

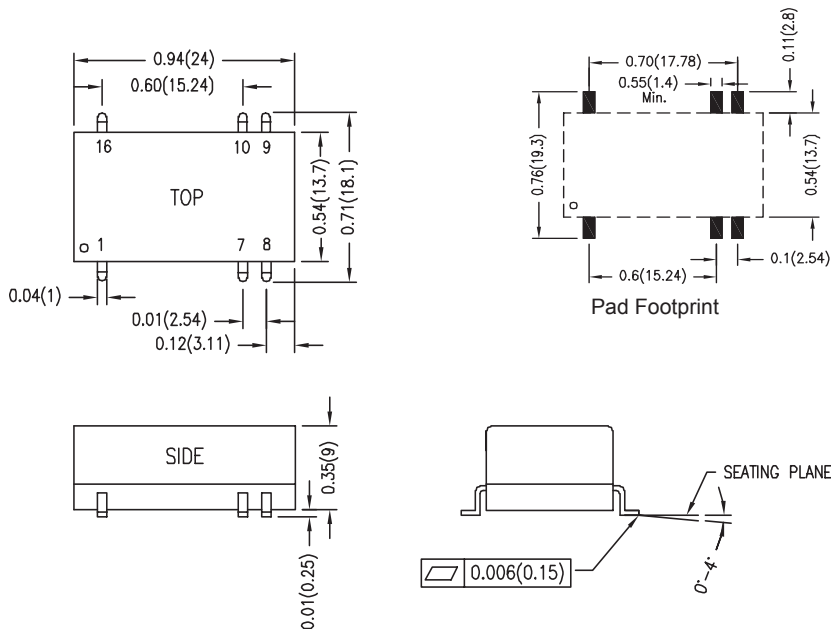
2 Watt SMP Single and Dual Series



- Efficiency up to 75%
- 4000VAC Isolation
- MTBF > 2,000,000 Hours
- UL 60950 and UL60601 Approved
- RoHS Compliant



Model Number	Voltage			Current				Load Regulation % (Max)	Input Overvoltage (1000ms) Max (VDC)	Efficiency @ Max Load (%) Typ)	Capacitive Load Max (Dual each output)
	Input		Output	Input		Output					
	Nom. (VDC)	Range (VDC)	(VDC)	@ No Load (mA)	@ Max Load (mA)	Min (mA)	Max (mA)				
SMP2L5S5	5	4.5 - 5.5	5	60	606	8	400	12	9	66	330 μ F
SMP2L5S12	5	4.5 - 5.5	12	60	600	3	165	10	9	66	330 μ F
SMP2L5S15	5	4.5 - 5.5	15	60	605	2.5	133	10	9	66	330 μ F
SMP2L5D12	5	4.5 - 5.5	\pm 12	60	553	\pm 1.5	\pm 83	10	9	72	100 μ F
SMP2L5D15	5	4.5 - 5.5	\pm 15	60	542	\pm 1	\pm 66	10	9	73	100 μ F
SMP2L12S5	12	10.8 - 13.2	5	30	253	8	400	12	18	66	330 μ F
SMP2L12S12	12	10.8 - 13.2	12	30	250	3	165	10	18	66	330 μ F
SMP2L12S15	12	10.8 - 13.2	15	30	252	2.5	133	10	18	66	330 μ F
SMP2L12D12	12	10.8 - 13.2	\pm 12	30	224	\pm 1.5	\pm 83	10	18	74	100 μ F
SMP2L12D15	12	10.8 - 13.2	\pm 15	30	220	\pm 1	\pm 66	10	18	75	100 μ F
SMP2L24S5	24	21.6 - 26.4	5	15	126	8	400	12	30	66	330 μ F
SMP2L24S12	24	21.6 - 26.4	12	15	125	3	165	10	30	66	330 μ F
SMP2L24S15	24	21.6 - 26.4	15	15	126	2.5	133	10	30	66	330 μ F
SMP2L24D12	24	21.6 - 26.4	\pm 12	15	112	\pm 1.5	\pm 83	10	30	74	100 μ F
SMP2L24D15	24	21.6 - 26.4	\pm 15	15	110	\pm 1	\pm 66	10	30	75	100 μ 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

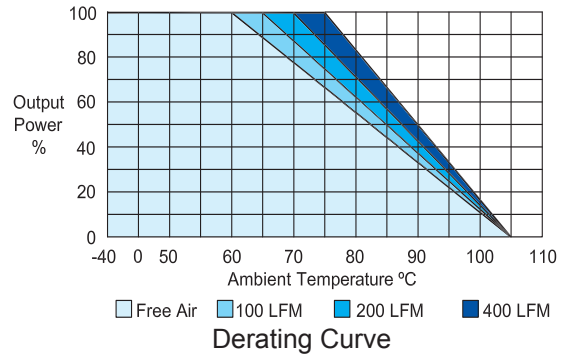
Pin Connections		
Pin	Single	Dual
1	-Vin	-Vin
7	NC	NC
8	NC	Common
9	+Vout	+Vout
10	-Vout	-Vout
16	+Vin	+Vin

See Model Selection Table for Model Specific Parameters

Input Parameters	Min	Typ	Max	Units
Reverse Polarity Input Current			0.3	A
Switching Frequency	50	80	100	kHz
Input Filter	Internal Capacitor			
Output Parameters	Min	Typ	Max	Units
Output Voltage Accuracy		±2.0	±4.0	%
Output Voltage Balance Dual Output, Balanced Loads		±0.1	±1.0	%
Load Regulation I _o = 20% to 100%	See Model Selection Guide			%
Line Regulation for V _{in} Change of 10%		±1.2	±1.5	%
Ripple & Noise (20MHz)		100	150	mV P-P
Ripple & Noise (20 MHz) Over Line, Load & Temp			200	mV P-P
Ripple & Noise (20 MHz)			15	mV RMS
Temperature Coefficient		±0.01	±0.02	% / °C
Short Circuit Protection	0.5 Second Max			
General Specifications	Min	Typ	Max	Units
Isolation Voltage, 60 seconds	4000			VAC
Isolation Resistance 500VDC	10			Gohms
Isolation Capacitance, 100kHz, 1V		15	20	pF
Operating Temperature (Ambient)	-25		+60	°C
Storage Temperature	-40		+125	°C
Humidity			95	%
MTBF MIL-HDBK-217F @25°C, Ground Benign	2000			K Hours
Leadfree Reflow Solder Process	IPC/JEDEC J-STD-020C peak temp. 245°C/10 sec.			
Moisture Sensitivity Level (MLS) Temperature	IPC/JEDEC J-STD-20 Level 2			
Cooling	Free-Air Convection			
Case Size	0.94 x 0.54 x 0.35 inches 24.0 x 13.7 x 9.0 mm			
Case Material	Non Conductive Black Plastic (UL94V-0)			
Weight	3.75g			
Agency Approvals	UL60950 & UL60601 Approved			

Notes:

1. Specifications typical at Ta=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.
2. 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.
3. 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.
4. When measuring peak-to-peak output noise, use a Cout 0.47µF 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.
5. Water washability - It is not recommended to use water-washing process on SMP models.
6. See ConTech website for Definition of Terms, Application Notes, and Test Setups and Parameters. www.ConTech-us.com/appnotes.html.
7. Specifications subject to change without notice.
8. See ConTech website www.ConTech.com/pdf/RoHS.pdf for RoHS Statement.



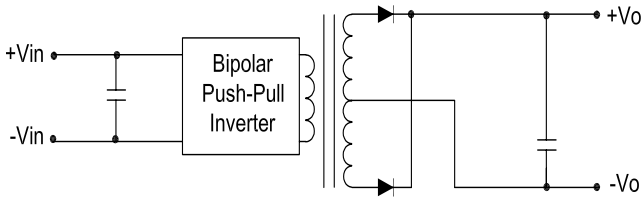
To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 90°C.

Input Fuse Selection Table	
5V Input	1000 mA Slow-Blow
12V Input	500 mA Slow-Blow
24V Input	200 mA Slow-Blow

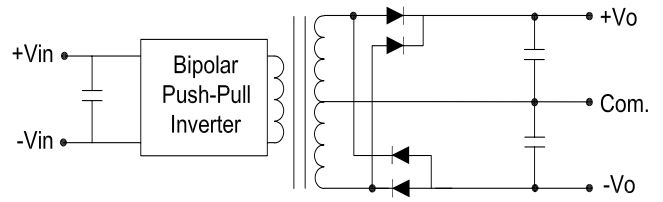
External fusing should be used for system protection due to a catastrophic failure. See ConTech website for Fusing Application Notes to determine the correct fuse.



Block Diagrams



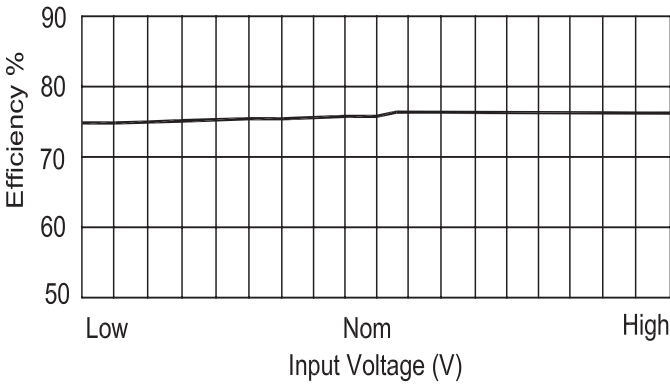
Single Output Block Diagram



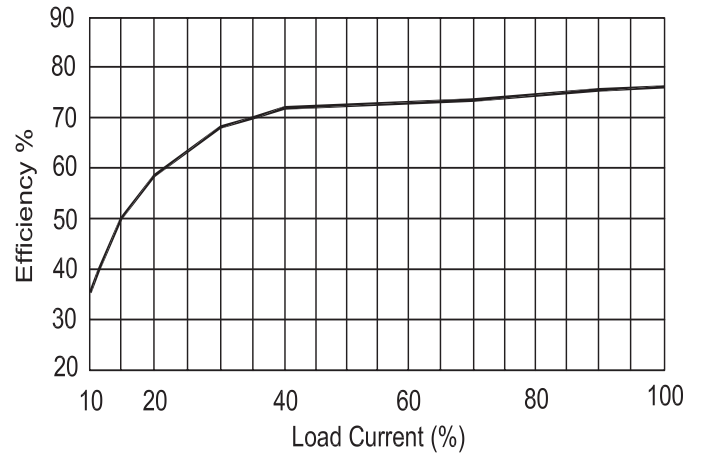
Dual Output Block Diagram

Efficiency Curves

Single Output

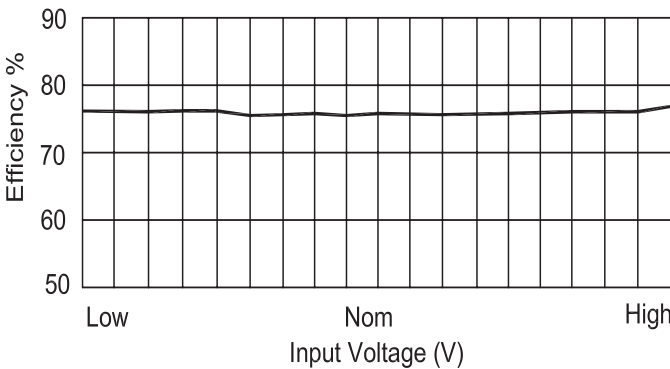


Efficiency vs Input Voltage

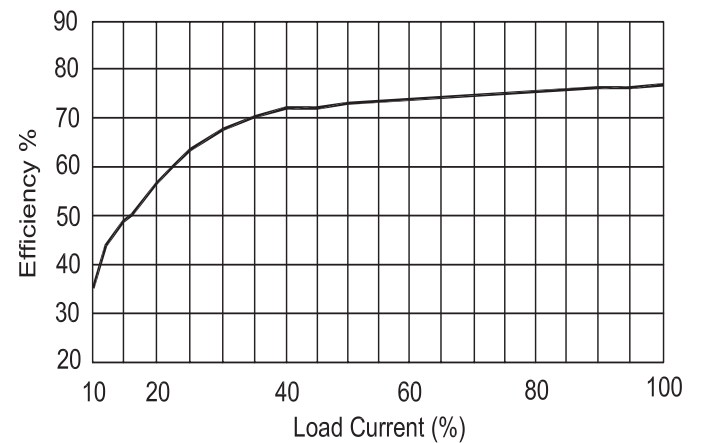


Efficiency vs Output Load

Dual Output



Efficiency vs Input Voltage



Efficiency vs Output Load