



| Typical Features | |
|------------------|---|
| ◆ | Wide input voltage range (2:1), output power 10W |
| ◆ | Transfer efficiency up to 88% |
| ◆ | 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°C~+85°C |
| ◆ | 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) | | Input voltage /Current (Vo/Io) | | Input Current (mA) Nominal Voltage | | Max. Capacitive Load uF | Ripple & Noise mVp-p | Efficiency (%)@output full load, input nominal | |
|--------------------|---------------------------|-------|--------------------------------|----------------------|---------------------------------------|-------------|----------------------------|-------------------------|--|-----|
| | Nominal | Range | Voltage (VDC) | Current (mA) MAX/Min | Full load typ | No load typ | | | Min | Typ |
| DD10-24S3V3E3C(N)2 | 24 | 18-36 | 3.3 | 3000/0 | 480 | 10 | 3000 | 100 | 84 | 86 |
| *DD10-24S05E3C(N)2 | 24 | 18-36 | 5 | 2000/0 | 473 | 10 | 1500 | 100 | 86 | 88 |
| *DD10-24S12E3C(N)2 | 24 | 18-36 | 12 | 833/0 | 479 | 10 | 1000 | 100 | 85 | 87 |
| *DD10-24S24E3C(N)2 | 24 | 18-36 | 24 | 416/0 | 479 | 10 | 330 | 100 | 85 | 87 |
| DD10-48S3V3E3C(N)2 | 48 | 36-75 | 3.3 | 3000/0 | 237 | 10 | 3000 | 100 | 85 | 87 |
| *DD10-48S05E3C(N)2 | 48 | 36-75 | 5 | 2000/0 | 236 | 10 | 1500 | 100 | 86 | 88 |
| *DD10-48S12E3C(N)2 | 48 | 36-75 | 12 | 833/0 | 239 | 10 | 1000 | 100 | 85 | 87 |
| *DD10-48S24E3C(N)2 | 48 | 36-75 | 24 | 416/0 | 236 | 10 | 330 | 100 | 86 | 88 |

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 | 18-36 Input | --- | --- | 18 | VDC |
| | 18-36 Input | --- | --- | 36 | |
| Input undervoltage protection | 18-36 Input | --- | 13 | --- | VDC |
| | 36-75 Input | --- | 27 | --- | |

| | | | |
|---------------------------|---|-----------|--|
| Standby power consumption | 0.25W (TYP) | | |
| input filter | Π filter | | |
| CTRL | Module is turned on CTRL is left floating or connected to high level (3.3VDC-12VDC) | | |
| | Module shutdown CTRL connected to low level (0-1.2VDC) | | |
| | Input current at shutdown | 2mA (TYP) | |

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%/°C |
| Dynamic Response | 25% nominal load step | ΔVo/Δt | ±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 | Typica | 330KHz (Typ.) |
| Operating Temperature | Refer to temperature | -40°C ~ +85°C |
| Storage Temperature | - | -55°C ~ +125°C |
| Max Case Temperature | Within Operating Curve | +105°C |
| 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°C MAX |
| Isolation Voltage | Input to Output | 1500Vdc ≤ 0.5mA / 1min |
| Minimum time between failures | MIL-HDBK-217F 25°C | 2X10 ⁵ Hrs |
| Product Weight | - | 22g (Typ.) |

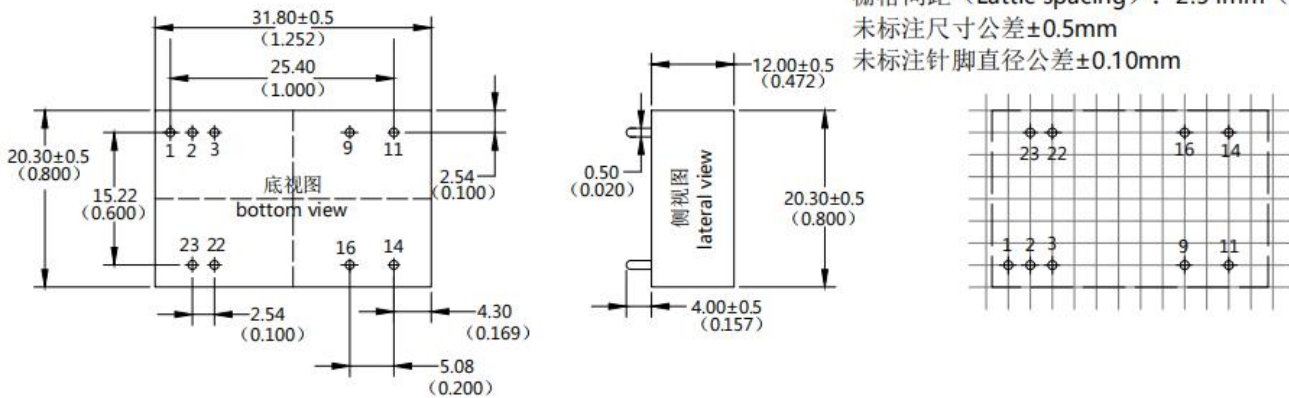
EMC Characteristics

| 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

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
未标注针脚直径公差±0.10mm



| | | | |
|------|-------------------------|---------------------------|--|
| 封装代号 | L x W x H | | |
| E3 | 31.80 × 20.30 × 12.00mm | 1.252 × 0.800 × 0.472inch | |

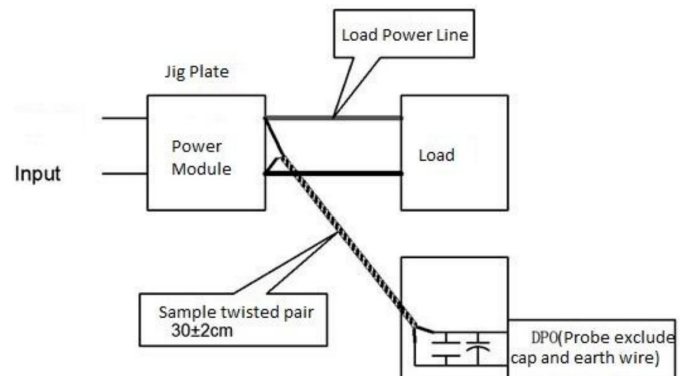
Pin-out

| Pin function | 1 | 2 | 3 | 9 | 11 | 14 | 16 | 22 | 23 |
|---------------|------------------|--------------|--------------|--------|-------------|-----------------|---------------|----------------|----------------|
| DD6-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 input | positive input |
| DD6-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 input | positive input |

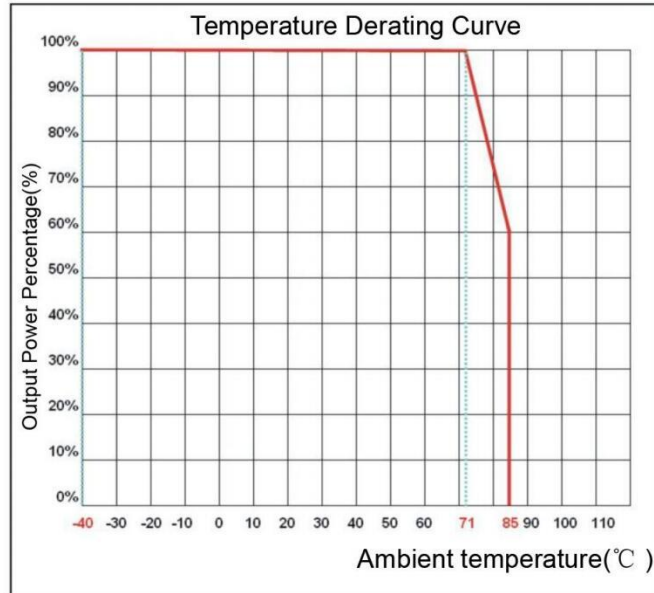
Ripple & Noise Test: (Twisted Pair Method 20MHZ bandwidth)

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

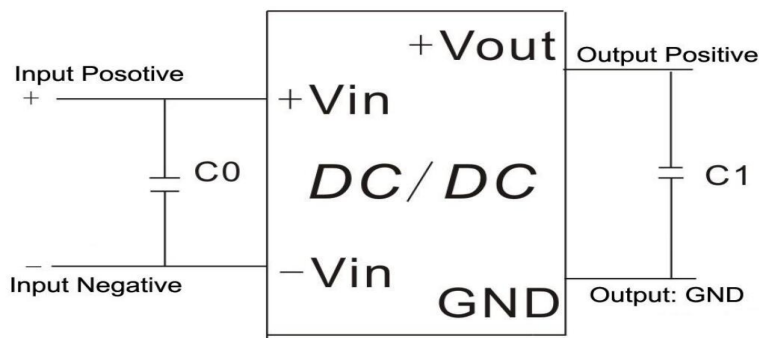


Design and Application Reference

Recommended circuit

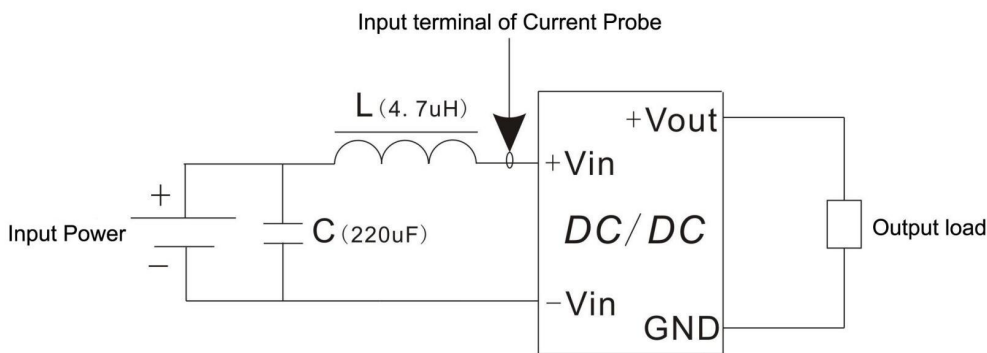
1、DC/DC test circuit:

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

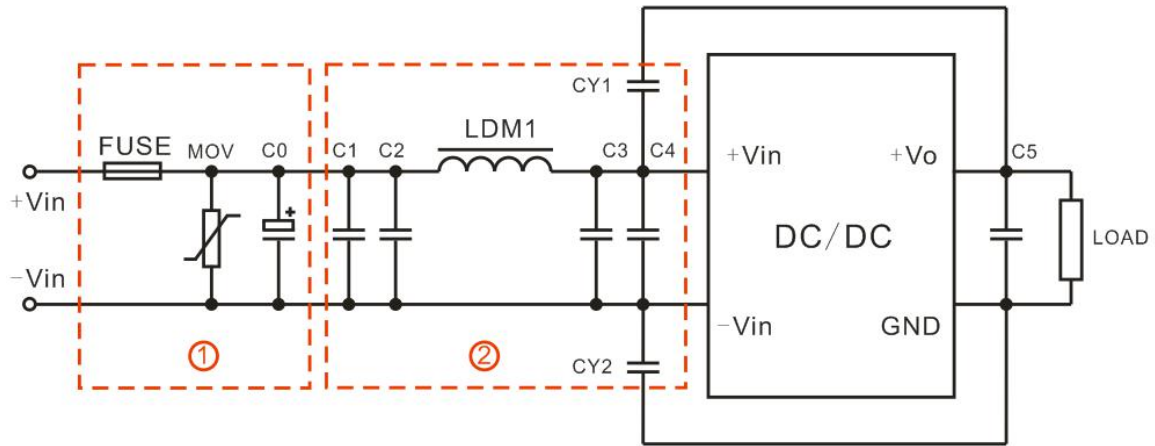


2、Input reflecting ripple current test circuit:

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°C, 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.