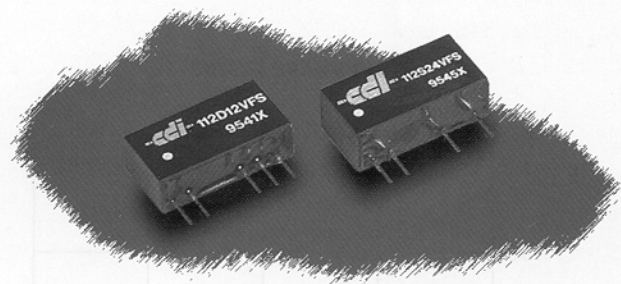


100VFS Series



KEY FEATURES

- Miniature Single-Inline-Package (SIP)
- 3000 VDC Input/Output Isolation
- High Efficiency
- 27 Models (Single & Dual Outputs)
- Wide Operating Temperature Range
- Requires Only 0.18 Square Inches of Board Space
- Low Cost

General Description

The **100VFS** series is a family of cost effective 1W DC/DC converters specifically designed to provide ultra-high levels of isolation in a miniature package. These Single-Inline-Package (SIP) modules take up only 0.18 square inches of board space, making them ideal for innumerable board level power distribution applications where space is critical.

Twenty seven models operate from input bus voltages of 5, 12 and 24 VDC; producing output voltage levels of 3.3 VDC, 5 VDC, 9 VDC, 12 VDC, 15VDC, ± 5 VDC, ± 9 VDC, ± 12 VDC or ± 15 VDC. High performance features include 3000 VDC input/output isolation, high efficiency operation, and output voltage accuracy of $\pm 3.0\%$. Standard features include a $\pm 10\%$ input voltage range and low output noise.

Modules are packaged in an ultra-miniature 0.77 x 0.24 x 0.40 inch Single-Inline-Package (SIP). Operation is specified over the full operating temperature range of -25°C to $+85^{\circ}\text{C}$. Cooling is by free-air convection.

Electrical Specifications

Input Specifications:

| | |
|---------------------------|--------------------|
| Input Voltage Range | $\pm 10\%$ |
| Input Filter | Internal Capacitor |

Output Specifications:

| | |
|--------------------------------------|-------------------------------|
| Output Voltage Accuracy | $\pm 3\%$, Max. |
| Ripple & Noise (20 MHz BW) | 65 mV Pk-Pk |
| Line Regulation ⁽¹⁾ | See Model Selection Guide |
| Load Regulation ⁽²⁾ | See Model Selection Guide |
| Minimum Load | 10% of Full Load |
| Temperature Coefficient @ FL | $\pm 0.02\%/^{\circ}\text{C}$ |
| Short Circuit Protection | Momentary |

General Specifications:

| | |
|---------------------------------|---------------------------|
| Efficiency ⁽³⁾ | See Model Selection Guide |
| Isolation Voltage (1 min) | 3000 VDC |
| Isolation Capacitance | 60 pF |
| Isolation Resistance | $10^{10}\Omega$ |
| Switching Frequency | 100 kHz |

Environmental Specifications:

| | |
|-----------------------------------|---|
| Operating Temperature Range | -25°C to $+85^{\circ}\text{C}$ |
| Storage Temperature Range | -40°C to $+125^{\circ}\text{C}$ |
| Derating | See Derating Curve |
| Humidity | Up to 95%, Non-Condensing |
| Cooling | Free-air Convection |

Physical Characteristics:

| | |
|-------------------------------------|---|
| Size, 5V & 12V Input Models | 0.77 x 0.24 x 0.40 inches (19.5 x 6.1 x 10.2 mm) |
| 24V Input Models | 0.77 x 0.28 x 0.40 (19.5 x 7.1 x 10.2) |
| Weight, 5V & 12V Input Models | 0.06 Oz (2.1g) |
| 24V Input Models | 0.08 Oz (2.5g) |
| Case Material | Non-Conductive Black Plastic |

Absolute Maximum Ratings: ⁽⁵⁾

| | |
|-------------------------------------|-----------|
| Input Voltage, 5 VDC Models | 9 VDC |
| 12 VDC Models | 18 VDC |
| 24 VDC Models | 30 VDC |
| Output Short Circuit Duration | Momentary |
| Internal Power Dissipation | 0.45W |

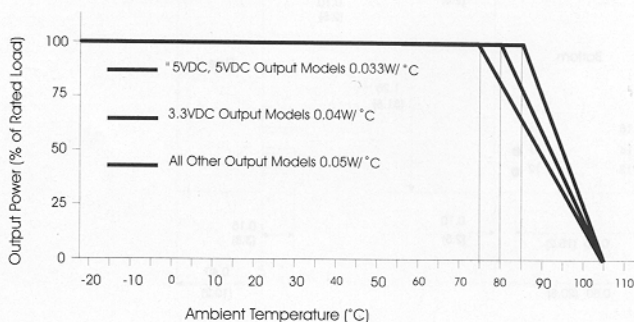
Specifications typical @ $+25^{\circ}\text{C}$ with nominal input voltage and under full output load conditions, unless otherwise noted. Specifications subject to change without notice.

Specification Notes:

1. Line regulation is measured by monitoring the output voltage while the module input voltage is varied from low line to high line. See Model Selection Guide.
2. Load regulation is measured at nominal input voltage while the output load is varied from 20% load to full load. See Model Selection Guide.
3. Efficiency is specified for nominal input voltage line and full output load.
4. Total output power should not exceed the specified output ratings for any particular model.
5. Absolute Maximum Ratings are specification limits that, if exceeded, could permanently damage the unit. These are not continuous operating ratings.

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Fax (818) 889-8417

Fig. 1. Output Derating Curve



**ULTRA-MINIATURE, SINGLE-IN-LINE
3000VDC ISOLATION
1W DC/DC CONVERTERS**

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100VFS Series

Model Selection Guide

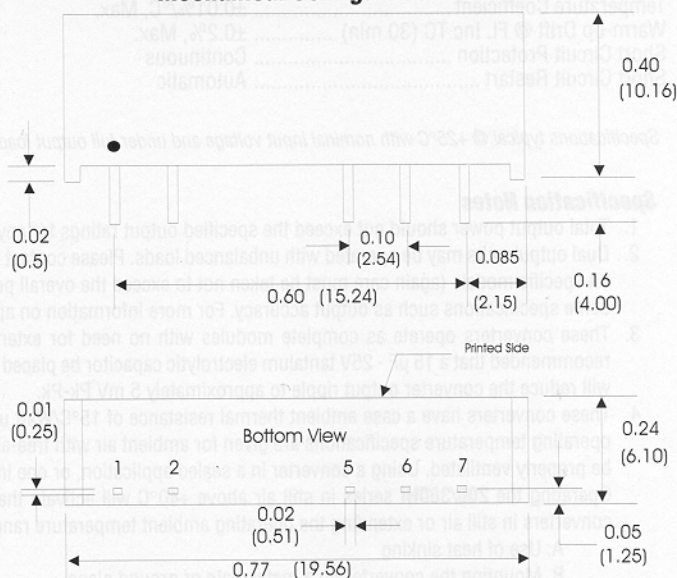
| Model Number | Input | | | Output | | Regulation | | Efficiency @FL (%) |
|--------------|-----------------------|--------------------|-----------|---------------|--------------|--|---------------------------|--------------------|
| | Nominal Voltage (VDC) | Current (mA, Max.) | | Voltage (VDC) | Current (mA) | Line ⁽¹⁾ %/%V _{IN} Max | Load ⁽²⁾ % Max | |
| | | No-Load | Full-Load | | | | | |
| 103S5VFS | 5 | 27 | 235 | 3.3 | 260 | 1.3 | 10 | 73 |
| 105S5VFS | 5 | 26 | 281 | 5.0 | 200 | 1.3 | 10 | 71 |
| 109S5VFS | 5 | 28 | 260 | 9.0 | 110 | 1.2 | 8 | 76 |
| 112S5VFS | 5 | 28 | 258 | 12.0 | 84 | 1.2 | 7 | 78 |
| 115S5VFS | 5 | 29 | 258 | 15.0 | 67 | 1.2 | 7 | 78 |
| 105D5VFS | 5 | 26 | 278 | ±5.0 | ±100 | 1.3 | 10 | 72 |
| 109D5VFS | 5 | 28 | 262 | ±9.0 | ±56 | 1.2 | 8 | 77 |
| 112D5VFS | 5 | 28 | 258 | ±12.0 | ±42 | 1.2 | 7 | 78 |
| 115D5VFS | 5 | 29 | 258 | ±15.0 | ±34 | 1.2 | 7 | 79 |
| 103S12VFS | 12 | 12 | 96 | 3.3 | 260 | 1.3 | 8 | 74 |
| 105S12VFS | 12 | 11 | 114 | 5.0 | 200 | 1.3 | 8 | 73 |
| 109S12VFS | 12 | 12 | 106 | 9.0 | 110 | 1.2 | 5 | 78 |
| 112S12VFS | 12 | 12 | 105 | 12.0 | 84 | 1.2 | 5 | 80 |
| 115S12VFS | 12 | 12 | 104 | 15.0 | 67 | 1.2 | 5 | 80 |
| 105D12VFS | 12 | 11 | 113 | ±5.0 | ±100 | 1.3 | 8 | 74 |
| 109D12VFS | 12 | 12 | 106 | ±9.0 | ±56 | 1.2 | 5 | 79 |
| 112D12VFS | 12 | 12 | 104 | ±12.0 | ±42 | 1.2 | 5 | 81 |
| 115D12VFS | 12 | 12 | 105 | ±15.0 | ±34 | 1.2 | 5 | 81 |
| 103S24VFS | 24 | 6 | 49 | 3.3 | 260 | 1.3 | 8 | 73 |
| 105S24VFS | 24 | 7 | 59 | 5.0 | 200 | 1.3 | 8 | 71 |
| 109S24VFS | 24 | 7 | 54 | 9.0 | 110 | 1.2 | 5 | 76 |
| 112S24VFS | 24 | 7 | 54 | 12.0 | 84 | 1.2 | 5 | 78 |
| 115S24VFS | 24 | 6 | 53 | 15.0 | 67 | 1.2 | 5 | 79 |
| 105D24VFS | 24 | 6 | 58 | ±5.0 | ±100 | 1.3 | 8 | 72 |
| 109D24VFS | 24 | 6 | 55 | ±9.0 | ±56 | 1.2 | 5 | 76 |
| 112D24VFS | 24 | 6 | 53 | ±12.0 | ±42 | 1.2 | 5 | 79 |
| 115D24VFS | 24 | 6 | 53 | ±15.0 | ±34 | 1.2 | 5 | 80 |

Pin Out - 100VFS Series

| Pin | Single Output | Dual Output |
|-----|----------------|--------------------|
| 1 | +V Input | +V Input |
| 2 | -V Input (Gnd) | -V Input (Gnd) |
| 5 | -V Output (0v) | -V Output |
| 6 | No Pin | Output Common (0v) |
| 7 | +V Output | +V Output |

Note: All dimensions are typical in inches (mm).
Tolerance: X.XX = ± 0.01, (± 0.25)
X.XXX = ± 0.002, (± 0.05)
The width of 24 VDC input models is 0.28 in (7.10 mm)

Mechanical Configurations



For Easy Ordering Use

