



DESCRIPTION: 1W 3KVDC Isolation Regulated Single Output DC/DC Converters

TPB-1W series are specially designed for 3KVDC isolation & regulated single and output application, the input voltage range within $\pm 5\%$, regulated output with very low ripple noise. short circuit protection

FEATURES

SIP ,DIP package	3000VDC Isolation	Operating temperature -40°C to 105°C
Regulated single output	Continuous short circuit protection	RoHS Compliance、CE certification
Low ripple noise	Small footprint	No external component required
Internal SMD construction	Input voltage:3.3V,5V,12V,15V,24V	Output voltage:3.3V,5V,9V,12V,15V,24V

SELECTION GUIDE

Part Number	Input		Output			Efficiency (%)	Package Style
	Voltage (VDC)		Voltage (VDC)	Current (mA)			
	Nominal	Range		Max	Min		
TPB0303S-1W	3.3	3.13~3.47	3.3	303	30	66	SIP
TPB0305S-1W	3.3	3.13~3.47	5	200	20	66	SIP
TPB0503S-1W	5	4.75~5.25	3.3	303	30	66	SIP
TPB0505S-W75	5	4.75~5.25	5	150	15	68	SIP
TPB0505S-1W	5	4.75~5.25	5	200	20	66	SIP
TPB0505S-1W/I	5	4.5-6	5	200	20	70	SIP
TPB0509S-1W	5	4.75~5.25	9	111	12	70	SIP
TPB0512S-1W	5	4.75~5.25	12	83	9	71	SIP
TPB0515S-1W	5	4.75~5.25	15	67	7	73	SIP
TPB0524S-1W	5	4.75~5.25	24	42	5	68	SIP
TPB0905S-1W	9	8.55~9.45	5	200	20	66	SIP
TPB1205S-W75	12	11.4~12.6	5	150	15	70	SIP
TPB1205S-1W	12	11.4~12.6	5	200	20	67	SIP
TPB1209S-1W	12	11.4~12.6	9	111	12	72	SIP
TPB1212S-1W	12	11.4~12.6	12	83	9	70	SIP
TPB1215S-1W	12	11.4~12.6	15	67	7	74	SIP
TPB1224S-1W	12	11.4~12.6	24	42	5	68	SIP
TPB1505S-W75	15	14.25~15.75	5	150	15	68	SIP
TPB1505S-1W	15	14.25~15.75	5	200	20	67	SIP
TPB1509S-1W	15	14.25~15.75	9	111	12	71	SIP
TPB1512S-1W	15	14.25~15.75	12	83	9	71	SIP
TPB1515S-1W	15	14.25~15.75	15	67	7	72	SIP
TPB1524S-1W	15	14.25~15.75	24	42	5	68	SIP
TPB2405S-W75	24	22.8~25.2	5	150	15	68	SIP
TPB2405S-1W	24	22.8~25.2	5	200	20	68	SIP
TPB2409S-1W	24	22.8~25.2	9	111	12	68	SIP
TPB2412S-1W	24	22.8~25.2	12	83	9	73	SIP
TPB2415S-1W	24	22.8~25.2	15	67	7	75	SIP
TPB2424S-1W	24	22.8~25.2	24	42	5	68	SIP
TPB0303D-1W	3.3	3.13~3.47	3.3	303	30	66	DIP
TPB0305D-1W	3.3	3.13~3.47	5	200	20	66	DIP
TPB0503D-1W	5	4.75~5.25	3.3	303	30	66	DIP
TPB0505D-W75	5	4.75~5.25	5	150	15	68	DIP
TPB0505D-1W	5	4.75~5.25	5	200	20	66	DIP
TPB0509D-1W	5	4.75~5.25	9	111	12	70	DIP
TPB0512D-1W	5	4.75~5.25	12	83	9	71	DIP
TPB0515D-1W	5	4.75~5.25	15	67	7	73	DIP
TPB0524D-1W	5	4.75~5.25	24	42	5	68	DIP
TPB0905D-1W	9	8.55~9.45	5	200	20	66	DIP
TPB1205D-W75	12	11.4~12.6	5	150	15	70	DIP
TPB1205D-1W	12	11.4~12.6	5	200	20	67	DIP
TPB1209D-1W	12	11.4~12.6	9	111	12	72	DIP
TPB1212D-1W	12	11.4~12.6	12	83	9	70	DIP
TPB1215D-1W	12	11.4~12.6	15	67	7	74	DIP

SELECTION GUIDE

Part Number	Input		Output			Efficiency (%)	Package Style
	Voltage (VDC)		Voltage (VDC)	Current (mA)			
	Nominal	Range		Nominal	Range		
TPB1224D-1W	12	11.4~12.6	24	42	5	68	DIP
TPB1505D-W75	15	14.25~15.75	5	150	15	68	DIP
TPB1505D-1W	15	14.25~15.75	5	200	20	67	DIP
TPB1509D-1W	15	14.25~15.75	9	111	12	71	DIP
TPB1512D-1W	15	14.25~15.75	12	83	9	71	DIP
TPB1515D-1W	15	14.25~15.75	15	67	7	72	DIP
TPB1524D-1W	15	14.25~15.75	24	42	5	68	DIP
TPB2405D-W75	24	22.8~25.2	5	150	15	68	DIP
TPB2405D-1W	24	22.8~25.2	5	200	20	68	DIP
TPB2409D-1W	24	22.8~25.2	9	111	12	68	DIP
TPB2412D-1W	24	22.8~25.2	12	83	9	73	DIP
TPB2415D-1W	24	22.8~25.2	15	67	7	75	DIP
TPB2424D-1W	24	22.8~25.2	24	42	5	68	DIP

Add suffix "P" for continuous short circuit protection, for example TPB0505SP-1W.

ISOLATION CHARACTERISTICS

Item	Test condition	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 minute and 1mA max	3000			VDC
Isolation resistance	Test at 1000VDC	1			GΩ

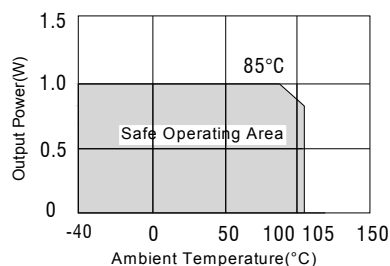
OUTPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Output power		0.1		1	W
Line regulation	For Vin change of ±5%			±0.25	%
Load regulation	10% to 100% load			±1	%
Output voltage accuracy	100% full load			±3	%
Temperature drift	100% full load			±0.03	%/°C
Ripple	20MHz Bandwidth		10	20	mv p-p
Noise	20MHz Bandwidth		50	75	mv p-p
Switching frequency	100% load, nominal input		100		KHz

COMMON SPECIFICATIONS

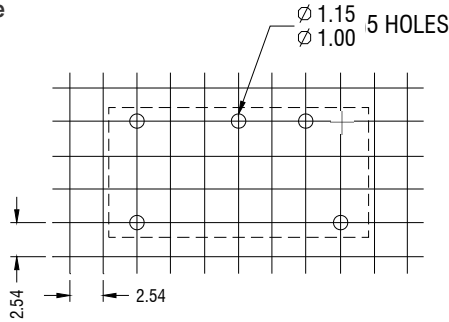
Item	Test condition	Min.	Typ.	Max.	Units
Storage humidity	Test Condition			95	%
Operating temperature	Derating if the temperature ≥85°C	-40		105	°C
Storage temperature		-55		125	°C
Temp. Rise at full load			15	25	°C
Lead temperature				300	°C
Short circuit protection	TPBxx05S-1W				
Short circuit protection	Others	Continuous			
Cooling		Free air convection			
Case material		Plastic (UL94-V0)			
MTBF		3500			K hours
Weight	SIP/2.1g, DIP/2.8g				

TEMPERATURE DERATING GRAPHS

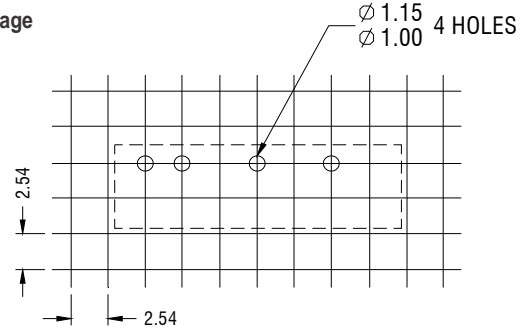


RECOMMENDED FOOTPRINT DETAILS

DIP Package

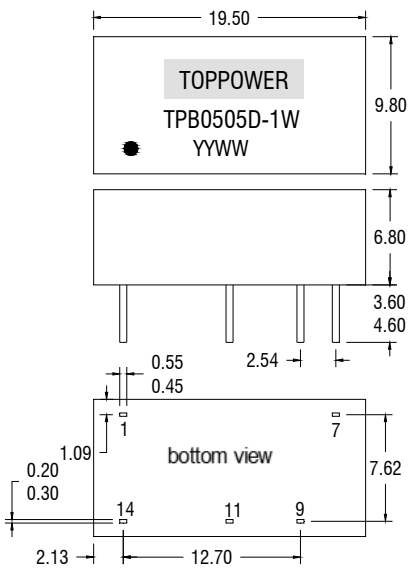


SIP Package

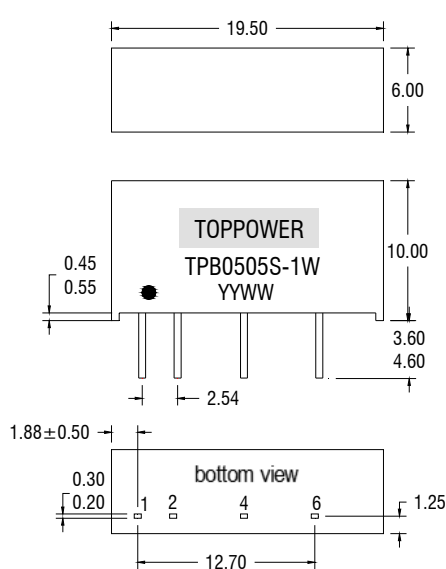


MECHANICAL DIMENSIONS

DIP Package



SIP Package



PIN CONNECTIONS

7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
6	+Vout

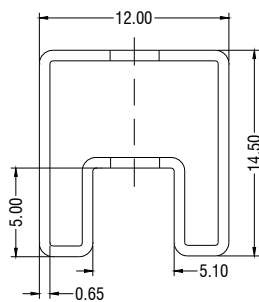
14 PIN DIP	
Pin	Function
1	GND
7	NC
9	+Vo
11	0V
14	Vin

NC: no external connection.

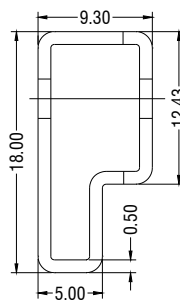
All dimensions in mm ± 0.25 mm. All pins on a 2.54mm pitch. Weight: SIP/2.1g ,DIP/2.8g

TUBE OUTLINE DIMENSIONS

14Pin DIP



7Pin SIP



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length (14 Pin DIP) : 520mm ± 2 mm.

Tube length (7 Pin SIP) : 520mm ± 2 mm.

Tube Quantity : 25PCS

SOLDERING INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds, this series are backward compatible with Sn/Pb soldering systems.