

## Features

- ★ Small Footprint
- ★ In-Out Isolation Voltage 1000 VDC
- ★ 10 PIN SIP Package
- ★ Temperature Range:-40℃ to +85℃
- ★ UL94V-0 Inflaming retarding package
- ★ MTBF>1million hours(25℃)

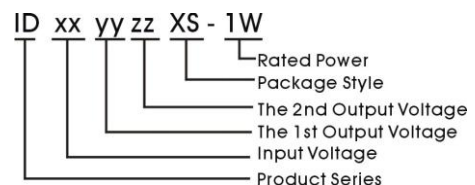


## Applications

The ID\_XS-1W Series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to where:

- 1) 1000 VDC input and output isolation;
- 2) Input voltage variation  $\leq \pm 5\%$ ;
- 3) Regulated and low ripple noise is not required.



## Model Detail List Specification

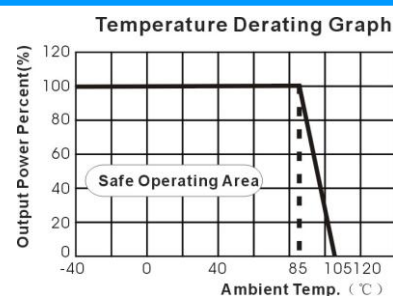
| Model Number  | Input Voltage range<br>(nominal voltage) | Output Voltage | Output Current (mA) |         | Input Current Full load.(mA) |     | Efficiency | Max. Capacitive Load(μF) |
|---------------|------------------------------------------|----------------|---------------------|---------|------------------------------|-----|------------|--------------------------|
|               |                                          |                | Min.                | Max.    | Max.                         | No. |            |                          |
| ID050505XS-1W | 4.75~5.25VDC<br>(5 VDC)                  | 5.0V;5.0V      | 10;10               | 100;100 | 136                          | 28  | 73%        | 100μF                    |
| ID050909XS-1W |                                          | 9.0V;9.0V      | 5;5                 | 56;56   | 132                          |     | 76%        |                          |
| ID051212XS-1W |                                          | 12.0V;12.0V    | 4;4                 | 42;42   | 130                          |     | 77%        |                          |
| ID051515XS-1W |                                          | 15.0V;15.0V    | 3;3                 | 33;33   | 126                          |     | 78%        |                          |
| ID120505XS-1W | 11.4~12.6VDC<br>(12 VDC)                 | 5.0V;5.0V      | 10;10               | 100;100 | 57                           | 24  | 72%        |                          |
| ID120909XS-1W |                                          | 9.0V;9.0V      | 5;5                 | 56;56   | 53                           |     | 78%        |                          |
| ID121212XS-1W |                                          | 12.0V;12.0V    | 4;4                 | 42;42   | 53                           |     | 78%        |                          |
| ID121515XS-1W |                                          | 15.0V;15.0V    | 3;3                 | 33;33   | 51                           |     | 80%        |                          |
| ID240505XS-1W | 22.8~25.2VDC<br>(24 VDC)                 | 5.0V;5.0V      | 10;10               | 100;100 | 28                           | 16  | 72%        |                          |
| ID240909XS-1W |                                          | 9.0V;9.0V      | 5;5                 | 56;56   | 27                           |     | 77%        |                          |
| ID241212XS-1W |                                          | 12.0V;12.0V    | 4;4                 | 42;42   | 27                           |     | 76%        |                          |
| ID241515XS-1W |                                          | 15.0V;15.0V    | 3;3                 | 33;33   | 27                           |     | 76%        |                          |

### Input Over-voltage Protection Circuit

The simplest device for input over-voltage protection is a linear voltage regulator with overheat protection that is connected to the input end in series.

When the environment temperature is higher than 85℃, the product output power should be less then 60% of the rated power. No parallel connection or plug and play.

### Temperature Derating Graph



# IDXS-1W Series



## Output Specifications

| Item                    | Test Conditions             | Min.     | Typ. | Max.       | Unit  |
|-------------------------|-----------------------------|----------|------|------------|-------|
| Output Power            |                             | 0.1      |      | 1          | W     |
| Line Voltage Regulation | For Vin change of $\pm 1\%$ |          |      | $\pm 0.25$ | %     |
| Load regulation         | 10% to 100% load            |          | 0.01 | 0.02       |       |
| Ripple                  | 20MHz Bandwidth             |          | 10   |            | mVp-p |
| Noise                   |                             |          | 20   |            |       |
| Temperature Drift       | 100% full load              |          |      | $\pm 0.03$ | %/°C  |
| Input Filter            |                             | C Filter |      |            |       |

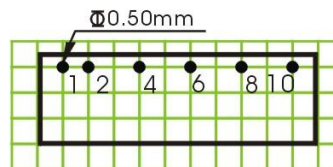
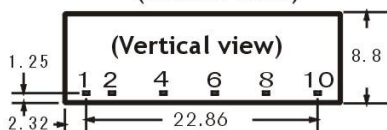
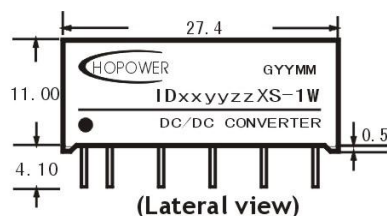
## Environmental Specifications

| Item                    | Test Conditions                | Min.                | Typ. | Max. | Unit |
|-------------------------|--------------------------------|---------------------|------|------|------|
| Storage Humidity        | Non condensing                 |                     |      | 95   | %    |
| Temp. rise at full load |                                |                     | 25   | 50   | °C   |
| Operating Temperature   |                                | -40                 |      | +85  |      |
| Storage Temperature     | Power derating (above 85°C)    | -55                 |      | +125 |      |
| Soldering Temperature   | 1.5mm from case for 10 seconds |                     |      | 300  |      |
| Cooling                 |                                | Free air convection |      |      |      |

## Common Specifications

| Item                  | Test Conditions                                        | Min. | Typ. | Max. | Unit    |
|-----------------------|--------------------------------------------------------|------|------|------|---------|
| Isolation Voltage     | Tested for 1 minute and leakage current less than 1 mA | 1000 |      |      | VDC     |
| Switching Frequency   | Full load, nominal input                               |      | 100  |      | KHz     |
| MTBF                  | MIL-HDBK-217F@25°C                                     | 1000 |      |      | K hours |
| Isolation Resistance  | Test at 500VDC                                         | 1000 |      |      | MΩ      |
| Isolation Capacitance |                                                        |      | 350  |      | PF      |
| Weight                |                                                        |      | 3.5  |      | g       |

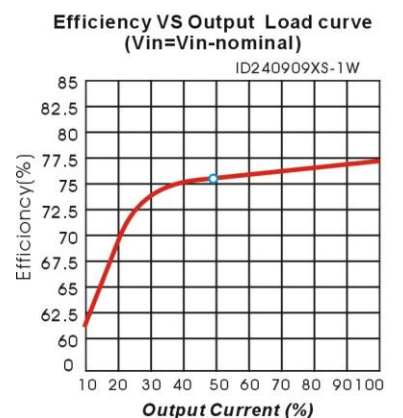
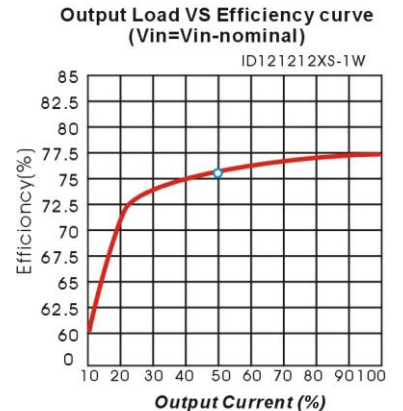
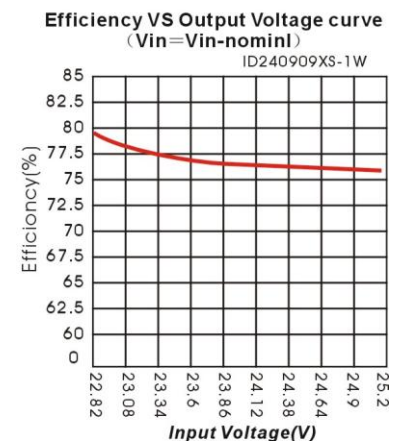
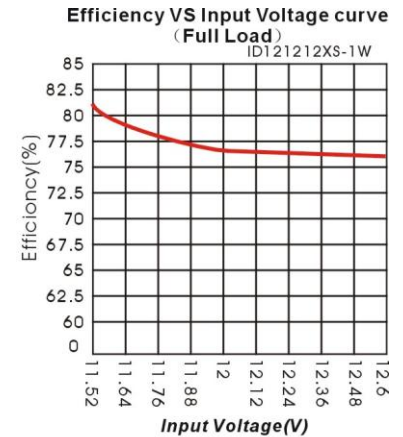
## Mechanical Dimensions & Recommended Footprint



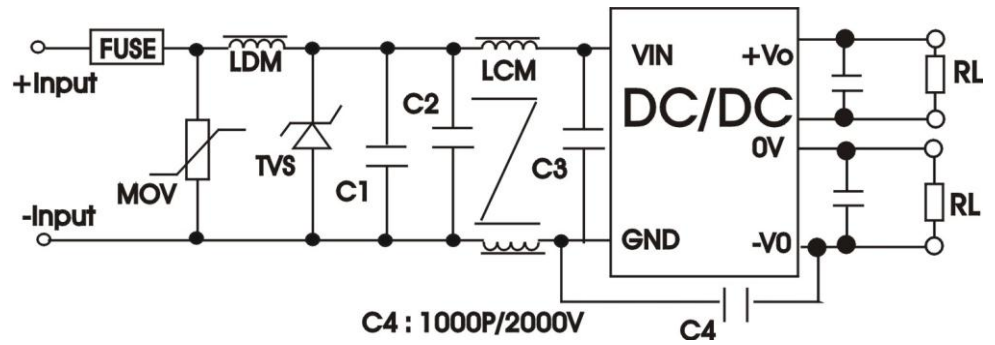
Note: Grid 2.54\*2.54mm.  
Unit: mm  
General tolerances : 0.20mm

| Package | Vin | GND | Ov1 | +Vo1 | Ov2 | +Vo2 |
|---------|-----|-----|-----|------|-----|------|
| IDXS    | 1   | 2   | 4   | 6    | 8   | 10   |

## Product typical Curve



## EMC Recommended Circuit



## EMC Module Application Circuit

