FKN400	FKN500
Power Rating at 40°C				3W	4W	5W
Power Rating at 70°C	1/2W	1W	2W			
Maximum working voltage	$\sqrt{P \times R}$					
Voltage Proof on Insulation	300V					
Resistance Range ( $\pm 1\%$ )		0.5 $\Omega$ - 100 $\Omega$	0.47 $\Omega$ - 150 $\Omega$	0.56 $\Omega$ - 330 $\Omega$		1 $\Omega$ - 620 $\Omega$
Resistance Range ( $\pm 5\%$ )	0.5 $\Omega$ - 47 $\Omega$	0.5 $\Omega$ - 100 $\Omega$	0.47 $\Omega$ - 150 $\Omega$	0.56 $\Omega$ - 330 $\Omega$		1 $\Omega$ - 620 $\Omega$
Operating Temp. Range	-40°C to +155°C					
Temperature Coefficient	$\pm 350$ ppm/°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		
Maximum working voltage	$\sqrt{P \times R}$					
Voltage Proof on Insulation	200V	300V				
Resistance Range ( $\pm 1\%$ )		0.47 $\Omega$ - 62 $\Omega$	0.47 $\Omega$ - 150 $\Omega$	0.47 $\Omega$ - 240 $\Omega$	0.56 $\Omega$ - 330 $\Omega$	1 $\Omega$ - 620 $\Omega$
Resistance Range ( $\pm 5\%$ )	2.5 $\Omega$ - 22 $\Omega$	0.47 $\Omega$ - 62 $\Omega$	0.47 $\Omega$ - 150 $\Omega$	0.47 $\Omega$ - 240 $\Omega$	0.56 $\Omega$ - 330 $\Omega$	1 $\Omega$ - 620 $\Omega$
Operating Temp. Range	-40°C to +155°C					
Temperature Coefficient	$\pm 350$ ppm/°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.	$\pm 2.0\% + 0.05\Omega$
Voltage Proof on Insulation	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 $\Omega$
Solderability	IEC 60115-1 4.17	235 $\pm 5$ °C for 3 $\pm 0.5$ Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5 $\pm 0.5$ 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	$\geq 2.5$ kg (24.5N)
Damp Heat Steady State	IEC 60115-1 4.24	40 $\pm 2$ °C, 90-95% RH for 56 days, loaded with 0.1 times RCWV	$\pm 5.0\% + 0.05\Omega$
Endurance at 70°C	IEC 60115-1 4.25	70 $\pm 2$ °C at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off)	$\pm 5.0\% + 0.05\Omega$
Temperature Cycling	IEC 60115-1 4.19	-55°C $\Rightarrow$ Room Temp. $\Rightarrow$ +155°C $\Rightarrow$ Room Temp. (5 cycles)	$\pm 1.0\% + 0.05\Omega$
Resistance to Soldering Heat	IEC 60115-1 4.18	260 $\pm 3$ °C for 10 $\pm 1$ Sec., immersed to a point 3 $\pm 0.5$ mm from the body	$\pm 1.0\% + 0.05\Omega$
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) =  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$  or Max. working voltage listed above, whichever less.



## EXPLANATIONS OF ORDERING CODE

<b>MFR</b>	<b>-12</b>	<b>F</b>	<b>T</b>	<b>F</b>	<b>52-</b>	<b>100R</b>
Code 1 - 3 <b>Series Name</b> See Index	Code 4 - 6 <b>Power Rating</b> -05 = $\varnothing$ d0.5mm -06 = $\varnothing$ d0.6mm -07 = $\varnothing$ d0.7mm -08 = $\varnothing$ d0.8mm -10 = $\varnothing$ d1.0mm -14 = $\varnothing$ d1.4mm -12 = 1/6W -25 = 1/4W 25S = 1/4WS -50 = 1/2W 50S = 1/2WS 100 = 1W 1WS = 1WS 200 = 2W 2WS = 2WS 204 = 0.4W 207 = 0.6W 300 = 3W 3WS = 3WS 3WM = 3WM 400 = 4W 500 = 5W 5WS = 5WS 5SS = 5WSS 700 = 7W 7WS = 7WS 10A = 10W 20A = 20W 30A = 30W 40A = 40W 50A = 50W 10S = 10WS 15A = 15W 25A = 25W 10B = 100W 25B = 250W	Code 7 <b>Tolerance</b> P = $\pm 0.02$ % A = $\pm 0.05$ % B = $\pm 0.1$ % C = $\pm 0.25$ % D = $\pm 0.5$ % F = $\pm 1$ % G = $\pm 2$ % J = $\pm 5$ % K = $\pm 10$ % - = Base on Spec.	Code 8 <b>Packing Style</b> T = Tape/Box R = Tape/Reel B = Bulk	Code 9 <b>Temperature Coefficient of Resistance</b> - = Base on Spec. A = $\pm 5$ ppm/ $^{\circ}$ C B = $\pm 10$ ppm/ $^{\circ}$ C C = $\pm 15$ ppm/ $^{\circ}$ C S = $\pm 20$ ppm/ $^{\circ}$ C D = $\pm 25$ ppm/ $^{\circ}$ C E = $\pm 50$ ppm/ $^{\circ}$ C F = $\pm 100$ ppm/ $^{\circ}$ C G = $\pm 200$ ppm/ $^{\circ}$ C H = $\pm 250$ ppm/ $^{\circ}$ C I = $\pm 300$ ppm/ $^{\circ}$ C J = $\pm 350$ ppm/ $^{\circ}$ C	Code 10 - 12 <b>Forming Type</b> 26- = 26mm 52- = 52.4mm 73- = 73mm 81- = 81mm 91- = 91mm F = F Type FK = FK Type FKK = FKK Type FFK = F-form Kink M = M-Type Forming MB = M-form W/flat MT = MT Type Forming MR = MR Type AV = AVIsert PN = PANAsert	Code 13 - 17 <b>Resistance Value</b> 0R1 = 0.1 100R = 100 10K = 10,000 10M = 10,000,000

### EXCEPTION:

#### • Cement series:

<Code 8>: Special packing style code

B: Bulk with wirewound or metal oxide sub-assembly for resistance value

W: Bulk with ceramic based wirewound sub-assembly for resistance value

M: Bulk with metal oxide sub-assembly for resistance value

F: Bulk with Fiberglass based wirewound sub-assembly for resistance value

<Code 10-12>: Without forming code

Example: **SQP500JB-10R**

#### • JPW series:

<Code 13-17>: without resistance value code

Example: **JPW-06-T-52-**