HWQ10-12S05V4

Product Specification

Chengdu Ebyte Electronic Technology Co.,Ltd.

Product Features

- ✧ Package form: 1” X 1”
- ✧ Working environment temperature range: -40° C to +85° C
- ✧ Isolation withstand voltage 1500VDC
- ✧ 2:1 wide input voltage range
- ✧ With output overcurrent and output short circuit protection mechanism.
- ✧ Application fields: industry, electric power, instrumentation, communication, rail transit, etc.

Wide voltage 10W 1*1 package isolated and regulated output series

Product number	Input voltage (VDC)	output		full load efficiency (%) Min./Typ.	capacitive load (μF)
		The output voltage (VDC)	Output current (mA) Max./Min		
HWQ10-12S05V4	12 (9-18)	5	2000/0	79/81	2200

#each output

input characteristics

project	working conditions	Min.	Typ.	Max.	unit
Input impulse voltage	12VDC input	-0.7	--	25	VDC
Starting voltage	12VDC input	--	--	9	
Input undervoltage protection	12VDC input	5.5	6.5	--	
Start Time	Nominal input and constant resistance load	--	10	--	ms
Ctrl foot function	module open	floating or 3.5V-12V conduction			
	Module shutdown	0V-1.2V shutdown			
input filter type		PI type			
hot swap		not support			

output characteristics

project	working conditions	Min.	Typ.	Max.	unit
Output Voltage Accuracy	0%-100%load	--	±1.0	±3.0	%
Linear Regulation	Full load, input voltage from low voltage to high voltage	--	--	±0.5	

load regulation	0% to 100% load	--	--	±1.0	
ripple noise	20MHz bandwidth, 5%-100% load	--	40	100	mVp-p
Transient recovery time	25% load step change, nominal input voltage	--	300	500	μs
Transient Response Deviation		--	±3	±5	%
Temperature drift coefficient		--	--	±0.03	%/℃
overcurrent protection		110	140	190	%Io
Short circuit protection		sustainable, self-healing			

General features

project	working conditions	Min.	Typ.	Max.	unit
insulation voltage	Input-output, test time 1 minute, leakage current less than 1mA	1500	--	--	VDC
Insulation resistance	Input-output, insulation voltage 500VDC/1 minute, normal temperature, 75%RH	1000	--	--	MΩ
isolation capacitor	Input-Output, 100KHz, 0.1V	--	1000	--	pF
Operating temperature		-40	--	+85	C°
Storage temperature		-50	--	+125	
storage humidity		5	--	95	%RH
Pin Resistance to Soldering Temperature	Solder spot 1.5mm from case, 10 seconds	--	--	+300	℃
On-off level		--	300	--	kHz
MTBF		1000	--	--	K Hours

physical properties

Shell material	Aluminum alloy, black anodized coating
package size	25.50×25.50×12.00mm
weight	15g
cooling method	natural air cooling

EMC characteristics

EMI	Conducted harassment	CISPR32/EN55032 CLASS A (bare board)/CLASS B (recommended circuit see Figure 5-②)	
	radiation	CISPR32/EN55032 CLASS A (bare board)/CLASS B (recommended circuit see Figure 5-②)	
EMS	electrostatic discharge	IEC/EN61000-4-2 Contact±4KV	Perf.Criteria B
	Radiated Immunity	IEC/EN61000-4-3 10V/m	Perf.Criteria A
	Burst Immunity	IEC/EN61000-4-4 ±2KV (recommended circuit see Figure 5-①)	Perf.Criteria B
	Surge Immunity	IEC/EN61000-4-5 line to line±2KV (recommended circuit see Figure 5-①)	Perf.Criteria B
	Conducted disturbance immunity	IEC/EN61000-4-6 3 Vr.m.s	Perf.Criteria A

Product characteristic curve

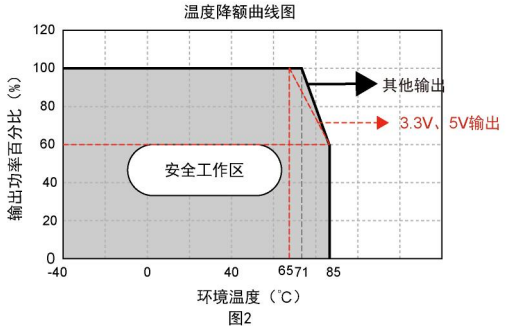
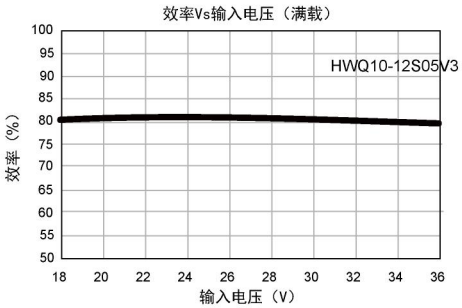
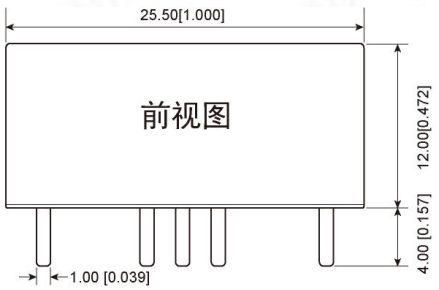
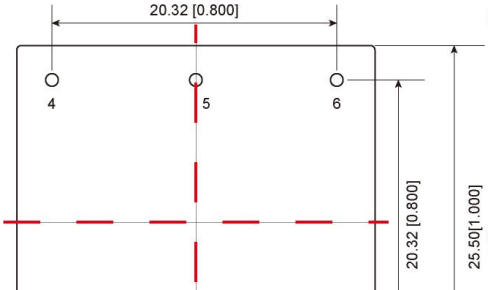


图2



Appearance Dimensions/Recommended Printing Layout





Dimensions in mm [inch]

Terminal Diameter Tolerance: ±0.10 [±0.004]

Unmarked Tolerance: ±0.50 [±0.020]

pin	Function (single channel)
1	CTRL
2	GND
3	Vin
4	+Vo
5	No Pin
6	-Vo

Circuit design

1. Application circuit

All DC/DC converters of this series are tested according to the recommended test circuit (Figure 3) before leaving the factory.

If it is required to further reduce the input and output ripple, the input and output external capacitors Cin and Cout can be increased or a capacitor with a small series equivalent impedance value can be selected, but the capacitance value cannot be greater than the maximum capacitive load of the product.

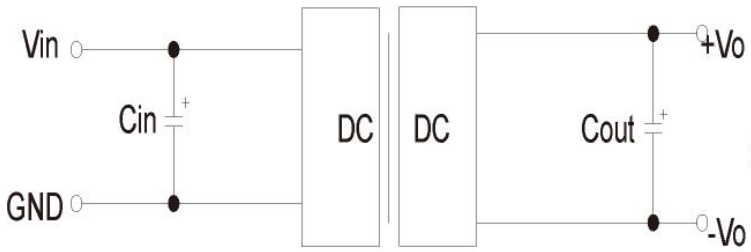


图3

Vin	12V
Cin	100uF
Cout	10uF

2. EMC solution - recommended circuit

12VDC nominal input series

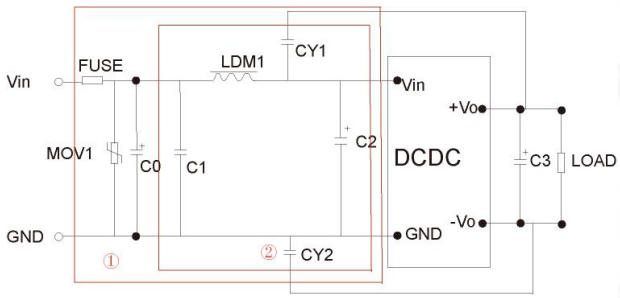


图5

model	Vin：12V
FUSE	According to the customer's actual input current selection
MOV	20D470K
C0、C2	330uF/50V
C1	1uF/50V
C3	Refer to the Cout parameter in Figure 3
LDM1	4.7uH
CY1、CY2	1nF/2KV

Note;

The first part in Figure 5 is used for EMC testing;

Part 2 is used for EMI filtering, which can be selected according to requirements

Note:

1. If the product works under the minimum required load, the performance of the product cannot be guaranteed to meet all the performance indicators in this manual;
2. The maximum capacitive load is tested under the condition of input voltage range and full load;
3. Unless otherwise specified, all indicators in this manual are measured at Ta=25° C, temperature <75%RH, nominal input voltage and output rated load;
4. All index test methods in this manual are based on the company's corporate standards;
5. Our company can provide product customization, and you can directly contact our technical staff for specific needs

About us

Technical support: support@cdebyte.com
Documents and RF Setting download link: www.cdebyte.com
Thank you for using Ebyte products! Please contact us with any questions or suggestions: info@cdebyte.com
---
Phone: +86 028-61399028
Web: www.ebyte.com
Address: B5 Mould Park, 199# Xiqu Ave, High-tech District, Sichuan, China

Chengdu Ebyte Electronic Technology Co.,Ltd.