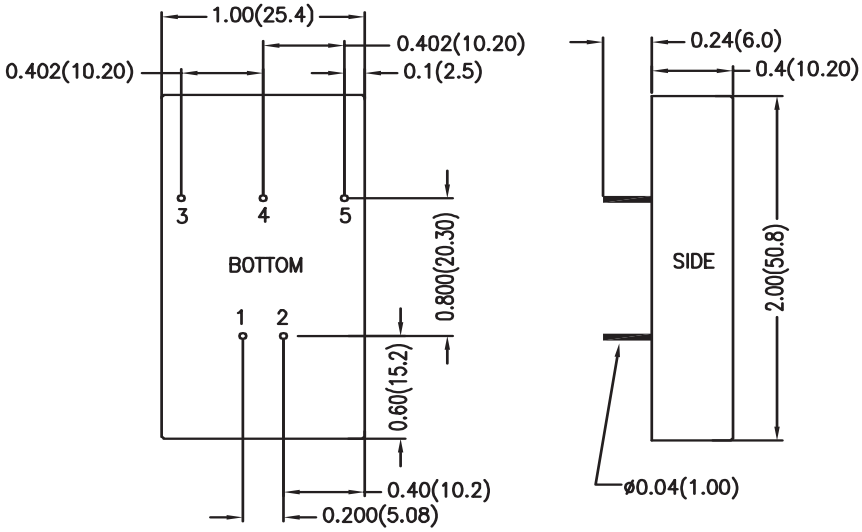
10 Watt TMD
Single and Dual Series

- Efficiency up to 83%
- 1500VDC Isolation
- MTBF > 700,000 Hours
- 2:1 Input
- Six-Sided Shielding
- UL60950 Approved
- RoHS Compliant

Model Number	Voltage			Current				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 (VDC)	@ Max Load (%, Typ)	Max (Dual each output)
TMD8H12S3R3	12	9-18	3.3	30	917	120	2400	25	72	2200µF
TMD10H12S5	12	9-18	5	30	1082	100	2000	25	77	2200µF
TMD10H12S12	12	9-18	12	30	1038	42	830	25	80	2200µF
TMD10H12S15	12	9-18	15	30	1047	34	670	25	80	2200µF
TMD10H12S24	12	9-18	24	30	1027	21	416	25	81	2200µF
TMD10H12D5	12	9-18	±5	30	1068	±50	±1000	25	78	470µF
TMD10H12D12	12	9-18	±12	30	1027	±21	±416	25	81	470µF
TMD10H12D15	12	9-18	±15	30	1041	±17	±333	25	80	470µF
TMD8H24S3R3	24	18-36	3.3	20	434	120	2400	50	76	2200µF
TMD10H24S5	24	18-36	5	20	534	100	2000	50	78	2200µF
TMD10H24S12	24	18-36	12	20	506	42	830	50	82	2200µF
TMD10H24S15	24	18-36	15	20	511	34	670	50	82	2200µF
TMD10H24S24	24	18-36	24	20	501	21	416	50	83	2200µF
TMD10H24D5	24	18-36	±5	20	521	±50	±1000	50	80	470µF
TMD10H24D12	24	18-36	±12	20	507	±21	±416	50	82	470µF
TMD10H24D15	24	18-36	±15	20	507	±17	±333	50	82	470µF
TMD8H48S3R3	48	36-75	3.3	10	217	120	2400	100	76	2200µF
TMD10H48S5	48	36-75	5	10	260	100	2000	100	80	2200µF
TMD10H48S12	48	36-75	12	10	253	42	830	100	82	2200µF
TMD10H48S15	48	36-75	15	10	252	34	670	100	83	2200µF
TMD10H48S24	48	36-75	24	10	251	21	416	100	83	2200µF
TMD10H48D5	48	36-75	±5	10	257	±50	±1000	100	81	470µF
TMD10H48D12	48	36-75	±12	10	251	±21	±416	100	83	470µF
TMD10H48D15	48	36-75	±15	10	251	±17	±333	100	83	470µF



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

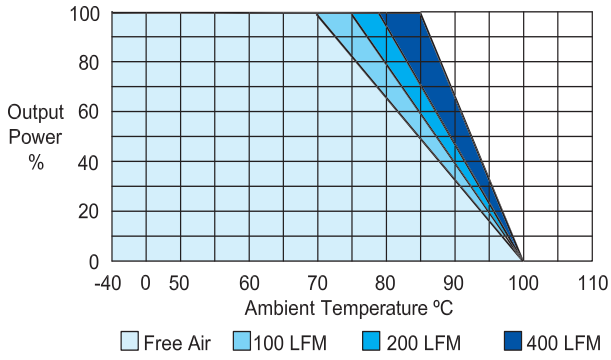
Pin Connections		
Pin	**Single**	**Dual**
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout

See Model Selection Table for Model Specific Parameters

Input Parameters		Min	Typ	Max	Units
Reverse Polarity Input Current				2	A
Short Circuit Input Power			3500	4500	mW
Start Voltage	12 Vin	8	8.5	9	VDC
	24 Vin	15	17	18	
	48 Vin	30	33	36	
Under Voltage Shutdown	12 Vin	7	8	8.5	VDC
	24 Vin	13	15	17	
	48 Vin	25	29	34	
Switching Frequency		260	300	340	kHz
Input Filter		Pi Filter			
Output Parameters		**Min**	**Typ**	**Max**	**Units**
Output Voltage Accuracy			±0.5	±1.0	%
Output Voltage Balance Dual Output, Balanced Loads			±0.5	±2.0	%
Load Regulation Io = 10% to 100%			±0.1	±0.5	%
Line Regulation Vin=Min. to Max.			±0.1	±0.3	%
Ripple & Noise (20MHz)			50	75	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			150	300	µs
Transient Response Deviation, 25% Load Step Change			±2	±4	%
Temperature Coefficient			±0.01	±0.02	% / ºC
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			150	470	pF
Operating Temperature (Ambient)		-40		+71	ºC
Storage Temperature		-40		+125	ºC
Humidity				95	%
MTBF MIL-HDBK-217F @25ºC, 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:

1. Specifications typical at Ta=+25ºC, resistive load, nominal input voltage, full rated output current unless otherwise noted.
2. Transient recovery time is measured to within 1% error band for a step change in output load 75% to 100%.
3. 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.
4. 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.
5. 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.
6. 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.
7. See ConTech website for Definition of Terms, Application Notes, and Test Setups and Parameters. www.ConTech-us.com/appnotes.html.
8. Specifications subject to change without notice.
9. See ConTech website www.ConTech-us.com/pdf/rohs.pdf for RoHS Statement.



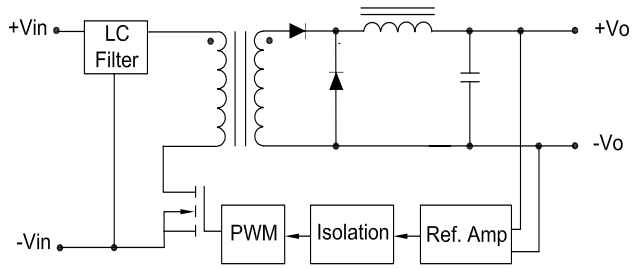
Derating Curve

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

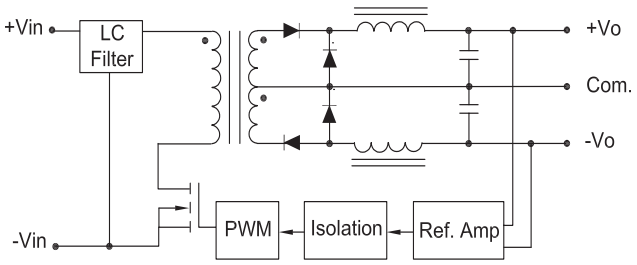
Input Fuse Selection Table	
12V Input	3000 mA Slow-Blow
24V Input	1500 mA Slow-Blow
48V Input	750 mA Slow-Blow

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



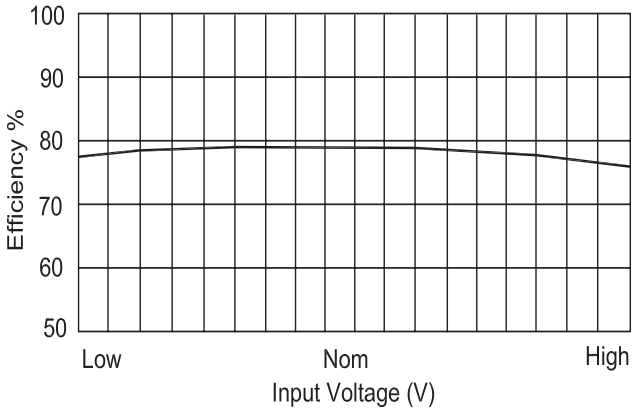
Single Output Block Diagram



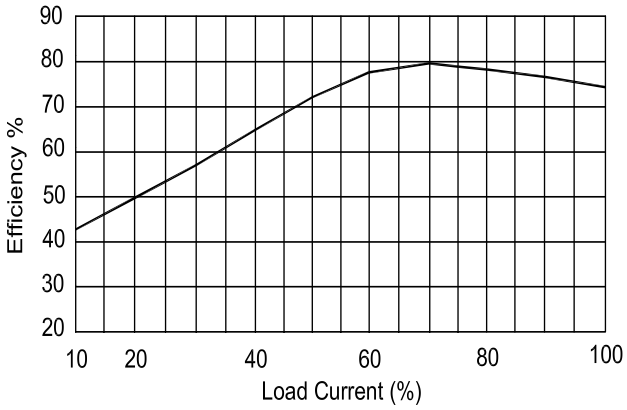
Dual Output Block Diagram

Efficiency Curves

Single Output

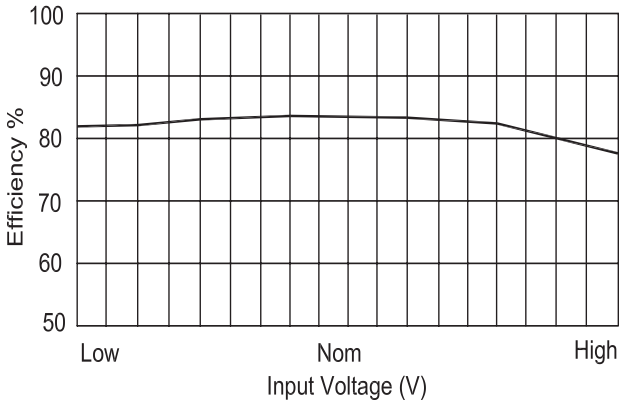


Efficiency vs Input Voltage

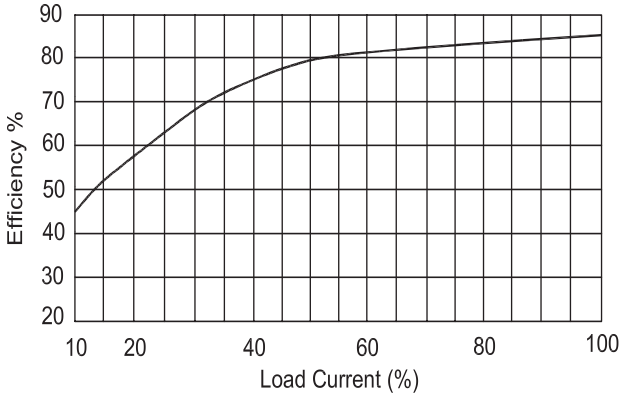


Efficiency vs Output Load

Dual Output



Efficiency vs Input Voltage



Efficiency vs Output Load