CDD6-05SXXE3C(N)2 Series
DC/DC Converter

Typical Features

- ◆ Wide input voltage range（2:1), output power 6W
- ◆ Transfer efficiency up to 84%
- ◆ With remote control shutdown function
- ◆ Continuous short circuit protection, Self-furbish
- ◆ Power-on and power-off without overshoot
- ◆ Isolation voltage 1500VDC
- ◆ Operating Temperature range：-40℃～+85℃
- ◆ Plastic housing, meet UL94-V0 requirements

Application Filed

Widely used in instrumentation, communications, pure digital circuits, general low-frequency analog circuits, relay drive circuits, data exchange circuits and other fields.

Typical Product List

Part no.	Input voltage Range (VDC)		Output voltage /Current（Vo/Io）		Input Current (mA) Nominal Voltage		Max. Capacitive Load	Ripple & Noise	Efficiency (%)@output full load，input nominal	
	Nominal	Range	Voltage (VDC)	Current（mA） MAX/Min	Full load typ	No load typ	uF	mVp-p	Min	Typ
CDD6-05S05E3C(N)2	5	4.5-9	5	1200/0	1500	10	3000	100	78	80
CDD6-05S12E3C(N)2	5	4.5-9	12	500/0	1428	10	1500	100	82	84
CDD6-05S15E3C(N)2	5	4.5-9	15	400/0	1428	10	1000	100	82	84
CDD6-05S24E3C(N)2	5	4.5-9	24	250/0	1428	10	330	100	82	84

Note 1: The maximum capacitive load refers to the capacitance capacity that the output is allowed to connect when the power supply is fully loaded and started. If this capacity is exceeded, the power supply may not be able to start;

Note 2: C is with control pin, N is without control pin;

Note 3: Due to the limited space, the above is only a partial list of products. If you need products other than the list, please contact the sales department of our company.

Input Specifications

Item	working conditions	MIn	typical	Max	Unit
Starting voltage	4.5-9 Input	---	---	4.5	VDC
Input undervoltage protection	4.5-9 Input	---	4	---	VDC
Standby power consumption	0.1W (TYP)				
input filter	Π filter				
CTRL	Module is turned on CTRL is left floating or connected to high level（3.3VDC-9VDC）				
	Module shutdown CTRL connected to low level（0-0.8VDC）				
	Input current at shutdown		2mA (TYP)		

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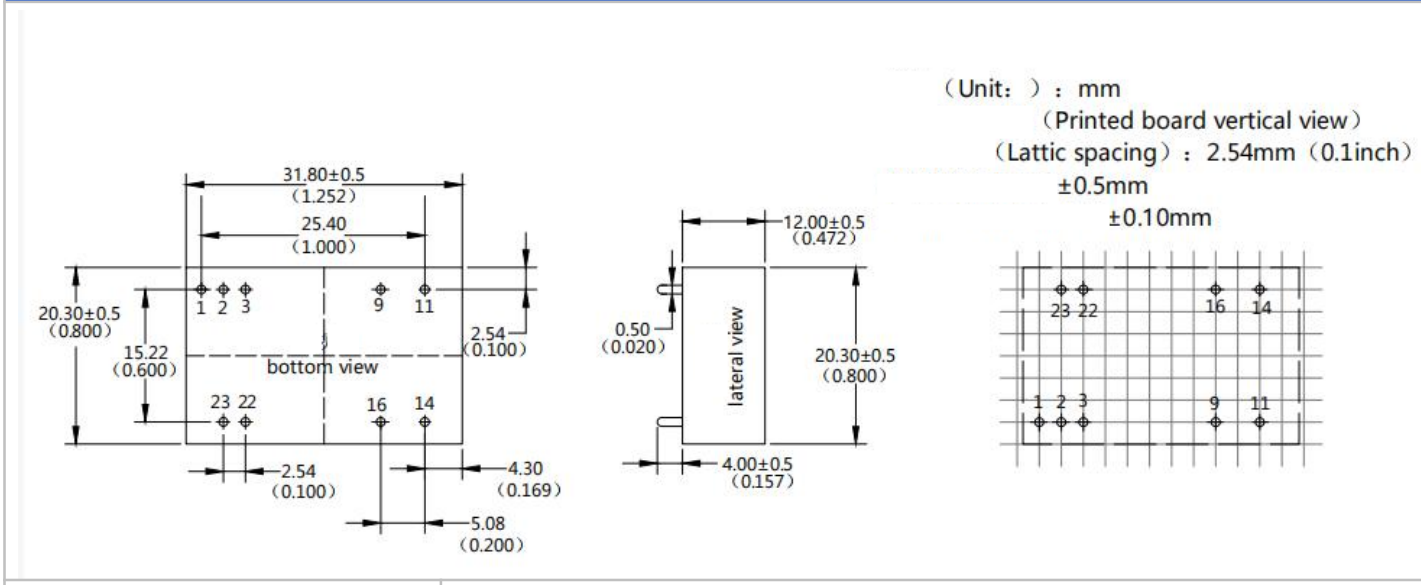
Output Specification			
Output Voltage Accuracy	Full voltage range	Vo	≤±2.0%
Voltage Regulation	Nominal load, full voltage range	Vo	≤±0.5%
Load Regulation	10% ~ 100% nominal load	Vo	≤±1%
Ripple & Noise*	Nominal Load, Nominal Voltage		≤100mVp-p （20MHz bandwidth）
Temperature Drift Coefficient	100％ Full load		±0.03%/℃
Dynamic Response	25% nominal load step	△Vo/△t	±5.0%/0.5ms(Typ.)
Output short circuit protection	Continuous, Self-recovery		
Output overload protection	120%~220% Io		
Output overvoltage protection	110%~160% Vo		
Startup delay time	Typ:10ms		
Output startup overshoot voltage	≤10%Vo		
Note: Ripple & noise test adopts twisted pair method, see Design and Application Circuit Reference for details.			

General Specification		
Switching Frequency	Typical	330KHz (Typ.)
Operating Temperature	Refer to temperature	-40℃ ~ +85℃
Storage Temperature	-	-55℃ ~ +125℃
Max Case Temperature	Within Operating Curve	+105℃
Relative Humidity	No condensing	5%~95%
Case Material	-	Black flame retardant heat resistant plastic（UL94-V0）
Pin Soldering Temperature	The solder joint is 1.5mm away from the shell, 10 seconds	300℃ MAX
Isolation Voltage	Input to Output	1500Vdc ≤ 0.5mA / 1min
Minimum time between failures	MIL-HDBK-217F 25℃	2X10^{5}Hrs
Product Weight	-	22g（Typ.）

EMC Characteristics				
Total Items		**Sub Items**	**Test Standard**	**Class**
EMC	EMI	CE	CISPR22/EN55032	CLASS B（see recommended circuit photo②）
		RE	CISPR22/EN55032	CLASS B（see recommended circuit photo②）
	EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria B（see recommended circuit photo②）
		CS	IEC/EN61000-4-6	3Vr.m.s Perf.Criteria B （see recommended circuit photo②）
		ESD	IEC/EN61000-4-2	Contact ±4KV Perf.Criteria B
		Surge	IEC/EN61000-4-5	±2KV Perf.Criteria B （see recommended circuit photo①）
		EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B （see recommended circuit photo①）
		Voltage dips, dips and short interruptions immunity	IEC/EN61000-4-11	0%~70% Perf.Criteria B

Packing Dimension



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

Pin-out

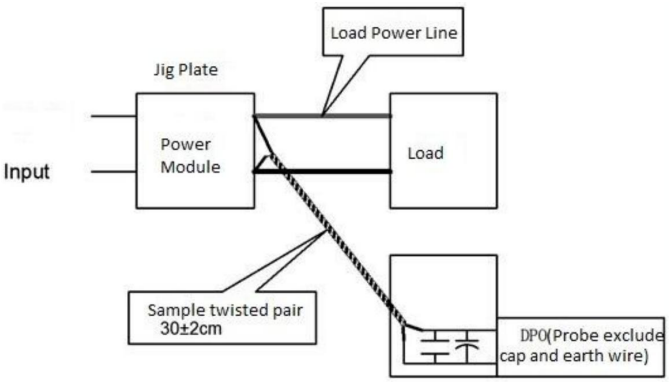
Pin function	1	2	3	9	11	14	16	22	23
CDD6-XXSXXE3C2	Ctrl	-Vin	-Vin	NP	NC	+Vo	GND	+Vin	+Vin
	Control terminal	Input ground	Input ground	No pin	No function	positive output	output ground	positive intput	positive intput
CDD6-XXSXXE3N2	NP	-Vin	-Vin	NP	NC	+Vo	GND	+Vin	+Vin
	No pin	Input ground	Input ground	No pin	No function	positive output	output ground	positive intput	positive intput

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

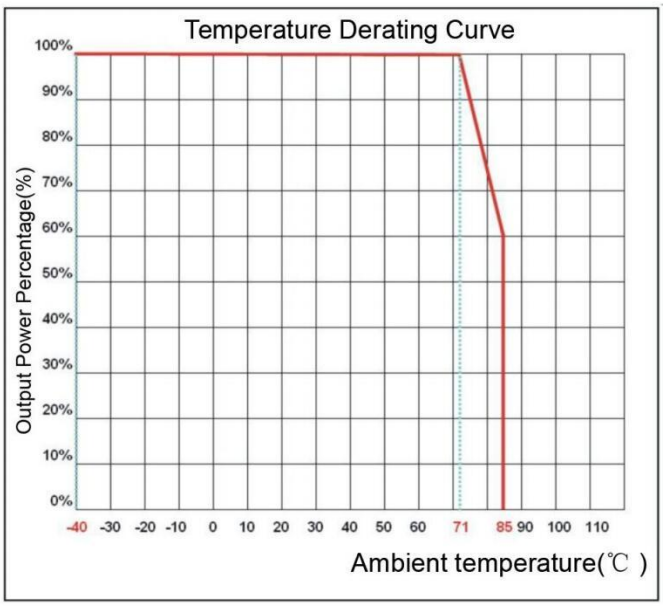
Test Method:

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、Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2cm sampling line, Power line selected from corresponding diameter wire with insulation according to the flow of output current.



Product characteristic curve

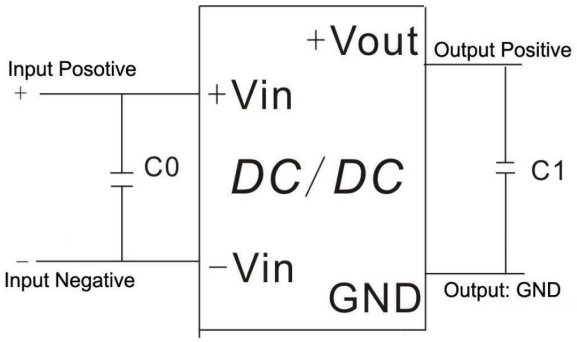


Design and Application Reference

Recommended circuit

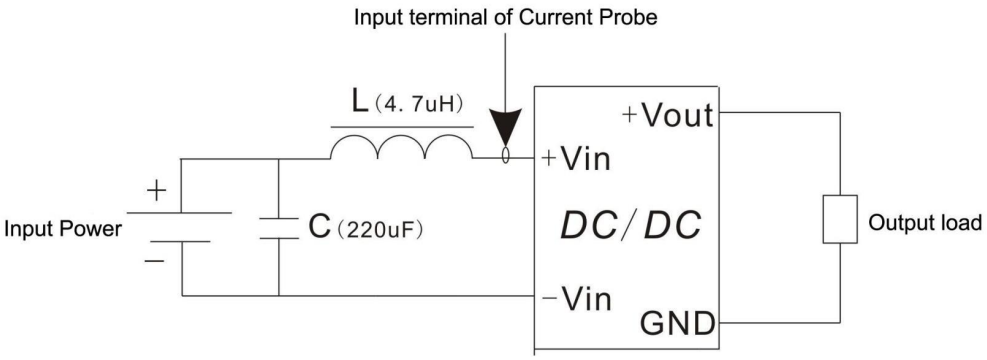
1、DC/DC test circuit：

Normal recommended capacitors：C0：47-100uF；C1；100uF。

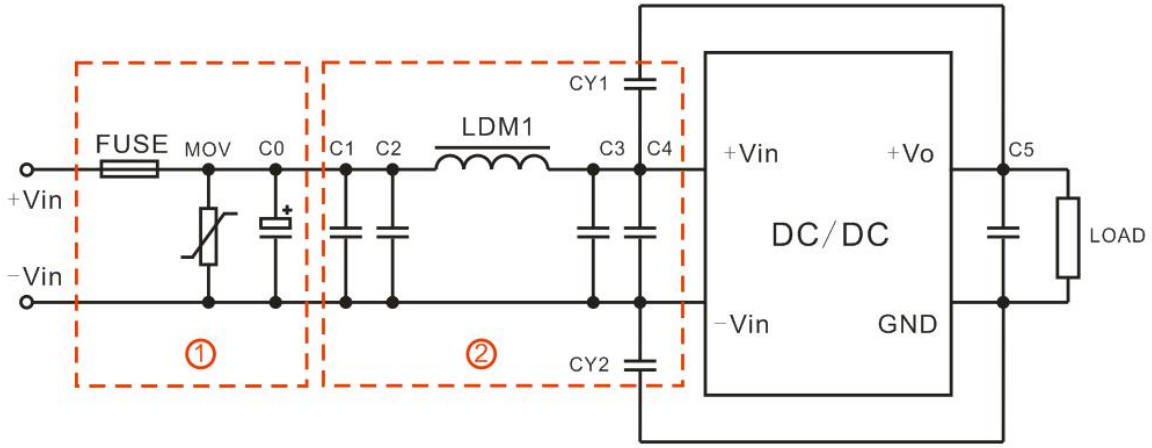


2、Input reflecting ripple current test circuit:

Capacitor C choose low ESR ones, withstand voltage value should be bigger than max input voltage;



3、EMC External Recommended Circuit：



Recommended Spec：

Device code	Spec.
FUSE	Access the corresponding fuse according to customer needs
MOV	14D470K
C0	1000uF/50V
C1,C2,C3,C4,C5	10uF/50V
LDM1	10uH
CY1,CY2	1nF/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 below the minimum required load, the product performance cannot be guaranteed to meet all the performance indicators in this manual;
3. 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;
4. Unless otherwise specified, the above data are measured at Ta=25℃, humidity <75%, input nominal voltage and output rated load (pure resistive load);
5. All the above index test methods are based on the company's standards;
6. The above are the performance indicators of the product models listed in this manual. Some indicators of non-standard models will exceed the above requirements. For details, please contact our technical staff directly;
7. Our company can provide product customization;
8. Product specifications are subject to change without notice. Please pay attention to the latest manual published on our official website.