



# DATASHEET

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

**Part Name** **VWN 30W ±5% Series**

**Part No.** **VWN030J0\*\*\*B00**

**File No.** **DIP-SP-120**

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Royal Technology (Thailand) Co., Ltd.

## 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 1<sup>st</sup>~4<sup>th</sup> codes: Product type. E.g.: VWN0=Oval-shaped Ceramic-core, Fixed

2.2 5<sup>th</sup>~6<sup>th</sup> digits:

2.2.1 This is to indicate the wattage or power rating. To indicate the size and the numbers, The following codes are used; and please refer to the following chart for detail: W=Normal Size;

Wattage	30
Normal Size	30W

2.3 The 7<sup>th</sup> digit is to denote the Resistance Tolerance. The following letter code is to be used for indicating the standard Resistance Tolerance.  
 $J=\pm 5\%$

2.4 The 8<sup>th</sup> to 11<sup>th</sup> digits is to denote the Resistance Value.

2.4.1 If value belongs to standard value of E-24 series 5%&10%, the 8<sup>th</sup> code is zero, 9<sup>th</sup>~10<sup>th</sup> codes are the significant figures of resistance value, and the 11<sup>th</sup> 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 11<sup>th</sup> digit:

$0=10^0$   $1=10^1$   $2=10^2$   $3=10^3$   $4=10^4$   $5=10^5$   $6=10^6$   $J=10^{-1}$   $K=10^{-2}$   $L=10^{-3}$   $M=10^{-4}$

2.5 The 12<sup>th</sup>, 13<sup>th</sup> & 14<sup>th</sup> digits.

2.5.1 The 12th digit is to denote the Packaging Type with the following codes: B=Bulk/Box

2.5.2 The 13<sup>th</sup> digit is normally to indicate the Packing Quantity of Tape/Reel packaging types. The following letter code is to be used for some packing quantities:

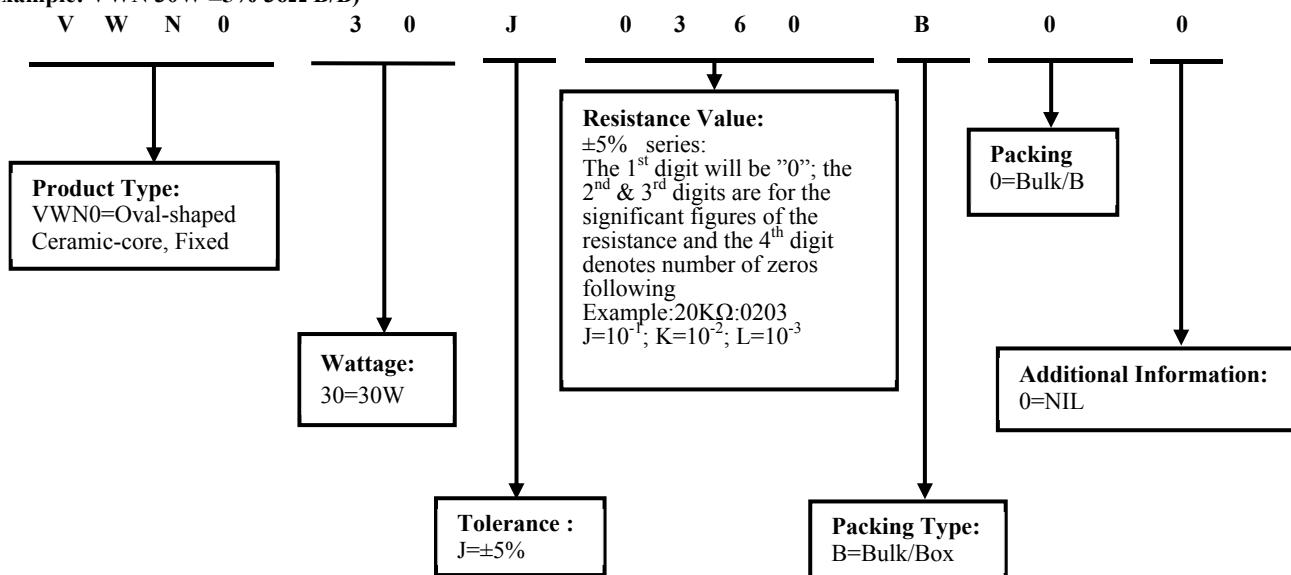
0=Bulk/Box

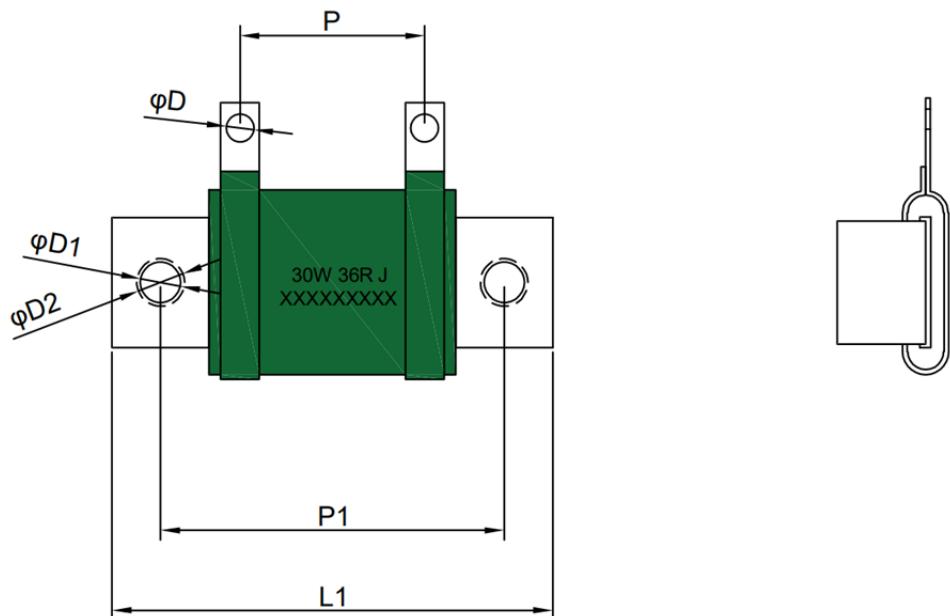
2.5.3 For some items, the 14<sup>th</sup> digit alone can be used to denote special features of additional information with the following codes:

0=NIL

## 3. Ordering Procedure

(Example: VWN 30W  $\pm 5\%$  36Ω B/B)

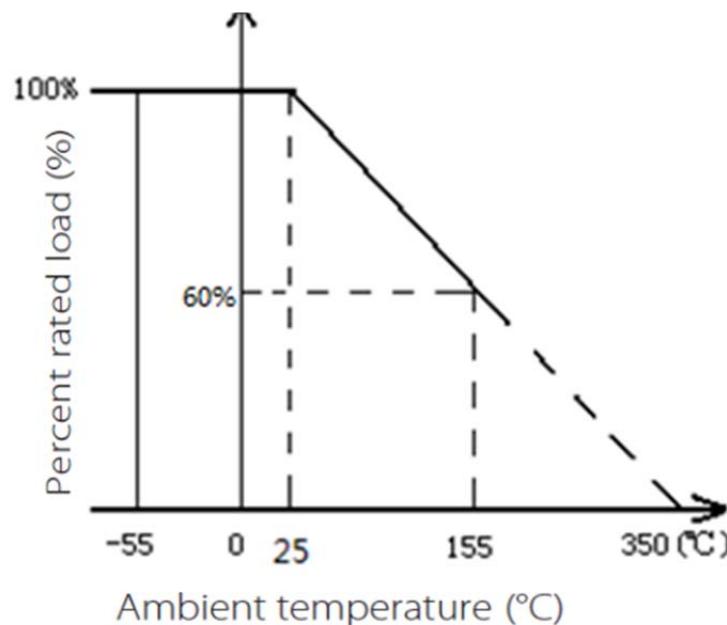


**4. Dimension**

Unit : mm						
Type	$L1 \pm 3$	$P \pm 2$	$P1 \pm 2$	$\Phi D \pm 0.3$	$\Phi D1+0.5/-0$ (Top hole)	$\Phi D2+0.5/-0$ (Lower hole)
VWN 30W	64	24	51	2.8	5.2	6.2

**5. Ratings**

Type	Power Rating (25°C)	Resistance Range	Tolerance	Operating Temperature
VWN	30W	10Ω~3.3KΩ	±5%	-55°C~+155°C

**6. Derating Curve**



# Vitreous Enamel Power Wire-wound Resistors



## 7. Performance Specification

Characteristic	Limits	Test Method (GB/T5729&JIS-C-5201&IEC60115-1)
Short-time overload	$\Delta R/R \leq \pm(5\% + 0.05\Omega)$	4.13 Permanent resistance change after the application of a potential of 10 times rate power for 5 seconds.
Vibration	$\Delta R/R \leq \pm(5\% + 0.05\Omega)$	Frequency 10~500Hz, 98m/s <sup>2</sup>
Crash	$\Delta R/R \leq \pm(5\% + 0.05\Omega)$	Pulse width 6ms.392m/s <sup>2</sup> , 4000 times
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	$\geq 100M\Omega$	Apply 500VDC, 1Min
Room temperature durability	$\Delta R/R \leq \pm(5\% + 0.1\Omega)$	The rated power load is applied for 1000h at room temperature
Humidity ( steady state )	$\Delta R/R \leq \pm(5\% + 0.1\Omega)$	$40 \pm 2^\circ\text{C}$ , $(93 \pm 3)\% \text{RH}$ , 240H

## 8. Note

- 8.1. 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.
- 8.2. Cartons must be placed in correct direction which indicated on carton, otherwise the reel or wire will be deformed.
- 8.3. Storage conditions as below are inappropriate:
  - a. Stored in high electrostatic environment
  - b. Stored in direct sunshine, rain, snow or condensation.
  - c. Exposed to sea wind or corrosive gases, such as Cl<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, NO<sub>2</sub>, Br, etc.

## 9. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~4	May.20,2025	Haiyan Chen	Yuhua Xu
2	Add the dielectric withstanding voltage test	4	Aug.18,2025	Haiyan Chen	Yuhua Xu