

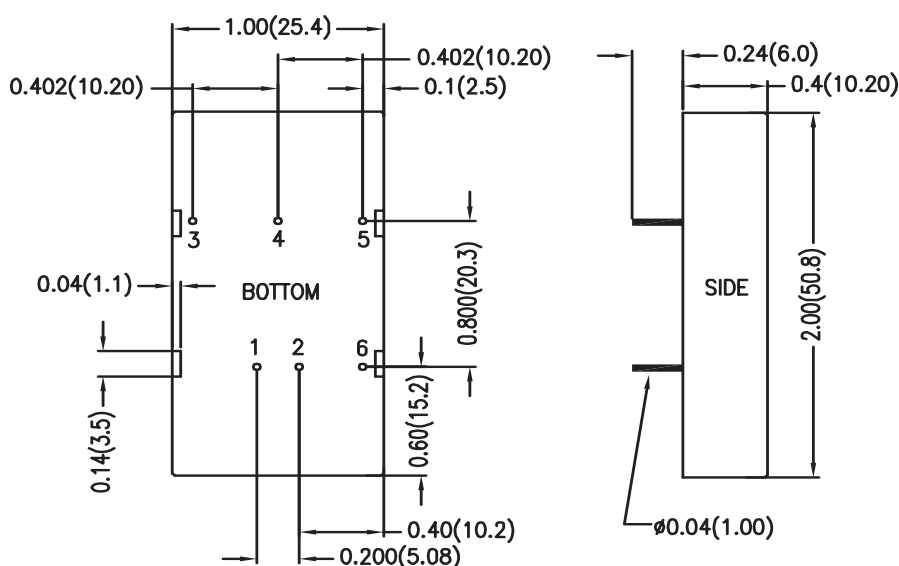
15 Watt TMS Single and Dual Series



- Efficiency up to 86%
- 1500VDC Isolation
- MTBF > 700,000 Hours
- 4:1 Input
- Six-Sided Shielding
- UL60950 Approved
- 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)	Min (mA)	Max (mA)	Typ (mA)	Max (VDC)	@ Max Load (%, Typ)	Max (Dual each output)
TMS10H24S3R3	24	9-36	3.3	25	528	300	3000	40	50	78	470μF
TMS15H24S5	24	9-36	5	25	762	300	3000	40	50	82	470μF
TMS15H24S5R1	24	9-36	5.1	25	787	300	3000	40	50	81	470μF
TMS15H24S12	24	9-36	12	25	735	125	1250	40	50	85	470μF
TMS15H24S15	24	9-36	15	25	726	100	1000	40	50	86	470μF
TMS15H12D5	24	9-36	±5	25	771	±150	±1500	40	50	81	220μF
TMS15H24D12	24	9-36	±12	25	735	±62.5	±625	40	50	85	220μF
TMS15H24D15	24	9-36	±15	25	726	±50	±500	40	50	86	220μF
TMS10H48S3R3	48	18-75	3.3	15	264	300	3000	30	100	78	470μF
TMS15H48S5	48	18-75	5	15	381	300	3000	30	100	82	470μF
TMS15H48S5R1	48	18-75	5.1	15	393	300	3000	30	100	81	470μF
TMS15H48S12	48	18-75	12	15	368	125	1250	30	100	85	470μF
TMS15H48S15	48	18-75	15	15	363	100	1000	30	100	86	470μF
TMS15H12D5	48	18-75	±5	15	386	±150	±1500	30	100	81	220μF
TMS15H48D12	48	18-75	±12	15	368	±62.5	±625	30	100	85	220μF
TMS15H48D15	48	18-75	±15	15	363	±50	±500	30	100	86	220μF



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

Pin Connections		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout
6	No Pin	No Pin

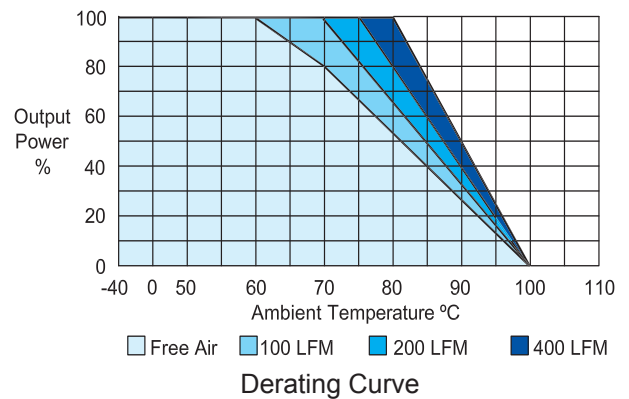


See Model Selection Table for Model Specific Parameters

Input Parameters	Min	Typ	Max	Units
Reverse Polarity Input Current			1	A
Short Circuit Input Power			3500	mW
Start Voltage 24 Vin 48 Vin	8 15	8.5 17	9 18	VDC
Under Voltage Shutdown 24 Vin 48 Vin	7 13	8 15	8.5 17	VDC
Switching Frequency	290	330	400	kHz
Input Filter	Pi Filter			
Output Parameters	Min	Typ	Max	Units
Output Voltage Accuracy		±1.0	±2.0	%
Output Voltage Balance Dual Output, Balanced Loads		±0.5	±2.0	%
Load Regulation Io = 10% to 100%		±0.5	±1.0	%
Line Regulation Vin=Min. to Max.		±0.1	±0.5	%
Ripple & Noise (20MHz)		55	80	mV P-P
Ripple & Noise (20 MHz) Over Line, Load & Temp			100	mV P-P
Ripple & Noise (20 MHz)			15	mV RMS
Over Power Protection	120			%
Transient Recovery Time 25% Load Step Change		300	500	µs
Transient Response Deviation, 25% Load Step Change		±2	±4	%
Temperature Coefficient		±0.01	±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		1200	1500	pF
Operating Temperature (Ambient)	-40		+60	°C
Storage Temperature	-50		+125	°C
Humidity			95	%
MTBF MIL-HDBK-217F @25°C, Ground Benign	700			K Hours
Cooling	Free-Air Convection			
Case Size	2.0 x 1.0 x 0.4 inches 50.8 x 25.4 x 10.2 mm			
Case Material	Six Sided Shielding Metal Case (UL94V-0)			
Weight	32g			
Agency Approval	UL60950 Approved			

Notes:

- Specifications typical at Ta=+25°C, resistive load, nominal input voltage, full rated output current unless otherwise noted.
- Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%.
- 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 0.47µF 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.
- Water washability - ConTech DC/DC converters are designed to withstand most solder/wash processes. Careful attention should be used when assessing the applicability in your specific manufacturing process. Converters are not hermetically sealed.
- 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.



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

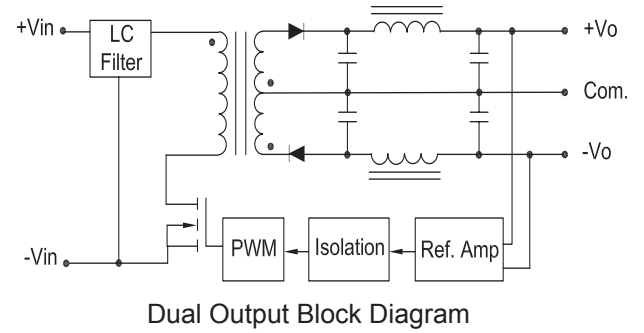
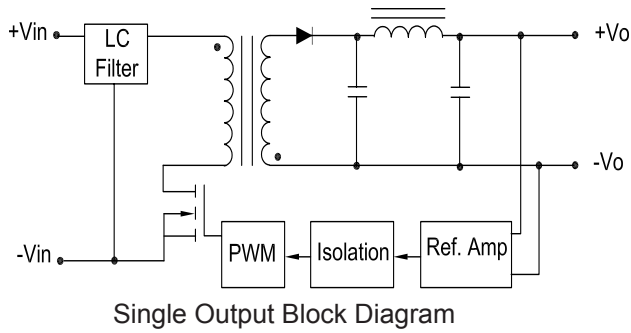
Input Fuse Selection Table

24V Input	2500 mA Slow-Blow
48V Input	1250 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.

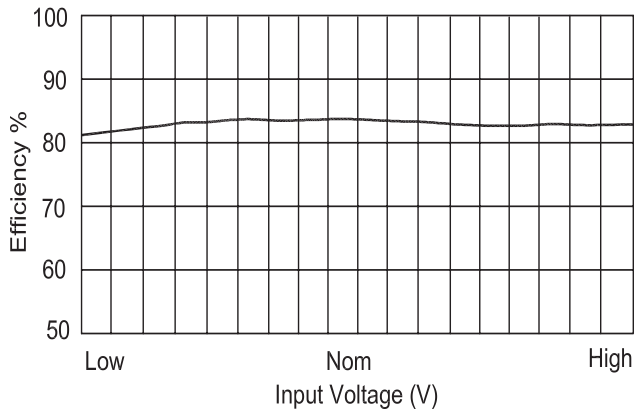


Block Diagrams

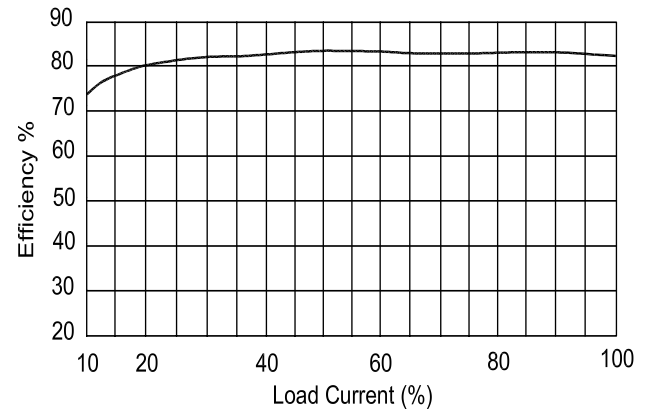


Efficiency Curves

Single Output

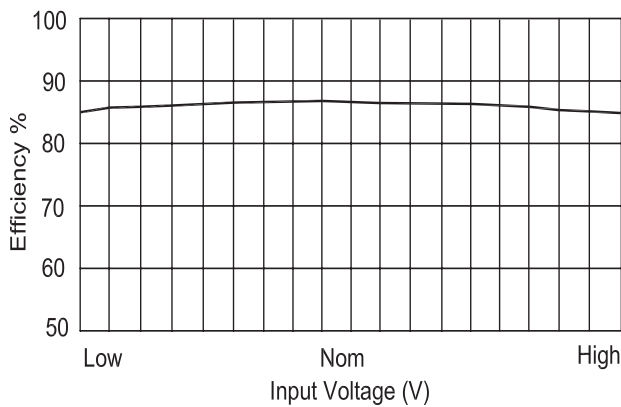


Efficiency vs Input Voltage

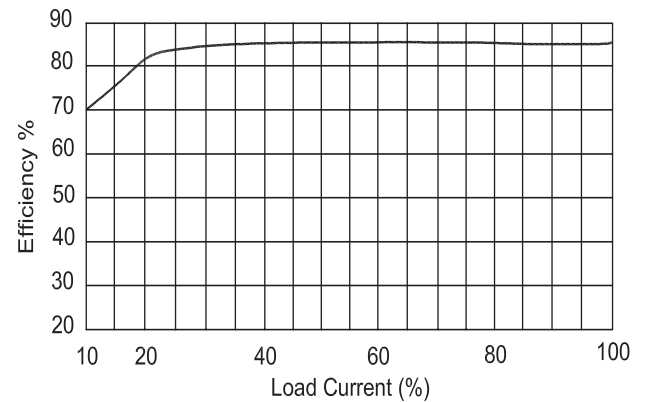


Efficiency vs Output Load

Dual Output



Efficiency vs Input Voltage



Efficiency vs Output Load