

### FEATURES

- Small volume, high power density
- High efficiency, low output ripple and noise
- Low zero-load power consumption, low static current
- Long time short circuit protection and self-recovery
- superior thermal stability and temperature characteristics
- Wide temperature performance at full 1 watt load: -40 ~ +85
- Isolation Voltage:3000VDC
- High Reliability (MTTF≥350 ten thousand hours)
- International standard DIP package, save PCB installation space
- Environmental design, ROHS compliant
- 100% full load aging



**RoHS**  
Isolate/Non-stabilized  
Single output

### PRODUCT MODEL LIST

| Order Code   | Nominal Input Voltage (V) |           | Nominal Output Voltage |              | Efficiency [Typ] (%) | Capacitive Load [Max] (uF) |
|--------------|---------------------------|-----------|------------------------|--------------|----------------------|----------------------------|
|              | Nominal                   | Range     | Voltage (V)            | Current (mA) |                      |                            |
| F0503DY-2WR1 | 5                         | 4.5~5.5   | 3.3                    | 606          | 81                   | 3300                       |
| F0505DY-2WR1 |                           |           | 5                      | 400          | 83                   | 3300                       |
| F0507DY-2WR1 |                           |           | 7.2                    | 278          | 86                   | 2200                       |
| F0509DY-2WR1 |                           |           | 9                      | 222          | 86                   | 2200                       |
| F0512DY-2WR1 |                           |           | 12                     | 167          | 88                   | 2200                       |
| F0515DY-2WR1 |                           |           | 15                     | 133          | 88                   | 1000                       |
| F0524DY-2WR1 |                           |           | 24                     | 83           | 85                   | 1000                       |
| F1205DY-2WR1 | 12                        | 10.8~13.2 | 5                      | 400          | 85                   | 3300                       |
| F1209DY-2WR1 |                           |           | 9                      | 222          | 85                   | 2200                       |
| F1212DY-2WR1 |                           |           | 12                     | 167          | 86                   | 2200                       |
| F1215DY-2WR1 |                           |           | 15                     | 133          | 88                   | 1000                       |
| F1224DY-2WR1 |                           |           | 24                     | 83           | 87                   | 1000                       |
| F1505DY-2WR1 | 15                        | 13.5~16.5 | 5                      | 400          | 86                   | 3300                       |
| F1515DY-2WR1 |                           |           | 15                     | 133          | 90                   | 1000                       |
| F1524DY-2WR1 |                           |           | 24                     | 83           | 87                   | 1000                       |
| F2403DY-2WR1 | 24                        | 21.6~26.4 | 3.3                    | 606          | 80                   | 3300                       |
| F2405DY-2WR1 |                           |           | 5                      | 400          | 86                   | 3300                       |
| F2409DY-2WR1 |                           |           | 9                      | 222          | 90                   | 2200                       |
| F2412DY-2WR1 |                           |           | 12                     | 167          | 89                   | 2200                       |
| F2415DY-2WR1 |                           |           | 15                     | 133          | 90                   | 1000                       |
| F2424DY-2WR1 |                           |           | 24                     | 83           | 86                   | 1000                       |

### OUTPUT CHARACTERISTICS

| Parameter               | Conditions                                    | Min.  | Typ.      | Max.       | Units |
|-------------------------|---|-------|-----------|------------|-------|
| Output Power            |   | 0.2   |           | 2          | W     |
| Line Voltage Regulation | Input voltage change $\pm 1\%$ at rated load  |       | $\pm 1.2$ | $\pm 1.5$  | %     |
| Load Regulation         | Load varies from 10% to 100% at nominal input |       | 10        | 15         |       |
| Quiescent Current       | Output load is 0 at nominal input             | F05XX | $\leq 20$ |            | mA    |
|                         |   | etc.  | $\leq 10$ |            |       |
| Temps Drift Coefficient | Rated load                                    |       |           | $\pm 0.03$ | %/    |
| Ripple & Noise          | At 20MHz bandwidth                            |       | 50        | 100        | mVp-p |

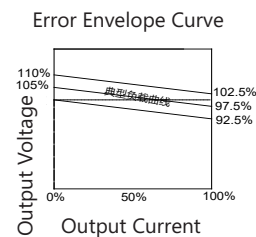
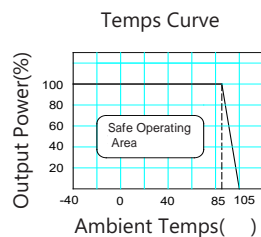
|                                 |                                       |     |     |
|---------------------------------|---------------------------------------|-----|-----|
| Switching Frequency             | Rated input voltage                   | 280 | KHz |
| Output Short Circuit Protection | Sustainable and automatic restoration |     |     |
| Input Filter                    | Filter capacitor                      |     |     |
| Hot Plug                        | Nonsupport                            |     |     |
| Output Voltage Accuracy         | Refer to error envelope curve         |     |     |

### Insulation Characteristic

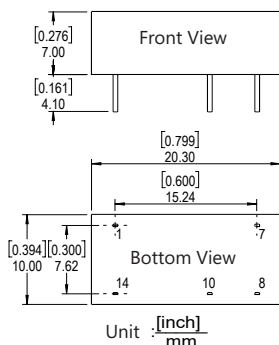
| Parameter             | Conditions   | Min. | Typ. | Max. | Units |
|-----------------------|--|------|------|------|-------|
| Insulation Resistance | 500VDC   | 1000 |      |      | M     |
| Insulation Voltage    | Test time 1 minute, leakage current less than 1 mA | 3000 |      |      | VDC   |

### General Characteristic

| Parameter            | Conditions   | Min. | Typ. | Max. | Units       |
|----------------------|--|------|------|------|-------------|
| Storage Humidity     |  | 5    |      | 95   | %           |
| Operating Temps      |  | -40  |      | 85   |             |
| Storage Temps        |  | -55  |      | 125  |             |
| Operating Case Temps |  |      | 15   | 25   |             |
| Pin Welding Temps    | Welding joint 1.5mm from case, 10 seconds operation    |      |      | 300  |             |
| MTTF                 | MIL - HDBK - 217@25                                    | 350  |      |      | 10000 hours |
| Weight               |  |      | 2.4  |      | g           |
| Cooling              | Free air convection                                    |      |      |      |             |
| Case Material        | Flame-retardant and heat-resistant plastic ( UL94-V0 ) |      |      |      |             |

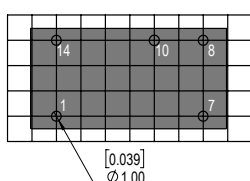


### Shape & Pin Dimensions



#### PCB

[0.1inch]2.54mm square grid



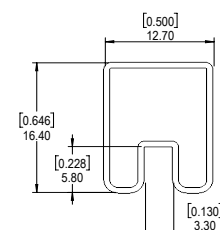
| Pin | Function |
|-----|----------|
| 1   | GND      |
| 7   | NC       |
| 8   | +Vo      |
| 10  | 0V       |
| 14  | Vin      |

ps:

Terminal section tolerance:  $\pm 0.10$  [ $\pm 0.004$ ]

Unmarked tolerance:  $\pm 0.25$  [ $\pm 0.010$ ]

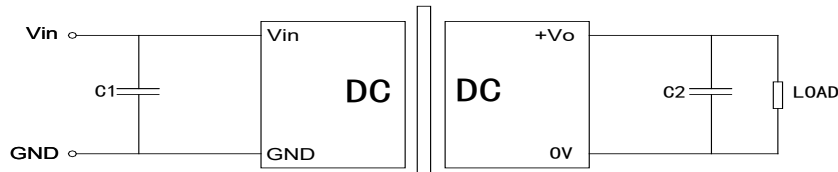
#### Package Dimensions



All Specifications Subject To Change Without Notice

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**Basic Application Circuit**



**Options of C1、C2:**

| Input Voltage | External Capacitance | Output Voltage | External Capacitance |
|---------------|----------------------|----------------|----------------------|
| 5VDC          | 10uF                 | 3.3/5VDC       | 10uF                 |
| 12VDC         | 4.7uF                | 7.2/9VDC       | 4.7uF                |
| 15VDC         | 2.2uF                | 12/15VDC       | 2.2uF                |
| 24VDC         | 1uF                  | 24VDC          | 1uF                  |

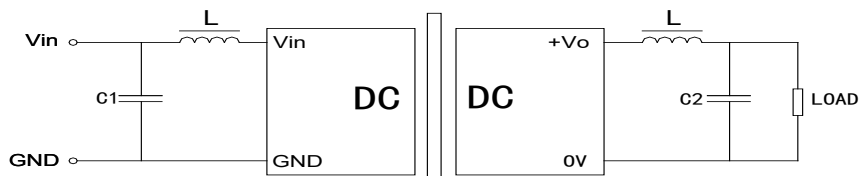
**Note**

**Try To Avoid No-load Use:** If the load power consumption is less than 10% of the rated output power of the module, it is recommended to connect a dummy load to the output terminal or select a module with a lower rated power. The dummy load (resistance) can be calculated by 10% of the rated power of the module, and the resistance value is  $R=U^2 / (10\% \times 2W)$ .

**Avoid Excessive Output External Capacitance:** The capacity value of the output external capacitor C2 should not be too large, otherwise it is easy to cause overcurrent or bad startup when the module is started. The specific value should be selected according to the external capacitor table.

The input of this series does not support parallel use of hot plug and output.

For situations requiring high ripple noise, external LC filter circuit should be connected, and the resonant frequency of LC filter should be far less than the switching frequency of DC/DC module to prevent mutual interference, resulting in output ripple increase or module damage, as shown in the figure:



**Naming Logic Of Constant Voltage Products**

B 05 05 LS Y-1W R1

