



Chengdu Bairui Technology Co., Ltd.

DM50-36120006DS Product Specification Manual

7W Negative Voltage DC-DC Power Supply Module

1.Product introduction

1.1. Brief introduction

DM50-36120006DS is a negative voltage type DC-DC low-power power supply module, continuous output 7W power, wide voltage input range: +5.5~+36VDC, highest efficiency up to 93%, and low-heat, which greatly reduces the users design threshold. All components come from formal purchasing channels, industrial grade design: -40~85℃, even in complex voltage environment, it also can output steadily.



1.2. Characteristic

- output power: -12V/600mA, can continuously output 7W;
- Ultra small volume: 28*17*9.2mm, 2.54 SMD and DIP;
- Over current protection: The maximum working current is preset in the module, can be automatically recovered after eliminating the fault;
- Short circuit protection: automatic recovery after fault elimination;
- Low heat: under normal temperature, the working temperature of full load is only 75 ℃;

1.3. Application scenarios

- Power supply for industrial control equipment;
- Aircraft model / remote control aircraft;
- Intelligent robot;
- Wireless communication equipment;
- Industrial control main board;
- Vehicle power supply;
- Charging pile power supply system;
- Intelligent home and industrial sensors;
- Internal power supply system of security alarm;

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- MCU, toys;
- power supply of LED driving light belt;
- Intelligent street lamp;

2.Specification parameters

2.1. Limit parameters

Order number	Main parameter	Minimum	Maximum	Mark
1	Input voltage (Vdc)	+5.5	+36	V (work voltage should not exceed 36Vdc, otherwise will case permanent damage.)
2	Output power (W)	0	7	W
3	Work temperature (°C)	-40	+85	°C

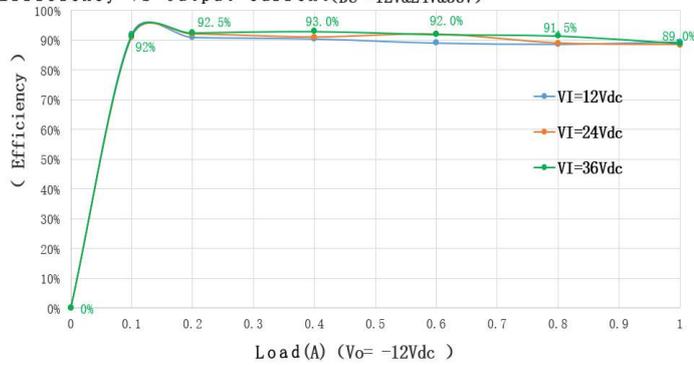
2.2. Working parameters

Order number	Main parameter	Minimum	Typical value	Maximum	Remarks
1	Input voltage (Vdc)	+5.5	+24	+36	V
2	Working frequency (Hz)	-	500	-	KHz
3	Output power (W)	0	-	7	W
4	working temperature (°C)	-40	25	85	°C
5	Static power(W)	-	-	0.17	< 0.17W
6	output voltage(Vdc)	-4.95	-5	-5.05	V
7	Persistent current (mA)	0	-	0.6	A

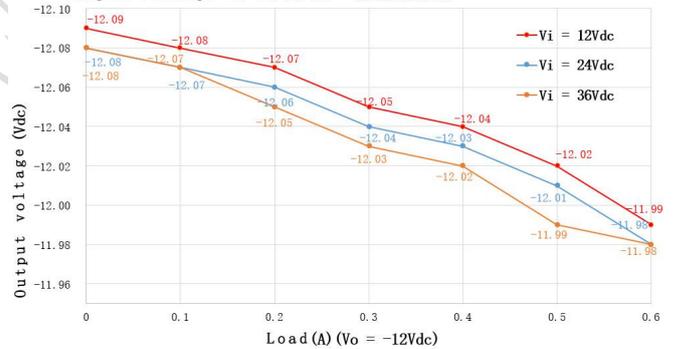
8	ripple noise(mV)	10	-	30	<30mV
9	Maximum efficiency (n%)	-	-	93	%
10	Over current protection(%)	0.7	-	0.9	A
11	Short circuit protection	-	-	-	Yes
12	Working humidity (RH%)	20	-	90	No condensation
13	Storage temperature (°C)	-40	+25	+85	Dry storage at normal temperature.
14	Storage humidity (RH%)	10	-	90	Dry storage at normal temperature.

2.3. Work efficiency VS Load

Efficiency VS Output current(DC =12V&24V&36V)



Output voltage VS Load (DC = 12V&24V&36V)



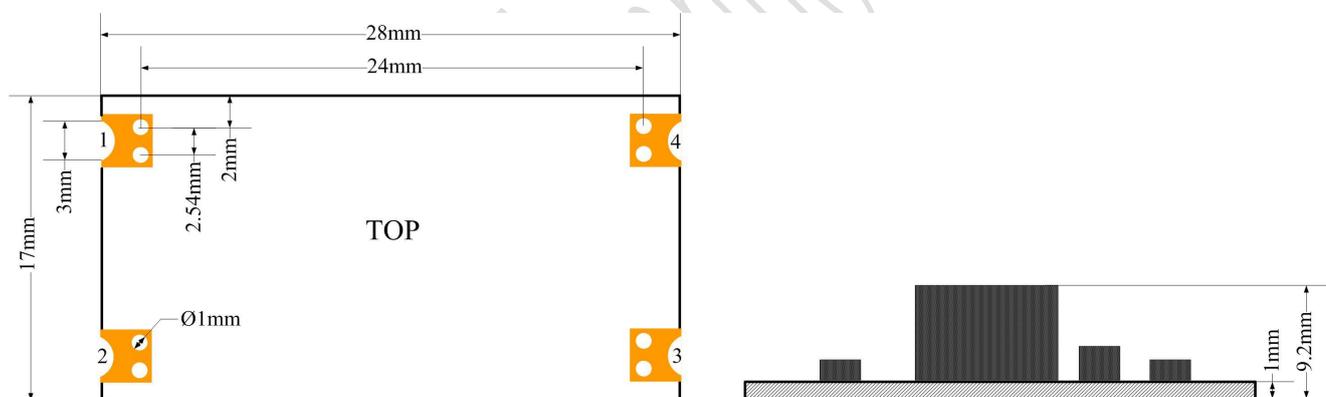
3. Basic operation

3.1. Matters need attentions

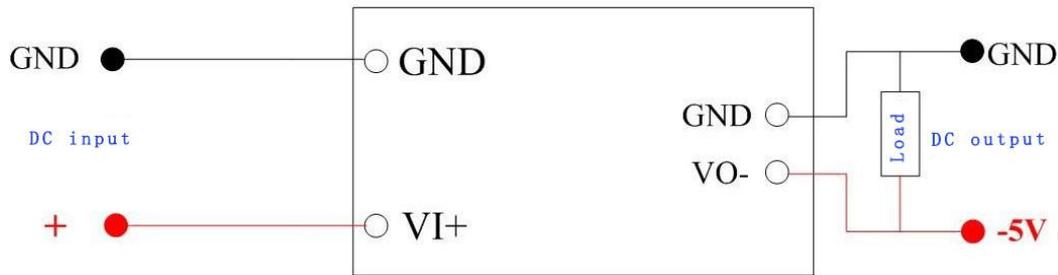
- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Please read this technical document carefully before use;
- Prohibit touch components after electrified;
- The maximum input voltage shall not exceed 36VDC, otherwise the module may be permanently damaged;
- It's high temperature when full load, please not touch!
- Do not short-circuit the output directly, otherwise will cause permanently damaged to the module;

4. Mechanical Characteristics and Pin Definition

4.1. Product size



4.2. Typical application



4.3. Pin Definition

Order number	Name	Direction	Pin use introduction
1	Vo-	output	-12V voltage output.
2	GND	output	Ground wire, output port power supply reference GND.
3	GND	input	Ground, link to power reference GND.
4	Vi+	input	Power supply input range: +5.5 ~ +36V, If exceed 36V will cause permanent damage to the module.

5. Product selection

Product model	Embed mode	Input voltage range	Fixed output	Max current	Work frequency	Work temperature
DM50-36120006DS	SMD/DIP	5.5- 36VDC	-12±0.1V	0.6A	0.5MHz	-40 ~ 85°C
DM50-36050016DS	SMD/DIP	5.5- 36VDC	-5.0±0.1V	1.0A	0.5MHz	-40 ~ 85°C

*mark: The series of pin sizes (packages) are fully compatible and replaceable.

Revision history

Order number	vision	modification date	Revision notes	Maintain person
1	V1.0	2019/11/20	First edition, first public release.	GHW

About US

Chengdu Bairui Technology Co.,Ltd. is a high-tech company focusing on electronic modules.Our Company owns a number of independent R&D products and obtains unanimously approved by customers.With powerful R&D technical strength and perfect After-sales service. Our company can provides customers with perfect solutions and technical support, shorten the R&D cycle, Reduces R&D cost, and provide a powerful platform for new products development.

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