# FVTL, FVTS, FVWL

Vishay Huntington

RoHS

COMPLIANT

HALOGEN

**GREEN** 

(5-2008)

# Wirewound Resistor, Industrial Power, Vitreous Coated, Tubular



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#### FEATURES

- High temperature vitreous coating
- Complete welded construction
- Excellent for intermittent power and pulsing application
- Available in non-inductive style (special "NI") with Ayrton-Perry winding
- Various lead and terminal options
- Excellent stability in operation (< 3 % change resistance)
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING P <sub>25 °C</sub> W	RESISTANCE RANGE Ω ±5%	RESISTANCE RANGE Ω ± 10 %	WEIGHT (typical) g		
FVTL05	FVTL-5	5	1.0 to 20.5K	0.1 to 20.5K	4.60		
FVTS05	FVTS-5	5	1.0 to 20.5K	0.1 to 20.5K	4.60		
FVWL5A	-	5.25	1.0 to 15K	0.1 to 15K	2.12		
FVTL5A	-	5.25	1.0 to 15K	0.1 to 15K	2.12		
FVWL05	FVWL-5	8	1.0 to 20.5K	0.1 to 20.5K	4.60		
FVWL08	-	8	1.0 to 20.5K	0.1 to 20.5K	4.60		
FVTL08	-	8	1.0 to 20.5K	0.1 to 20.5K	4.60		
FVWL1A	-	10	1.0 to 29K	0.10 to 29K	6.24		
FVTL10	FVTL-10	12	1.0 to 58K	0.10 to 58K	6.69		
FVTS10	FVTS-10	12	1.0 to 58K	0.10 to 58K	6.69		
FVWL10	FVWL-10	12	1.0 to 58K	0.10 to 58K	6.69		
FVWL12	-	12	1.0 to 58K	0.10 to 58K	6.69		
FVTL12	-	12	1.0 to 58K	0.10 to 58K	6.69		
FVWL15	-	15	1.0 to 60K	0.10 to 60K	8.82		
FVTL15	-	15	1.0 to 60K	0.10 to 60K	8.82		
FVWL2A	-	20	1.0 to 95K	0.10 to 95K	11.36		
FVTL2A	-	20	1.0 to 95K	0.10 to 95K	11.36		
FVTL20	FVTL-20	20	1.0 to 95K	0.10 to 95K	12.57		
FVTS20	FVTS-20	20	1.0 to 95K	0.10 to 95K	12.57		
FVWL20	FVWL-20	20	1.0 to 95K	0.10 to 95K	12.57		

TECHNICAL SPECIFICATIONS						
PARAMETER	UNIT	FVT RESISTOR CHARACTERISTICS				
Temperature Coefficient	ppm/°C	$\pm$ 260 for 20 $\Omega$ and above, $\pm$ 400 for 1 $\Omega$ to 20 $\Omega,$ 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 x R) <sup>1/2</sup>				
Operating Temperature Range	°C	-55 to +350				

Revision: 18-Aug-16

1 For technical questions, contact: <u>ww2dresistors@vishay.com</u> Document Number: 31837

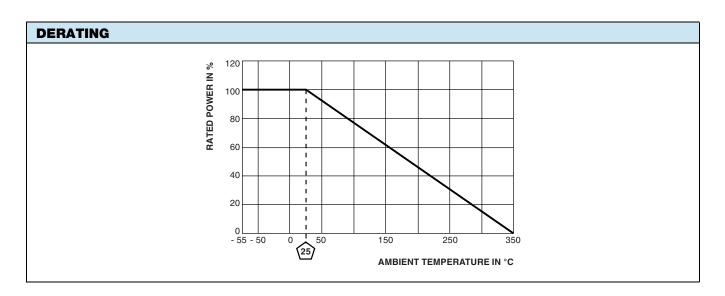
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GLOBAL PART NUMBER INFORMATION								
Global Part Numb	Global Part Numbering example: FVTL05R2E25R00JE (visit www.vishay.net SAP parts manual for all options)							
FVT	F     V     T     L     0     5     R     2     E     2     5     R     0     0     J     E							
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 R2		E = lead (Pb)-free	<b>R</b> = decimal <b>K</b> = thousand <b>1R500</b> = 1.5 Ω <b>1K500</b> = 1.5 kΩ	<b>J</b> = ± 5 % <b>K</b> = ± 10 %	E = lead (Pb)-free cell and bulk pack	(dash number) from 1 to 99 as applicable NI = non-inductive		
column for options)	mbor ovomalo: F					92 = 203 or 209 style push-in bracket as applicable		
Historical Part Number example: FVTL-5-25-5 % FVTL-5 25 Ω				5 %				
HISTORICAL MODEL		RESISTANC		TOLERANCE SPECIAL		SPECIAL		



#### **MATERIAL SPECIFICATIONS**

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

Core: ceramic, steatite

Coating: special high temperature vitreous

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 lower.

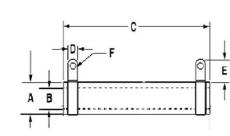


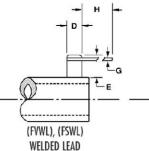
(FVTS), (FSTS)

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## **DIMENSIONS** in inches [millimeters]





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	(FVTL), (FSTL) EVELETED LEAD

					(FVWL), (FS WELDED LE		COMBINATION LEAD		EVELETED I	
	CORE D	CORE DIMENSIONS (REF.)			TERMINAL				LEADS	
MODEL	A	В	С	D ± 0.005 [± 0.12]	E ± 0.015 [± 0.38]	F ± 0.005 [± 0.12]	DESIGNATION	G ± 0.002 [± 0.05]	H ± 0.125 [± 3.18]	BRACKET TYPE
FVTL05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.188 [4.78]	0.406 [10.31]	0.132 [3.35]	R2	0.032 [0.813]	2.90 [73.66]	209
FVTS05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.188 [4.78]	0.406 [10.31]	0.132 [3.35]	R2	0.032 [0.813]	1.50 [38.10]	209
FVWL5A	0.250 [6.35]	0.125 [3.18]	0.625 [15.88]	0.063 [1.59]	0.188 [4.76] typ.	n/a	A2	0.032 [0.813]	1.50 [38.10]	-
FVTL5A	0.250 [6.35]	0.125 [3.18]	0.625 [15.88]	0.063 [1.59]	0.188 [4.76] typ.	n/a	R2	0.032 [0.813]	1.50 [38.10]	-
FVWL05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.125 [3.175]	0.188 [4.78]	-	A2	0.032 [0.813]	1.50 [38.10]	209
FVWL08	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.125 [3.175]	0.188 [4.78]	n/a	R1	0.040 [1.20]	1.50 [38.10]	-
FVTL08	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.125 [3.175]	0.188 [4.78]	n/a	A1	0.040 [1.20]	1.50 [38.10]	-
FVWL1A	0.438 [11.11]	0.313 [7.94]	1.000 [25.40]	0.125 [3.18]	0.188 [4.76] typ.	n/a	A1	0.040 [1.02]	1.50 [38.10]	-
FVTL10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.188 [4.78]	0.406 [10.31]	0.132 [3.35]	R1	0.040 [1.02]	2.90 [73.66]	209
FVTS10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.188 [4.78]	0.406 [10.31]	0.132 [3.35]	R1	0.040 [1.02]	1.50 [38.10]	209
FVWL10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.125 [3.175]	0.188 [4.78]	-	A1	0.040 [1.02]	1.50 [38.10]	209
FVWL12	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.125 [3.175]	0.188 [4.76] typ.	n/a	A1	0.040 [1.02]	1.50 [38.10]	-
FVTL12	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.125 [3.175]	0.188 [4.76] typ.	n/a	R1	0.040 [1.02]	1.50 [38.10]	-
FVWL15	0.438 [11.11]	0.313 [7.94]	1.500 [38.10]	0.125 [3.18]	0.188 [4.76] typ.	n/a	A1	0.040 [1.02]	1.50 [38.10]	-
FVTL15	0.438 [11.11]	0.313 [7.94]	1.500 [38.10]	0.125 [3.18]	0.188 [4.76] typ.	n/a	R1	0.040 [1.02]	1.50 [38.10]	-
FVWL2A	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.125 [3.18]	0.188 [4.76] typ.	-	A1	0.040 [1.02]	1.50 [38.10]	-
FVTL2A	0.438 [11.11]	0.313 [7.94]	2.000 [50.80]	0.125 [3.18]	0.188 [4.76] typ.	0.133 [3.37]	R1	0.040 [1.02]	1.65 [41.91]	-
FVTL20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.188 [4.78]	0.406 [10.32]	0.133 [3.37]	R1	0.040 [1.02]	1.65 [41.91]	203
FVTS20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.188 [4.78]	0.406 [10.32]	0.133 [3.37]	R1	0.040 [1.02]	1.50 [38.10]	203
FVWL20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.125 [3.175]	0.188 [4.78]	-	A1	0.040 [1.02]	1.50 [38.10]	203

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