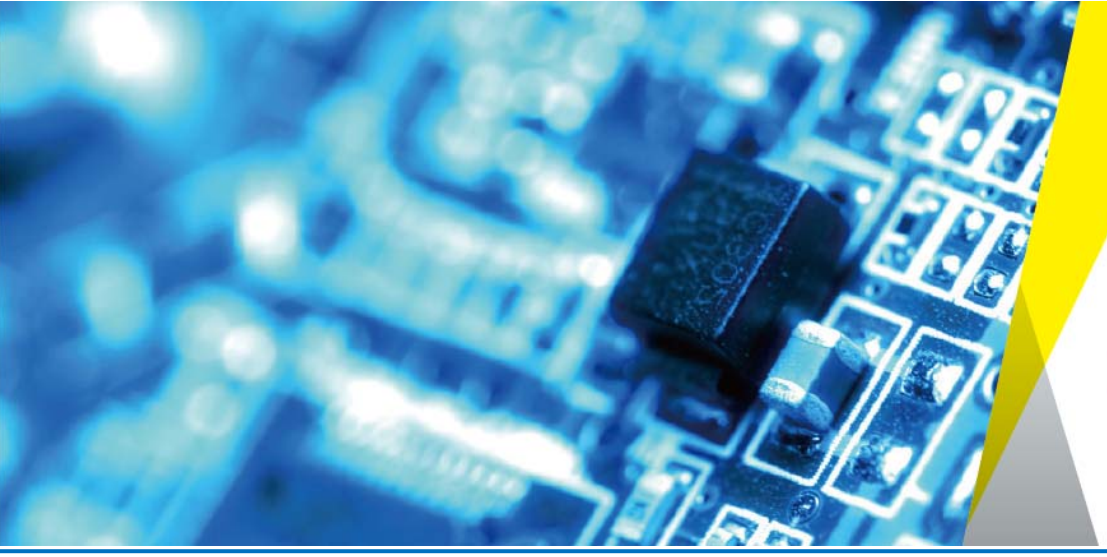

# DATASHEET

| | |
|---|---|
| **Product Name** | **High Power Wire-wound Flat Aluminum Shell Fixed Resistors** |
| **Part Name** | **HPWR 110W、120W、220W Series** |
| **File No.** | **DIP-SP-058** |


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## 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 The 5th & 6th digits will show the connector style.

Example: A0=Terminal Type; B0=Cable Type.

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 5%&10% series, the8th 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;

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:

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

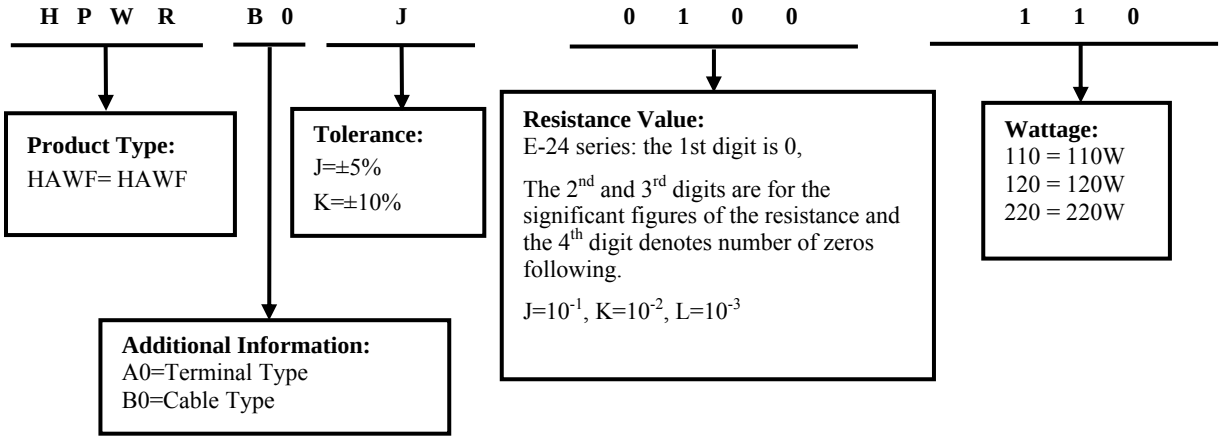
2.5 The 12th ~14th digits.

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

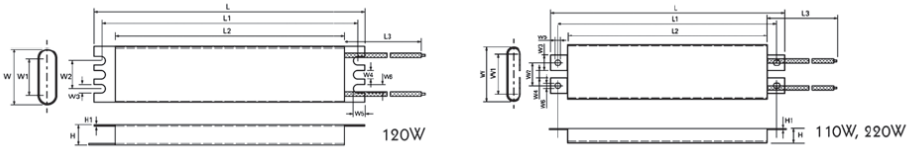
Example: 110 = 110W 120 = 120W 220=220W

## 3. Ordering Procedure

**(Example: HPWR 110W ±5% 10Ω B/B )**



**4. Dimension**

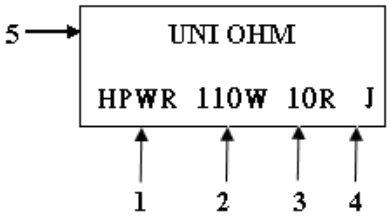



**Unit:mm**

| Type | L+0/-5 | L1±0.5 | W±0.5 | H±0.5 | L3±5 |
|---|---|---|---|---|---|
| HPWR 110W | 105 | 91.5 | 44.6 | 11.5 | 300 |
| HPWR 120W | 195 | 184 | 40 | 14 | 250 |
| HPWR 220W | 200 | 187 | 44.6 | 11.5 | 250 |

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

**5. Resistor marked**



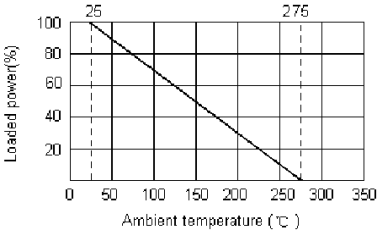

**Code description and regulation:**

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

**marking:** LASER PRINT

**Note：The marking code shall be prevailed in kind!**

**6. Derating Curve**




6.1Voltage 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 | ±300 PPM/℃ | 4.8 Natural resistance changes per temp. Degree centigrade<br>$\frac{R_2-R_1}{R_1(t_2-t_1)} \times 10^6$ (PPM/℃)<br>$R_1$: Resistance Value at room temperature （$t_1$）;<br>$R_2$: Resistance at test temperature<br>(Upper limit temperature or Lower limit temperature)<br>$t_1$: +25°C or specified room temperature<br>$t_2$: Upper limit temperature or Lower limit temperature test temperature |
| Short time overlord | 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℃±5℃) 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℃ and 90~95%RH relative humidity |
| Dielectric withstanding voltage | No evidence of flashover mechanical damage, arcing or insulation break down | AC 3000V for 60 seconds |

## 8. Note

8.1. 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.

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 $Cl_2$, $H_2S$, $NH_3$, $SO_2$, $NO_2$, 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 ordering procedure | 2 | Dec.31, 2024 | Haiyan Chen | Yuhua Xu |