



## F\_S-2W/ F\_D-2W Series

### FIXED INPUT ISOLATED & UNREGULATED

### 2W OUTPUT SINGLE OUTPUT

### SIP(DIP) PACKAGE



multi-country patent protection

#### FEATURES

- High Efficiency up to 86%
- Small Footprint
- SIP/DIP Package
- Single Output Voltage
- 3KVDC Isolation
- Power Density 1.42W/cm<sup>3</sup>
- Temperature Range: -40°C~+85°C
- Industry Standard Pinout
- UL94-V0 Package
- No Heat sink Required
- No External Component Required
- PCB Mounting
- RoHS Compliance

#### APPLICATIONS

The F\_S/D-2W Series are specially designed for applications where a single power supply is highly isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation  $\leq \pm 10\%$ );
- 2) Where isolation is necessary between input and output (isolation voltage = 3000VDC);
- 3) Where the regulation of the output voltage and the output ripple and noise are not demanding.

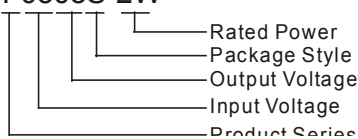
Such as: purely digital circuits, ordinary low frequency analog circuits and IGBT power device driven circuits, etc.

These products don't apply to:

- 1) Where the input supply voltage is varied (variation  $\geq \pm 10\%$ ), otherwise our company's WRA series is recommended;
- 2) Where the isolation voltage between input and output is required to be  $> 3000\text{VDC}$ , otherwise our company's HD Series products are recommended;
- 3) Circuits in which the output voltage regulation is demanding, otherwise our company's IB Series or WRB Series are recommended;
- 4) The output load's actual power consumption is less than nominal output, otherwise our company's F\_S(D)- 1W Series are recommended.

#### MODEL SELECTION

##### F0505S-2W



| PRODUCT PROGRAM |               |           |               |              |      |                    |               |
|-----------------|---------------|-----------|---------------|--------------|------|--------------------|---------------|
| Part Number     | Input         |           | Output        |              |      | Efficiency (% Typ) | Package Style |
|                 | Voltage (VDC) |           | Voltage (VDC) | Current (mA) |      |                    |               |
|                 | Nominal       | Range     |               | Max          | Min  |                    |               |
| F0503S/D-2W     | 5             | 4.5~5.5   | 3.3           | 606          | 61   | 65                 | SIP/DIP       |
| F0505S/D-2W     | 5             | 4.5~5.5   | 5             | 400          | 40   | 80                 | SIP/DIP       |
| F0509S/D-2W     | 5             | 4.5~5.5   | 9             | 222          | 22.2 | 81                 | SIP/DIP       |
| F0512S/D-2W     | 5             | 4.5~5.5   | 12            | 167          | 16.7 | 82                 | SIP/DIP       |
| F0515S/D-2W     | 5             | 4.5~5.5   | 15            | 133          | 13.3 | 84                 | SIP/DIP       |
| F1205S/D-2W     | 12            | 10.8~13.2 | 5             | 400          | 40   | 80                 | SIP/DIP       |
| F1209S/D-2W     | 12            | 10.8~13.2 | 9             | 222          | 22.2 | 83                 | SIP/DIP       |
| F1212S/D-2W     | 12            | 10.8~13.2 | 12            | 167          | 16.7 | 84                 | SIP/DIP       |
| F1215S/D-2W     | 12            | 10.8~13.2 | 15            | 133          | 13.3 | 85                 | SIP/DIP       |
| F2405S/D-2W     | 24            | 21.6~26.4 | 5             | 400          | 40   | 81                 | SIP/DIP       |
| F2409S/D-2W     | 24            | 21.6~26.4 | 9             | 222          | 22.2 | 84                 | SIP/DIP       |
| F2412S/D-2W     | 24            | 21.6~26.4 | 12            | 167          | 16.7 | 85                 | SIP/DIP       |
| F2415S/D-2W     | 24            | 21.6~26.4 | 15            | 133          | 13.3 | 86                 | SIP/DIP       |

| COMMON SPECIFICATION          |  |
|-------------------------------|--|
| Short circuit protection      | 1 second                               |
| Temperature rise at full load | 25°C MAX, 15°C TYP                     |
| Cooling                       | Free air convection                    |
| No-load power consumption     | 10% nominal power (typical)            |
| Operating temperature range   | -40°C ~+85°C                           |
| Storage temperature range     | -55°C ~+125°C                          |
| Lead temperature*             | 300°C (1.5mm from case for 10 seconds) |
| Storage humidity range        | $\leq 95\%$                            |
| Case material                 | Plastic (UL94-V0)                      |
| MTBF                          | >3,500,000 hours                       |

| ISOLATION SPECIFICATIONS |                     |      |     |     |       |  |
|--------------------------|---------------------|------|-----|-----|-------|--|
| Item                     | Test condition      | Min  | Typ | Max | Units |  |
| Isolation voltage        | Tested for 1 minute | 3000 |     |     | VDC   |  |
| Isolation resistance     | Test at 500VDC      | 1000 |     |     | MΩ    |  |

| OUTPUT SPECIFICATIONS   |                                  |     |     |      |       |  |
|-------------------------|----------------------------------|-----|-----|------|-------|--|
| Item                    | Test condition                   | Min | Typ | Max  | Units |  |
| Output power            |                                  | 0.2 |     | 2    | W     |  |
| Line regulation         | For Vin change of 1%             |     |     | 1.5  | %     |  |
| Load regulation         | 10% to 100% full load            |     | 10  | 15   | %     |  |
| Output voltage accuracy | See tolerance envelope graph     |     |     |      |       |  |
| Temperature drift       | 100% full load                   |     |     | 0.03 | %/°C  |  |
| Ripple & noise          | 20Hz bandwidth                   |     | 100 | 200  | mVp-p |  |
| Switching frequency     | Full load, nominal input voltage |     | 75  |      | KHz   |  |

Note:

1. All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.

2. See below recommended circuits for more details.

