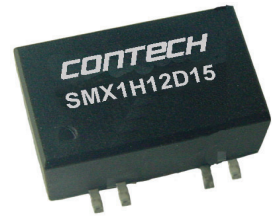


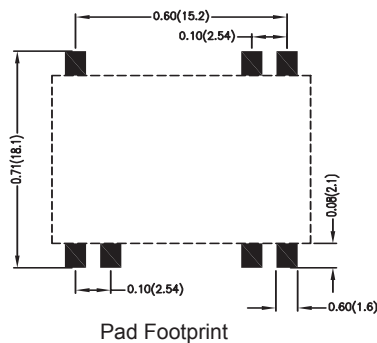
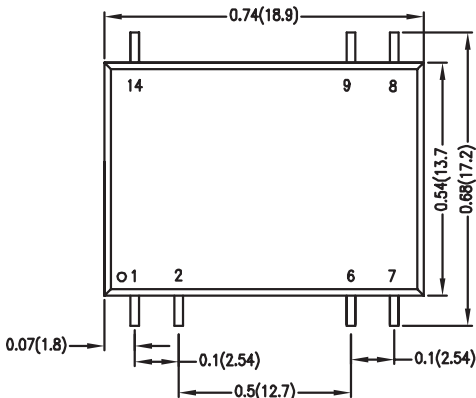
# 1 Watt SMX Single and Dual Series



- Efficiency up to 82%
- 1500VDC Isolation
- Remote On/Off
- MTBF > 2,000,000 Hours
- CSA 60950 (Pending)
- RoHS Compliant



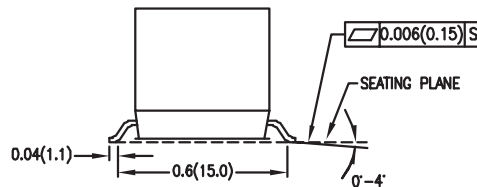
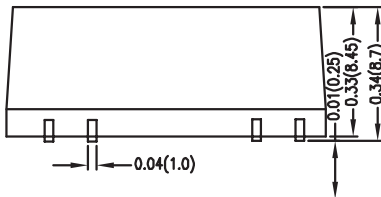
Model Number	Voltage			Current			Reflected Ripple	Input Overvoltage (1000ms)	Efficiency	Capacitive Load
	Input		Output	Input		Output				
	Nom. (VDC)	Range (VDC)	(VDC)	@ No Load (mA)	@ Max Load (mA)	Max (mA)				
SMX1H5S5	5	4.5 - 9	5	40	256	200	80	15	78	1680 $\mu$ F
SMX1H5S12	5	4.5 - 9	12	40	252	83	80	15	79	820 $\mu$ F
SMX1H5S15	5	4.5 - 9	15	40	248	67	80	15	81	680 $\mu$ F
SMX1H5D12	5	4.5 - 9	$\pm$ 12	40	255	$\pm$ 42	80	15	79	470 $\mu$ F
SMX1H5D15	5	4.5 - 9	$\pm$ 15	40	248	$\pm$ 33	80	15	80	330 $\mu$ F
SMX1H12S5	12	9 - 18	5	20	105	200	40	25	79	1680 $\mu$ F
SMX1H12S12	12	9 - 18	12	20	105	83	40	25	79	820 $\mu$ F
SMX1H12S15	12	9 - 18	15	20	102	67	40	25	82	680 $\mu$ F
SMX1H12D12	12	9 - 18	$\pm$ 12	20	104	$\pm$ 42	40	25	81	470 $\mu$ F
SMX1H12D15	12	9 - 18	$\pm$ 15	20	103	$\pm$ 33	40	25	80	330 $\mu$ F
SMX1H24S5	24	18 - 36	5	10	53	200	30	50	79	1680 $\mu$ F
SMX1H24S12	24	18 - 36	12	10	51	83	30	50	82	820 $\mu$ F
SMX1H24S15	24	18 - 36	15	10	51	67	30	50	82	680 $\mu$ F
SMX1H24D12	24	18 - 36	$\pm$ 12	10	51	$\pm$ 42	30	50	82	470 $\mu$ F
SMX1H24D15	24	18 - 36	$\pm$ 15	10	50	$\pm$ 33	30	50	82	330 $\mu$ F
SMX1H48S5	48	36 - 75	5	7	26	200	20	100	79	1680 $\mu$ F
SMX1H48S12	48	36 - 75	12	7	26	83	20	100	80	820 $\mu$ F
SMX1H48S15	48	36 - 75	15	7	26	67	20	100	80	680 $\mu$ F
SMX1H48D12	48	36 - 75	$\pm$ 12	7	26	$\pm$ 42	20	100	81	470 $\mu$ F
SMX1H48D15	48	36 - 75	$\pm$ 15	7	25	$\pm$ 33	20	100	81	330 $\mu$ F



Dimensions are inches (mm) unless noted

Tolerance: Inches	Millimeters
X.XX $\pm$ 0.01	X.X $\pm$ 0.25
X.XXX $\pm$ 0.005	X.XX $\pm$ 0.13
Pin	$\pm$ 0.002 $\pm$ 0.05

Pin Connections (NC) Not Connected		
Pin	Single	Dual
1	-Vin	-Vin
2	Remote On/Off	Remote On/Off
6	NC	Common
7	NC	-Vout
8	+Vout	+Vout
9	-Vout	Common
14	+Vin	+Vin



See Model Selection Table for Model Specific Parameters

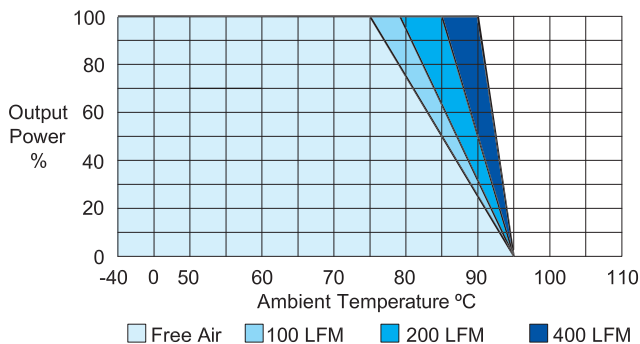
Input Parameters	Min	Typ	Max	Units
Start Voltage 5 Vin 12 Vin 24 Vin 48 Vin			4.5 9 18 36	VDC
Switching Frequency		220		kHz
Input Filter	Internal Capacitor			
Output Parameters	Min	Typ	Max	Units
Output Voltage Accuracy @ 50% Load and Nom Vin			±1.0	%
Load Regulation Io = 10% to 90%		Single Dual	±0.5 ±0.8	%
Line Regulation Vin = Min to Max			±0.2	%
Ripple & Noise (20MHz)		30		mV P-P
Transient Recovery Time 25% Step Load Change		250		µsec
Temperature Coefficient			±0.02	% / °C
Short Circuit Protection	Continuous			
General Specifications	Min	Typ	Max	Units
Isolation Voltage, 60 seconds	1500			VDC
Isolation Resistance 500VDC	1000			Mohms
Isolation Capacitance, 100kHz, 1V			50	pF
Operating Temperature (Ambient)	-40		+85	°C
Storage Temperature	-55		+125	°C
Humidity			95	%
MTBF MIL-HDBK-217F @25°C, Ground Benign	2800			K Hours
Moisture Sensitivity Level (MLS) Temperature	IPC/JEDEC J-STD-20 Level 2			
Cooling	Free-Air Convection			
Case Size	0.74 x 0.54 x 0.34 inches 18.9 x 13.7 x 8.7 mm			
Case Material	Non Conductive Black Plastic (UL94V-0)			
Weight	4.5g			
Agency Approval	CSA 60950-1 (Pending)			

Remote On/Off	Min	Typ	Max	Units
Converter On	Open or High Impedance			
Converter Off	2 - 4mA current applied via 1kΩ resistor			
Device Standby Input Current		2.5		mA

Notes:

- Specifications typical at Ta=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.
- ConTech power converters require a minimum output loading to maintain specified regulation. Operation under no-load conditions will not damage these modules; however, they may not meet all specifications listed.
- The series has a limitation of a maximum connected capacitance at the output. The power module may be operated in current limiting mode during start-up, affecting the ramp-up and the startup time.
- When measuring peak-to-peak output noise, use a Cout 0.33µF ceramic capacitor. Scope measurement should be made by using a BNC socket, measurement bandwidth is 0-20MHz. Position the load between 2" and 2.5" from the converter.
- Water washability - It is not recommended to use water-washing process on SMH models.
- See ConTech website for Definition of Terms, Application Notes, and Test Setups and Parameters. [www.ConTech-us.com/appnotes.html](http://www.ConTech-us.com/appnotes.html).
- Specifications subject to change without notice.
- See ConTech website [www.ConTech-us.com/pdf/RoHS.pdf](http://www.ConTech-us.com/pdf/RoHS.pdf) for RoHS Statement.

Derating Curve



To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 85°C.

Input Fuse Selection Table	
5V Input	500 mA Slow-Blow
12V Input	250 mA Slow-Blow
24V Input	120 mA Slow-Blow
48V Input	60 mA Slow-Blow

External fusing should be used for system protection due to a catastrophic failure. See ConTech website for Fusing Application Notes to determine the correct fuse.

