



DM41-5W0505V Product Specification Manual

5W Isolated Low-power Buck DC-DC Power



1.product introduction

1.1. Brief introduction

DM41-5W0505V is a isolated (DC-DC) low power buck power supply module, can continuously output 5W power, Input rang: 4.5-9V, the max input is up to 9V, High quality synchronous rectification and voltage reduction scheme, the maximum efficiency up to 77%, low temperature rise, which greatly reduces the users design threshold. all components from the regular procurement channels, users do not need to worry about stability, when in complex voltage environment, it also output steadily.



1.2. Module features

- Isolation and buck voltage: Isolated load and previous circuit, effectively protect the use safety of load equipment;
- Output power: 5V/1A,can sustainable output of 5W;
- Ultra-small volume: 34.5*20.5*15mm, Black plastic fireproof shell, use more safe;
- Over temperature protection: module internal presets highest temperature,it can be automatically restored;
- Output protection: module internal presets over current protection, Short-circuit protection, can be automatically restored;
- withstand voltage test: 1500V;

1.3. Application scenarios

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

- Power supply of LED driving lamp belt;
- Smart street lamp;

2.Specification parameters

2.1. Limit parameters

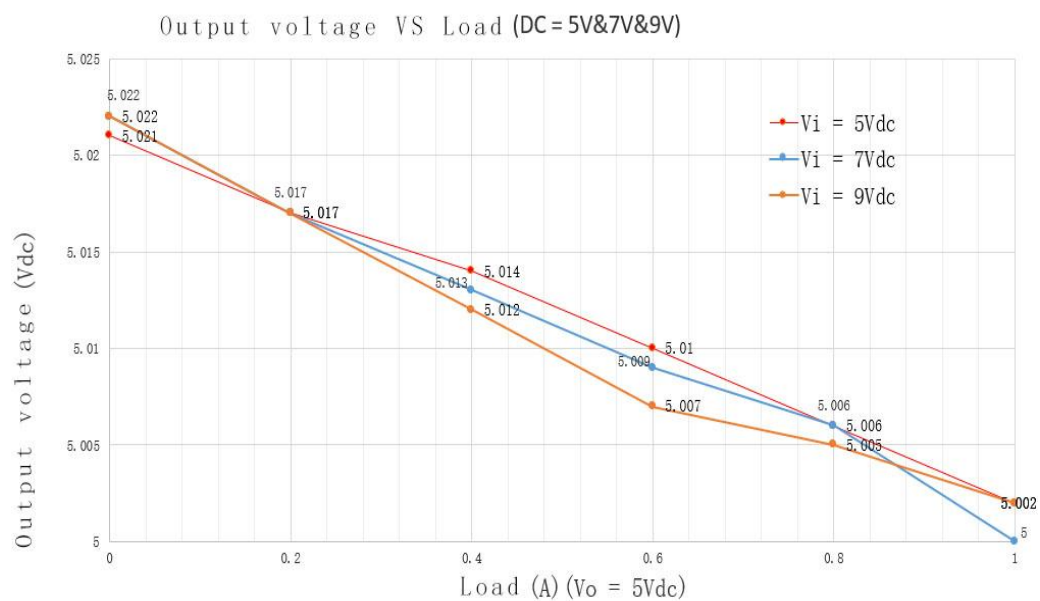
Order number	Main parameter	Minimum	Maximum	Remarks
1	Input voltage (Vdc)	4.5	9	Work voltage shouldn't exceed 9Vdc, otherwise will cause permanent damage.
2	Output power (W)	0	5	W
3	Working temperature (°C)	-40	+85	°C

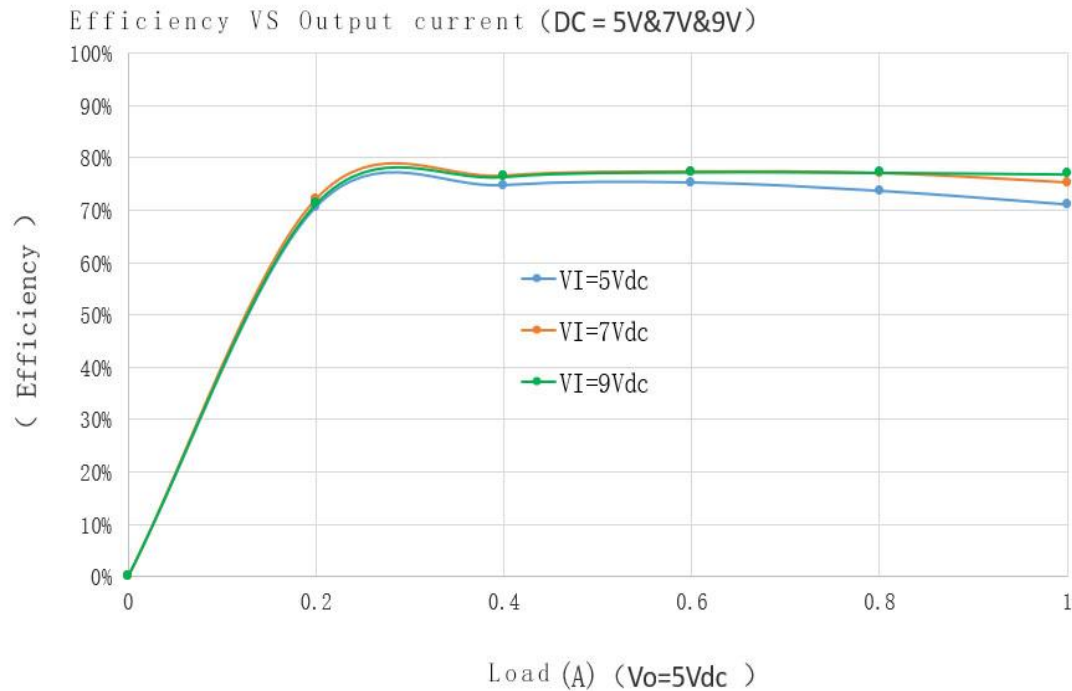
2.2. Work parameters

Order number	Main parameter	Minimum	Typical value	Maximum	Remarks
1	Input voltage (Vdc)	4.5	-	9	V
2	Working frequency (Hz)	-	300	-	KHz
3	Output power(W)	0	-	5	W
4	Working temperature (°C)	-40	25	85	°C
5	Static power(mA)	-	-	0.4	< 0.4W
6	Output voltage (Vdc)	4.9	5	5.1	V
7	Persistent	0	-	1	A

	current(A)				
8	Ripple noise(mV)	15	-	90	<50mV
9	Max efficiency (n%)	70.5	-	77	%
10	Over current protection (%)	-	-	1.3	A(Vin = 5V)
11	Over current protection (%)	-	-	-	No
12	Short-circuit protection	20	-	90	No-condensing.
13	Work humidity (RH%)	-40	+25	+85	Dry storage in normal temperature.
14	Storage temperature (°C)	10	-	90	Dry storage in normal temperature.
15	withstand voltage test	-	1500	-	V

2.3. Work efficiency VS load





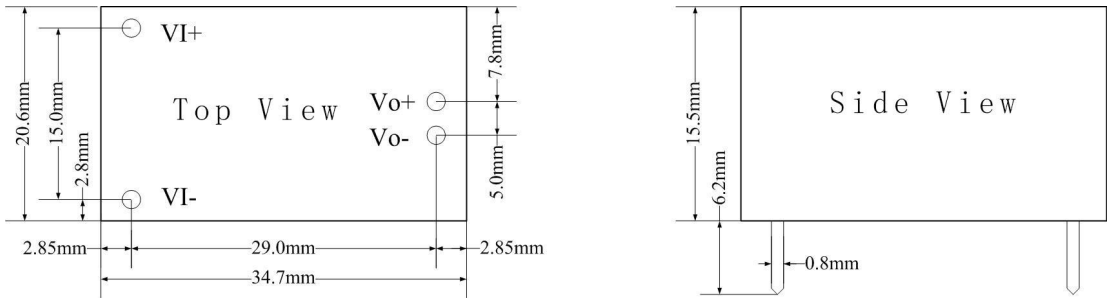
3. Basic operation

3.1. Matters need attentions

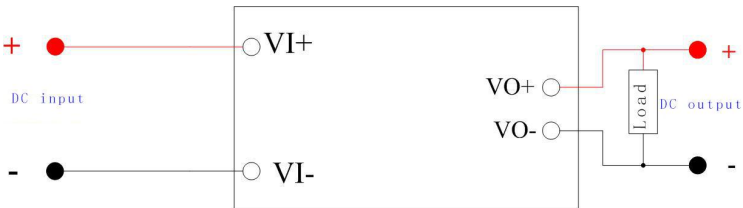
- Operating this module requires certain professional skills, prohibit non-professionals operate on it!
- Before using it, you must study Knowledge of safe use carefully.
- prohibit human body contact components when electrified;
- The maximum input voltage shall not exceed 9Vdc, otherwise may occur permanent damage .
- Temperature is high when working at full load, please do not touch!
- Over-current function only efficient in VIN = 4.5~5.5V, please notice that if over 5.5V Over-current point will become large, which need cautious about;

4.Mechanical Characteristics and Pin Definition

4.1. Product size



4.2. Typical application



4.3. Pin definition

Order number	Pin name	Direction	Use
1	Vi+	Input	Power input is positive
2	Vi-	Input	Power input is negative
3	Vo-	Output	Power input is negative
4	Vo+	Output	Power input is positive

5.Product selection

Product model	Input voltage	Output voltage	Output current	Efficiency	Installation mode
DM41-5W0505V	4.5 ~ 9.0Vdc	5Vdc	1000mA	77%	Plastic package plug-ins
DM41-5W0512V	4.5 ~ 9.0Vdc	12Vdc	416mA	78%	Plastic package plug-ins
DM41-5W1205V	9.0 ~ 18Vdc	5Vdc	1000mA	75%	Plastic package plug-ins
DM41-5W2405V	18 ~ 36Vdc	5Vdc	1000mA	75%	Plastic package plug-ins

Revision history

Order number	vision	modification date	Revision notes	Maintain person
1	V1.0	2019/08/27	First edition, first public release.	GHW

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