

DATA SHEET

Product Name Weld Semi-Finished Product Resistors

Part Name WMO Series

File No. DIP-SP-084

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1. Scope

- 1.1 This datasheet is the characteristics of Weld Semi-Finished Product Resistors manufactured by UNI-ROYAL.
- 1.2 Compliant with RoHS directive.
- 1.3 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: WMO0= Weld Semi-Finished Product Resistors

2.2 5th~6th indicate material size.

Example: 18=4×22; 23=5×40; 22=5×51; 13=7×28; 15=7×51

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 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

2.4.3 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:

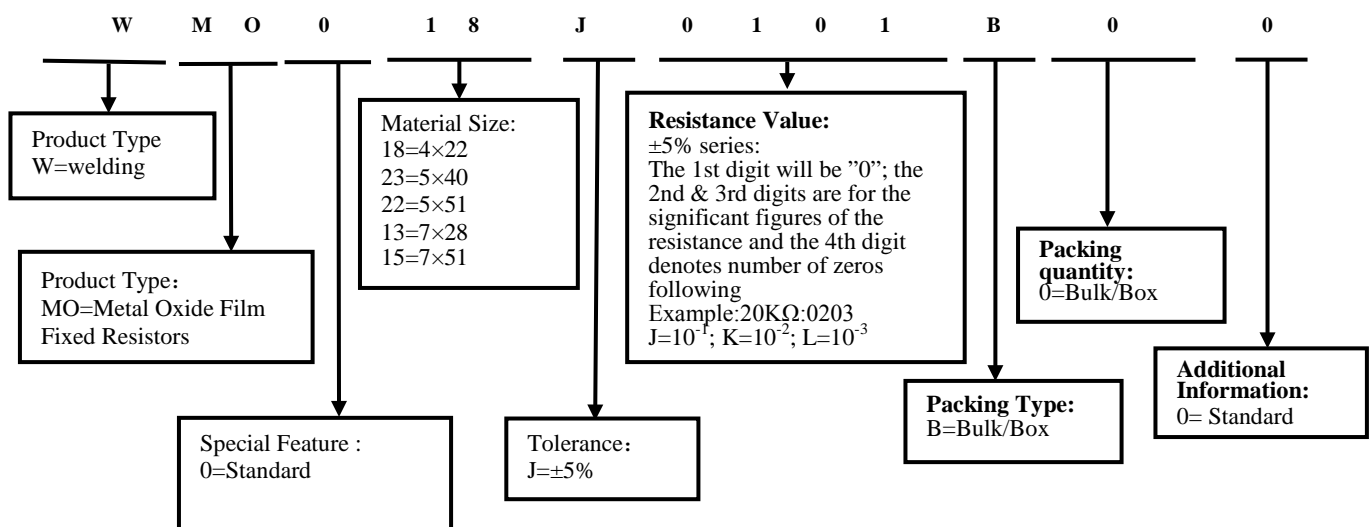
0=Bulk/Box

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

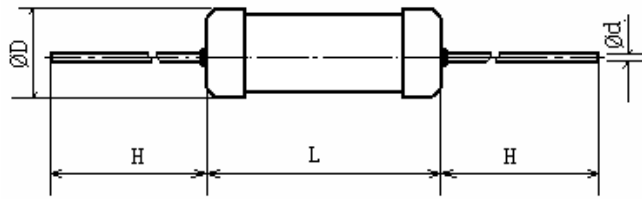
0=Standard

3. Ordering Procedure

(Example: WMO 4×22 ±5% 100Ω B/B)



4. Dimension

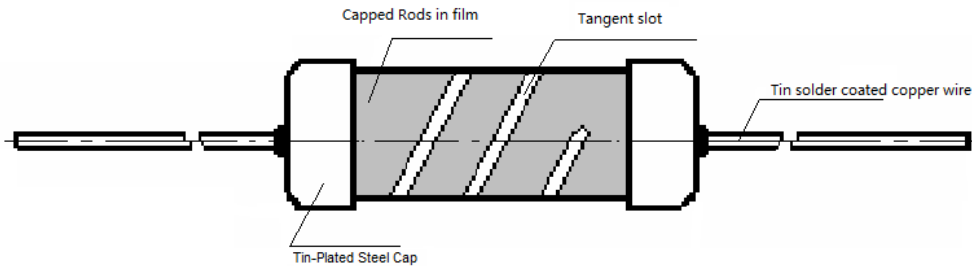


Unit: mm

Type	Size	L	ΦD	H	Φd±0.05	Resistance Range
WMO	4×22	22.10-23.18	4.57-4.75	40±0.5	0.80	0.1Ω~560KΩ
	5×40	39.6-44.8	5.48-5.6	38±0.5	0.80	0.1Ω~560KΩ
	5×51	50.6-52.48	5.48-5.66	38±0.5	0.80	0.1Ω~560KΩ
	7×28	27.96-29.09	7.39-7.61	37.0±0.2	0.75	20Ω~150KΩ
	7×51	50.96-52.09	7.39-7.61	37.0±0.2	0.75	50Ω~200KΩ

* “H” & “φ d” can be specially provided according to customer requirements

5. Structure



6. Performance Specification

Characteristic	Limits	Test Methods (GB/T5729&JIS-C-5201&IEC60115-1)
Temperature Coefficient	<p>4×22; 5×40; 5×51: $\cong 150K\Omega: \pm 350PPM/^{\circ}C$ $150K\Omega < R \cong 560K\Omega$ 0~-700PPM/$^{\circ}C$</p> <p>7×28; 7×51: $\pm 350PPM/^{\circ}C$</p>	<p>4.8 Natural resistance changes per temp. Degree centigrade $\frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6$ (PPM/$^{\circ}C$) R_1: Resistance Value at room temperature (t_1); R_2: Resistance at test temperature (t_2) t_1: +25$^{\circ}C$ or specified room temperature t_2: Test temperature (-55$^{\circ}C$ or 125$^{\circ}C$)</p>
Solderability	95% coverage Min.	<p>4.17 The area covered with a new, smooth, clean, shiny and continuous surface free from concentrated pinholes. Test temp. Of solder: 245$^{\circ}C \pm 3^{\circ}C$ Dwell time in solder 2~3 seconds.</p>
Terminal strength	No evidence of mechanical damage	<p>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$^{\circ}$ at a point of about 6mm from the body of the resistor and shall be rotated through 360$^{\circ}$ about the original axis of the bent terminal in alternating direction for a total of 3 rotations.</p>

7. Precaution for storage/Transportation

- 7.1. 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 Cl₂, H₂S, NH₃, SO₂, NO₂, Br etc.

8. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~4	Aug.07, 2023	Haiyan Chen	Yuhua Xu

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