

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 isolation.

FEATURES

RoHS compliant	Single isolated output	1KVDC isolation
Efficiency up to 81%	Power density 1.45W/cm ³	UL 94V-0 Package material
Footprint from 0.69cm ²	Industry Standard Pinout	Input voltage: 24V, 48V
Output voltage: 5V, 9V, 12V, 15V	Custom solutions available	Operating temperature: -40°C to 85°C

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency	Package Style
	V	V	mA	%	
TPE2405D	24	5	200	70	DIP
TPE2409D	24	9	111	75	DIP
TPE2412D	24	12	83	81	DIP
TPE2415D	24	15	66	81	DIP
TPE2405S	24	5	200	71	SIP
TPE2409S	24	9	111	75	SIP
TPE2412S	24	12	83	80	SIP
TPE2415S	24	15	66	80	SIP
TPE4805D	48	5	200	70	DIP
TPE4809D	48	9	111	75	DIP
TPE4812D	48	12	83	80	DIP
TPE4815D	48	15	66	80	DIP
TPE4805S	48	5	200	70	SIP
TPE4809S	48	9	111	75	SIP
TPE4812S	48	12	83	81	SIP
TPE4815S	48	15	66	81	SIP

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	24V input	21.6	24	26.4	V
Voltage range	48V input	43.2	48	52.8	V

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			15	%
Load Regulation (10% load to rated load)	all other output			10	%

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

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage Vin, TPE24	28V
Input voltage Vin, TPE48	54V

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 second	1000			VDC
Resistance	Viso= 500VDC	1			GΩ

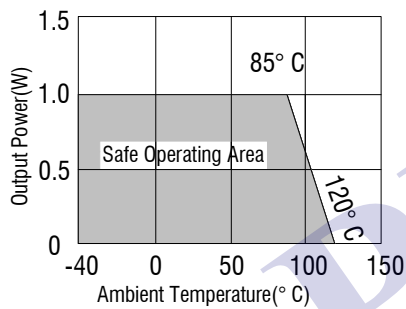
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	All types		100		kHz

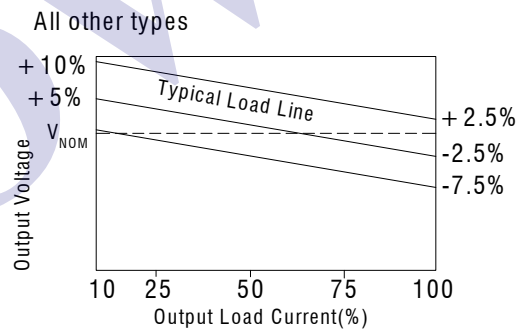
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	-40		85	°C
Storage		-55		130	°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS



TOLERANCE ENVELOPES

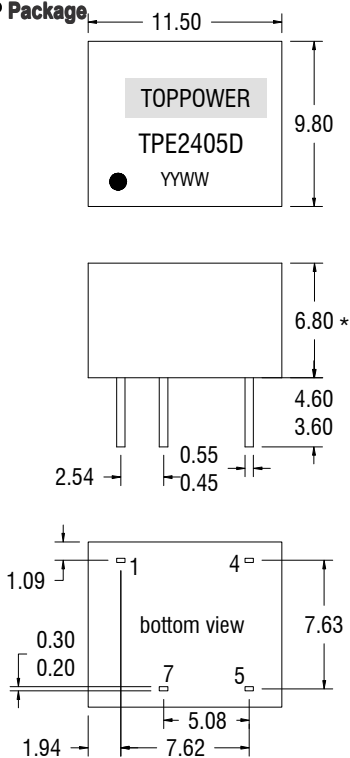


SOLDERING INFORMATION

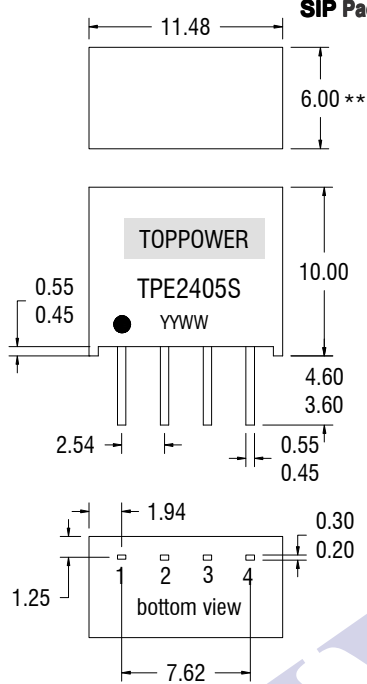
This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300 ° C for 10 seconds. Both SIP and DIP types in this series are backward compatible with Sn/Pb soldering systems.

MECHANICAL DIMENSIONS

DIP Package



SIP Package



PIN CONNECTIONS-8 PIN DIP

Pin	Function
1	-Vin
4	+Vin
5	+Vout
7	-Vout

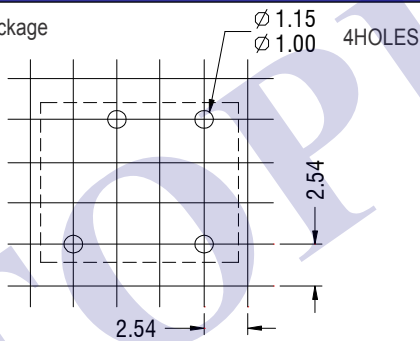
PIN CONNECTIONS-4 PIN SIP

Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

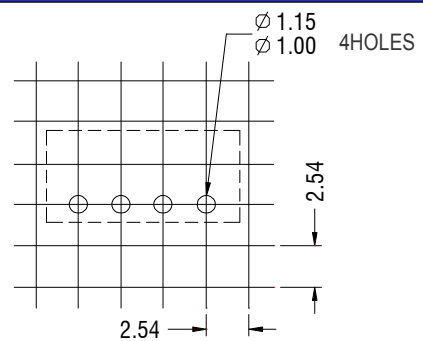
*7.70 for 48V variants **7.50 for 48V variants Weight: 1.48g (DIP) 1.30g (SIP)
 All dimensions in mm ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position.

RECOMMENDED FOOTPRINT DETAILS

8 Pin DIP Package

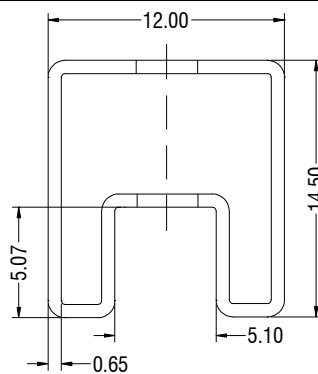


4 Pin SIP Package

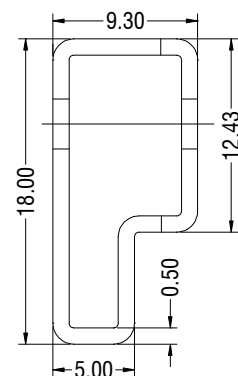


TUBE OUTLINE DIMENSIONS

8Pin DIP Tube



**4Pin SIP Tube
4Pin SIP 管**



Unless otherwise stated all dimensions in mm ±0.5mm.

Tube length (8 Pin DIP) : 520mm ±2mm.

Tube length (4 Pin SIP) : 520mm ±2mm.

Tube Quantity : 35