DM41-10W2412B1

10w Isolated Step-down DC-DC Power Supply

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Contents

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1 Introduction

1.1 Brief Introduction

DM41-10W2412B1 is an isolated DC-DC (DC-DC) low-power step-down power supply module, which continuously outputs 10W power, wide voltage 18~36V input, maximum efficiency up to 80%, and low heat generation, large Lower user design threshold. All components come from formal procurement channels, and the industrial grade design is -40~85℃, which can stabilize the output even in a complex voltage environment.

1.2 Features

- Isolation and step-down: filter out the peak value of the power supply, effectively protecting the back-end load equipment from being damaged;
- Output power: 10W/12V/833mA sustainable;
- Ultra-small size: 50.8*25.4*11mm, metal shell;
- Overcurrent protection: The maximum operating current is preset inside the module, which can automatically recover after the fault is eliminated;
- Short-circuit protection: automatic recovery after the fault is eliminated;
- Isolation withstand voltage: 1000V.

1.3 Application

- Power supply for industrial control equipment;
- RS485/RS232/CAN communication equipment;
- Solenoid valve/relay;
- Intelligent robot;
- Wireless communication equipment;
- Industrial control motherboard;
- On-board power supply;
- Charging pile power supply system;
- Smart home and industrial sensors, etc.;
- The internal power supply system of the security alarm;
- Single-chip microcomputer motherboard (MCU), toys;
- LED drive lights with power supply;
- Smart street lights.

2 Specification and parameter

2.1 Limit parameter

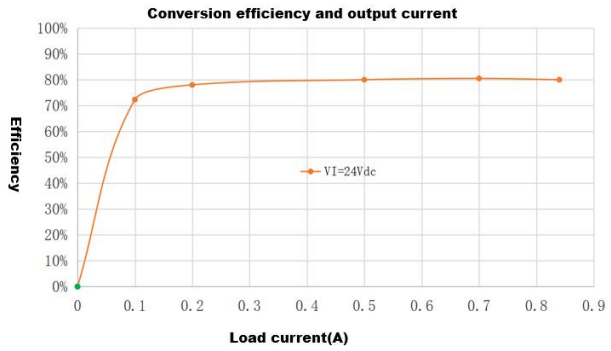
Main parameter	Performance		Remark
	Minimum	Maximum	
Input voltage（Vdc）	17.8	36.5	V (The work voltage shall not exceed 18Vdc, Otherwise it will permanently damaged.)
Output power（W）	0	10	W
Working temperature（℃）	-40	+85	℃

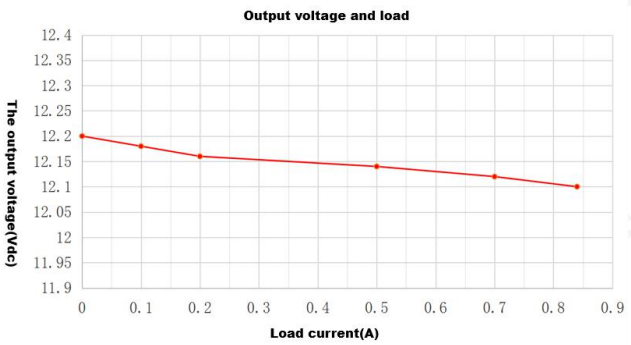
2.2 Operating parameter

Serial number	Main parameter	Performance			Remark
		Min	Type	Max	
Input	Input voltage-DC	18	24	36	Vdc
	Working frequency	280	300	330	KHz
	Static power	-	-	<0.4	W
	Highest efficiency	-	-	80	%
Output	Output voltage	11.95	12	12.15	V
	Continuous current	0	-	833	mA
	Output Power	0	-	10	W
	Ripple noise	10	-	50	mV
	Voltage adjustment range	-	±0.5	-	V
	Output voltage accuracy	-	-	±1	%
	Boot time	400	550	1000	ms
	Line regulation	-	0.5	-	%
	Load regulation	-	1.0	-	%
Protection	Overcurrent protection	110	-	150	%
	Short circuit protection	-	-	-	Hiccup mode, automatic recovery after the fault state is eliminated
Surroundings	Operating temperature	-40	25	85	ta=40℃,tc=85℃
	Working humidity	20	-	90	No condensation
	storage temperature	-40	+25	+85	Dry and store at room temperature

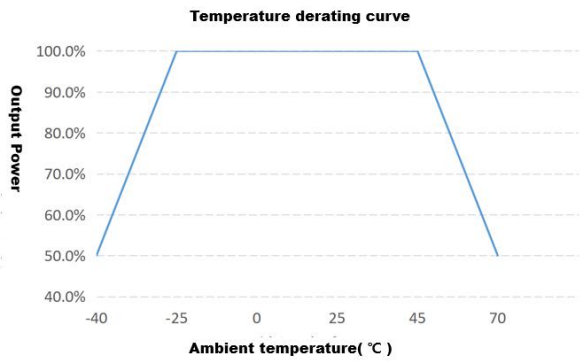
	Storage humidity	10	-	90	Dry and store at room temperature
Safety	Insulation withstand voltage	-	-	1000	VAC I/P - O/P
	Insulation resistance	-	-	500	I/P - O/P: 100M ohms / 500VDC at 25 ℃
	safety regulations	Comply with FCC CE ROHS certification standards			
Others	Product Size	50.8x25.4x11mm			
	product weight	21.5	22	22.5	g

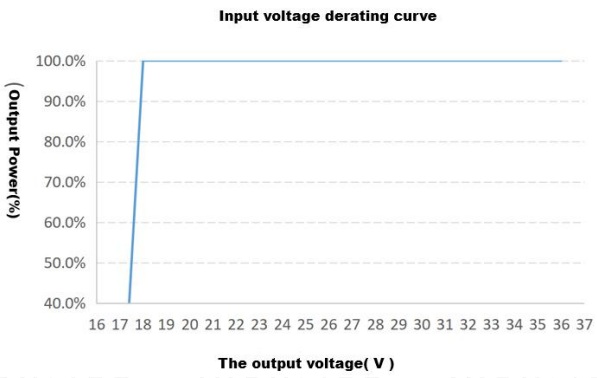
2.3 Work efficiency VS load





2.4 Input derating design





3 Basic operation

3.1 Matters need attentions

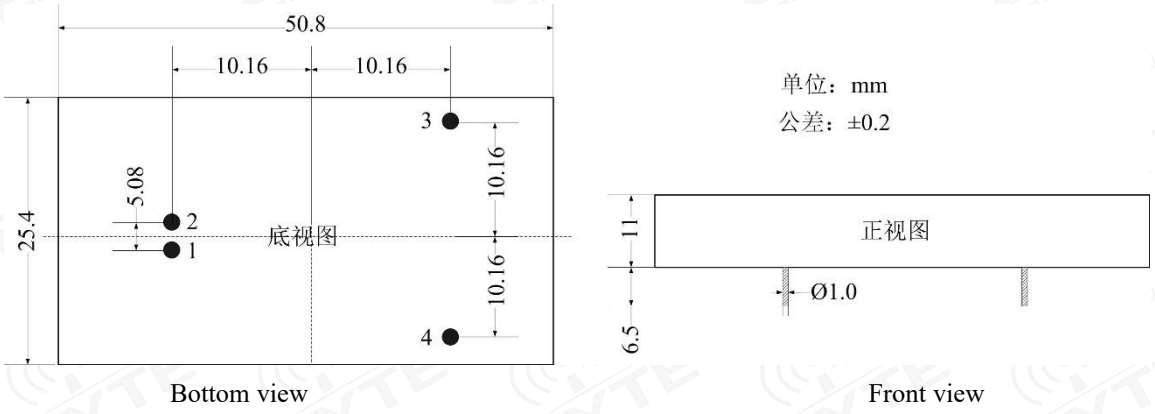
- The operation of this module requires certain professional skills, and it is strictly prohibited for non-professional life

to operate it;

- Be sure to read this technical document carefully before use;
- It is strictly forbidden to touch the components with human body after power on;
- The maximum input voltage must not exceed 36Vdc, otherwise it may cause permanent damage to the module;
- The temperature is high when working under full load, please do not touch it!
- Do not short-circuit the output terminal directly, otherwise it will cause permanent damage to the module;
- The over-current protection function is only valid when VIN = 18~24V, the over-current point will become larger when VIN = 18~24V, so be careful.

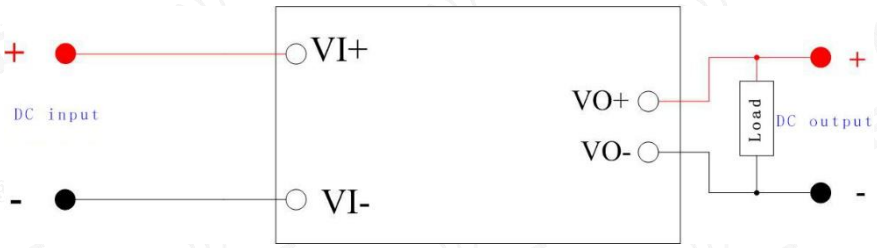
4 Mechanical Characteristics and Pin Definition

4.1 Product size



Bottom view Front view

4.2 Typical application



4.3 Pin definition

Serial number	Pin name	Direction	Use
1	Vi+	Input	Power supply input is positive.
2	Vi-	Input	Power supply input is negative.

3	Vo-	Output	Power supply output is negative.
4	Vo+	Output	Power supply output is positive.

5 Product selection

Product model	Input voltage	Output voltage	Output current	Efficiency	Size	Installation mode
DM41-10W1205B1	9.0 ~ 18Vdc	5Vdc	2000mA	80%	50.8*25.4*11mm	Plastic package plug-ins
DM41-10W1212B1	9.0 ~ 18Vdc	12Vdc	833mA	80%	50.8*25.4*11mm	Plastic package plug-ins
DM41-10W1215B1	9.0 ~ 18Vdc	15Vdc	666mA	80%	50.8*25.4*11mm	Plastic package plug-ins
DM41-10W2405B1	18 ~ 36Vdc	5Vdc	2000mA	80%	50.8*25.4*11mm	Plastic package plug-ins
DM41-10W2412B1	18 ~ 36Vdc	12Vdc	833mA	80%	50.8*25.4*11mm	Plastic package plug-ins
DM41-10W2415B1	18 ~ 36Vdc	15Vdc	666mA	80%	50.8*25.4*11mm	Plastic package plug-ins

Revision history

Version	Date	Description	Issued by
V1.0	2019/09/17	First edition, first public release.	LJ

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