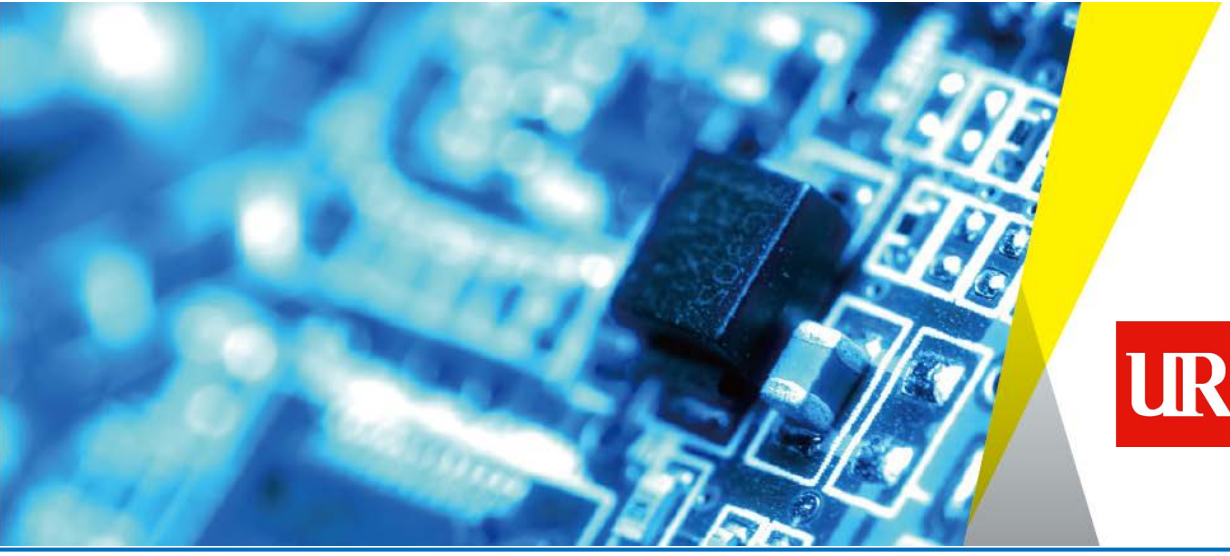

DATA SHEET

Product Name	**Power Dissipation Mount Fixed Resistors**
Part Name	**PDM、PDMS Series**
File No.	**DIP-SP-048**

Uniroyal Electronics Global Co., Ltd.

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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 Power Dissipation Mount Fixed Resistors manufactured by UNI-ROYAL.

1.2 With Aluminum Shell for a good heat dissipation，suitable for board mount

1.3 Thin & lightweight body with big power rating

1.4 Application：Power Supply，Adapter，Machine

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 For Power Dissipation Mount Fixed Resistors, these 4 digits are to indicate the product type but if the product type has only 3digits, the 4th digit will be "0"

Example: PDM0=PDM type;

2.2 5th~6th digits:

1W~16W (≧1W)

Wattage	5	10
Normal Size	5W	AW

2.2.1 For power rating of 1watt to 16watt, the 5th digit will be a number or a letter code and the 6th digit will be the letters of W.

Example: 5W=5W

2.2.2 For power rating between20 watt to 99 watt, the 5th and the 6th digit will show the whole numbers of the power rating itself

Example: 25=25W; 35=35W ; 50=50W; 85=85W

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 digit are to denote the significant figures of the resistance and the 11th digit is the numbers of zeros following.

Example: 012J=1.2Ω 0120=12Ω 0273=27KΩ

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

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

B=Bulk/Box

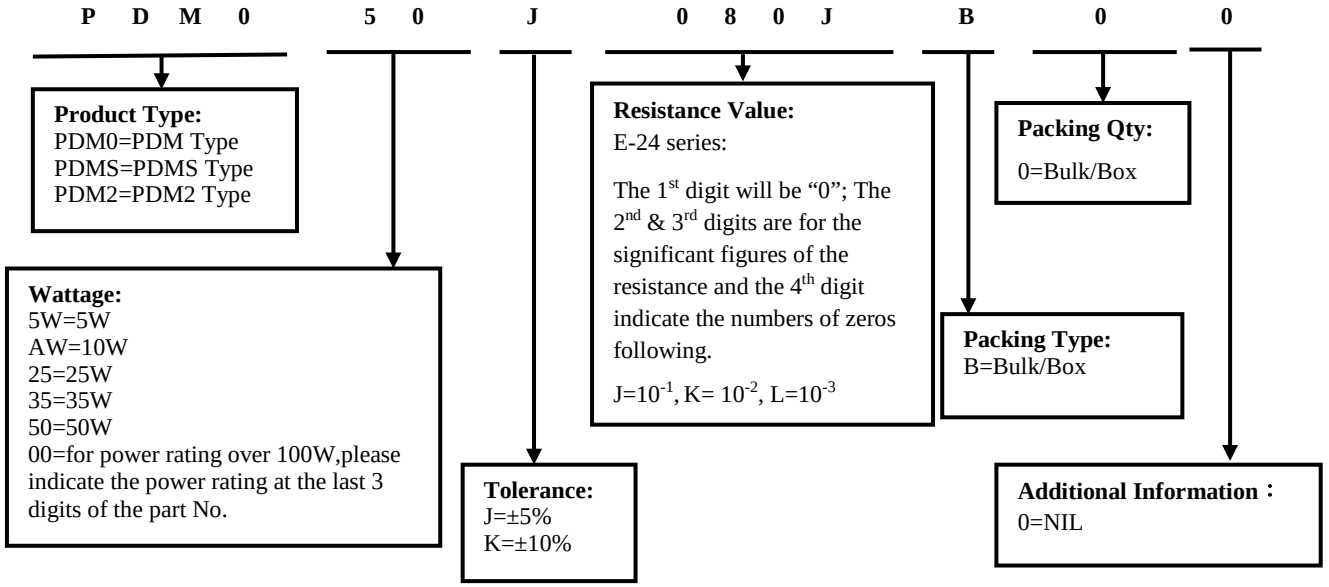
2.5.2 The 13th digit is normally to indicate the Packing Quantity, This digit should be filled with "0"for the Cement products with "Bulk/Box" packing requirements.

2.5.3 For some items, the 14th digit alone can use to denote special features of additional information with the following codes or standard product

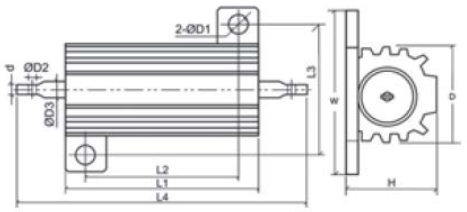
Example: 0= standard product

3. Ordering Procedure

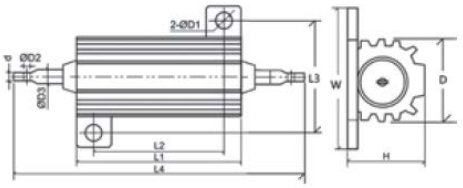
(Example: PDM 50W ±5% 8Ω B/B)



4. Ratings & Dimension

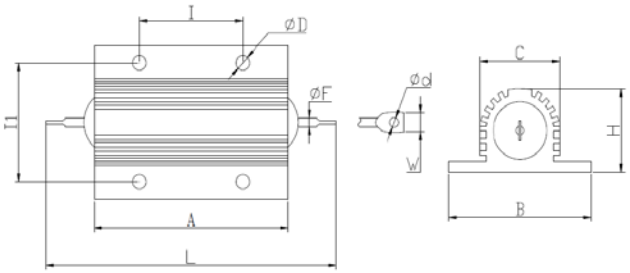


PDM5W~50W



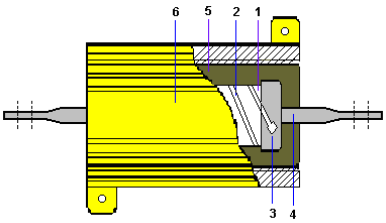
(PDMS 25W~50W)

Type	Dimension(mm)											Resistance range	Special high value
	L1±1.0	L2	L3	L4±1.5	W	H±1.0	D±1	d±0.2	D1±0.5	D2±0.5	D3±0.1		
PDM 5W	15.5	11.0±0.5	12.5±0.5	32.5	16.4±0.5	8.0	8.0	0.3	2.0	1.3	1.0	0.5Ω~1 KΩ	1.8KΩ
PDM 10W	20.5	14.2±0.5	15.9±0.5	40.5	21±0.5	10.0	11.0	0.8	2.5	2.0	2.0	1Ω~1.5KΩ	5KΩ
PDM 25W	28.0	18.2±0.5	20.2±0.5	45.5	29.0±0.5	16.0	15.5	0.8	3.0	2.0	2.0	5.1Ω~8.2KΩ	12KΩ
	28.0	18.0±0.5	19.0±0.5	49.0	27.0±1.0	14.0	13.5	0.8	4.0	2.0	2.0	5.1Ω~8.2KΩ	12KΩ
PDM 35W	34.5	24.2±0.5	20.2±0.5	56.5	29.0±0.5	16.3	15.5	0.8	3.0	2.0	2.0	5.1Ω~8.2KΩ	15KΩ
PDM 50W	50.0	40.2±0.5	20.2±0.5	78.5	29.0±0.5	16.0	15.5	0.8	3.5	2.0	2.0	5.1Ω~20KΩ	35KΩ
	50.5	40.0±0.5	21.5±0.5	75.0	30.0±0.5	15.7	15.5	0.8	3.0	2.0	2.0	5.1Ω~20KΩ	35KΩ
PDMS 25W	28.0	18.0±0.5	19.0±1.0	49.0	27.0±0.5	14.0	13.5	0.8	4.0	2.0	2.0	5.1Ω~8.2KΩ	22KΩ
PDMS 50W	50.0	40.0±0.5	21.5±1.0	75.0	30.0±0.5	16.0	15.5	0.8	3.5	2.0	2.0	5.1Ω~20KΩ	35KΩ



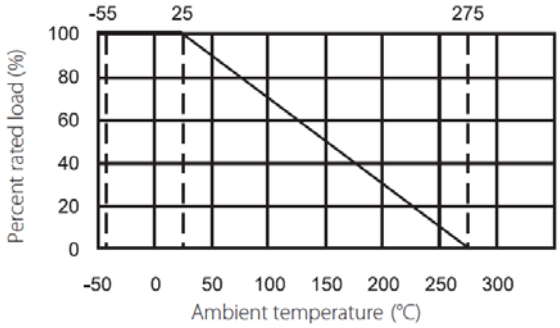
Type	Dimension(mm)										Resistance range
	A±0.5	B±0.5	C±0.5	H±0.5	I±0.5	I1±0.5	L±2	ΦD±0.5	W±0.3	Φd±0.5	
PDM2 100W	65.5	48	27	26	35	37	88	4.5	6	3	0.5Ω~22KΩ

5. Structure



No.	Material Generic Name
1	Ceramic rod
2	Resistance wire
3	Cap
4	Terminal lead
5	Silicones molding compound
6	Aluminum shell

6. Derating Curve



5.1 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 Methods (GB/T5729&JIS-C-5201&IEC60115-1)
Temperature Coefficient	＜20Ω: ±400PPM/℃ ≧20Ω: ±350PPM/℃	4.8 Natural resistance changes per temp. Degree centigrade $\frac{R_2-R_1}{R_1(t_2-t_1)} \times 10^6$ (PPM/℃) R_1: Resistance Value at room temperature （t_1）; R_2: Resistance at test temperature （t_2） t_1: +25℃ or specified room temperature t_2: Test temperature（-55℃or 125℃）
Short-time overload	Resistance change rate must be in ±(5%+0.05Ω) ,and no mechanical damage.	4.13 Permanent resistance change after the application of a potential of 2.5 times RCWV or Max.Overload Votage whichever less for 5 seconds.
Dielectric withstanding voltage	No evidence of flashover mechanical damage, arcing or insulation break down.	4.7 Applied voltage AC1000V for 60 seconds
Resistance to soldering heat	Resistance change rate must be in ±(1%+0.05Ω) , and no mechanical damage.	4.18 Permanent resistance change when leads immersed to a point 2.0-2.5mm from the body in 260℃±5℃ solder for 10±1 seconds.
Terminal strength	No evidence of mechanical damage	4.16 Direct load: Resistance to a 2.5Kg 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.
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℃±3℃ Dwell time in solder: 2~3seconds.

Humidity (Steady state)	Resistance change rate must be in ±(5%+0.05Ω) , and no 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
Load life	Resistance change rate must be in ±(5%+0.05Ω) , and no mechanical damage.	4.25.1 Permanent Resistance change after 1000 hours operating at RCWV or Max. Working Voltage whichever less with duty cycle of 1.5 hours “ON”， 0.5 hour “OFF” at 70±2℃ ambient.
Low Temperature Storage	Resistance change rate must be in ±(5%+0.05Ω) , and no mechanical damage.	IEC 60068-2-1 (Aa) Lower limit temperature，for 2H.
High Temperature Exposure	Resistance change rate must be in ±(5%+0.05Ω) , and no mechanical damage.	MIL-STD-202 108A Upper limit temperature ，for 16H.

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, Br etc.

9. Record

Version	Description	Page	Date	Amended by	Checked by
1	First version	1~5	Mar.20, 2018	Haiyan Chen	Nana Chen
2	Modify characteristic	4~5	Feb.26, 2019	Haiyan Chen	Yuhua Xu
3	Modify the dimensions	3	Sep.11,2020	Song Nie	Yuhua Xu
4	Modify characteristic	4	Nov.20,2020	Song Nie	Yuhua Xu
5	Modify the temperature coefficient test conditions	4	Nov.07, 2022	Haiyan Chen	Yuhua Xu
6	Cancel PDM-1	3	Aug.14, 2023	Haiyan Chen	Yuhua Xu
7	Add the “PDM2 100W”	2~3	Apr.18, 2024	Junying Ye	Haiyan Chen