



200WFS series

Single & Dual Output DC/DC Converter



DESCRIPTIONS

The 200WFS series is a family of cost effective 2 watt single and dual output DC/DC converters in ultra-miniature "gull-wing" SMT packages. 13 models operate from input bus voltages of 5V, 12V and 24V; producing output voltage levels of 5V, 12V, $\pm 5V$, $\pm 12V$ and $\pm 15V$ for a wide choice.

The 200WFS series is ideal 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	± 1.5	± 4.0		% 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			Measured from Full Load to 20% load
Ripple/Noise	100	120		mV p-p, Nom.Line @FL, 20MHz B.W., using 1 μ F bypass capacitor
Ripple/Noise		200		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
Temperature Coefficient	± 0.01	± 0.02		% per degree C

FEATURES

- Miniature "Gull-wing" SMT Package
- 1000 VDC Input/Output Isolation
- High Efficiency
- Wide Operating Temperature Range
- MTBF > 2,000,000 Hours
- Low Cost

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		1000		mA; Slow blow type
12 VDC Input Models		500		mA; Slow blow type
24 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	120	kHz
Isolation Voltage	1000			VDC, 60 sec
Isolation Resistance	1000			Mohm, 500VDC
Isolation Capacitance		60	120	pF, 100kHz, 1Volt
MTBF (MIL-HBK-217F)	2000			Thousand Hours, +25°C, Ground Benign



ENVIRONMENTAL SPECIFICATIONS

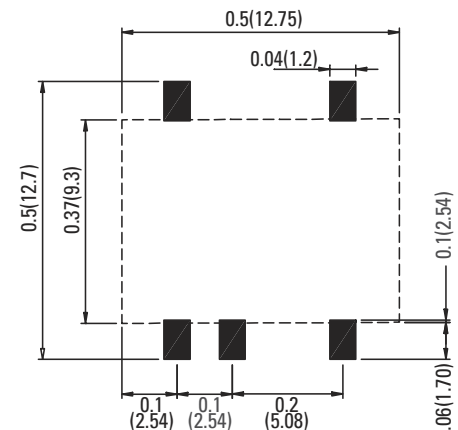
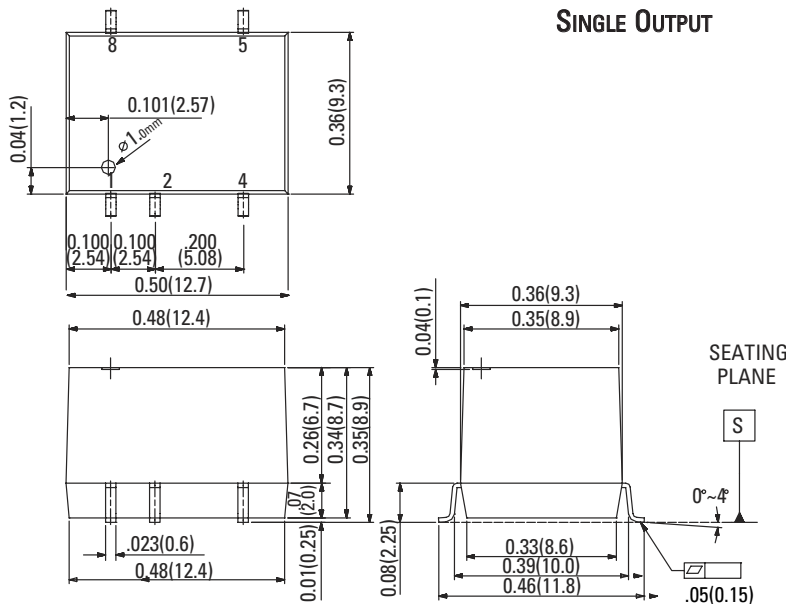
	Min	Typ	Max	Unit/Comments
Operating Temp. Range	-40		+85	°C; Ambient
Operating Temp. Range	-40		+90	°C; Case
Storage Temp. Range	-40		+125	°C
Relative Humidity			95	% Humidity; non-condensing
Cooling				Free-Air Convection

PHYSICAL CHARACTERISTICS

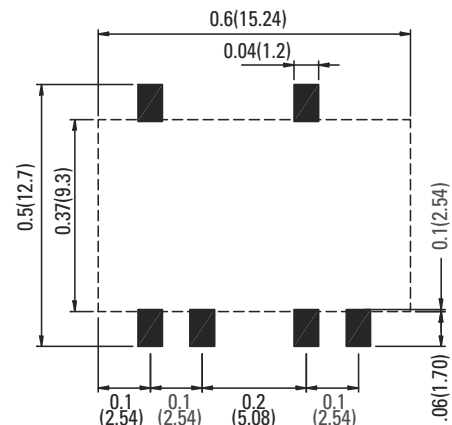
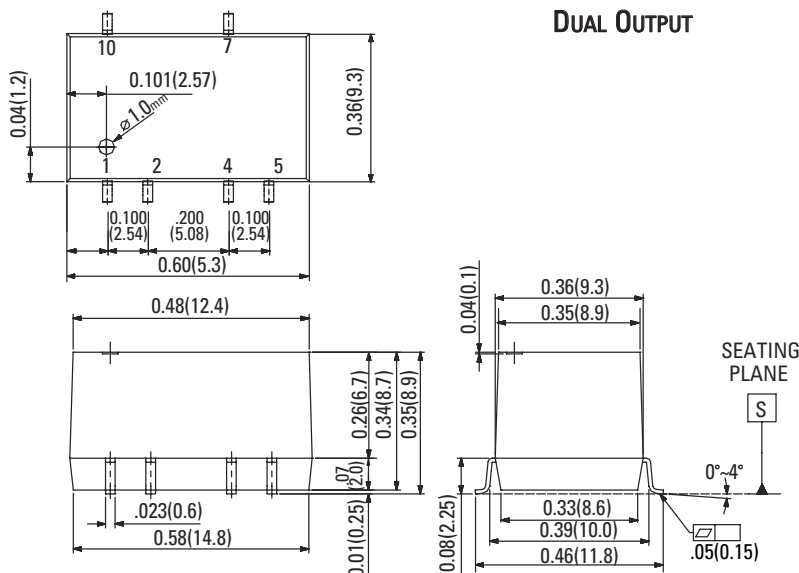
	Unit/Comments
Case Size (Single)	0.50 X 0.36 X 0.35 inches (12.8 X 9.3 X 8.9 mm)
Case Size (Dual)	0.60 X 0.36 X 0.35 inches (15.3 X 9.3 X 8.9 mm)
Case Material	Molding
Flammability	UL94V-0
Weight	1.5 Grams (Single) 2.2 Grams (Dual)

OUTLINE DRAWING

SINGLE OUTPUT



DUAL OUTPUT



Notes:

1. Unless otherwise specified dimensions are in inch (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.

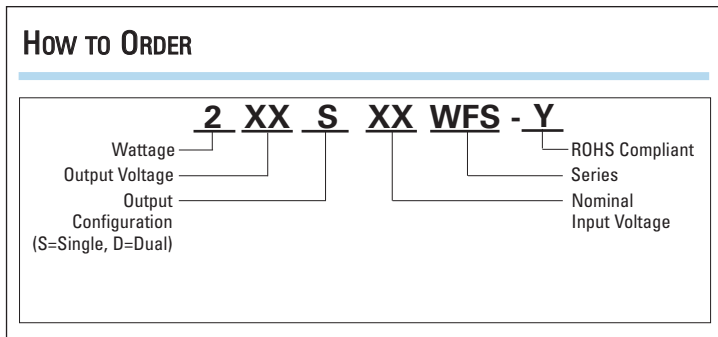
External, low ESR, 10 microfarad (minimum) capacitor across output is recommended for operation.

PIN OUT CHART

Pins	Single	Dual
1	- Vin	- Vin
2	+ Vin	+ Vin
4	- Vout	Common
5	+ Vout	- Vout
7	No Pin	+ Vout
8	NA	No Pin
10	No Pin	NA



How To ORDER



MODEL SELECTION CHART

Model	Nominal Input Voltage (VDC)	Output Voltage (VDC)	Min. Output Current (mA)	FL Output Current (mA)	No Load Input Current (mA)	FL Input Current (mA)	Efficiency @ FL (%)	Max. Load Regulation (%)
205S5WFS	5	5	8	400	60	519	77	11
212S5WFS	5	12	3	165	60	488	81	11
205S12WFS	12	5	8	400	30	213	78	8
212S12WFS	12	12	3	165	30	201	82	5
205S24WFS	24	5	8	400	15	106	78	8
212S24WFS	24	12	3	165	15	101	81	5
205D5WFS	5	±5	±4	±200	60	519	77	10
212D5WFS	5	±12	±1.5	±83	60	504	79	7
215D5WFS	5	±15	±1	±66	60	501	79	7
212D12WFS	12	±12	±1.5	±83	30	202	82	5
215D12WFS	12	±15	±1	±66	30	201	82	5
212D24WFS	24	±12	±1.5	±83	15	102	81	5
215D24WFS	24	±15	±1	±66	15	100	82	5



DERATING CURVES

