

DATASHEET

Product Name **Vitreous Enamel Power Wire-wound Resistors**

Part Name **VWT1 90W~375W $\pm 5\%$ 、 $\pm 10\%$ Series**

Part No. **VWT1*******

File No. **DIP-SP-121**

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1. Scope

- 1.1 This datasheet is the characteristics of Vitreous Enamel Power Wire-wound Resistors manufactured by UNI-ROYAL.
- 1.2 It is moisture-resistant, has high insulation, strong overload capacity, good thermal stability and long service life.
- 1.3 Good thermal stability and reliability.
- 1.4 Strong resistance to corrosion and harsh environment.
- 1.5 It is applicable to power supply testing, circuit load, frequency converter, lifting, braking, power, shipbuilding, industrial automation and other electromechanical equipment.

2. Part No. System

The standard Part No. includes 14 digits with the following explanation:

2.1 1st~4th codes: Product type. E.g.: VWT1=Tubular Ceramic, Fixed, 1 High Bracket;

2.2 The 5th digits:

The 5th digit indicates the type of bracket

Example: C=C Slotted type bracket ; L=Elongated type bracket

2.2 The 6th digits: Special features.

Example: 0=Standard ; S=Special

2.3 The 7th digit is to denote the Resistance Tolerance. The following letter code is to be used for indicating the standard Resistance Tolerance.

J=±5% K=±10%

2.4 The 8th to 11th digits is to denote the Resistance Value.

2.4.1 If value belongs to standard value of E-24 series 5%&10%, the 8th code is zero, 9th~10th codes are the significant figures of resistance value, and the 11th code is the power of ten.

2.4.3 The following numbers and the letter codes are to be used to indicate the number of zeros in the 11th digit:

0=10⁰ 1=10¹ 2=10² 3=10³ 4=10⁴ 5=10⁵ 6=10⁶ J=10⁻¹ K=10⁻² L=10⁻³ M=10⁻⁴

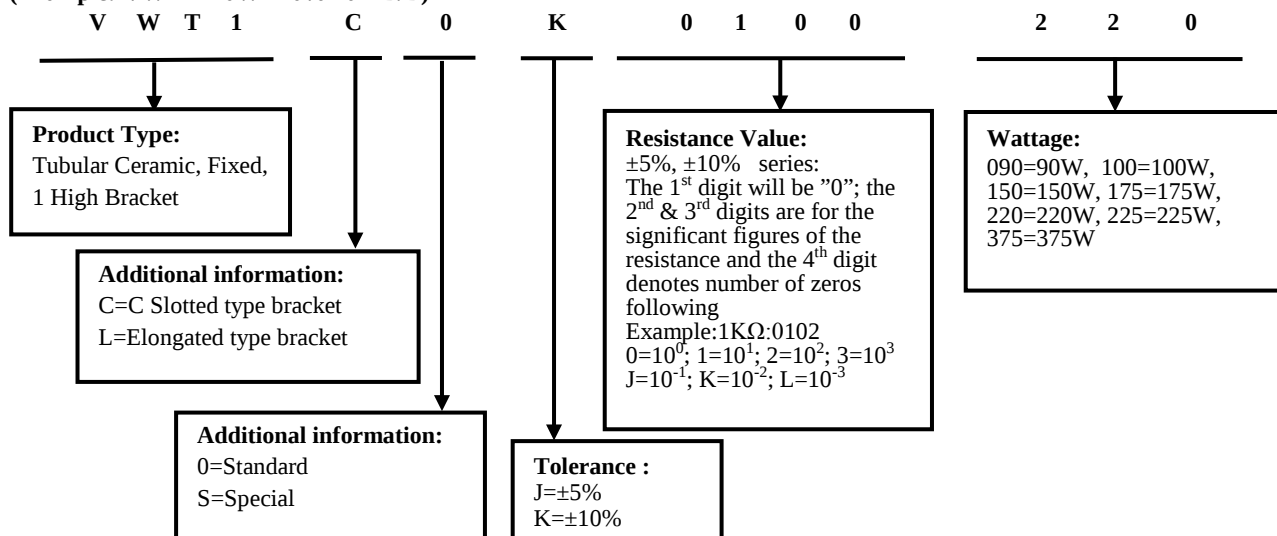
2.5 The 12th, 13th & 14th digits.

2.5.1 The 12th to the 14th digits are to denote the actual wattage of the products.

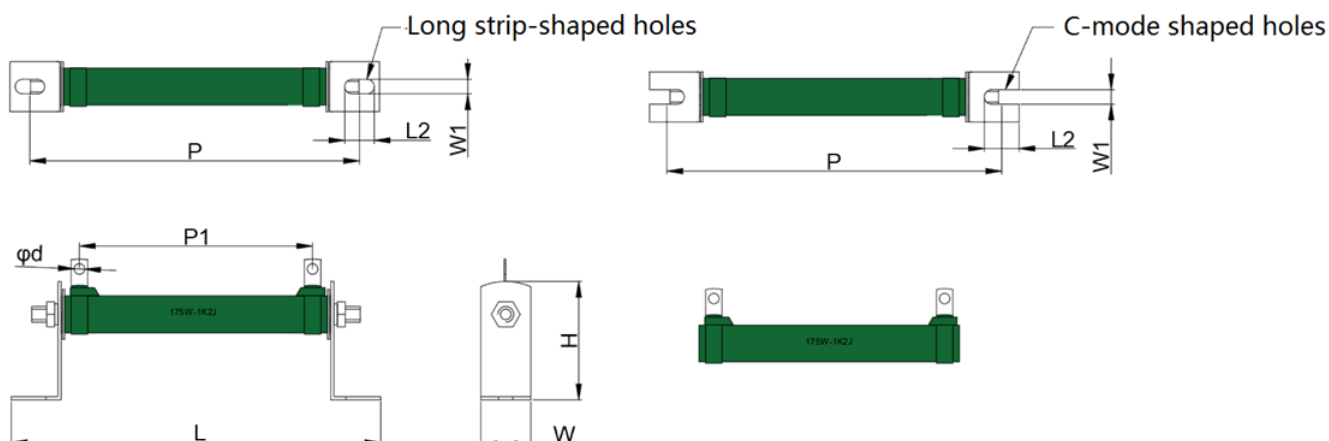
Example: 090 = 90W 100 = 100W 220=220W

3. Ordering Procedure

(Example: VWT1 220W ±10% 10Ω B/B)



4. Dimension& Ratings

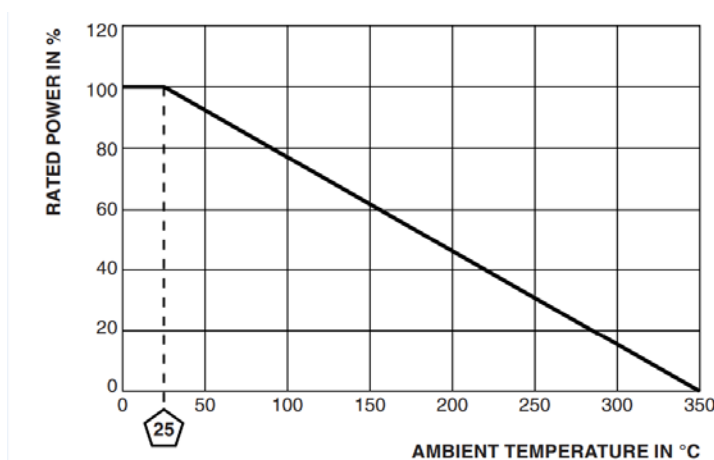


Unit: mm

Unit: mm												
Type	L ±5	L2 ±1	W ±2	W1 ±0.5	H ±2	P ±5	P1 ±5	Φd +0.5/-0	Resistance Range	Remarks	Tolerance	Operating Temperature
VWT1 90W	144	11	13	5.6	35	126	89	5	0.1Ω~1.0KΩ	Elongated type bracket	±5% ±10%	-55℃~+350℃
VWT1 100W	130	11	19	5.5	45	116	70	5	0.1Ω~3.3KΩ			
VWT1 150W	140	11	26	6.5	48	128	85	5	0.1Ω~3.3KΩ	C Slotted type bracket		
VWT1 175W	159	15	26	6.5	48	244	190	5	1.0Ω~5.0KΩ			
VWT1 220W	204	14	32	6.5	53	182	131	5	1.0Ω~5.0KΩ	Elongated type bracket		
VWT1 225W	315	19	26	6.0	48	298	245	5	1.0Ω~10KΩ	C Slotted type bracket		
VWT1 375W	303	11	26	6.5	48	292	246	5	1.0Ω~10KΩ			

*Remark: Other sizes can be specially provided according to customer requirements, please contact our sales team.

5. Derating Curve



6. Performance Specification

Characteristic	Limits	Test Method (GB/T5729&JIS-C-5201&IEC60115-1)
Short-time overload	$\Delta R \leq \pm(5\% + 0.05\Omega)$	Apply 5 times rated power load for 5 seconds
Humidity (steady state)	$\Delta R \leq \pm(5\% + 0.05\Omega)$	$40 \pm 2^{\circ}\text{C}$, $(93 \pm 3)\% \text{RH}$, 96h
Temperature Cycle	$\Delta R \leq \pm(2\% + 0.05\Omega)$	$-55^{\circ}\text{C} \sim 200^{\circ}\text{C}$, 5 cycles
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down	Apply an AC voltage of 1000V for 60 seconds
Insulation resistance	$\geq 1\text{M}\Omega$	Apply 500VDC, 1Min
Load life	$\Delta R \leq \pm(5\% + 0.05\Omega)$	Apply rated power load for 1,000 hours at room temperature

7. Note

9.1. UNI-ROYAL recommend products store in warehouse with temperature between 15 to 35°C under humidity between 25 to 75%RH.

Even under storage conditions recommended above, solder ability of products will be degraded stored over 1 year old.

7.2. Cartons must be placed in correct direction which indicated on carton, otherwise the reel or wire will be deformed.

7.3. Storage conditions as below are inappropriate:

- Stored in high electrostatic environment
- Stored in direct sunshine, rain, snow or condensation.
- Exposed to sea wind or corrosive gases, such as Cl_2 , H_2S , NH_3 , SO_2 , NO_2 , Br, etc.

8. Record

Version	Description	Page	Date	Amended by	Checked by
1	First edition	1~4	Jun.03,2025	Haiyan Chen	Yuhua Xu
2	Modify the ordering procedure	2	Aug.15,2025	Haiyan Chen	Yuhua Xu
	Modify the dimension	3			
	Modify the derating curve	3			
3	1.Cancel 135W,240W, and 300W 2.Modify the dimension	3	Jun.12,2026	Haiyan Chen	Yuhua Xu