

DATA SHEET

Product Name High Power Wire-wound Flat Aluminum Shell Fixed Resistors

Part Name HPWR 40W Series

File No. DIP-SP-057

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

- 1.1 This datasheet is the characteristics of High Power Wire-wound Flat Aluminum Shell Fixed Resistors manufactured by UNI-ROYAL.
- 1.2 High Power Wire-wound Flat Aluminum Shell Fixed Resistors
- 1.3 Easy to assembled on PCB
- 1.4 Application: Power supply of frequency converter
- 1.5 Compliant with RoHS directive.
- 1.6 Halogen free requirement.

2. Part No. System

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

2.1 High Power Wire-wound Flat Aluminum Shell Fixed Resistors the 1st to 4rd digits are to indicate the product type.

Example: HPWR= High Power Wire-wound Flat Aluminum Shell Fixed Resistors

2.2 5th~6th digits:

2.2.1 This is to indicate the wattage or power rating. To dieting the size and the numbers,

The following codes are used; and please refer to the following chart for detail:

Example : 40=40W

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 For the standard resistance values of E-24 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 zeros following;

For the standard resistance values of E-96 series, 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 N=10⁻⁵ P=10⁻⁶

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

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

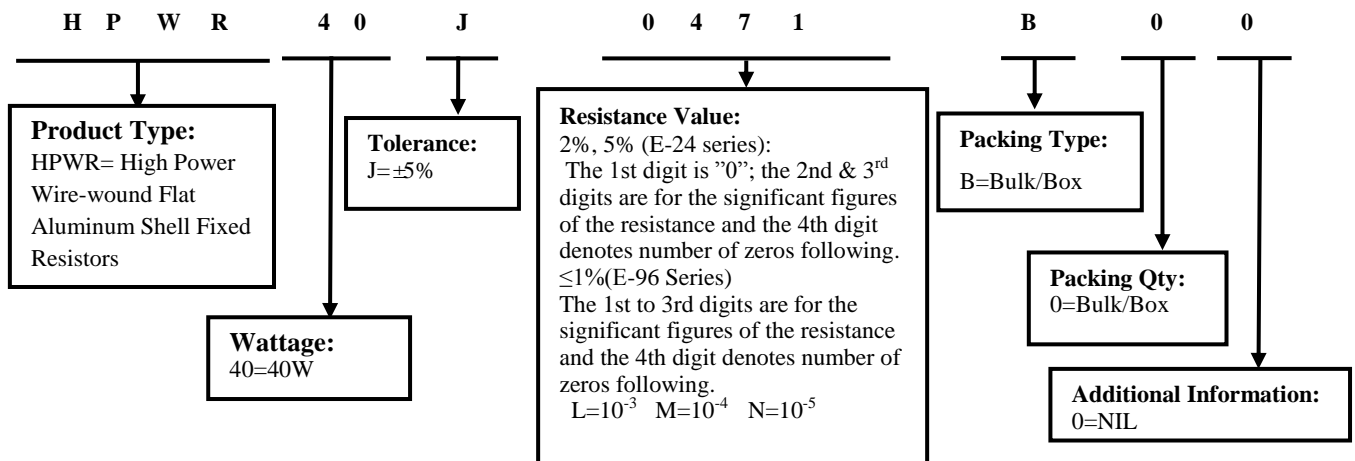
B=Bulk /Box

2.4.4 Current Sense Resistors, The 13th digit should be filled with "0"

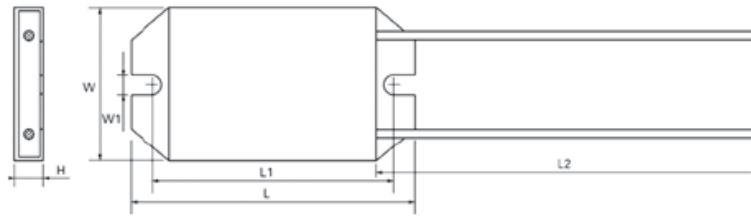
2.4.5 Current Sense Resistors, The 14th digit should be filled with "0"

3. Ordering Procedure

(Example: HPWR 40W ±5% 470Ω B/B)



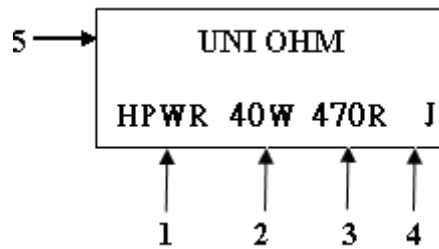
4. Dimension



Unit:mm						
Type	L±1	L1±0.5	L2 +20/-0	W±0.5	W1±0.2	H±0.5
HPWR 40W	85	72	300	45	5.5	8.2

*Remark: For further information, please contact our sales team.

5. Resistor marked

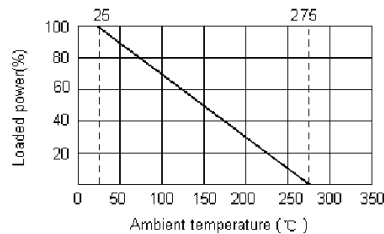


Code description and regulation:

1. Resistors type
2. Wattage rating
3. Nominal resistance value
4. Resistance tolerance. J: ± 5%
5. Trademark

marking: LASER PRINT

6. Derating Curve



6.1 Voltage rating:

Resistors shall have a rated direct-current (DC) continuous working voltage or an approximate sine-wave root-mean-square (RMS) alternating-current (AC) continuous working voltage at commercial-line frequency and waveform corresponding to the power rating, as determined from the following formula:

$$RCWV = \sqrt{P \times R}$$

Where: RCWV = rated dc or RMS ac continuous working voltage at commercial-line frequency and waveform (VOLT.)

P = power rating (WATT.)

R = nominal resistance (OHM)

7. Performance Specification

Characteristic	Limits	Test method (GB/T 5729&JIS-C-5201&IEC60115-1)
Temperature Coefficient	±350 PPM/°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)
Short time overload	Resistance change rate is :±(5%+0.05Ω) max. With no evidence of mechanical damage.	4.13 Permanent resistance change after the application of a potential of 2.5 times RCWV or the max. Overload voltage respectively specified in the above list, whichever less for 10 seconds.
Load life (room temperature)	Resistance change rate is :±(5%+0.05Ω) max. With no evidence of mechanical damage.	(Room temperature 25°C ±5°C) continue electrify for 96h.
Humidity (Steady state)	Resistance change rate is: ±(3%+0.05Ω)Max. With no evidence of mechanical damage.	4.24 Temporary resistance change after 240 hours exposure in a humidity test chamber controlled at 40±2°C and 90~95%RH relative humidity
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down	AC 2500V for 60 seconds AC 3000V for 3 seconds
Insulation resistance	≥ 100MΩ	More than 100MΩ at DC 500V

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 Cl₂, H₂S, NH₃, SO₂, NO₂, Br etc.

9. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~4	Apr.16, 2019	Haiyan Chen	Yuhua Xu
2	Modify the temperature coefficient test conditions	4	Nov.07, 2022	Haiyan Chen	Yuhua Xu

© Uniroyal Electronics Global Co., Ltd. All rights reserved. Specification herein will be changed at any time without prior notice