100FS Series

Key Features:

- Miniature Single-Inline Package (SIP)
- High Efficiency
- 11 Models
- 500 VDC Input/Output Isolation
- Single and Dual Outputs
- Requires Only 0.18 Square Inches of Board Space
- Low Cost

General Description

The **100FS** series is a family of cost effective 1W single & dual output DC/DC converters. These converters achieve low cost and ultra-miniature SIP size without compromising performance or field reliability. Taking up only 0.18 square inches of board space, they are ideal for innumerable board level power distribution applications where space is critical.

Eleven models operate from input bus voltages of 5 and 12 VDC; producing output voltage levels of 5, 9, 12, 15, ± 5, ± 12 or ± 15 VDC. High performance features include 500 VDC input/output isolation, high efficiency operation, and output voltage accuracy of ± 3.0%. Standard features include an input range of ± 5% tolerance and low output noise.

All models are packaged in ultra-miniature 0.76 x 0.24 x 0.37 inch single-inline package (SIP). Operation is specified over the full operating temperature range of -25°C to +71°C with no derating required. Cooling is by free-air convection.

Electrical Specifications

Input Specifications:

Input Voltage Range	±5%
Input Filter	Internal Capacitor
Reflected Ripple Current	See Model Selection Guide

Output Specifications:

Output Voltage Accuracy	±3%
Voltage Balance (Dual Outputs)	±1%
Ripple & Noise (20 MHz BW)	1% Pk-Pk, Max.
Line Regulation [1]	±1.2%/% change in Vin
Load Regulation [2]	±10%
Minimum Load	20%
Temperature Coefficient @ FL	±0.02%/°C
Transient Response [3]	<500 µSec.
Short Circuit Protection	Momentary

General Specifications:

Efficiency	See Model Selection Guide
Isolation Voltage (1 min)	500 VDC
Isolation Capacitance	60 pF
Isolation Resistance	$10^9\Omega$
Switching Frequency	<25 kHz

Environmental Specifications:

Operating Temperature Range (Ambient)	-25°C to +71°C
Storage Temperature Range	-55°C to +125°C
Derating	None Required
Humidity	Up to 95%, Non-condensing
Cooling	Free-air Convection

Physical Characteristics:

Size	0.76 x 0.24 x 0.37 inches (19.5 x 6.1 x 9.4 mm)
Weight	0.1 Oz (3g)
Case Material	Non-conductive Black Plastic

Absolute Maximum Ratings: [4]

Input Voltage	175% of Nominal Input Line
Output Short Circuit Duration	Momentary
Internal Power Dissipation	0.6W

All specifications are typical @ +25°C with nominal input voltage and under full output load conditions, unless otherwise noted. Specifications subject to change without notice.

Notes:

1. Line regulation is measured by monitoring the output voltage while the module input voltage is varied from low line to high line.
2. Load regulation is measured at nominal input voltage while the output load is varied from 20% load to full load. Dual output models are loaded equally.
3. Transient response is measured to within a 1% error band with a 25% step load change for single output units and a 50% load step for dual output units.
4. Absolute Maximum Ratings are specification limits that, if exceeded, could permanently damage the unit. These are not continuous operating ratings.

Application Notes:

1. Converters may be conFigured to produce different outputs (total power is limited to 1 watt). Please contact the factory for more information.
2. These units operate as complete converters with no need for external components. However, in some noise sensitive analog applications it is recommended that a 15 µF - 25V tantalum electrolytic capacitor be placed in parallel with a 0.1 µF ceramic capacitor as close to the load as possible. This will reduce ripple significantly.

* For information on the standard conditions and methods used or approved by **CDI** to test DC/DC converter parameters, see the application note "Testing DC/DC converters" on page 92.

MARTEK POWER

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Typical Applications:

- Mixed Analog/Digital Subsystems
- Portable Test Equipment
- Local Power Networks
- Battery Backed Systems
- General Purpose Board Level DC/DC Converter

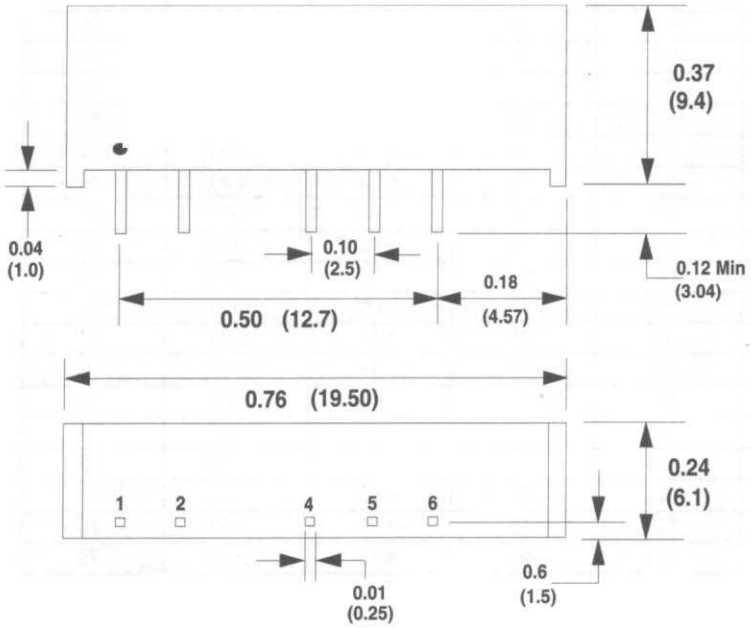
100FS Series

ULTRA-MINIATURE SINGLE-INLINE 1W SINGLE and DUAL OUTPUT ISOLATED DC/DC CONVERTERS

Model Selection Guide

Model Number	Input				Output		Efficiency @FL (%)
	Nominal Voltage (VDC)	Current (mA)		Reflected Ripple (mA P-P)	Voltage (VDC)	Current (mA)	
		No-Load	Full-Load				
105S5FS	5	27	298	34	5	200	67
109S5FS	5	27	256	30	9	111	78
112S5FS	5	20	256	28	12	83	78
115S5FS	5	35	256	28	15	66	78
105D5FS	5	25	298	26	±5	±100	67
112D5FS	5	30	282	25	±12	±41	71
115D5FS	5	32	250	24	±15	±33	80
105S12FS	12	12	123	12	5	200	67
112S12FS	12	12	109	10	12	83	76
112D12FS	12	12	120	12	±12	±41	69
115D12FS	12	12	109	12	±15	±33	76

Mechanical Configuration:



Pin-Out

Single Output

Pin	Description
1	+V Input (Vcc)
2	-V Input (GND)
4	N/C
5	-V Output
6	+V Output

Dual Output

Pin	Description
1	+V Input (Vcc)
2	-V Input (GND)
4	-V Output
5	Output Common (OV)
6	+V Output

Note: All dimensions are typical in inches (mm).
Tolerance X.XX = ± 0.02 (± 0.5)
X.XXX = ± 0.010 (± 0.25)
N/C = No Connection

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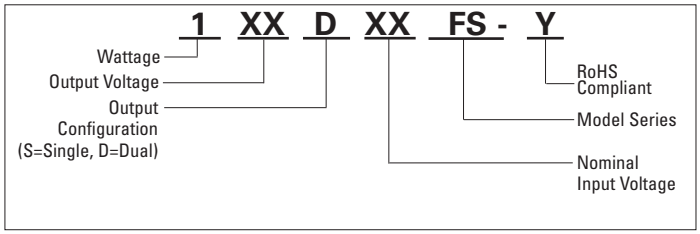
How To Order

How to Order



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