

DESCRIPTION: **3W 1.5KVDC、3KVDC Isolated Wide Input Single And Dual Output DC/DC Converters**

TP2L series are a range of isolated 3 Watt converters in a SIP package, 2:1, 4:1 wide input range and tightly regulated output voltage qualifies these converters for many cost critical applications in industrial and consumer electronics. Operating temperature range from -40 ºC to 85 ºC .The internal SMD construction makes it possible to offer a product with high performance at low cost.

FEATURES

RoHS compliant	2:1 4:1 wide range voltage input	Continuous short circuit protection
Operating temperature: -40ºC to 85ºC	Low regulation	1.5KVDC、3KVDC Isolation
Efficiency up to 83%	Power density 0.91W/cm^3	Input voltage: 5V, 12V, 24V, 48V
Output voltage: 3.3V,5V, 9V, 12V, 15V,24V / ±5V, ±9V, ±12V, ±15V	Low noise	External control

SELECTION GUIDE

Part Number	Input			Output			Efficiency (Typ.)
	Voltage(VDC)			Voltage	Current(mA)		
	Rated	Range values	Max*	VDC	Max.	Min.	%
TP2L05S05S-3W	5 (2:1)	4.5-9	11	5	600	60	74
TP2L12D05S-3W	12 (2:1)	9-18	22	±5	±300	±30	74
TP2L12D09S-3W	12 (2:1)	9-18	22	±9	±167	±16	76
TP2L12D12S-3W	12 (2:1)	9-18	22	±12	±125	±13	78
TP2L12D15S-3W	12 (2:1)	9-18	22	±15	±100	±10	79
TP2L12S03S-3W	12 (2:1)	9-18	22	3.3	909	91	71
TP2L12S05S-3W	12 (2:1)	9-18	22	5	600	60	74
TP2L12S09S-3W	12 (2:1)	9-18	22	9	333	33	76
TP2L12S12S-3W	12 (2:1)	9-18	22	12	250	25	74
TP2L12S15S-3W	12 (2:1)	9-18	22	15	200	20	75
TP2L12S24S-3W	12 (2:1)	9-18	22	24	125	13	78
TP2L24D05S-3W	24 (2:1)	18-36	40	±5	±300	±30	76
TP2L24D09S-3W	24 (2:1)	18-36	40	±9	±167	±17	78
TP2L24D12S-3W	24 (2:1)	18-36	40	±12	±125	±13	79
TP2L24D15S-3W	24 (2:1)	18-36	40	±15	±100	±10	80
TP2L24S03S-3W	24 (2:1)	18-36	40	3.3	909	91	71
TP2L24S05S-3W	24 (2:1)	18-36	40	5	600	60	76
TP2L24S09S-3W	24 (2:1)	18-36	40	9	300	33	78
TP2L24S12S-3W	24 (2:1)	18-36	40	12	250	25	80
TP2L24S15S-3W	24 (2:1)	18-36	40	15	200	20	80
TP2L24S24S-3W	24 (2:1)	18-36	40	24	125	13	82
TP2L48S05S-3W	48 (2:1)	36-72	80	5	600	60	75
TP2L48S12S-3W	48 (2:1)	36-72	80	12	250	25	78
TP2L48S15S-3W	48 (2:1)	36-72	80	15	200	20	80
TP2L24S05SW-3W	24 (4:1)	9-36	40	5	600	60	76
TP2L24S12SW-3W	24 (4:1)	9-36	40	12	250	25	75
TP2L48S05SW-3W	48 (4:1)	18-72	80	5	600	60	75
TP2L48S12SW-3W	48 (4:1)	18-72	80	12	250	25	75

3KVDC isolation with /3H at the end of the part number. for exampleTP2L24S05S-3W/3H.

TOPPOWER

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COMMON SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Units
Storage humidity				95	%
Operating temperature		-40		85	℃
Storage temperature		-55		125	℃
Temp.Rise at full load			15		℃
Lead temperature	1.5mm from case for 10 seconds			300	℃
No-load power consumption			300		mW
Cooling		Free Air Convection			
Short circuit protection		Continuous. automatic recovery			
Case material		Plastic (UL94-V0)			
MTBF		1000			K hours
Weight			6		g

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Tested for 1 minute and leakage current less than 1 mA	1500、3000			VDC
Isolation Resistance	Test at 500VDC	1			GΩ
Isolation Capacitance	Input/Output,100KHz/1V		80		pF

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Units
Output power	Refer to product program	0.3		3	W
Positive voltage accuracy	Refer to recommended circuit		±1	±3	%
Negative voltage accuracy	Refer to recommended circuit		±3	±5	%
Load regulation	10% to100% load (TP2L-D-3W)		±0.5	±0.75	%
Load regulation	10% to100% load (TP2L-S-3W)		±0.5	±1.0	%
Line regulation	Input Voltage from low to high		±0.2	±0.5	%
Temperature drift (Vout)	Refer to recommended circuit			±0.03	%/℃
Ripple & Noise	20MHZ Bandwidth		50	100	mVp-p
Switching frequency	100% load ,input voltage range		300		KHZ

All specifications typical at TA=25° C, nominal input voltage and rated output current unless otherwise specified.

APPLICATION NOTES

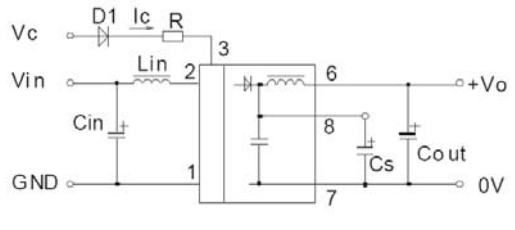
External capacitance

These converters will work without external capacitors, in order to guarantee the full parametric performance over the full line and load range we recommended you to use the value we listed at right side. All parts have been tested and characterized using the following values and test circuit.

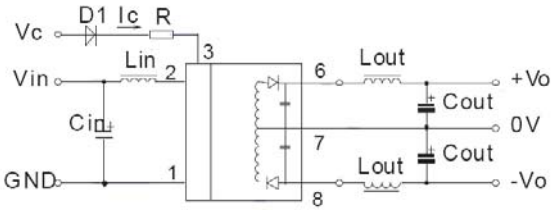
External Capacitor Table			
Single Vout (VDC)	Cout (uF)	Dual Vout (VDC)	Cout (uF)
3.3	2200	±5	680
5	1000	±9	470
9	680	±12	330
12	470	±15	220
15	330	-	-
24	220	-	-

RECOMMENDED CIRCUIT

Single Output



Dual Output

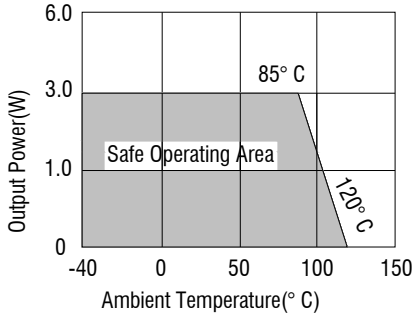


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SOLDERING INFORMATION

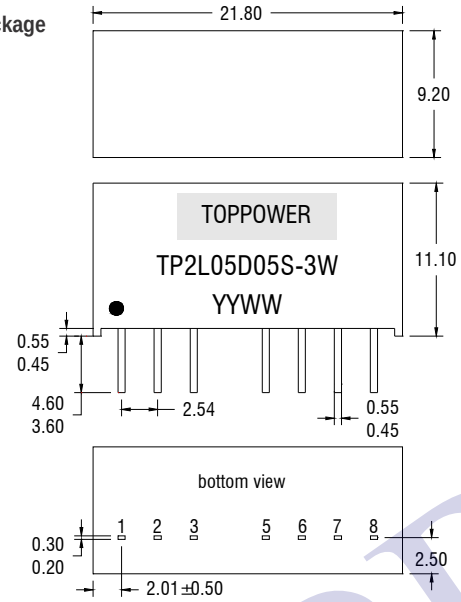
This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300℃for 10 seconds. The series is backward compatible with Sn/Pb soldering systems.

TEMPERATURE DERATING GRAPHS



MECHANICAL DIMENSIONS

SIP Package



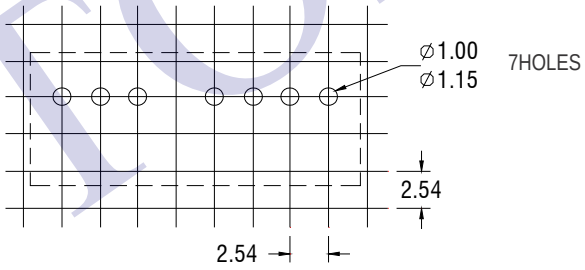
All dimensions in mm ±0.25mm .
All pins on a 2.54mm pitch and within ±0.25mm of true position.
Weight: 5.0g

PIN CONNECTIONS

8 PIN SIP		
Pin	Single	Dual
1	GND	GND
2	Vin	Vin
3	CTRL	CTRL
5 *	NC	NC
6	+V0	+V0
7	0V	0V
8	CS	-V0

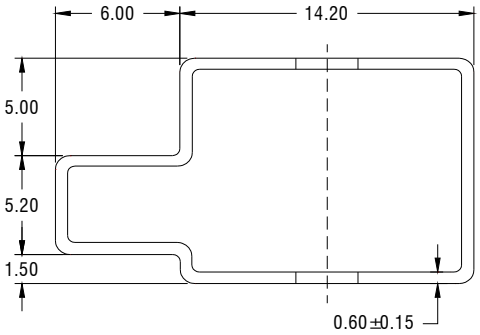
*This pin must have no external connection.

RECOMMENDED FOOTPRINT DETAILS



Unless otherwise stated all dimensions in mm ±0.5mm.

TUBE OUTLINE DIMENSIONS



All dimensions in mm ±0.5mm.

Tube length : 520mm ±2mm . Tube Quantity: 23PCS

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