



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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!



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## Wirewound Resistors, Industrial Power, Silicone Coated, Printed Circuit Board Mount


**FEATURES**

- High temperature silicone coating
- Eliminates lead forming to keep parts off of PC board
- Built in standoffs provide PC board heat protection and opposing feet to avoid rocking
- Available in non-inductive style (special "NI") with Ayrton-Perry winding
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

**STANDARD ELECTRICAL SPECIFICATIONS**

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$ $\pm 5\%$	RESISTANCE RANGE $\Omega$ $\pm 10\%$	WEIGHT (typical) g
FS-003	FS-3	3	1.0 to 6K	0.1 to 6K	1.16
FS-05A	FS-5A	5	1.0 to 15K	0.1 to 15K	2.12
FS-005	FS-5	7	1.0 to 17.5K	0.1 to 17.5K	3.36
FS-05S	FS-5S	8	1.0 to 20.5K	0.1 to 20.5K	4.60
FS-010	FS-10	10	1.0 to 29K	0.1 to 29K	6.24
FS-10S	FS-10S	12	1.0 to 58K	0.1 to 58K	6.60
FS-020	FS-20	20	1.0 to 60K	0.1 to 60K	8.82
FS-20S	FS-20S	20	1.0 to 95K	0.1 to 95K	11.36

**TECHNICAL SPECIFICATIONS**

PARAMETER	UNIT	FS RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	$\pm 260$ for 20 $\Omega$ and above, $\pm 400$ for 1 $\Omega$ to 19.99 $\Omega$ , special TC's available please contact factory
Short Time Overload	-	10 x rated power for 5 s
Dielectric Withstanding Voltage	V <sub>AC</sub>	1000, from terminal to mounting hardware
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	-55 to +350

**GLOBAL PART NUMBER INFORMATION**

 Global Part Numbering example: **FS-010CBE1K000JE** (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

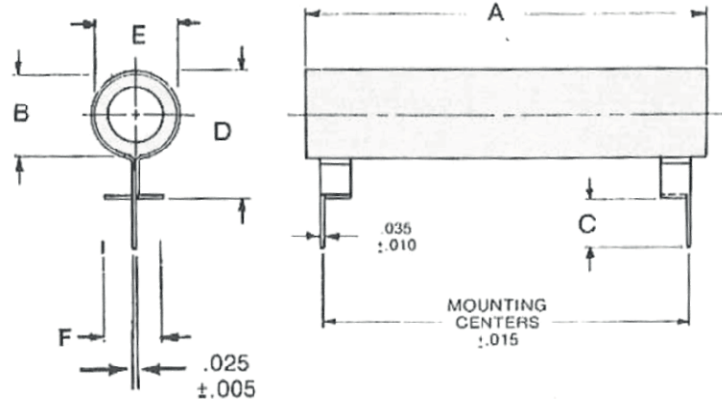
F	S	-	0	1	0	C	B	E	1	K	0	0	0	J	E		
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GLOBAL MODEL (6 digits)	TERMINAL DESIGNATION (2 digits)	TERMINAL FINISH (1 digit)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (1 digit)	SPECIAL (up to 2 digits)
(see Standard Electrical Specifications Global Model column for options)	<b>CB</b>	<b>E</b> = lead (Pb)-free	<b>R</b> = decimal <b>K</b> = thousand <b>1R500</b> = 1.5 $\Omega$ <b>1K500</b> = 1.5 k $\Omega$	<b>J</b> = $\pm 5\%$ <b>K</b> = $\pm 10\%$	<b>E</b> = lead (Pb)-free cell and bulk pack	(dash number) from 1 to 99 as applicable <b>NI</b> = non-inductive

 Historical Part Number example: **FS-10-1K-5 %**

<b>FS-10</b>	<b>1K <math>\Omega</math></b>	<b>5 %</b>	
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	SPECIAL



**DIMENSIONS** in inches [millimeters]

**Note**

- Recommended mounting hole is 0.078 diameter.

MODEL	DIMENSIONS in inches [millimeters]						
	CORE		C ± 0.062 [± 1.57]	D MAX.	E MAX.	F MAX.	STANDARD MOUNTING CENTERS ± 0.015 [± 0.381]
	A ± 0.062 [± 1.57]	B ± 0.031 [± 0.78]					
FS-003	1.000	0.200	0.360	0.450	0.281	0.400	0.600
FS-002	[25.4]	[5.08]	[9.14]	[11.43]	[7.14]	[10.16]	[15.24]
FS-05A	1.125	0.200	0.360	0.450	0.281	0.400	0.900
	[28.58]	[5.08]	[9.14]	[11.43]	[7.14]	[10.16]	[22.86]
FS-005	1.000	0.312	0.360	0.600	0.410	0.500	0.600
FS-006	[25.4]	[7.94]	[9.14]	[15.24]	[10.41]	[12.7]	[15.24]
FS-05S	1.125	0.312	0.360	0.600	0.410	0.500	0.900
	[28.58]	[7.94]	[9.14]	[15.24]	[10.41]	[12.7]	[22.86]
FS-010	1.750	0.312	0.360	0.600	0.410	0.500	1.300
	[44.45]	[7.94]	[9.14]	[15.24]	[10.41]	[12.7]	[33.02]
FS-10S	2.125	0.312	0.360	0.600	0.410	0.500	1.700
	[53.98]	[7.94]	[9.14]	[15.24]	[10.41]	[12.7]	[43.18]
FS-015	2.000	0.437	0.19	0.725	0.531	0.531	1.700
FS-020	[50.8]	[11.11]	[4.82]	[18.41]	[13.49]	[13.49]	[43.18]
FS-20S	2.375	0.437	0.19	0.725	0.531	0.531	2.200
	[9.53]	[11.11]	[4.82]	[18.41]	[13.49]	[13.49]	[55.88]

**Notes**

- The pin configuration on the terminals for the FS-10S and smaller products is on the center of the terminal.
- The pin configuration on the terminals for the FS-015 and larger products is on the edge of the terminal

**MATERIAL SPECIFICATIONS**

**Element:** Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

**Core:** Ceramic, steatite

**Coating:** Special high temperature silicone

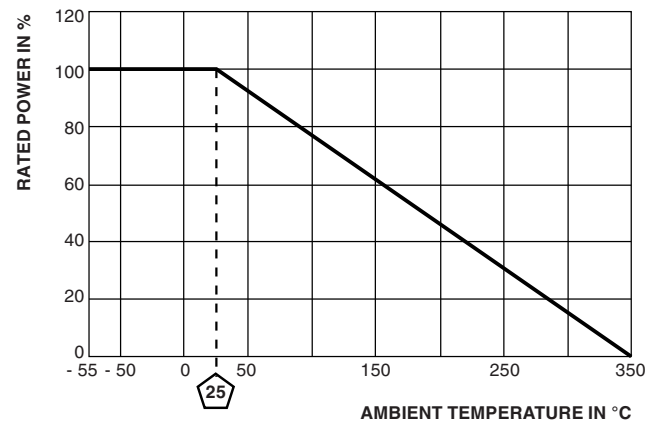
**Standard Terminals:** Tinned alloy 42

**Terminal Bands:** Alloy 42

**Part Marking:** HEI, model, wattage, value, tolerance, date code

**NON-INDUCTIVE**

Models of equivalent physical and electrical specifications are available with non-inductive (Ayrton-Perry) winding. They are identified by adding the letters "NI" to the end of the part number in the special section. For non-inductive models the maximum resistance values are one-half the standard part.

**DERATING**




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