



Typical Features

- ◆ Wide input voltage range (2:1), output power 10W
- ◆ Transfer efficiency up to 87%
- ◆ Output quick start
- ◆ Continuous short circuit protection, Self-recovery
- ◆ Input under-voltage, output over-voltage, short circuit, over-current protection
- ◆ Switching frequency 330KHz
- ◆ Isolation voltage 1500VDC
- ◆ Operating Temperature range: -40°C~+85°C
- ◆ International standard pin



Application Filed

DD10-XXDXXE3C2 Series ----- have an output power of 10W, an isolation withstand voltage of 1500VDC, and have input under-voltage, output over-voltage, short circuit, and over-current protection functions. They can be widely used in industrial control, instrumentation, communications, electricity, Internet of Things and other fields. When the product is used in a harsh electromagnetic compatibility environment, please refer to the application circuit provided by our company.

Typical Product List

Part no.	Input voltage Range (VDC)		Output voltage /Current (Vo/Io)		Max. Capacitive Load	Ripple & Noise	Efficiency (%)@output full load, input nominal	
	Nominal	Range	Voltage (VDC)	Current(mA) MAX/Min	uF	mVp-p	Min	Typ
DD10-12D05E3C2	12	9-18	±5	±1000/0	1000	100	81	83
DD10-24D12E3C2	24	18-36	±12	±416/0	470	100	85	87
DD10-48D15E3C2	48	36-75	±15	±333/0	470	100	85	87

- Note:
1. C is with control function, N is without control function.
 2. The maximum capacitive load refers to the capacitance capacity of the output that is allowed to be connected when the power supply is started at full load. Beyond this capacity, the power supply may not be able to start;
 3. Due to limited space, the above is only a partial product list. If you need products other than the list, please contact our sales department.

Input Specifications

Standby power consumption	0.3W		
Input Filter	Π filter		
Input under-voltage Protection	7VDC Typ.@nominal 12V input; 13VDC Typ.@nominal 24V input; 24VDC Typ.@nominal 48V input;		
CTRL*	Turn on	CTRL is left floating or connected to TTL high level (3.3VDC-12VDC)	
	Turn off	CTRL connected to -Vin or low level (0-1.2VDC)	
	Input current at shutdown	5mA (TYP)	

Note: *The voltage of the CTRL control pin is relative to the input pin -Vin.



Output Specification

Output Voltage Accuracy	Under voltage range, 0% ~ 100% nominal load	Vo1 / Vo2	±1% Typ; ±3% Max
Voltage Regulation	Nominal load, full voltage range	Vo1	±0.3% Typ; ±0.5% Max
		Vo2	±0.5% Typ; ±1% Max
Load Regulation	10% ~ 100% rated load, dual output power balance	Vo1	±0.5% Typ; ±1% Max
		Vo2	±0.5% Typ; ±1.5% Max
Ripple & Noise	20MHz, Twisted Pair Test	50mV Typ; 100mVp Max	
Output Over-voltage Protection	120%~200% Vo		
Output Over-load Protection	110%~280% Io		
Output Short Circuit Protection	Continuous, Self-recovery		
Dynamic Response	25% nominal load step $\Delta Vo/\Delta t$	5V Output	±5% Typ; ±8% Max/500us
		Other Output	±3% Typ; ±5% Max/500us
Output Startup Overshoot Voltage	10% ~ 100% rated load, dual output power level	≤10%Vo	

Note: Ripple & noise test adopts twisted pair method, see Design and Application Circuit Reference for details.

General Specification

Switching Frequency	Typical	330KHz
Operating Temperature	Refer to temperature	-40°C ~ +85°C
Storage Temperature	--	-55°C ~ +125°C
Relative Humidity	No condensing	5%~95%
Case Material	--	Aluminum metal casing
Cooling Method		Natural cooling
Isolation Voltage	Input to Output	1500Vdc ≤ 1mA / 1min
Insulation Resistance	Input to Output	500Vdc ≥ 1000MΩ
Minimum Time Between Failures	MIL-HDBK-217F 25°C	2X10 ⁵ Hrs
Product Weight	Average	22g

EMC Characteristics

Total Items	Sub Items	Test Standard	Class
EMC	EMI	CE	CISPR32/EN55032 CLASS B (see recommended circuit figure 3)
		RE	CISPR32/EN55032 CLASS B (see recommended circuit figure 3)
	EMS	RS	IEC/EN61000-4-3 10V/m Perf.Criteria B (see recommended circuit figure 3)
		CS	IEC/EN61000-4-6 3Vr.m.s Perf.Criteria B (see recommended circuit figure 3)
		ESD	IEC/EN61000-4-2 Contact ±4KV Perf.Criteria B
		Surge	IEC/EN61000-4-5 ±2KV Perf.Criteria B (see recommended circuit figure 3)
		EFT	IEC/EN61000-4-4 ±2KV Perf.Criteria B (see recommended circuit figure 3)



Packing Dimension

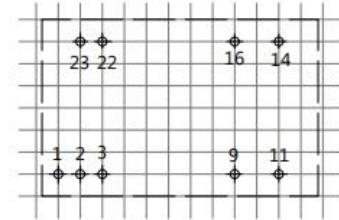
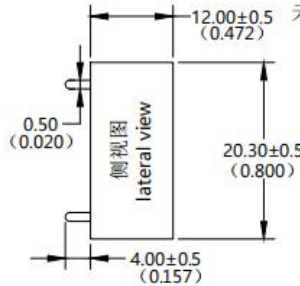
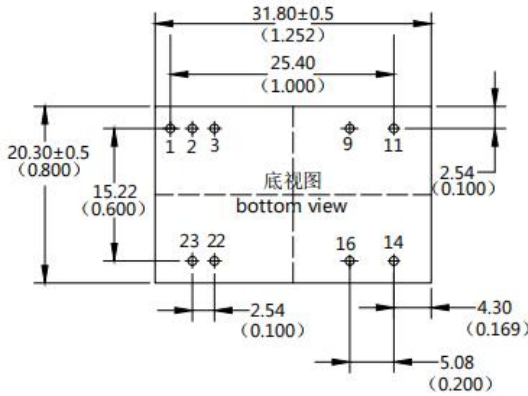
单位 (Unit:) : mm

印刷板俯视图 (Printed board vertical view)

栅格间距 (Lattice spacing) : 2.54mm (0.1inch)

未标注尺寸公差±0.5mm

未标注引脚直径公差±0.10mm



Package Code	L x W x H	
E3	31.80 × 20.30 × 12.00mm	1.252 × 0.800 × 0.472inch

Pin-out

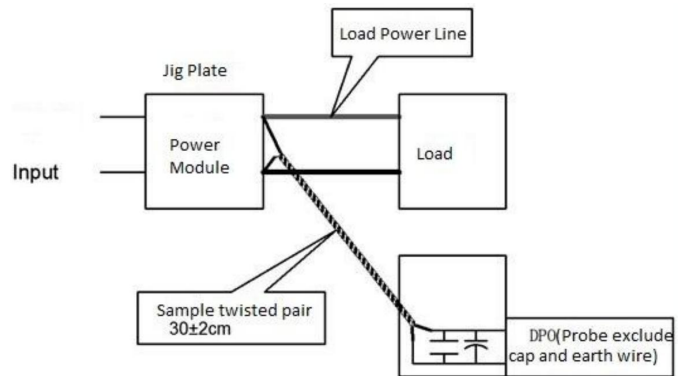
Pin function	1	2	3	9	11	14	16	22	23
DD10-XXDXXE3C2	Ctrl	-Vin	-Vin	GND	-Vo	+Vo	GND	+Vin	+Vin

Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

Test Method:

1、12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern

2. Output ripple noise test schematic: connect the input power to the input power, and the output power is connected to the electronic load through the fixture plate. The test sample directly from the power output port with 30cm ± 2cm sampling wire alone. Power line according to the size of the output current selection of the corresponding wire diameter of the conductor with insulation.



Application reference:

1. Dual output products with balanced load test;
2. The maximum capacitive load is measured under pure resistive full load conditions;
3. Our company can provide overall power supply solutions or product customization; due to limited space, if you have any other questions, please contact our relevant personnel.

Product characteristic curve

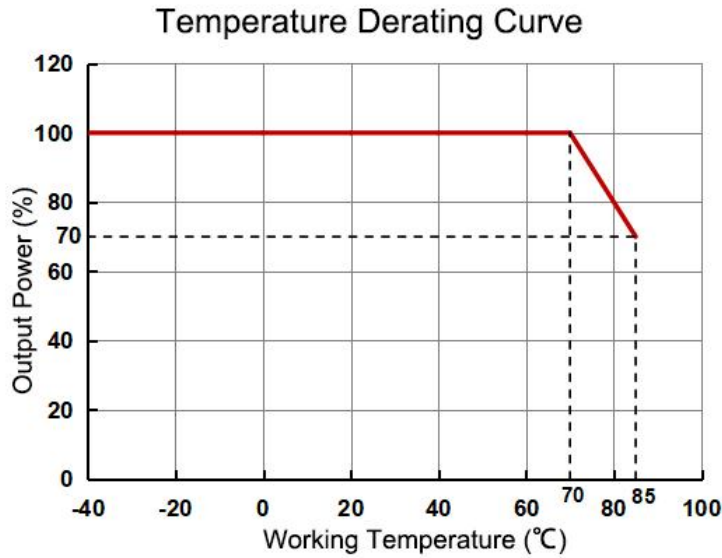


Figure 1: Temperature Derating Curve

Design and Application Reference

Recommended circuit

1、DC/DC test circuit:

All products of this series are tested according to the recommended test circuit (Figure 2) before leaving the factory.

C1: 100uF / 100V ; C2,C3: 100uF / 50V

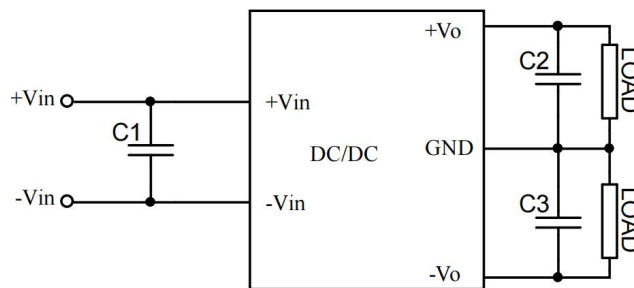


Figure 2: Recommended test circuit

2、EMC External Recommended Circuit:

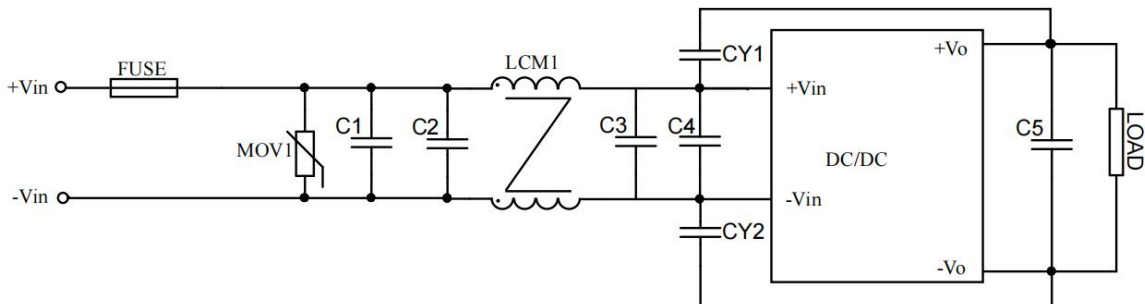


Figure 3: EMC External Recommended Circuit



Recommended Spec:

Device code	DD10-12DXXE3C2	DD10-24DXXE3C2	DD10-48DXXE3C2
FUSE	Access the corresponding fuse according to customer needs		
MOV1	14D470K	14D470K	14D101K
C1, C4	330uF/50V	330uF/50V	330uF/100V
LCM1	5mH		
C2,C3	10uF/50V	10uF/50V	10uF/100V
C5	100uF/50V		
CY1,CY2	2.2nF/2000V		

Note:

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. If the product works beyond the product load range, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
3. Unless otherwise specified, the above data are measured at $T_a=25^{\circ}\text{C}$, humidity <75%, input nominal voltage and output rated load (pure resistive load);
4. All the above index test methods are based on the company's standards;
5. Product specifications are subject to change without notice. Please pay attention to the latest manual published on our official website.

