



DESCRIPTION : 1W Isolated Single Output DC/DC Converters

The TPE series are miniature, isolated 1W DC/DC converters in a SIP and DIP package. They offer the ideal solution in many space critical applications for board level power distribution. The internal SMD construction makes it possible to offer a product with high performance at low cost. The series offers smaller size, improved efficiency, lower output ripple noise and 1KVDC~3KVDC isolation.

FEATURES

RoHS compliant	Single isolated output	1KVDC isolation /SIP; 3KVDC/ DIP
Efficiency up to 81%	Operating temperature :-40°C to 85°C	Power density 1.53W/cm ³
UL 94V-0 package material	Footprint from 0.69cm ²	Industry standard pinout
Input voltage: 5V, 12V ,24V	Output voltage: 5V, 9V, 12V ,15V,24V	/

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency	Package Style
	V	V	mA	%	
TPE0505D	5	5	200/20.0	68	DIP
TPE0509D	5	9	110/11.0	78	DIP
TPE0512D	5	12	83/8.3	77	DIP
TPE0515D	5	15	66/6.6	81	DIP
TPE0524D	5	24	42/4.2	80	DIP
TPE0505S	5	5	200/20.0	70	SIP
TPE0509S	5	9	110/11.0	78	SIP
TPE0512S	5	12	83/8.3	78	SIP
TPE0515S	5	15	66/6.6	80	SIP
TPE0524S	5	24	42/4.2	79	SIP
TPE1205D	12	5	200/20.0	69	DIP
TPE1209D	12	9	110/11.0	74	DIP
TPE1212D	12	12	83/8.3	76	DIP
TPE1215D	12	15	66/6.6	75	DIP
TPE1205S	12	5	200/20.0	71	SIP
TPE1209S	12	9	110/11.0	73	SIP
TPE1212S	12	12	83/8.3	76	SIP
TPE1215S	12	15	66/6.6	74	SIP
TPE1218S	12	18	55/5.5	74	SIP
TPE2405S	24	5	200/20.0	71	SIP

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	5V input	4.5	5.0	5.5	V
Voltage range	12V input	10.8	12.0	13.2	V
Voltage range	24V input	21.6	24	26.4	V
Reflected ripple current			26	48	mA p-p

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage/SIP	Tested for 1 second	1000			VDC
Isolation test voltage/DIP	Tested for 1 second	3000			VDC
Resistance	Viso= 1000VDC	1			GΩ

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA= - 40°C to 85°C			1.0	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High VIN to low VIN		1.0	1.2	%/%
Load Regulation (10%load to rated load)	5V output		14	15	%
Load Regulation (10%load to rated load)	9V output		9	10	%
Load Regulation (10%load to rated load)	12V output		7.5	9.5	%
Load Regulation (10%load to rated load)	15V output		7.0	8.5	%
Load Regulation (10%load to rated load)	24V output		5.5	7.5	%

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

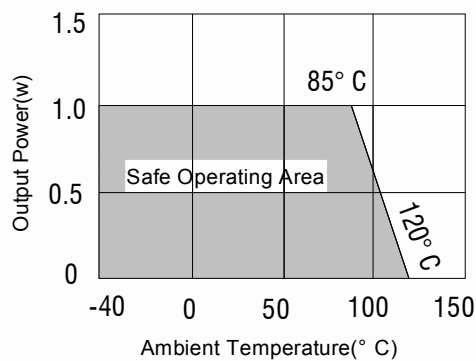
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	5V input		110		kHz
Switching frequency	12V input		145		kHz
Switching frequency	24V input		100		kHz

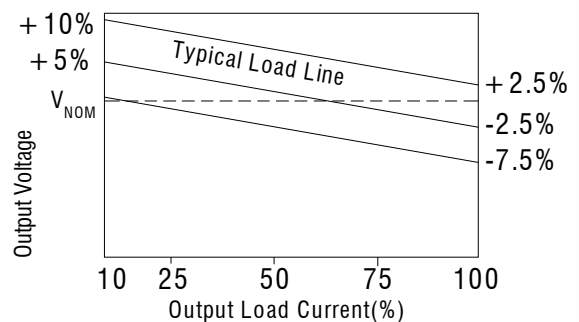
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output	-40		85	°C
Storage		-55		150	°C
Case Temperature above ambient	5V output			41	°C
Case Temperature above ambient	All other output			32	°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS



TOLERANCE ENVELOPES

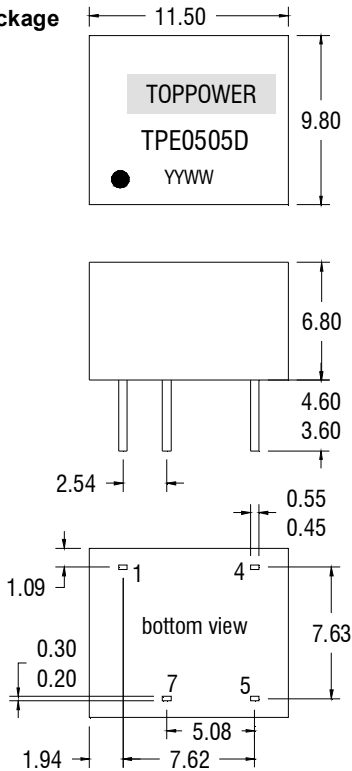


SOLDERING INFORMATION

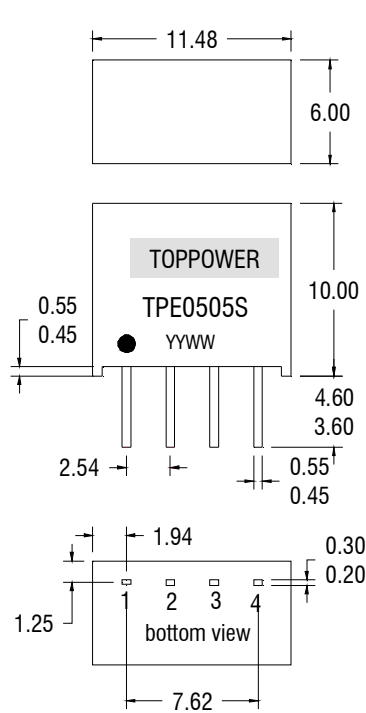
This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300°C for 10 seconds. Both types in this series are backward compatible with Sn/Pb soldering systems.

MECHANICAL DIMENSIONS

DIP Package



SIP Package



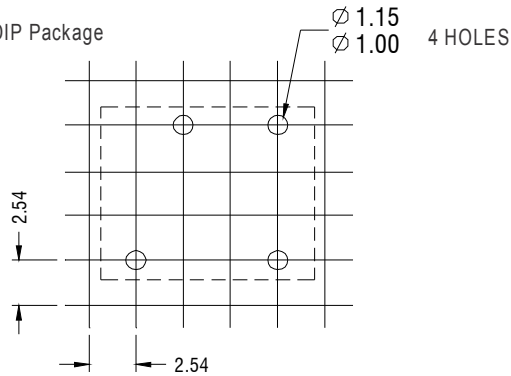
All dimensions in mm ± 0.25 mm. All pins on a 2.54 mm pitch and within ± 0.25 mm of true position
 Weight: 1.30g (SIP) 1.48g (DIP)

PIN CONNECTIONS-8 PIN DIP	
Pin	Function
1	-Vin
4	+Vin
5	+Vout
7	-Vout

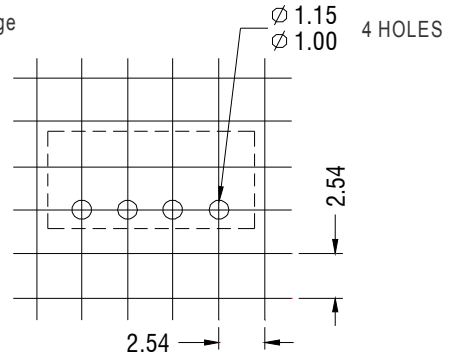
PIN CONNECTIONS-4 PIN SIP	
Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

RECOMMENDED FOOTPRINT DETAILS

8Pin DIP Package

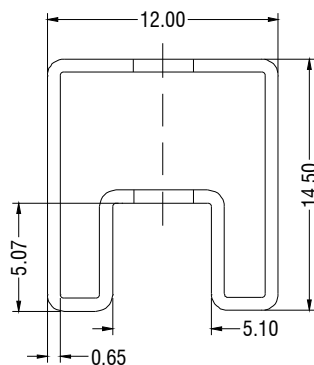


4Pin SIP Package

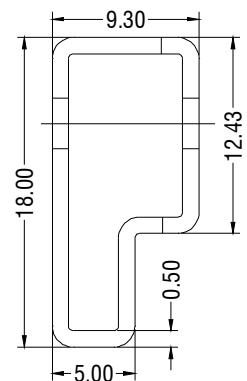


TUBE OUTLINE DIMENSIONS

8Pin DIP Tube



4Pin SIP Tube



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length (8 Pin DIP) : 520mm ± 2 mm.

Tube length (4 Pin SIP) : 520mm ± 2 mm.

Tube Quantity : 35