

250mW Isolated Single Output DC/DC Converters

DESCRIPTION

The TPLE series of DC/DC converters are low -power operation. They are ideally suited to generating a negative supply where only a positive rail exists.



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: 5V , 12V
Output voltage: 5V, 9V, 12V ,15V	Custom solutions available	

SELECTION GUIDE

Order Code	Nominal Input Voltage	Output Voltage	Output Current	Efficiency	Isolation Capacitance	Package Style
	V	V	mA	%	pF	
TPLE0505D	5	5	51	71	30	DIP
TPLE0509D	5	9	28	74	38	
TPLE0512D	5	12	21	76	42	
TPLE0515D	5	15	17	76	43	
TPLE0505S	5	5	50	70	30	SIP
TPLE0509S	5	9	28	75	38	
TPLE0512S	5	12	21	75	42	
TPLE0515S	5	15	16	75	41	
TPLE1205D	12	5	50	71	39	DIP
TPLE1209D	12	9	28	75	40	
TPLE1212D	12	12	21	75	44	
TPLE1215D	12	15	16	75	46	
TPLE1205S	12	5	50	71	38	SIP
TPLE1209S	12	9	28	75	42	
TPLE1212S	12	12	21	75	44	
TPLE1215S	12	15	16	75	46	

INPUT CHARACTERISTICS

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

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	$T_A=0^{\circ}\text{C}$ to 70°C			0.25	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High V_{IN} to low V_{IN}			1.2	%/%
Load Regulation(10% load to rated load)	5V output types			16	%
	all other types			11	

All specifications typical at $T_A=25^{\circ}\text{C}$, 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 V_{IN} , TPLE05	7V
Input voltage V_{IN} , TPLE12	15V

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Flash tested for 1 second	1000			VDC
Resistance	$V_{iso}=500\text{VDC}$	1			$\text{G}\Omega$

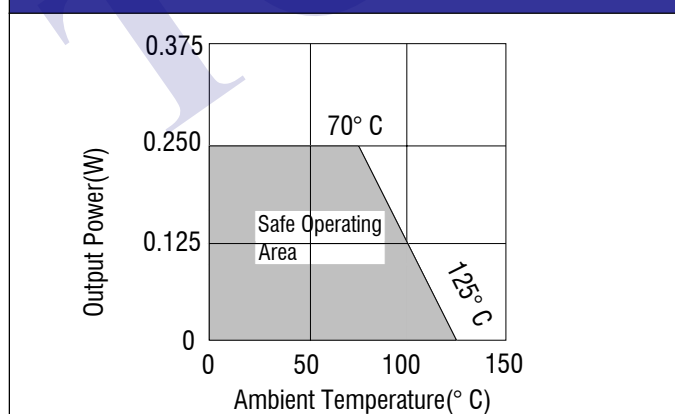
GENERAL CHARACTERISTICS

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

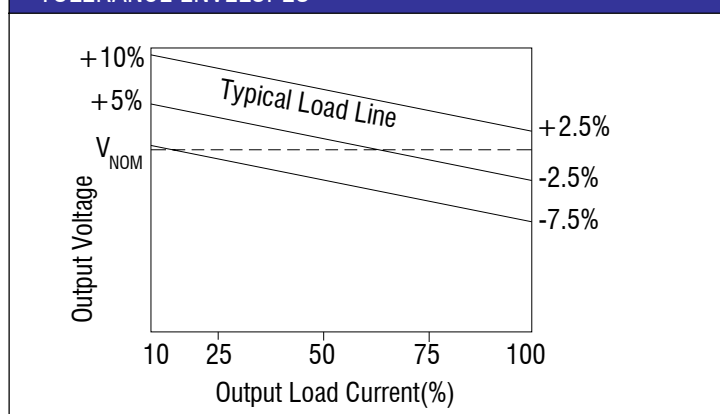
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	0		70	$^{\circ}\text{C}$
Storage		-55		130	
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

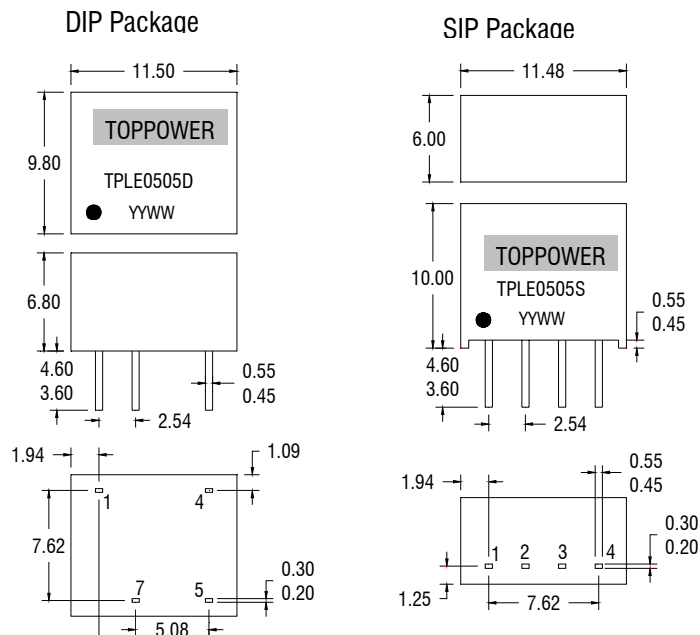


TOLERANCE ENVELOPES



PACKAGE SPECIFICATIONS

MECHANICAL DIMENSIONS



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 ± 0.25 mm. All pins on a 0.54 mm pitch and within ± 0.25 mm of true position.

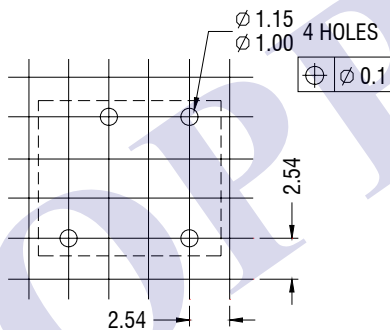
Weight: 1.30g (SIP) 1.48g (DIP)

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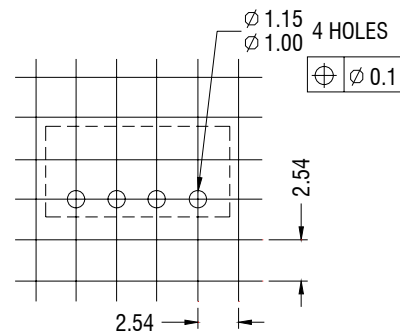
PACKAGE SPECIFICATIONS (continued)

RECOMMENDED FOOTPRINT DETAILS

8Pin DIP Package

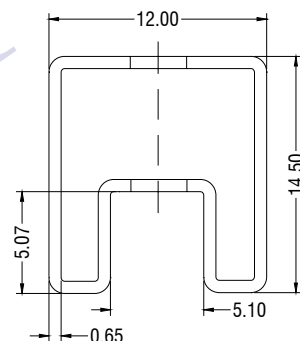


4Pin SIP Package

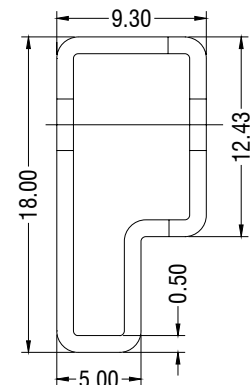


TUBE OUTLINE DIMENSIONS

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 DIP) : 520mm ± 2 mm.

Tube Quantity : 35