

# 100VFS series

## Single & Dual Output DC/DC Converter



### DESCRIPTIONS

The 100VFS 1 Watt DC/DC's are specially designed to provide ultra-high levels of isolation 3000VDC in a miniature SIP package. The series consists of 27 models with input voltages of 5V, 12V and 24V, and offers standard output voltages of 3.3V, 5V, 9V, 12V, 15V,  $\pm 5V$ ,  $\pm 9V$ ,  $\pm 12V$ , and  $\pm 15V$  for a wide choice.

The 100VFS series is an excellent selection for a variety of applications including distributed power systems, mixed analog/digital subsystems, portable test equipment, local power networks and battery backed systems.

### OUTPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Output Voltage Set Point	$\pm 1.0$	$\pm 3.0$		% Output voltage at nominal line & FL
Output Voltage Balance (Duals)	$\pm 0.1$	$\pm 1.0$		% Equal Output Loads
Line Regulation	$\pm 1.2$	$\pm 1.5$		%; % Change / Percentage change in Input voltage
Load Regulation	See Model Selection Guide			% Output voltage measured from FL to 20% load
Ripple/Noise		65	100	mV p-p, Nom.Line @FL, 20MHz B.W., using 1 $\mu$ f bypass capacitor
Ripple/Noise			150	mV p-p, Over Line, Load & Temp., 20 MHz B.W., using 1 $\mu$ f bypass capacitor
Overload Protection	120			%Rated Output Load
Short Circuit Protection			<0.5	Second, Momentary
Temperature Coefficient	$\pm 0.01$	$\pm 0.02$		% per degree C

### FEATURES

- High Isolation - 3000 VDC
- Up to 81 % Efficiency
- Single and Dual Output, 1 watt converter
- Available in 5, 12, and 24 VDC Inputs
- Miniature Package
- SMT Technology

### INPUT CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Input Voltage				
5 VDC Input Models	4.5	5	5.5	VDC
12 VDC Input Models	10.8	12	13.2	VDC
24 VDC Input Models	21.6	24	26.4	VDC
Input Fuse Requirements				
5 VDC Input Models		500		mA; Slow blow type
12 VDC Input Models		200		mA; Slow blow type
15 VDC Input Models		100		mA; Slow blow type
Reverse Polarity Input Current			0.3	Amp
Input Filter				Input Capacitor

### GENERAL CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Switching Frequency	70	100	120	kHz
Isolation Voltage	3000			VDC, 1 minute
Isolation Resistance	10,000			Mohm, 500VDC
Isolation Capacitance		60	100	pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	2			Million Hours, +25°C, Ground Benign

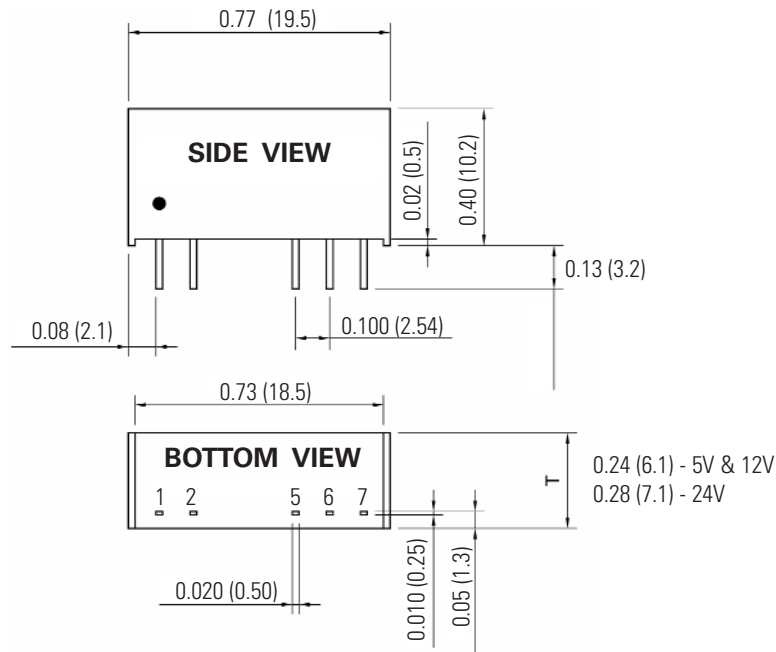
## ENVIRONMENTAL SPECIFICATIONS

	Min	Typ	Max	Unit/Comments
Operating Temp. Range	-25		+85	°C; Ambient
Storage Temp. Range	-40		+125	°C
Relative Humidity			+95	% Humidity; non-condensing
Cooling				Free-Air Convection

## PHYSICAL CHARACTERISTICS

		Unit/Comments
Case Size	5V & 12V Input	0.77 X 0.24 X 0.40 inches (19.5 X 6.1 X 10.2 mm)
	24V Input	0.77 X 0.28 X 0.40 inches (19.5 X 7.1 X 10.2 mm)
Case Material		Non-Conductive Black Plastic
Flammability		UL94V-0
Weight	5V & 12 V Input	2.2 Grams
	24V Input	2.6 Grams

## OUTLINE DRAWING



## PIN OUT CHART

Pins	Single	Dual
1	+ Vin	+ Vin
2	- Vin	- Vin
5	- Vout	- Vout
6	No Pin	Common
7	+ Vout	+ Vout

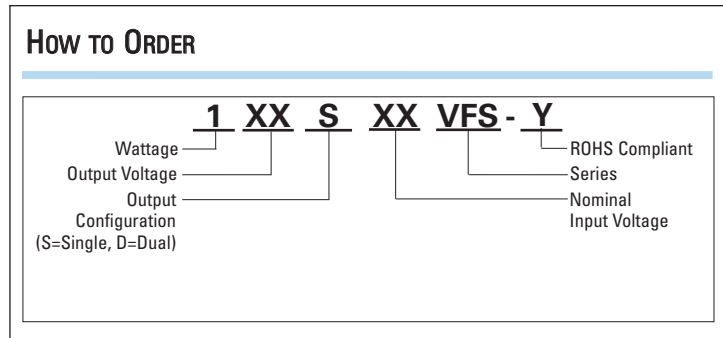
### Notes:

1. Unless otherwise specified dimensions are in inches (mm).

Tolerances	Inches	mm
	X.XX = ±0.02	X.X = ±0.5
	X.XXX = ±0.010	X.XX = ±0.25
Pin :	±0.002	±0.05

All specifications are typical at nominal input, nominal load and 25° C unless otherwise specified. External, low ESR, 10 microfarad (minimum) capacitor across input is recommended for operation.

## How To ORDER

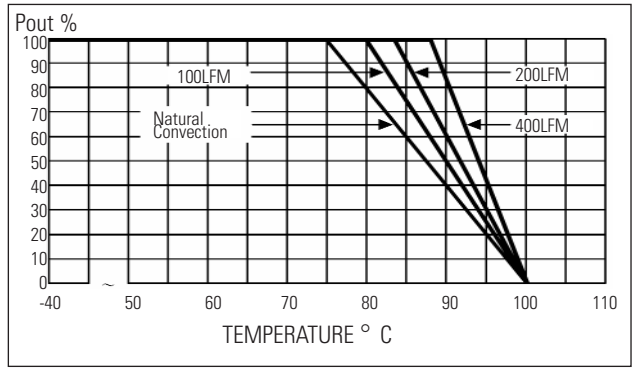


## MODEL SELECTION CHART

Model	Nominal Input Voltage (VDC)	Output Voltage (VDC)	Full Load Output Current (mA)	No Load Input Current (mA)	Full Load Input Current (mA)	Load Regulation Max. (%)	Efficiency @ FL (%)
103S5VFS	5	3.3	260	30	235	10	73
105S5VFS	5	5	200	30	281	10	71
109S5VFS	5	9	110	30	260	8	76
112S5VFS	5	12	84	30	258	7	78
115S5VFS	5	15	67	30	258	7	78
105D5VFS	5	±5	±100	30	278	10	72
109D5VFS	5	±9	±56	30	262	8	77
112D5VFS	5	±12	±42	30	258	7	78
115D5VFS	5	±15	±34	30	258	7	79
103S12VFS	12	3.3	260	12	96	8	74
105S12VFS	12	5	200	12	114	8	73
109S12VFS	12	9	110	12	106	5	78
112S12VFS	12	12	84	12	105	5	80
115S12VFS	12	15	67	12	104	5	80
105D12VFS	12	±5	±100	12	113	8	74
109D12VFS	12	±9	±56	12	106	5	79
112D12VFS	12	±12	±42	12	104	5	81
115D12VFS	12	±15	±34	12	105	5	81
103S24VFS	24	3.3	260	7	49	8	73
105S24VFS	24	5	200	7	59	8	71
109S24VFS	24	9	110	7	54	5	76
112S24VFS	24	12	84	7	54	5	78
115S24VFS	24	15	67	7	53	5	79
105D24VFS	24	±5	±100	7	58	8	72
109D24VFS	24	±9	±56	7	55	5	76
112D24VFS	24	±12	±42	7	53	5	79
115D24VFS	24	±15	±34	7	53	5	80

# DERATING CURVES

**MODEL 100VFS (3.3V, 5V & ±5V)**



**MODEL 100VFS (All other outputs)**

