

DATASHEET

Product Name **Wire-Wound Semi-Finished Product Resistors**

Part Name **WWR Series**

File No. **DIP-SP-085**

Uniroyal Electronics Global Co., Ltd.

88#, Longteng Road, Economic & Technical Development Zone, Kunshan, Jiangsu, China

Tel +86 512 5763 1411 / 22 /33

Email marketing@uni-royal.cn

Manufacture Plant Uniroyal Electronics Industry Co., Ltd.

Aeon Technology Corporation

Royal Electronic Factory (Thailand) Co., Ltd.

Royal Technology (Thailand) Co., Ltd.

1. Scope

This datasheet is the characteristics of Wire-Wound Semi-Finished Product Resistors manufactured by UNI-ROYAL.

1.1 Compliant with RoHS directive.

1.2 Halogen free requirement.

2. Part No. System

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

2.1 1th ~4th digits

This is to indicate the Chip Resistor. Example: WWR0= Wire-Wound Semi-Finished Product Resistors

2.2 5th~6th indicate material size.

Example: 26=3×12; 27=7×15; 15=7×51; 25=7×100

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%

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

2.4.1 For the standard resistance values of 5%&10% series, the 8th digit is "0", the 9th & 10th digits are to denote the significant figures of the resistance and the 11th digit is the number of zeros following;

For the standard resistance values of ≤2% series in, the 8th digit to the 10th digits is to denote the significant figures of the resistance and the 11th digit is the zeros following.

2.4.2 The following number s 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

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

The 12th digit is to denote the Packaging Type with the following codes:

B=Bulk/Box

2.4.4 The 13th 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:

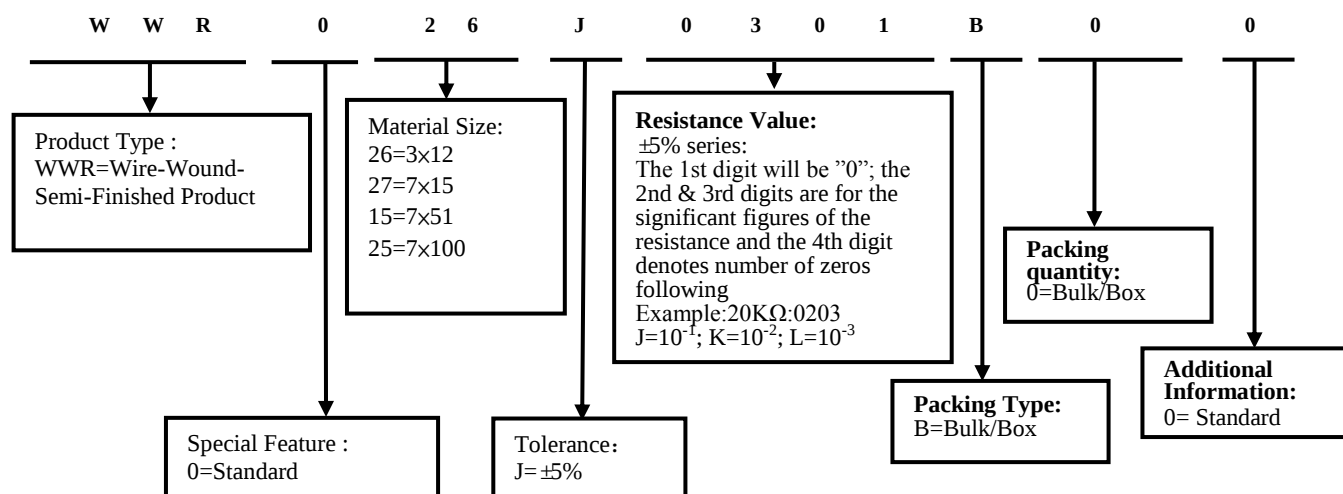
0=Bulk/Box

2.4.5 For some items, the 14th digit alone can use to denote special features of additional information with the following codes:

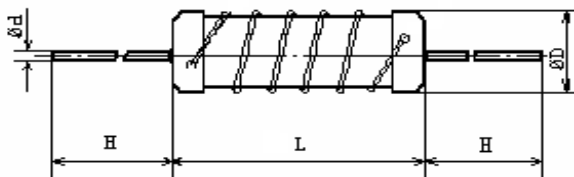
0=Standard

3. Ordering Procedure

(Example: WWR 3×12 ±5% 300Ω B/B)



4. Dimension

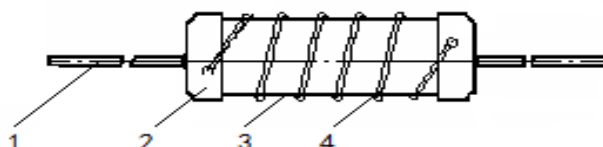


Unit: mm

Type	Power	Size	L	ΦD	H±0.5	Φd±0.05	Resistance Range
WWR	1/2W	3×12	12.19-12.87	3.48-3.63	6	0.75	0.01Ω~390Ω
	2W	7×15	15.19-15.87	7.50-7.70	6	0.75	0.01Ω~3.0KΩ
	8WS	7×51	50.50-52.60	7.50-7.70	6	0.75	0.1Ω~8.2KΩ
	10WS	7×100	100.00-102.00	7.50-7.70	6	1.00	0.22Ω~15KΩ

* "H" can be selected according to customer demand 6~38mm

5. Structure



No.	Name	Raw materials
1	Lead wire	Tin solder coated copper wire
2	End cap	Steel (Tin Plated iron Surface)
3	Basic body	Rod Type Ceramics
4	Resistor	Alloys

6. Performance Specification

Characteristic	Limits	Test Methods (GB/T5729&JIS-C-5201&IEC60115-1)
Temperature Coefficient	≥20Ω: ±300PPM/°C. <20Ω: ±400PPM/°C	4.8 Natural resistance changes per temp. Degree centigrade $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (PPM/°C)}$ R ₁ : Resistance Value at room temperature (t ₁) ; R ₂ : Resistance at test temperature (t ₂) t ₁ : +25 °C or specified room temperature t ₂ : Test temperature (-55°C or 125°C)
Solderability	95% coverage Min.	4.17 The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. Of solder: 245°C ± 3°C Dwell time in solder 2~3 seconds.
Terminal strength	No evidence of mechanical damage	4.16 Direct load: Resistance to a 2.5 kg direct load for 10 seconds in the direction of the longitudinal axis of the terminal leads. Twist test: Terminal leads shall be bent through 90° at a point of about 6mm from the body of the resistor and shall be rotated through 360° about the original axis of the bent terminal in alternating direction for a total of 3 rotations.

7. Precaution for storage/Transportation

- 7.1. UNI-ROYAL recommend products store in warehouse with temperature between 15 to 35℃ 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 Cl₂, H₂S, NH₃, SO₂, NO₂, Br etc.

8. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~4	May.10, 2023	Haiyan Chen	Yuhua Xu

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