



## 30W DC-DC Single Output

## SDM30 series



### ■ Features :

- Wide 2:1 DC input range
- In/out capacitance 1000pF
- Protections: Short circuit / Overload / Over voltage
- 1000VDC I/O isolation for D/D
- Cooling by free air convection
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Fixed switching frequency at 225KHz
- Lost cost
- High reliability
- 1 year warranty



### SPECIFICATION

| MODEL                 | SDM30-12S3  | SDM30-24S3 | SDM30-48S3                    | SDM30-12S5  | SDM30-24S5 | SDM30-48S5                |             |
|-----------------------|---|------------|-------------------------------|---|------------|---------------------------|-------------|
| OUTPUT                | DC VOLTAGE  |            |                               | 3.3V  |            |                           | 5V          |
|                       | RATED CURRENT   |            |                               | 5A  |            |                           | 5A          |
|                       | CURRENT RANGE   |            |                               | 0 ~ 5A  |            |                           | 0 ~ 5A      |
|                       | RATED POWER   |            |                               | 16.5W   |            |                           | 25W         |
|                       | RIPPLE & NOISE (max.) Note.2  |            |                               | 75mVp-p   |            |                           | 75mVp-p     |
|                       | VOLTAGE TOLERANCE Note.3  |            |                               | ±3.0%   |            |                           | ±2.0% max.  |
|                       | LINE REGULATION   |            |                               | ±1.0%   |            |                           | ±1.0%       |
|                       | LOAD REGULATION   |            |                               | ±1.0%   |            |                           | ±1.0%       |
| TRIM OUTPUT           |   |            | ±13%(Typ.) output voltage     |   |            | ±10%(Typ.) output voltage |             |
| INPUT                 | RATED DC INPUT  |            |                               | 12S: 12VDC 24S: 24VDC 48S: 48VDC  |            |                           |             |
|                       | VOLTAGE RANGE   |            |                               | 12S: 9.2 ~ 18VDC 24S: 18 ~ 36VDC 48S: 36 ~ 72VDC  |            |                           |             |
|                       | EFFICIENCY (Typ.)   |            |                               | 77%   | 79%        | 80%                       | 77%         |
|                       | DC CURRENT  |            |                               | 12S: 3.6A 24S: 2A 48S: 1A   |            |                           |             |
|                       | IDLE CURRENT  |            |                               | 12S: 35mA 24S/48S: 30mA   |            |                           |             |
| PROTECTION            | OVERLOAD  |            |                               | Above 105% rated output power<br>Protection type : Over power limiting, recovers automatically after fault condition is removed |            |                           |             |
|                       | OVER VOLTAGE  |            |                               | 3.8 ~ 4.95V<br>Protection type : Shut off o/p voltage, clamping by zener diode  |            |                           | 5.75 ~ 7.5V |
|                       | SHORT CIRCUIT   |            |                               | Protection type : Constant current limiting, recovers automatically after fault condition is removed                            |            |                           |             |
| FUNCTION              | ON/OFF CONTROL  |            |                               | Logic "1" or open: power on Logic "0" short to Vin: power off   |            |                           |             |
| ENVIRONMENT           | WORKING TEMP.   |            |                               | -25 ~ +85°C (Refer to output load derating curve)   |            |                           |             |
|                       | STORAGE TEMP., HUMIDITY   |            |                               | -25 ~ +85°C, 0 ~ 95% RH   |            |                           |             |
|                       | TEMP. COEFFICIENT   |            |                               | ±0.03%/°C (0~50°C)  |            |                           |             |
| SAFETY & EMC (Note 6) | SAFETY STANDARDS  |            |                               | Design refer to LVD   |            |                           |             |
|                       | ISOLATION VOLTAGE   |            |                               | I/P-O/P: 1KVDC  |            |                           |             |
|                       | ISOLATION RESISTANCE  |            |                               | I/P-O/P: 100M Ohms/500VDC   |            |                           |             |
|                       | EMI CONDUCTION & RADIATION  |            |                               | Compliance to EN55022 (CISPR22) Class B   |            |                           |             |
| OTHERS                | EMS IMMUNITY  |            |                               | Compliance to EN61000-2, 3, 4, 6, 8; EN50204, EN55024, light industry level, criteria A   |            |                           |             |
|                       | MTBF  |            |                               | 322.4K hrs min. MIL-HDBK-217F (25°C)  |            |                           |             |
|                       | DIMENSION   |            |                               | 50.8*50.8*16mm (2**2**0.63") (L*W*H)  |            |                           |             |
| PACKING               |   |            | 0.1Kg; 150pcs/15.8Kg/0.97CUFT |   |            |                           |             |
| NOTE                  | <p>1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF &amp; 47uF parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Short circuit not more than 60 second.</p> <p>5. DC source wires ≥5cm, an input external al capacitor 47 ~ 100uF is required.</p> <p>6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.</p> |            |                               |   |            |                           |             |



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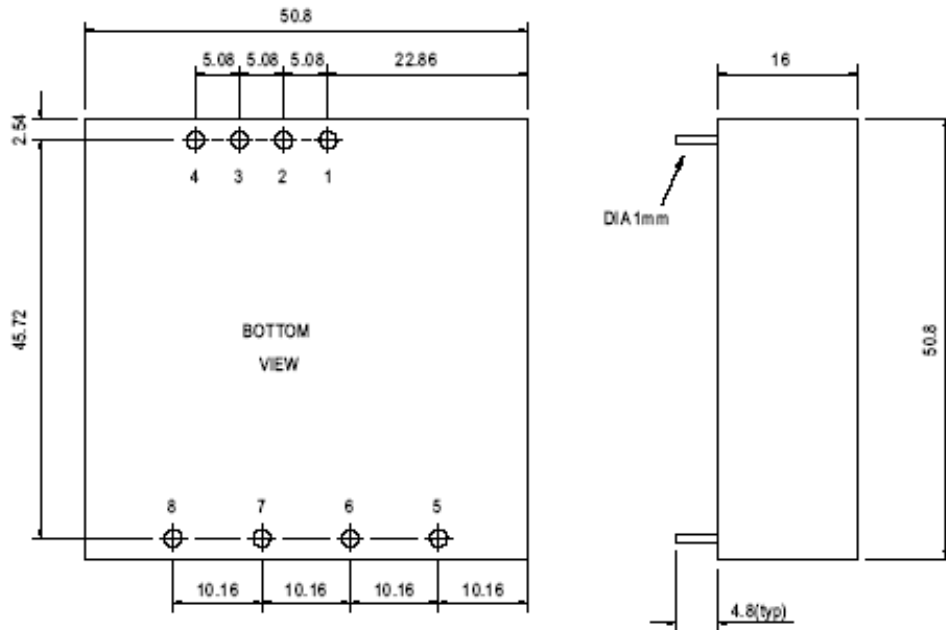


#### SPECIFICATION

| MODEL                 | SDM30-12S12  | SDM30-24S12   | SDM30-48S12  | SDM30-12S15     | SDM30-24S15     | SDM30-48S15 |     |
|-----------------------|--|---|--------------|-----------------|-----------------|-------------|-----|
| OUTPUT                | DC VOLTAGE   | 12V   |              |                 | 15V             |             |     |
|                       | RATED CURRENT  | 2.1A  | 2.5A         |                 | 1.7A            | 2A          |     |
|                       | CURRENT RANGE  | 0 ~ 2.1A  | 0 ~ 2.5A     |                 | 0 ~ 1.7A        | 0 ~ 2A      |     |
|                       | RATED POWER  | 25.2W   | 30W          |                 | 25.5W           | 30W         |     |
|                       | RIPPLE & NOISE (max.) Note.2   | 100mVp-p  |              |                 | 100mVp-p        |             |     |
|                       | VOLTAGE TOLERANCE Note.3   | ±2.0% max.  |              |                 | ±2.0% max.      |             |     |
|                       | LINE REGULATION  | ±1.0%   |              |                 | ±1.0%           |             |     |
|                       | LOAD REGULATION  | ±1.0%   |              |                 | ±1.0%           |             |     |
| TRIM OUTPUT           | ±10%(Typ.) output voltage  |   |              |                 |                 |             |     |
| INPUT                 | RATED DC INPUT   | 12S: 12VDC  |              | 24S: 24VDC      | 48S: 48VDC      |             |     |
|                       | VOLTAGE RANGE  | 12S: 9.2 ~ 18VDC  |              | 24S: 18 ~ 36VDC | 48S: 36 ~ 72VDC |             |     |
|                       | EFFICIENCY (Typ.)  | 80%   | 82%          | 84%             | 80%             | 83%         | 85% |
|                       | DC CURRENT   | 12S:3.6A  | 24S:2A       | 48S:1A          |                 |             |     |
|                       | IDLE CURRENT   | 12S:35mA  | 24S/48S:30mA |                 |                 |             |     |
| PROTECTION            | OVERLOAD   | Above 105% rated output power<br>Protection type : Over power limiting, recovers automatically after fault condition is removed |              |                 |                 |             |     |
|                       | OVER VOLTAGE   | 13.8 ~ 18V  |              |                 | 17.25 ~ 22.5V   |             |     |
|                       | SHORT CIRCUIT  | Protection type : Constant current limiting, recovers automatically after fault condition is removed                            |              |                 |                 |             |     |
| FUNCTION              | ON/OFF CONTROL   | Logic "1" or open: power on      Logic "0" short to Vin: power off  |              |                 |                 |             |     |
| ENVIRONMENT           | WORKING TEMP.  | -25 ~ +85°C (Refer to output load derating curve)   |              |                 |                 |             |     |
|                       | STORAGE TEMP., HUMIDITY  | -25 ~ +85°C, 0 ~ 95% RH   |              |                 |                 |             |     |
|                       | TEMP. COEFFICIENT  | ±0.03%/°C (0~50°C)  |              |                 |                 |             |     |
| SAFETY & EMC (Note 6) | SAFETY STANDARDS   | Design refer to LVD   |              |                 |                 |             |     |
|                       | ISOLATION VOLTAGE  | I/P-O/P:1KVDC   |              |                 |                 |             |     |
| EMC (Note 6)          | ISOLATION RESISTANCE   | I/P-O/P:100M Ohms/500VDC  |              |                 |                 |             |     |
|                       | EMI CONDUCTION & RADIATION   | Compliance to EN55022 (CISPR22) Class B   |              |                 |                 |             |     |
|                       | EMS IMMUNITY   | Compliance to EN61000-2,3,4,6,8; ENV50204, EN55024, light industry level, criteria A  |              |                 |                 |             |     |
| OTHERS                | MTBF   | 322.4K hrs min.      MIL-HDBK-217F (25°C)   |              |                 |                 |             |     |
|                       | DIMENSION  | 50.8*50.8*16mm (2**2**0.63") (L*W*H)  |              |                 |                 |             |     |
|                       | PACKING  | 0.1Kg; 150pcs/15.8Kg/0.97CUFT   |              |                 |                 |             |     |
| NOTE                  | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. Short circuit not more than 60 second.</li> <li>5. DC source wires ≥5cm, an input external al capacitor 47 ~ 100uF is required.</li> <li>6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.</li> </ol> |   |              |                 |                 |             |     |

### Mechanical Specification

Case No. SDM-30 Unit:mm

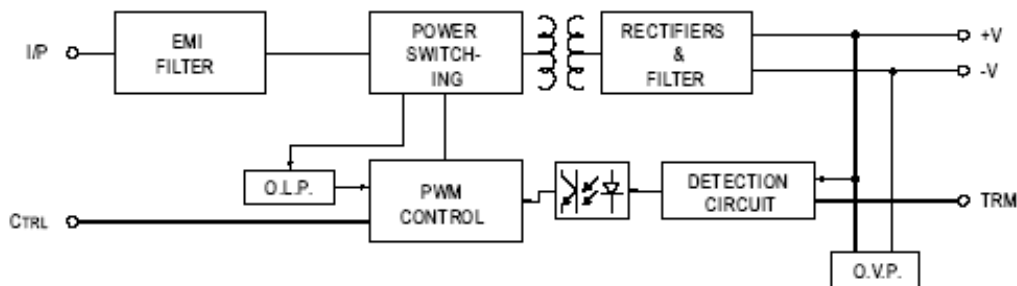


#### Pin No. Assignment

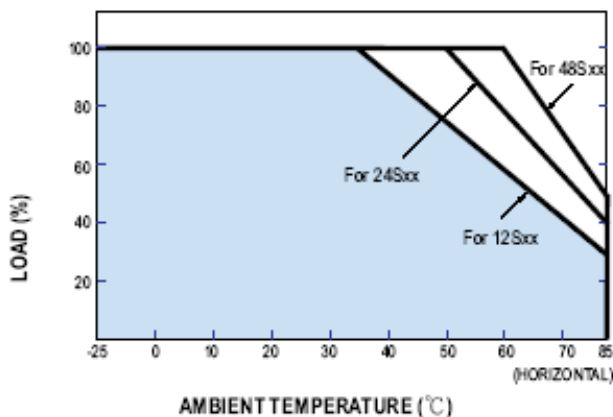
| Pin No. | Assignment     | Pin No. | Assignment |
|---------|----------------|---------|------------|
| 1       | +Vin           | 6       | +Vout      |
| 2       | -Vin           | 7       | -Vout      |
| 3,5     | No pin         | 8       | Trim       |
| 4       | Control ON/OFF |         |            |

### Block Diagram

fosc : 225KHz

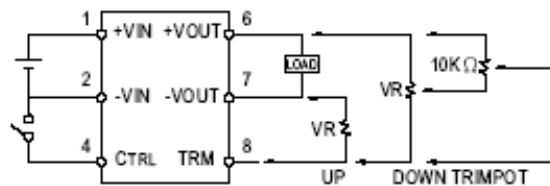


### Derating Curve



### External Output Trimming

OUTPUT MAY OPTIONALLY BE EXTERNALLY TRIMMED ( $\pm 10\%$ )  
A FIXED RESISTOR OR AN EXTERNAL TRIMPOT AS SHOWN



### ON/OFF Control Pin

CONTROL INPUT.....PIN4  
CONTROL COMMON.....PIN2  
LOGIC COMPATIBILITY.....CMOS OR OPEN COLLECTOR TTL  
CONTROL VOLTAGE  
ON.....+5.5VDC min OR OPEN CIRCUIT  
OFF.....+2.5VDC max. OR SHORT TO PIN2