

100WFS series

NEW Approved for New Designs



www.martekpower.com

Single & Dual Output DC/DC Converter



DESCRIPTIONS

The 100WFS 1 watt DC-DC converters are in “gull-wing” SMT packages. They can withstand lead temperatures up to +230°C and are compatible with contemporary pick-and-place and solder-reflow processes.

The series is an excellent selection for a wide variety of applications including data communication equipment, distributed power systems, telecommunication equipment, and industrial robot 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 Chart			% Output voltage measured from FL to 20% load
Ripple/Noise	60	120		mV p-p, Nom.Line @FL, 20MHz B.W., using 1 µf bypass capacitor
Ripple/Noise		150		mV p-p, Over Line, Load & Temp., 20 MHz B.W., using 1 µf 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

- SMT Technology
- 1000 VDC Input/Output Isolation
- High Efficiency
- Wide Operating Temperature Range
- Lead Frame Technology
- MTBF > 2,000,000 Hours
- Available on tape and reel

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
Input Fuse Requirements				
5 VDC Input Models		500		mA; Slow blow type
12 VDC Input Models		200		mA; Slow blow type
Reverse Polarity Input Current			0.3	A
Input Filter				Internal Capacitor

GENERAL CHARACTERISTICS

	Min	Typ	Max	Unit/Comments
Switching Frequency	50	100	140	kHz
Isolation Voltage	1000			VDC, 1 min.
Isolation Resistance	1000			Mohm, 500VDC
Isolation Capacitance		40	100	pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	2000			Thousand Hours, +25°C, Ground Benign

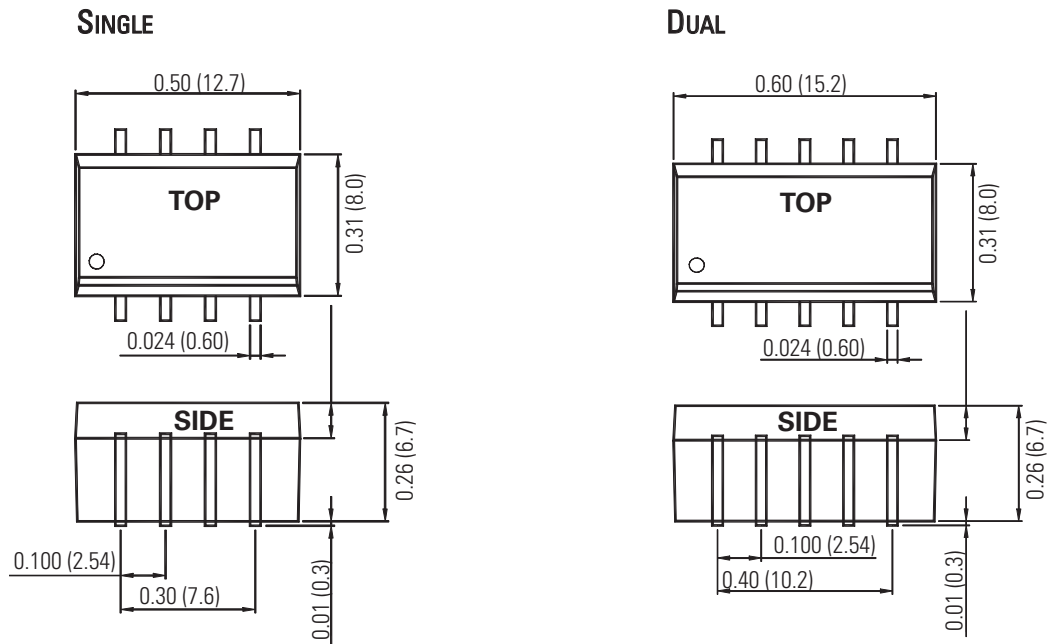
ENVIRONMENTAL SPECIFICATIONS

	Min	Typ	Max	Unit/Comments
Operating Temp. Range	-40		+85	°C; Ambient
Operating Temp. Range	-25		+90	°C; Case
Storage Temp. Range	-40		+125	°C
Relative Humidity			+95	% Humidity; non-condensing
Cooling				Free-Air Convection

PHYSICAL CHARACTERISTICS

	Unit/Comments
Case Size	
Single	0.50 X 0.31 X 0.27 inches (12.7 X 8.0 X 6.8 mm)
Dual	0.60 X 0.31 X 0.25 inches (15.24 X 8.0 X 6.5 mm)
Case Material	Non-conductive Black Plastic
Flammability	UL94V-0
Weight	
Single	1.5 Grams
Dual	1.9 Grams

OUTLINE DRAWING



PIN OUT CHART

Pins	Single	Dual
1	- Vin	- Vin
2	+ Vin	+ Vin
3	NC	NC
4	- Vout	Common
5	+ Vout	- Vout
6	NC	NC
7	NC	+ Vout
8	NC	NC
9	-	NC
10	-	NC

NC = No Connection

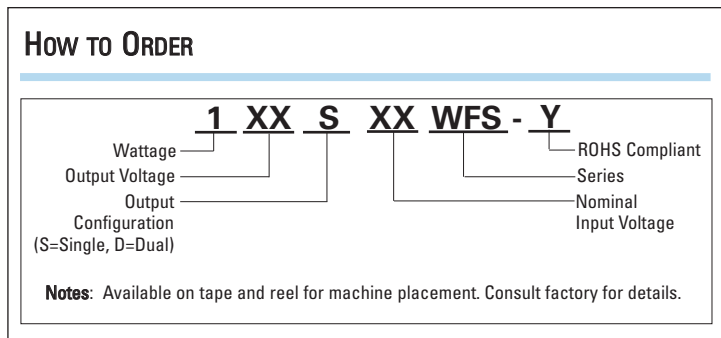
Notes:

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

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

How To ORDER



MODEL SELECTION CHART

Model	Nominal Input Voltage (VDC)	Input Voltage Range (VDC)	Output Voltage (VDC)	Max. Output Current (mA)	Efficiency @ FL (%)	Max. Load Regulation (%)
103S5WFS	5	4.5 - 5.5	3.3	300	75	10
105S5WFS	5	4.5 - 5.5	5.0	200	80	10
109S5WFS	5	4.5 - 5.5	9.0	110	78	10
112S5WFS	5	4.5 - 5.5	12.0	84	80	8
115S5WFS	5	4.5 - 5.5	15.0	67	81	7
105D5WFS	5	4.5 - 5.5	±5.0	±100	75	10
109D5WFS	5	4.5 - 5.5	±9.0	±55	76	10
112D5WFS	5	4.5 - 5.5	±12.0	±42	79	8
115D5WFS	5	4.5 - 5.5	±15.0	±33	79	7
105S12WFS	12	10.8 - 13.2	5.0	200	81	8
109S12WFS	12	10.8 - 13.2	9.0	110	78	8
112S12WFS	12	10.8 - 13.2	12.0	84	81	5
115S12WFS	12	10.8 - 13.2	15.0	67	82	5
105D12WFS	12	10.8 - 13.2	±5.0	±100	75	8
109D12WFS	12	10.8 - 13.2	±9.0	±55	76	8
112D12WFS	12	10.8 - 13.2	±12.0	±42	80	5
115D12WFS	12	10.8 - 13.2	±15.0	±33	80	5

DERATING CURVES

MODEL 100WFS

