

100VFS series



www.martekpower.com

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	± 1.0	± 3.0		% Output voltage at nominal line & FL
Output Voltage Balance (Duals)	± 0.1	± 1.0		% Equal Output Loads
Line Regulation	± 1.2	± 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 μ f bypass capacitor
Ripple/Noise			150	mV p-p, Over Line, Load & Temp., 20 MHz B.W., using 1 μ f bypass capacitor
Overload Protection	120			%Rated Output Load
Short Circuit Protection			<0.5	Second, Momentary
Temperature Coefficient	± 0.01	± 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

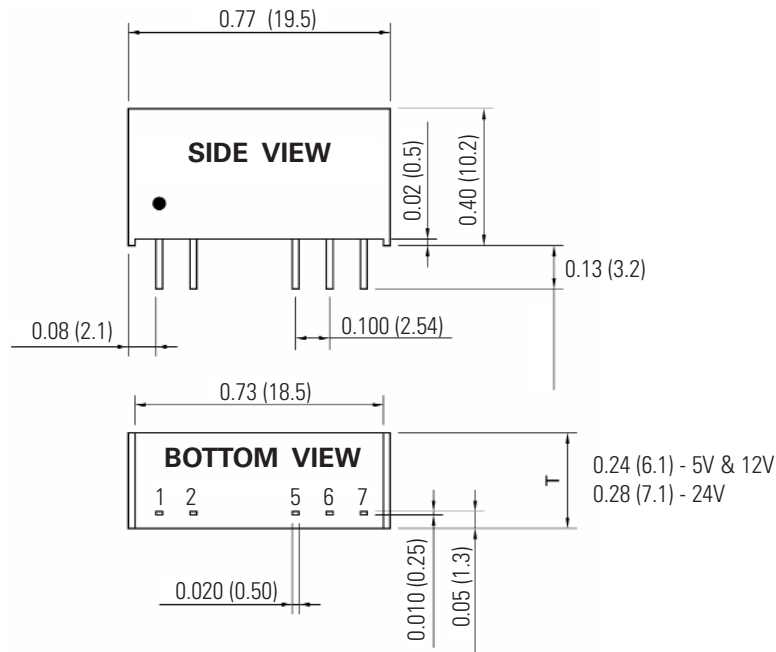
ENVIRONMENTAL SPECIFICATIONS

	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

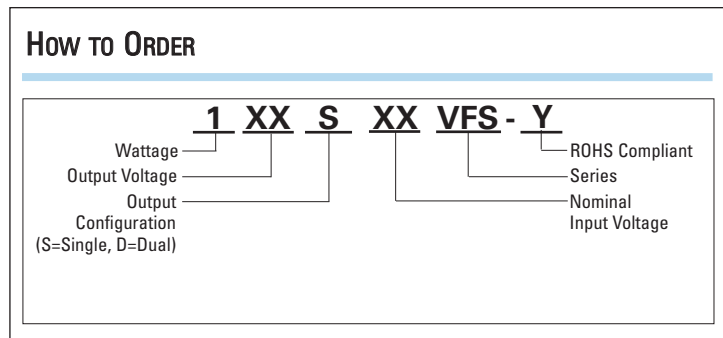
Notes:

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

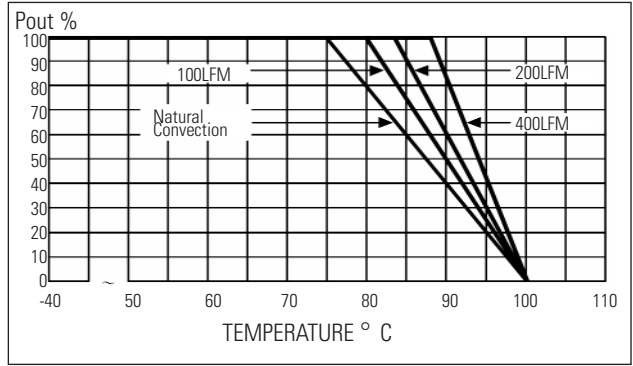


MODEL SELECTION CHART

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)

