

- Efficiency up to 80%
- 1500VDC Isolation
- MTBF > 2,000,000 Hours
- RoHS Compliant

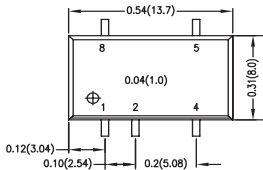


1 Watt SMJ

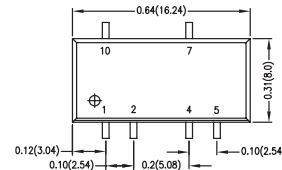
Single and Dual Series



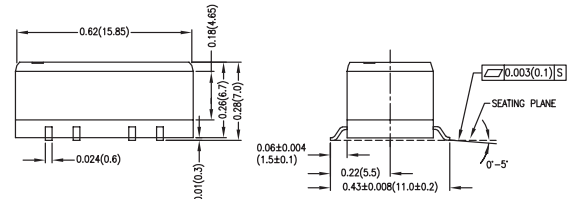
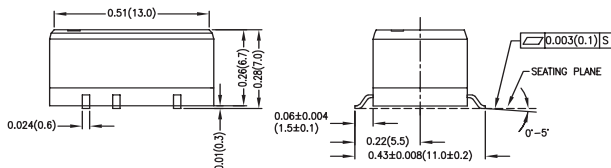
Model Number	Voltage			Current				Load Regulation	Input Overvoltage (1000ms)	Efficiency	Capacitive Load
	Input		Output	Input		Output					
	Nom. (VDC)	Range (VDC)	(VDC)	@ No Load (mA)	@ Max Load (mA)	Min (mA)	Max (mA)	% (Max)	Max (VDC)	@ Max Load (% Typ)	Max (Dual each output)
SMJ1H5S3R3	5	4.5 - 5.5	3.3	30	271	6	300	10	9	73	33 μ F
SMJ1H5S5	5	4.5 - 5.5	5	30	256	4	200	10	9	78	33 μ F
SMJ1H5S9	5	4.5 - 5.5	9	30	254	2	110	10	9	78	33 μ F
SMJ1H5S12	5	4.5 - 5.5	12	30	259	1.5	84	8	9	78	33 μ F
SMJ1H5S15	5	4.5 - 5.5	15	30	254	1	67	7	9	79	33 μ F
SMJ1H5D5	5	4.5 - 5.5	$\pm$ 5	30	270	$\pm$ 2	$\pm$ 100	10	9	74	33 μ F
SMJ1H5D12	5	4.5 - 5.5	$\pm$ 12	30	259	$\pm$ 0.8	$\pm$ 42	8	9	78	33 μ F
SMJ1H5D15	5	4.5 - 5.5	$\pm$ 15	30	254	$\pm$ 0.7	$\pm$ 33	7	9	78	33 μ F
SMJ1H12S3R3	12	10.8 - 13.2	3.3	15	112	6	300	8	18	74	33 μ F
SMJ1H12S5	12	10.8 - 13.2	5	15	109	4	200	8	18	76	33 μ F
SMJ1H12S9	12	10.8 - 13.2	9	15	106	2	110	8	18	78	33 μ F
SMJ1H12S12	12	10.8 - 13.2	12	15	106	1.5	84	5	18	79	33 μ F
SMJ1H12S15	12	10.8 - 13.2	15	15	105	1	67	5	18	80	33 μ F
SMJ1H12D5	12	10.8 - 13.2	$\pm$ 5	15	113	$\pm$ 2	$\pm$ 100	8	18	74	33 μ F
SMJ1H12D12	12	10.8 - 13.2	$\pm$ 12	15	108	$\pm$ 0.8	$\pm$ 42	5	18	78	33 μ F
SMJ1H12D15	12	10.8 - 13.2	$\pm$ 15	15	104	$\pm$ 0.7	$\pm$ 33	5	18	79	33 μ F
SMJ1H15S12	15	13.5 - 16.5	12	14	86	1.5	84	5	20	78	33 μ F
SMJ1H15S15	15	13.5 - 16.5	15	14	86	1	67	5	20	78	33 μ F
SMJ1H24S3R3	24	21.6 - 26.4	3.3	8	58	6	300	8	30	72	33 μ F
SMJ1H24S5	24	21.6 - 26.4	5	8	54	4	200	8	30	78	33 μ F
SMJ1H24S9	24	21.6 - 26.4	9	8	54	2	110	8	30	77	33 μ F
SMJ1H24S12	24	21.6 - 26.4	12	8	55	1.5	84	5	30	77	33 μ F
SMJ1H24S15	24	21.6 - 26.4	15	8	53	1	67	5	30	79	33 μ F
SMJ1H24D5	24	21.6 - 26.4	$\pm$ 5	9	57	$\pm$ 2	$\pm$ 100	8	30	73	33 μ F
SMJ1H24D12	24	21.6 - 26.4	$\pm$ 12	9	54	$\pm$ 0.8	$\pm$ 42	5	30	78	33 μ F
SMJ1H24D15	24	21.6 - 26.4	$\pm$ 15	9	53	$\pm$ 0.7	$\pm$ 33	5	30	78	33 μ F



Single Output Case



Dual Output Case



Pin Connections (NC) Not Connected		
Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
4	-Vout	Common
5	+Vout	-Vout
7	No Pin	+Vout
8	NC	No Pin
10	No Pin	NC

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

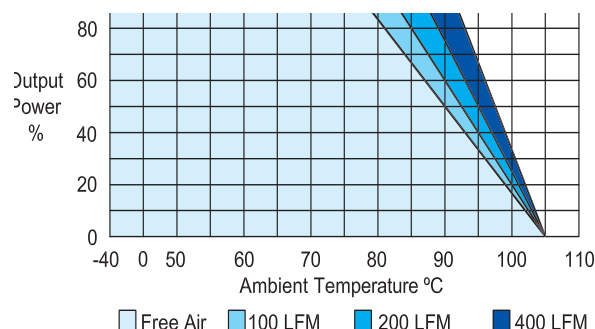
Pin $\pm$ 0.002 $\pm$ 0.05

See Model Selection Table for Model Specific Parameters

Input Parameters	Min	Typ	Max	Units
Reverse Polarity Input Current			0.3	A
Switching Frequency	50	100	140	kHz
Input Filter	Internal Capacitor			
Output Parameters	Min	Typ	Max	Units
Output Voltage Balance Dual Output, Balanced Loads		±0.1	±1.0	%
Load Regulation Io = 20% to 100%	See Model Selection Guide			%
Line Regulation for Vin Change of 1%		±1.2	±1.5	%
Ripple & Noise (20MHz)		60	120	mV P-P
Ripple & Noise (20 MHz) Over Line, Load & Temp			150	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	1500			VDC
Isolation Resistance 500VDC	1000			Mohms
Isolation Capacitance, 100kHz, 1V		40	100	pF
Operating Temperature (Ambient)	-40		+75	°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	Single Output	0.54 x 0.31 x 0.26 inches 13.7 x 8.0 x 6.7 mm		
	Dual Output	0.64 x 0.31 x 0.26 inches 16.24 x 8.0 x 6.7 mm		
Case Material	Non Conductive Black Plastic (UL94V-0)			
Weight	Single Output	1.7g		
	Dual Output	2.0g		

Notes:

- Specifications typical at $T_a = +25^\circ\text{C}$, 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 0.33 μF 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 SMJ models.
- See ConTech website for Definition of Terms, Application Notes, and Test Setups and Parameters. www.ConTech-us.com/appnotes.html.
- Specifications subject to change without notice.
- See ConTech website www.ConTech-us.com/pdf/rohs.pdf for RoHS Statement.



Derating Curve

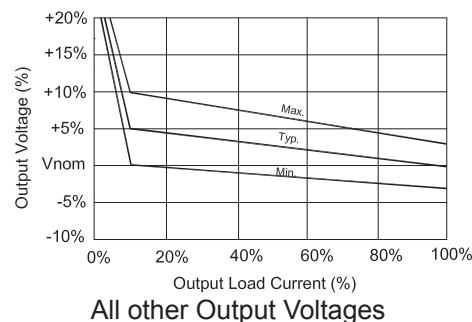
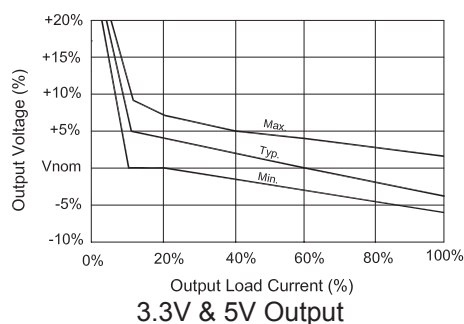
To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 90°C.

Input Fuse Selection Table

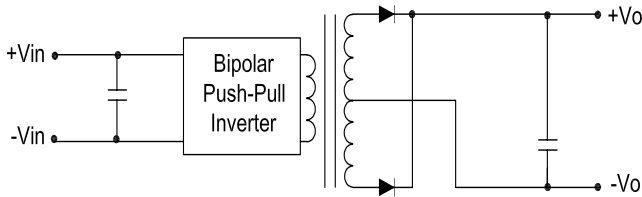
5V Input	1000 mA Slow-Blow
12V Input	500 mA Slow-Blow
24V Input	200 mA Slow-Blow

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.

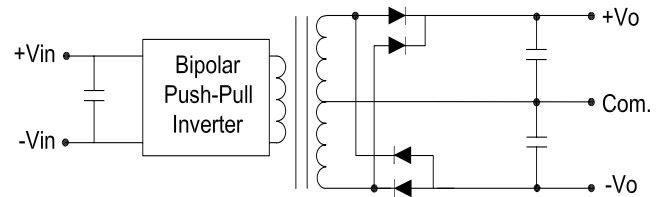
Tolerance Envelope Graphs



Block Diagrams



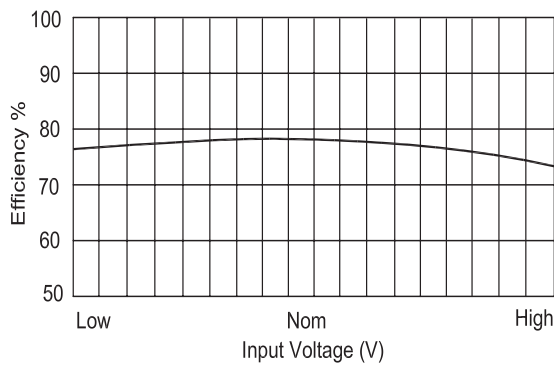
Single Output Block Diagram



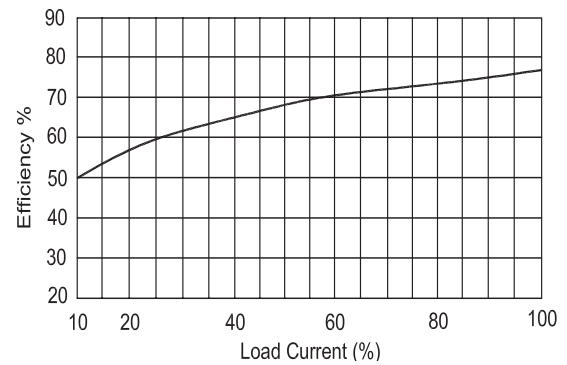
Dual Output Block Diagram

Efficiency Curves

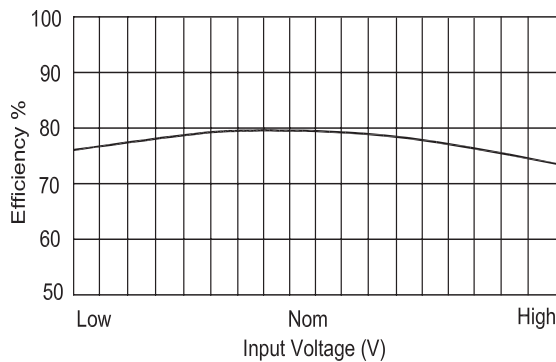
Single Output



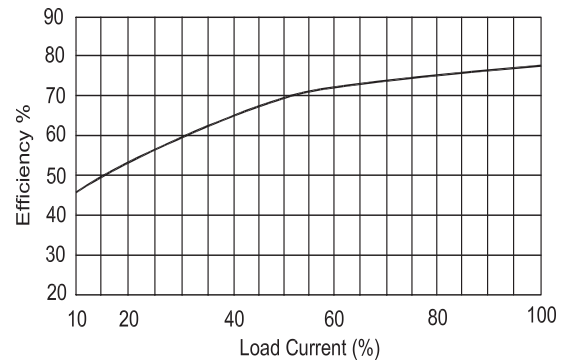
Efficiency vs Input Voltage



Efficiency vs Output Load

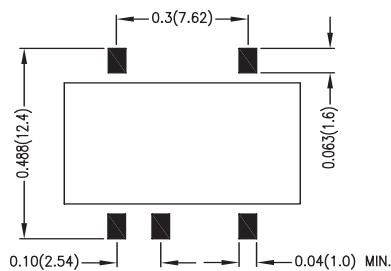


Efficiency vs Input Voltage

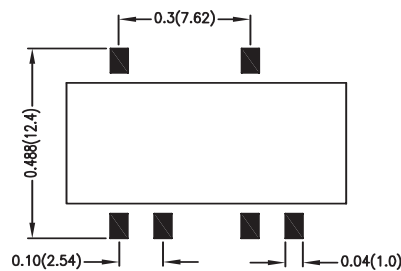


Efficiency vs Output Load

SMD Footprints



Single Output



Dual Output

Dimensions are inches (mm) unless noted

Tolerance:	Inches	Millimeters
	X.XX ±0.01	X.X ±0.25
	X.XXX ±0.005	X.XX ±0.13
Pin	±0.002	±0.05