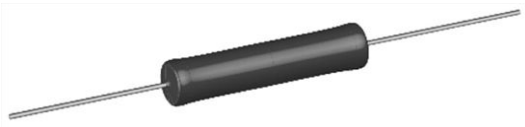
Wirewound Resistor, Commercial Power, Silicone Coated, Axial Lead



FEATURES

- High temperature coating (> 350 °C)
- Complete welded construction
- Available in non-inductive styles with Ayrton-Perry winding for lowest reactive components, special "NI"
- Will meet flammability requirements of UL 94 V-0
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

e3

RoHS COMPLIANT

GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING (1) $P_{25\,°C}$ W CHARACTERISTIC U + 250 °C	POWER RATING (1) $P_{25\,°C}$ W CHARACTERISTIC V + 350 °C	RESISTANCE RANGE Ω ± 0.1 %	RESISTANCE RANGE Ω ± 0.25 %	RESISTANCE RANGE Ω ± 0.5 %, ± 1 %, ± 5 %, ± 10 %	WEIGHT (typical) g
FA3/4	FA3/4	0.75	1.0	0.499 to 1.0K	0.499 to 1.5K	0.1 to 1.5K	0.26
FA001	FA1	1.0	1.5	0.499 to 1.3K	0.499 to 4.0K	0.1 to 4.0K	0.51
FA01A	FA1A	1.0	1.5	0.499 to 2.74K	0.499 to 5.0K	0.1 to 5.0K	0.35
FA002	FA2	2.0	2.6	0.499 to 4.49K	0.499 to 7.2K	0.1 to 7.2K	0.87
FA003	FA3	3.0	3.6	0.499 to 8.6K	0.499 to 9.5K	0.1 to 9.5K	0.87
FA03A	FA3A	3.0	3.7	0.499 to 6.5K	0.1 to 11.0K	0.1 to 11.0K	0.93
FA004	FA4	4.0	5.0	0.499 to 12.7K	0.1 to 24.0K	0.1 to 24.0K	1.36
FA04B	FA4B	4.0	5.0	0.499 to 10.5K	0.1 to 14.0K	0.1 to 14.0K	0.93
FA005	FA5	5.0	6.5	0.499 to 25.7K	0.1 to 42.0K	0.1 to 42.0K	3.01
FA07A	FA7A	7.0	8.0	0.499 to 41.4K	0.1 to 63.0K	0.1 to 63.0K	3.29
FA007	FA7	7.0	8.0	0.499 to 41.4K	0.1 to 80.0K	0.1 to 80.0K	3.90
FA10A	FA10A	10.0	11.0	0.499 to 73.4K	0.1 to 92.0K	0.1 to 92.0K	4.70
FA010	FA10	10.0	12.5	0.499 to 73.4K	0.1 to 100K	0.1 to 100K	8.71

Note

(1) Vishay Central FA models have two power ratings depending on operation temperature and stability requirements.

GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: FA0105K600JE12 (visit www.vishay.net Vishay Dale parts numbering manual for all options)

F	A	0	1	0	5	K	6	0	0	J	E	1	2			

GLOBAL MODEL (5 digits)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (3 digits)	SPECIAL (up to 3 digits)
(See Standard Electrical Specifications Global Model column for options)	**R** = Decimal **K** = Thousand **1R500** = 1.5 Ω **1K500** = 1.5 kΩ	**B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1 % **J** = ± 5 % **K** = ± 10 %	**E07** = Tape/reel (FA004, FA005, FA07A) **E08** = Tape/reel (FA3/4, FA001, FA01A) **E29** = Tape/reel (FA007, FA010, FA10A) **E48** = Tape/reel (FA002, FA003, FA03A, FA04B) **E12** = Bulk, up to 100 pc boxes	(Dash Number) From **1** to **999** as applicable **NI** = Non-inductive

Historical Part Number example: FA10 5.6K 5 %

FA10	5.6 kΩ	5 %
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE

For technical questions, contact: ww2aresistors@vishay.com

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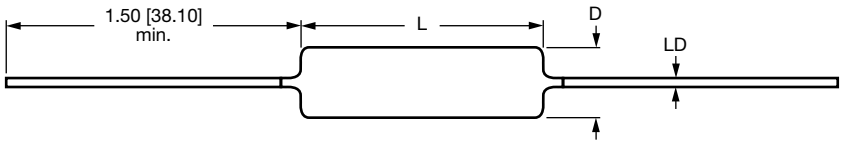
DIMENSIONS in inches [millimeters]



MODEL	DIMENSIONS in inches [millimeters]		
	L	D	LD ± 0.002 [0.051]
FA3/4	0.250 ± 0.030 [6.35 ± 0.762]	0.095 ± 0.015 [2.41 ± 0.381]	0.025 [0.635]
FA001	0.375 ± 0.030 [9.53 ± 0.762]	0.135 ± 0.030 [3.43 ± 0.762]	0.032 [0.813]
FA01A	0.410 ± 0.030 [10.41 ± 0.762]	0.110 ± 0.030 [2.79 ± 0.762]	0.020 [0.508]
FA002	0.500 ± 0.062 [12.70 ± 1.57]	0.185 ± 0.031 [4.70 ± 0.787]	0.032 [0.813]
FA003	0.500 ± 0.062 [12.70 ± 1.57]	0.185 ± 0.031 [4.70 ± 0.787]	0.032 [0.813]
FA03A	0.560 ± 0.062 [14.22 ± 1.57]	0.187 ± 0.031 [4.75 ± 0.787]	0.032 [0.813]
FA004	0.770 ± 0.062 [19.55 ± 1.57]	0.230 ± 0.031 [5.84 ± 0.787]	0.032 [0.813]
FA04B	0.560 ± 0.062 [14.22 ± 1.57]	0.187 ± 0.031 [4.75 ± 0.787]	0.032 [0.813]
FA005	0.875 ± 0.062 [22.33 ± 1.57]	0.312 ± 0.031 [7.92 ± 0.787]	0.032 [0.813]
FA07A	1.22 ± 0.062 [30.99 ± 1.57]	0.312 ± 0.031 [7.92 ± 0.787]	0.032 [0.813]
FA007	1.55 ± 0.062 [39.37 ± 1.57]	0.295 ± 0.031 [7.49 ± 0.787]	0.032 [0.813]
FA10A	1.75 ± 0.062 [44.45 ± 1.57]	0.295 ± 0.031 [7.49 ± 0.787]	0.032 [0.813]
FA010	1.78 ± 0.062 [45.21 ± 1.57]	0.375 ± 0.031 [9.53 ± 0.787]	0.040 [1.02]

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	FA RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 30 for 10 Ω and above; ± 50 for 1.0 Ω to 9.9 Ω; ± 90 for 0.5 Ω to 0.99 Ω
Terminal Strength	lb	5 min (FA3/4 and FA01A) and 10 min for all others
Dielectric Withstanding Voltage	V_{AC}	500 for FA01A and smaller; 1000 for FA002 and larger
Operating Temperature Range	°C	Characteristic U = - 65 to + 250, Characteristic V = - 65 to + 350
Maximum Working Voltage	V	$(P \times R)^{1/2}$

MATERIAL SPECIFICATIONS

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

Core: Ceramic: Steatite or alumina, depending on physical size

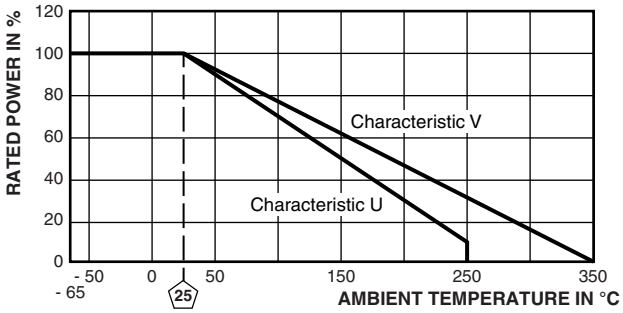
Coating: Special high temperature silicone

Standard Terminals: Tinned copper clad steal

End Caps: Stainless steel

Part Marking: CENTRAL, model, value, tolerance, date code

DERATING



PERFORMANCE

TEST	CONDITIONS OF TEST	TEST LIMITS	
		(CHARACTERISTIC U)	(CHARACTERISTIC V)
Dielectric Withstanding Voltage	500 V_{RMS} 1 min for FA01A and smaller; 1000 V_{RMS} 1 min for all others	± (0.1 % + 0.05 Ω) Δ*R*	± (0.1 % + 0.05 Ω) Δ*R*
High Frequency Vibration	Frequency varied 10 Hz to 2000 Hz, 20 *g* peak, 2 directions 6 h each	± (0.1 % + 0.05 Ω) Δ*R*	± (0.2 % + 0.05 Ω) Δ*R*
High Temperature Exposure	250 h at + 250 °C for U Characteristic, + 350 °C for V Characteristic	± (0.5 % + 0.05 Ω) Δ*R*	± (4.0 % + 0.05 Ω) Δ*R*
Load Life	2000 h at 25 °C at rated power, 1.5 h "ON", 0.5 h "OFF"	± (0.5 % + 0.05 Ω) Δ*R*	± (3.0 % + 0.05 Ω) Δ*R*
Low Temperature Storage	- 65 °C for 24 h	± (0.2 % + 0.05 Ω) Δ*R*	± (2.0 % + 0.05 Ω) Δ*R*
Moisture Resistance	MIL-STD-202 Method 106, 7b not applicable	± (0.2 % + 0.05 Ω) Δ*R*	± (2.0 % + 0.05 Ω) Δ*R*
Shock, Specified Pulse	MIL-STD-202 Method 213, 100 *g*'s for 6 ms, 10 shocks	± (0.1 % + 0.05 Ω) Δ*R*	± (0.2 % + 0.05 Ω) Δ*R*
Thermal Shock	Rated power applied until thermally stable, then 15 min at - 55 °C	± (0.2 % + 0.05 Ω) Δ*R*	± (2.0 % + 0.05 Ω) Δ*R*
Short Time Overload	5 x rated power (3.70 W smaller), 10 x rated power (4 W and larger) for 5 s	± (0.2 % + 0.05 Ω) Δ*R*	± (2.0 % + 0.05 Ω) Δ*R*
Terminal Strength	Pull test 5 s to 10 s, 5 lb (FA3/4 and FA01A), 10 lb for all others; torsion test - 3 alternating directions, 360° each	± (0.1 % + 0.05 Ω) Δ*R*	± (1.0 % + 0.05 Ω) Δ*R*

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