

# 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	1100			VDC, 1 sec
Isolation Resistance	1000			Mohm, 500VDC
Isolation Capacitance		40	100	pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	2000			Thousand Hours, +25°C, Ground Benign

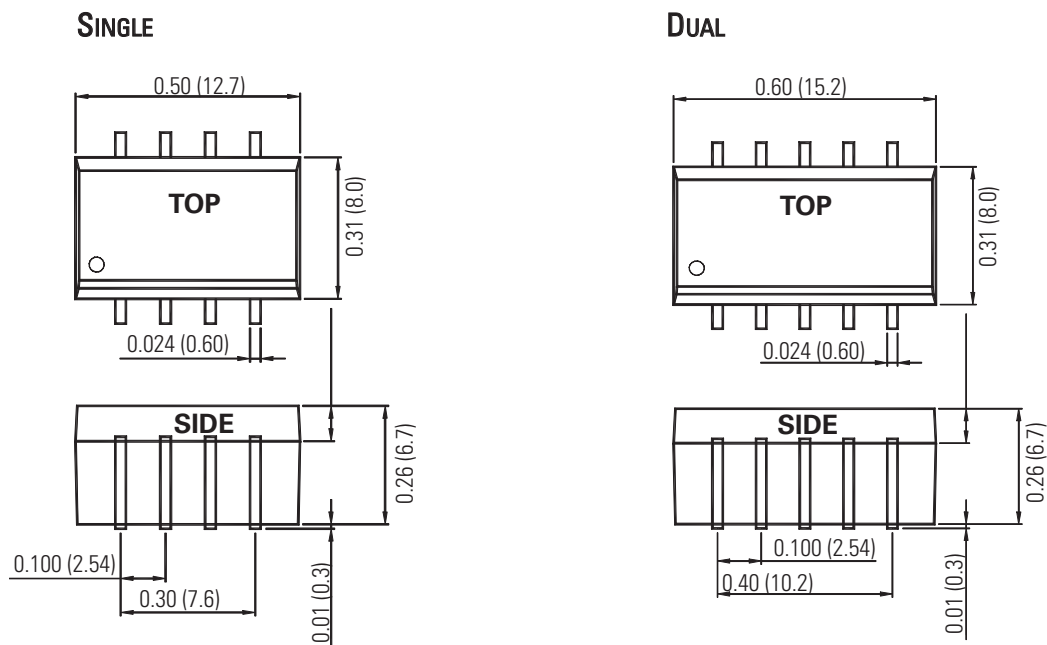
## ENVIRONMENTAL SPECIFICATIONS

	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

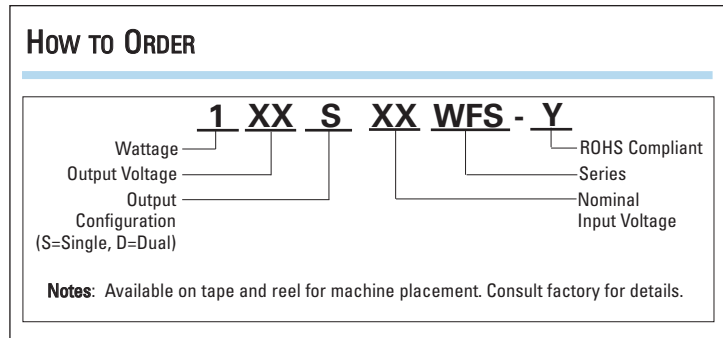
### Notes:

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**

