
DESCRIPTION: 0.25W Isolated Single Output DC/DC Converters

The TPLE series are miniature, isolated low power and high efficiency 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. Operating temperature range from -40 °C to 85 °C.

FEATURES

RoHS compliant	Single output rail	1KVDC isolation
High efficiency for low power applications	SIP & DIP package styles	Power density 0.36W/cm ³
UL 94V-0 package material	Footprint from 0.69cm ²	Input voltage: 3.3V, 5V, 12V
Output voltage: 3.3V, 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	%	
TPLE0303D	3.3	3.3	75.8	70	DIP
TPLE0305D	3.3	5	51	70	DIP
TPLE0505D	5	5	51	71	DIP
TPLE0509D	5	9	28	74	DIP
TPLE0512D	5	12	21	76	DIP
TPLE0515D	5	15	17	76	DIP
TPLE0303S	3.3	3.3	75.8	70	SIP
TPLE0305S	3.3	5	51	70	SIP
TPLE0505S	5	5	50	70	SIP
TPLE0509S	5	9	28	75	SIP
TPLE0512S	5	12	21	75	SIP
TPLE0515S	5	15	16	75	SIP
TPLE1205D	12	5	50	71	DIP
TPLE1209D	12	9	28	75	DIP
TPLE1212D	12	12	21	75	DIP
TPLE1215D	12	15	16	75	DIP
TPLE1205S	12	5	50	71	SIP
TPLE1209S	12	9	28	75	SIP
TPLE1212S	12	12	21	75	SIP
TPLE1215S	12	15	16	75	SIP

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	3.3V input types	2.9	3.3	3.6	V
Voltage range	5V input types	4.5	5.0	5.5	V
Voltage range	12V input types	11	12	13.3	V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA=-40°C to 85°C			0.25	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High Vin to low Vin		1	1.2	%/%
Load Regulation (10% load to rated load)	5V output types			16	%
Load Regulation (10% load to rated load)	all other types			11	%

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, TPLE03	5.5V
Input voltage Vin, TPLE05	7V
Input voltage Vin, TPLE12	15V

ISOLATION CHARACTERISTICS

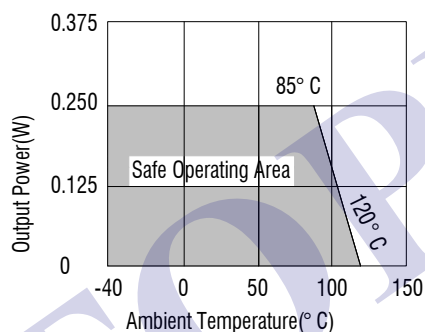
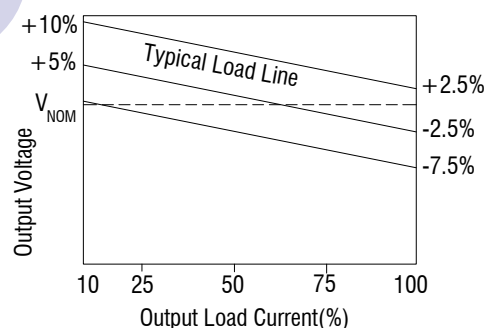
Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 second	1000			VDC
Resistance	Viso= 1000VDC	1			GΩ

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	All input types		110		kHz

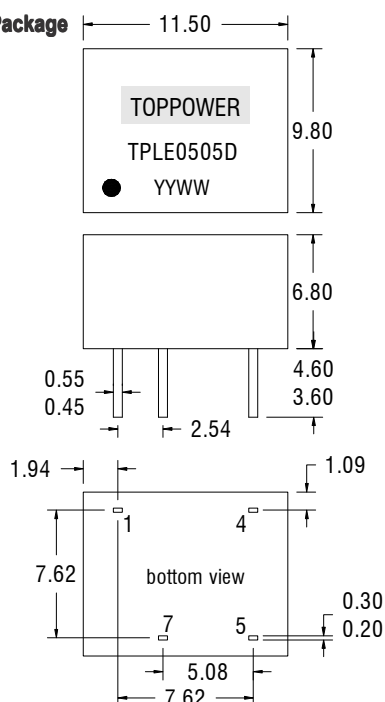
TEMPERATURE CHARACTERISTICS

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

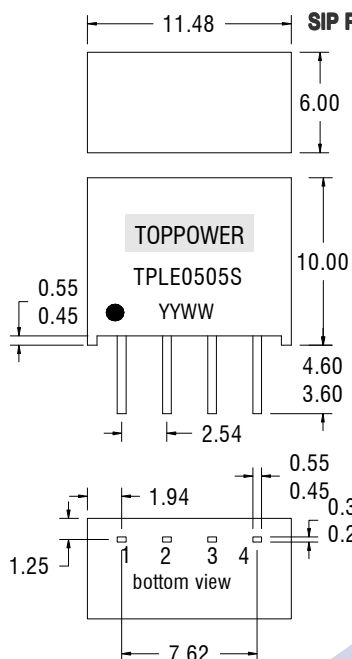
TEMPERATURE DERATING GRAPHS

TOLERANCE ENVELOPES


MECHANICAL DIMENSIONS

DIP Package



SIP Package



PIN CONNECTIONS-8PIN DIP

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

PIN CONNECTIONS-4PIN SIP

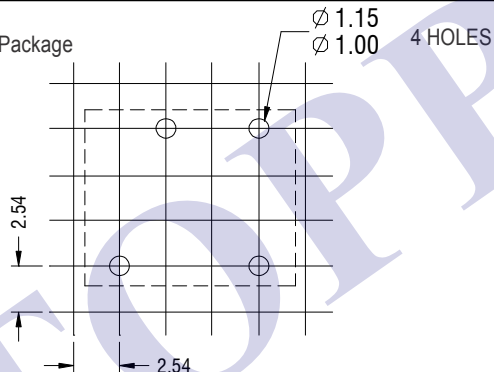
Pin	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

All dimensions in mm \pm 0.25mm. All pins on a 0.54mm pitch and within \pm 0.25mm of true position.

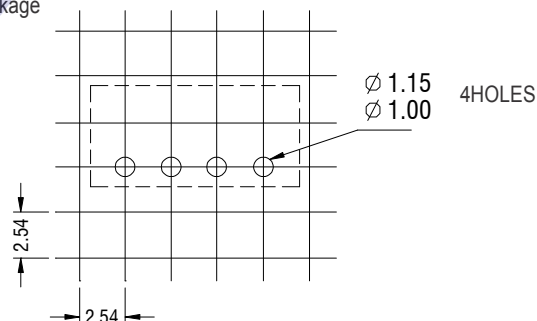
Weight: 1.30g(SIP), 1.48g(DIP)

RECOMMENDED FOOTPRINT DETAILS

8 Pin DIP Package

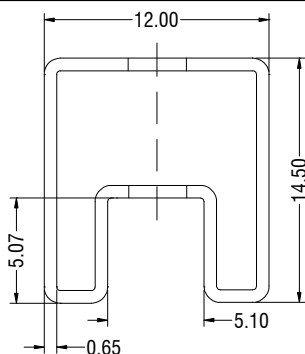


4Pin SIP Package

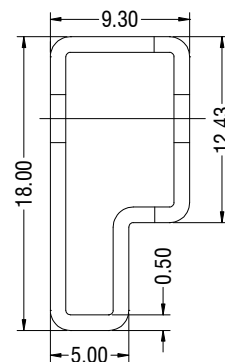


TUBE OUTLINE DIMENSIONS

8Pin DIPTube



4Pin SIPTube



Unless otherwise stated all dimensions in mm \pm 0.5mm.

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

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

Tube Quantity : 35