



# DM21-36W12C Product Specification Manual

36W Low-power DC-DC Buck Power



## Contents

|  |   |
|--|---|
| 1.product introduction.....                          | 2 |
| 1.1. Brief introduction.....                         | 2 |
| 1.2. Characteristics.....                            | 2 |
| 1.3. Application scenarios.....                      | 2 |
| 2.specification parameters.....                      | 3 |
| 2.1. Limit parameters.....                           | 3 |
| 2.2. Work parameters.....                            | 3 |
| 2.3. Work efficiency VS load.....                    | 4 |
| 3.Basic operation.....                               | 5 |
| 3.1. Matters need attentions.....                    | 5 |
| 4.Mechanical characteristics and pin definition..... | 5 |
| 4.1. Product size.....                               | 5 |
| 4.2. Typical application.....                        | 5 |
| 4.3. Pin definition.....                             | 6 |
| 5.Product selection.....                             | 6 |
| Revision history.....                                | 6 |
| About us.....  | 6 |

# 1.product introduction

## 1.1. Brief introduction

DM21-36W12C is a (DC-DC) low-power buck power supply module, can continuously output 36W power, Wide voltage input range :15~28V, the max input can up to 28V, adopting high quality synchronous rectification and voltage reduction scheme, the max efficiency up to 9%, low temperature rise, which greatly reduces the users design threshold. All components from the regular procurement channels, industrial grade design: -40~85°C, when in complex voltage environment, it also output steadily.



## 1.2. Characteristics

- current: 12V / 3A, can constantly output of 36W.
- Volume: 46.2\*27\*14.2mm, Use ABS fire-proof black plastic shell, safe to use.
- Synchronous rectification: greatly improve its working efficiency, with the highest efficiency of 97%.
- Over temperature protection: module internal preset the maximum working temperature, can be restored automatically.
- Over current protection: module internal preset constant current limit, which can be recovered automatically.

## 1.3. Application scenarios

- Aircraft model / remote control aircraft;
- intelligent robot;
- Wireless communication equipment;
- Industrial control motherboard;
- Vehicular power supply;
- Charging pile power supply system;
- Smart home and industrial sensors;
- Internal power supply system of security alarm;
- Industrial control;
- MCU, toys;

- LED Drive light with power supply;
- Intelligent street lamp.

## 2.specification parameters

### 2.1. Limit parameters

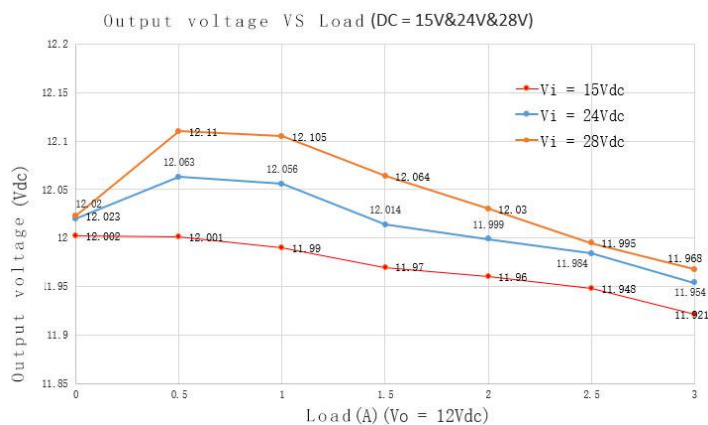
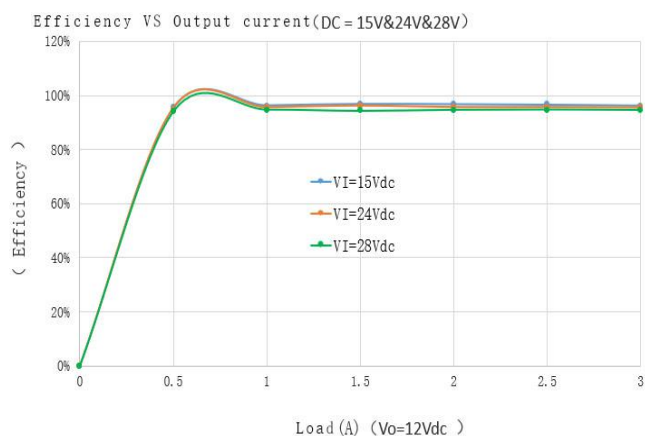
| Order number | Main parameter           | Minimum | Maximum | Remarks   |
|--------------|--------------------------|---------|---------|---|
| 1            | Input voltage (Vdc)      | 15      | 28      | The work voltage shall not exceed 28Vdc, Otherwise it will permanently damaged. |
| 2            | output power (W)         | 0       | 36      | W   |
| 3            | working temperature (°C) | -40     | +85     | °C  |

### 2.2. Work parameters

| Order number | Main parameter           | Minimum | Typical value | Maximum | Remarks |
|--------------|--------------------------|---------|---------------|---------|---------|
| 1            | Input voltage (Vdc)      | 15      | -             | 28      | V       |
| 2            | Working frequency (Hz)   | -       | 500           | -       | KHz     |
| 3            | Output power(W)          | 0       | -             | 36      | W       |
| 4            | Working temperature (°C) | -40     | 25            | 85      | °C      |
| 5            | Static power(mA)         | -       | -             | 200     | < 200uA |
| 6            | Output voltage (Vdc)     | 11.95   | 12            | 12.15   | V       |
| 7            | Persistent current       | 0       | -             | 3       | A       |

|    | (mA)                        |      |     |     |                                    |
|----|-----------------------------|------|-----|-----|------------------------------------|
| 8  | Ripple noise (mV)           | 10   | -   | 70  | <70mV                              |
| 9  | Max efficiency (n%)         | 94.4 | -   | 97  | %                                  |
| 10 | Over current protection (%) | -    | 5   | -   | A                                  |
| 11 | Short circuit protection    | -    | -   | -   | No                                 |
| 12 | Working humidity (RH%)      | 20   | -   | 90  | No-condensing.                     |
| 13 | Storage temperature (°C)    | -40  | +25 | +85 | Dry storage in normal temperature. |
| 14 | Storage humidity (RH%)      | 10   | -   | 90  | Dry storage in normal temperature. |

## 2.3. Work efficiency VS load



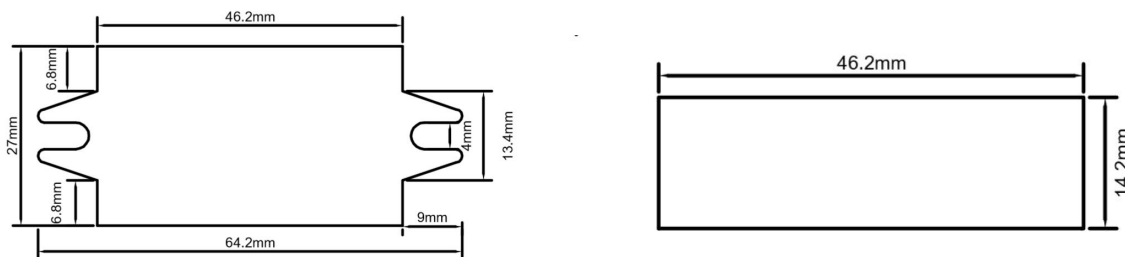
## 3. Basic operation

### 3.1. Matters need attentions

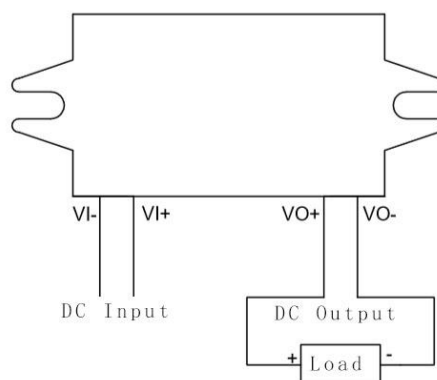
- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Before using it, you must study Knowledge of safe use carefully.
- prohibit human body contact components when electrified;
- The maximum input voltage shall not exceed 28Vdc, otherwise may occur permanent damage .
- Temperature is high when working at full load, please do not touch!
- Do not short-circuit the output port otherwise it will cause permanent damage to the module;

## 4. Mechanical characteristics and pin definition

### 4.1. Product size



### 4.2. Typical application



## 4.3. Pin definition

| Order number | Lead wire colour | Direction       | Use  |
|--------------|------------------|-----------------|--|
| VI-          | Black            | Positive input  | DC input, Input power reference GND.   |
| VI+          | Red              | Positive input  | DC input, positive power supply (15-28Vdc, exceed 28V will cause permanent damage to the module) |
| VO+          | Yellow           | Negative output | DC output, positive power supply.  |
| VO-          | Black            | Negative output | DC output, output power reference GND.   |

## 5. Product selection

| Product model | Input voltage | Output voltage | Output current | Efficiency | Installation mode |
|---------------|---------------|----------------|----------------|------------|-------------------|
| DM21-36W12C   | 15~ 28Vdc     | 12Vdc          | 0-3A           | 97%        | Fixed shell       |

## Revision history

| Order number | vision | modification date | Revision notes                       | Maintain person |
|--------------|--------|-------------------|--------------------------------------|-----------------|
| 1            | V1.0   | 20190721          | First edition, first public release. | GHW             |

## About us

Technical support: [support@cdebyte.com](mailto:support@cdebyte.com)

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Fax: 028-64146160 ext. 821

Web: [www.ebyte.com](http://www.ebyte.com)

Address: Innovation Center D347, 4# XI-XIN Road, Chengdu, Sichuan, China

