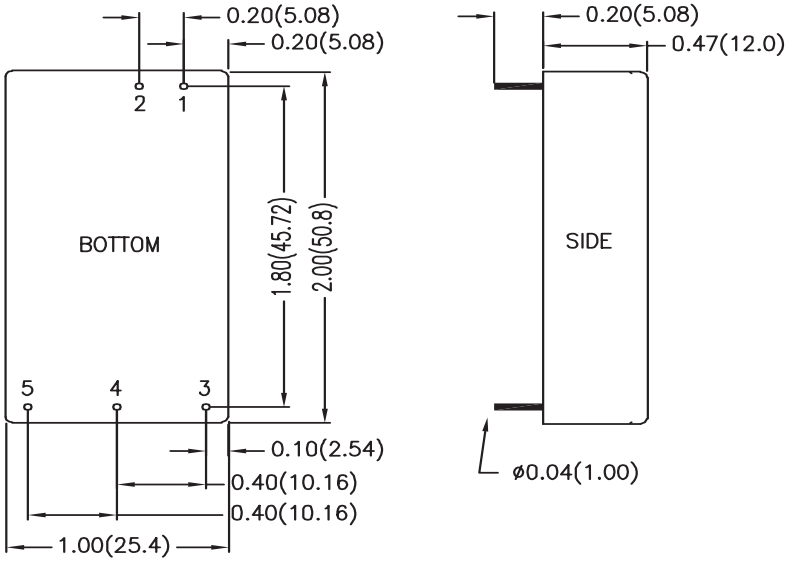
CONTECH
Division of Calex Mfg.

10 Watt TMR
Single and Dual Series

RoHS Compliant

- Efficiency up to 82%
- 4200VAC Isolation
- MTBF > 1M Hours
- 2:1 Wide Input
- Over Voltage Protection
- Short Circuit Protection
- RoHS Compliant

Model Number	Voltage			Current			Input Overvoltage (1sec max)	Reflected Ripple Current	Efficiency	Capacitive Load
	Input		Output	Input		Output				
	Nom. (VDC)	Range (VDC)	(VDC)	@ No Load (mA)	@ Max Load (mA)	Max (mA)	Max (VDC)	mA (Typ)	@ Max Load (%, Typ)	Max (Dual each output)
TMR8L12S5	12	9-18	5	30	877	1600	25	100	76	1000µF
TMR10L12S12	12	9-18	12	30	1044	835	25	100	80	470µF
TMR10L12D12	12	9-18	±12	30	1042	±417	25	100	80	220µF
TMR10L12D15	12	9-18	±15	30	1028	±333	25	100	81	220µF
TMR10L24S5	24	18-36	5	20	541	2000	50	50	77	1000µF
TMR10L24S12	24	18-36	12	20	516	835	50	50	81	470µF
TMR10L24D12	24	18-36	±12	20	516	±417	50	50	81	220µF
TMR10L24D15	24	18-36	±15	20	508	±333	50	50	82	220µF
TMR10L48S5	48	36-75	5	10	271	2000	100	25	77	1000µF
TMR10L48S12	48	36-75	12	10	258	835	100	25	81	470µF
TMR10L48D12	48	36-75	±12	10	258	±417	100	25	81	220µF
TMR10L48D15	48	36-75	±15	10	254	±333	100	25	82	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

See Model Selection Table for Model Specific Parameters

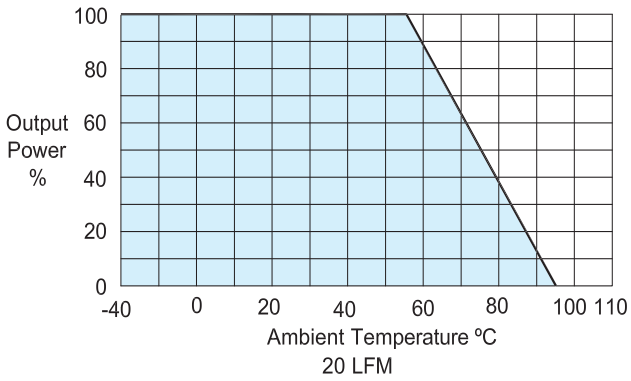
Input Parameters		Min	Typ	Max	Units
Start Voltage	12 Vin 24 Vin 48 Vin	7 13 30	8 15 33	9 18 36	VDC
Under Voltage Shutdown	12 Vin 24 Vin 48 Vin			8.5 16 34	VDC
Switching Frequency		120	150	180	kHz
Input Filter					
Conducted EMI		Meets EN 55022 Class A and FCC part 15, Class A			
Output Parameters		**Min**	**Typ**	**Max**	**Units**
Output Voltage Accuracy at 50% Load and Nom Vin				±1.0	%
Output Voltage Balance Dual Output, Balanced Loads			±0.5	±2.0	%
Load Regulation Io=15% to 100% Io=5% to 100%			±0.5 ±0.6	±1.0 ±1.2	%
Line Regulation Vin=Min. to Max.			±0.3	±0.5	%
Ripple & Noise (20MHz) 5 V Models All other Models			75 100	100 150	mV P-P
Over Power Protection		120	150		%
Transient Recovery Time 25% Load Step Change			300	600	µs
Transient Response Deviation			±3	±5	
Temperature Coefficient			±0.2	±0.05	% / ºC
Short Circuit Protection		Continuous			
General Specifications		**Min**	**Typ**	**Max**	**Units**
Isolation Voltage, 60 seconds		4200			VACrms
Isolation Resistance 500VDC		10			Gohms
Isolation Capacitance, 100kHz, 1V			60	80	pF
Operating Temperature (Ambient)		-40		+75	ºC
Operating Temperature (Case)				+95	ºC
Storage Temperature		-50		+125	ºC
Humidity				95	%
MTBF MIL-HDBK-217F @25ºC, Ground Benign		1			M Hours
Cooling		Free-Air Convection			
Case Size		2.0 x 1.0 x 0.47 inches 50.8 x 25.4 x 12.0 mm			
Case Material		Non-Conductive Black Plastic (UL94V-0)			
Weight		24.5g			
Agency Approvals (PENDING)		UL60950-1, UL60601-1			

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.

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. Ripple & Noise measurement bandwidth is 20MHz, measured with a 1 µF M/C and a 10 µF T/C.
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.



To avoid exceeding the maximum temperature rating of the components inside the power module, the case temperature must be kept below 95ºC.