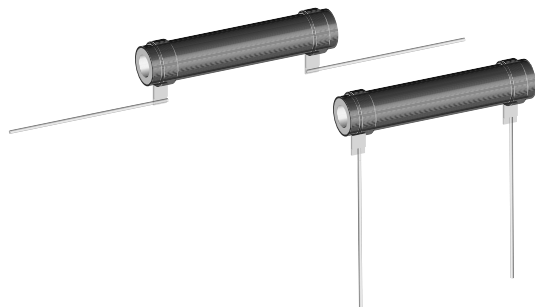


## Wirewound Resistor, Industrial Power, Vitreous Coated, Tubular



### 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 [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### 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
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
FVWL05	FVWL-5	5	1.0 to 20.5K	0.1 to 20.5K	4.60
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
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	$V_{AC}$	1000, from terminal to mounting hardware
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	- 55 to + 350

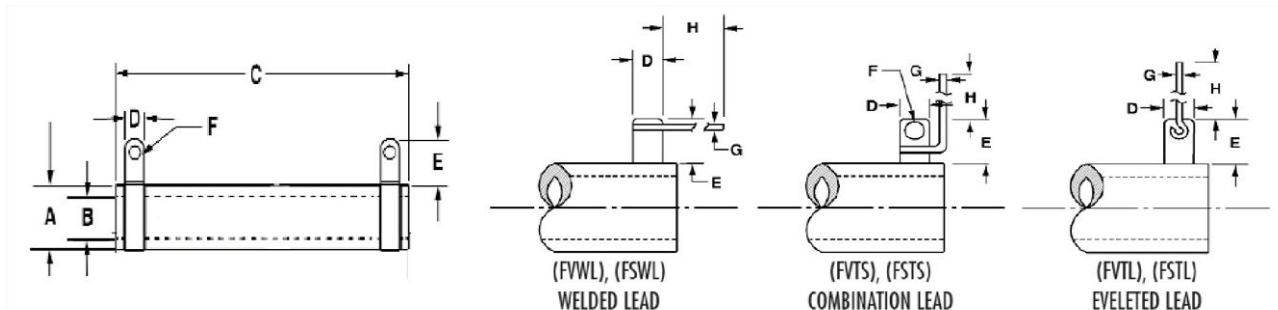
### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: FVTL05A1E25R00JE (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

<b>F</b>	<b>V</b>	<b>T</b>	<b>L</b>	<b>0</b>	<b>5</b>	<b>A</b>	<b>1</b>	<b>E</b>	<b>2</b>	<b>5</b>	<b>R</b>	<b>0</b>	<b>0</b>	<b>J</b>	<b>E</b>		
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>A1</b> <b>A2</b> <b>R1</b> <b>R2</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 skin pack		(Dash number) From <b>1</b> to <b>99</b> as applicable <b>NI</b> = Non-inductive								

Historical Part Number example: FVTL-5-25-5 %

<b>FVTL-5</b>	<b>25 <math>\Omega</math></b>	<b>5 %</b>	
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	SPECIAL

**DIMENSIONS** in inches [millimeters]


MODEL	DIMENSIONS in inches [millimeters]									
	CORE DIMENSIONS			TERMINAL			DESIGNATION	LEADS		BRACKET TYPE
	A	B	C	D	E	F		G	H	
FVTL05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.188 [4.78]	0.438 [11.11]	-	R2	0.032 [0.813]	2.00 [50.80]	204
FVTS05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.188 [4.78]	0.438 [11.11]	0.104 [2.64]	R2	0.032 [0.813]	2.00 [50.80]	204
FVWL05	0.313 [7.94]	0.188 [4.76]	1.000 [25.40]	0.125 [3.175]	0.250 [6.35]	-	A2	0.032 [0.813]	2.00 [50.80]	204
FVTL10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.188 [4.78]	0.438 [11.11]	-	R1	0.040 [1.02]	2.00 [50.80]	204
FVTS10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.188 [4.78]	0.438 [11.11]	0.104 [2.64]	R1	0.040 [1.02]	2.00 [50.80]	204
FVWL10	0.313 [7.94]	0.188 [4.76]	1.750 [44.45]	0.125 [3.175]	0.250 [6.35]	-	A1	0.040 [1.02]	2.00 [50.80]	204
FVTL20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.188 [4.78]	0.406 [10.32]	-	R1	0.040 [1.02]	2.00 [50.80]	203
FVTS20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.188 [4.78]	0.406 [10.32]	0.063 [1.59]	R1	0.040 [1.02]	2.00 [50.80]	203
FVWL20	0.438 [11.11]	0.260 [6.604]	2.000 [50.8]	0.125 [3.175]	0.250 [6.35]	-	A1	0.040 [1.02]	2.00 [50.80]	203

**MATERIAL SPECIFICATIONS**

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

**Core:** Ceramic, steatite

**Coating:** Special high temperature vitreous

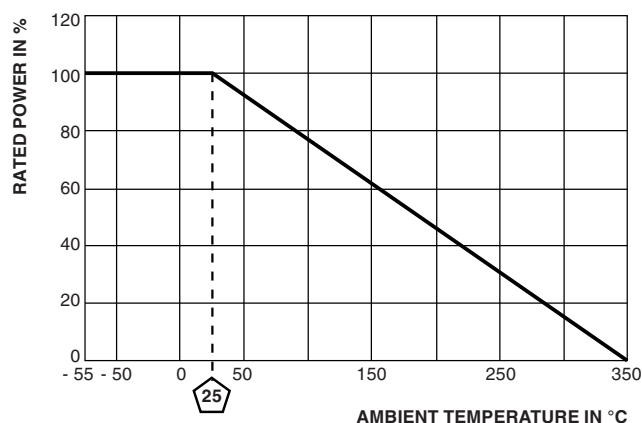
**Standard Terminals:** Tinned alloy 42

**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.

**DERATING**




## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**