



DESCRIPTION : 3W 1KVDC Isolated Wide Input Dual Output DC/DC Converters

The TP2D series are a range of isolated 3 Watt converters in a low profile DIP package, 2:1 wide input range and tightly regulated output voltage qualifies these converters for many cost critical applications in industrial and consumer electronics. Operating temperature ranges from -40 °C to 85 °C, the internal SMD construction makes it possible to offer a product with high performance at low cost.

FEATURES

RoHS compliant	Industry standard footprint	Power density 0.9W/cm ³
2:1 wide input range	Dual isolated output	Short circuit protection
Low profile	Operating temperature: -40°C to 85°C	Load and line regulation <1%
Footprint 4.7cm ²	1KVDC isolation	Input voltage: 5V, 12V, 24V, 48V Output voltage: ±3.3V, ±5V, ±12V, ±15V

SELECTION GUIDE

Part Number	Input voltage		Rated output voltage	Output current		Efficiency
	Voltage(VDC)			Min. Load	Full load	
	Rated	Range values	(V)	mA	mA	%
TP2D0503	5 (2:1)	4.5-9	±3.3	±114	±453	66
TP2D0505	5 (2:1)	4.5-9	±5	±76	±301	71
TP2D0512	5 (2:1)	4.5-9	±12	±30	±126	75
TP2D0515	5 (2:1)	4.5-9	±15	±26	±99	75
TP2D1203	12 (2:1)	9-18	±3.3	±114	±453	72
TP2D1205	12 (2:1)	9-18	±5	±76	±301	75
TP2D1212	12 (2:1)	9-18	±12	±30	±126	78
TP2D1215	12 (2:1)	9-18	±15	±26	±99	77
TP2D2403	24 (2:1)	18-36	±3.3	±114	±453	73
TP2D2405	24 (2:1)	18-36	±5	±76	±301	78
TP2D2412	24 (2:1)	18-36	±12	±30	±126	81
TP2D2415	24 (2:1)	18-36	±15	±26	±99	82
TP2D4803	48 (2:1)	36-72	±3.3	±114	±453	72
TP2D4805	48 (2:1)	36-72	±5	±76	±301	75
TP2D4812	48 (2:1)	36-72	±12	±30	±126	79
TP2D4815	48 (2:1)	36-72	±15	±26	±99	81

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	5V input variants	4.5	5	9	V
Voltage range	12V input variants	9	12	18	V
Voltage range	24V input variants	18	24	36	V
Voltage range	48V input variants	36	48	74	V

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	8 hours
Lead temperature 1.5mm from case for 10 seconds	300°C
Minimum output load for specification	25% of rated output
Input voltage 5V variants	10V
Input voltage 12V variants	20V
Input voltage 24V variants	40V
Input voltage 48V variants	80V
Free air space	10mm Min. around component

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

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min	Typ	Max.	Units
Voltage set point accuracy	With external input/output capacitors	3.3V & 5V outputs	±2	±5	%
		12V & 15V outputs	±1	±3	%
Load regulation	Low line to high line with external input/output capacitors		0.2	0.5	%
Load regulation	25% load to 100% load with external input/output capacitors with balanced load	3.3V & 5V outputs	0.5	1.0	%
		12V & 15V outputs	0.2	0.6	%
Cross regulation	% voltage change on negative output when positive load varies from 12% to 50% of 3W rating, with negative load fixed at 50%	All types		6.0	%
Short circuit protection				Continuous	

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	100% to 25% load, VIN min to max	60		630	kHz

TEMPERATURE CHARACTERISTICS

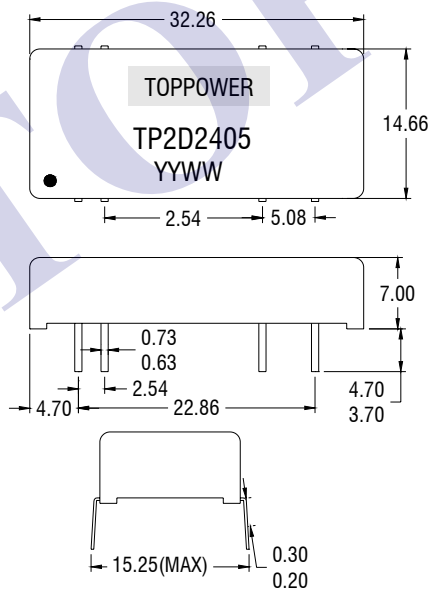
Parameter	Conditions	Min.	Typ.	Max.	Units
Operation		-40		85	°C
Storage		-50		130	°C
Case temperature rise above ambient	All types		45		°C

ISOLATION CHARACTERISTICS

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

MECHANICAL DIMENSIONS

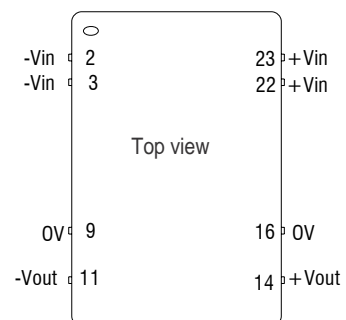
DIP Package



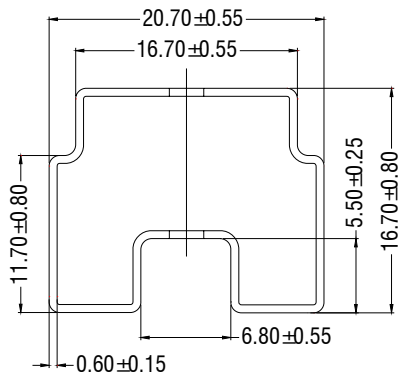
All dimensions in mm ±0.25mm. All pins on a 2.54mm pitch and within ± 0.25mm of true position.
Weight: 6.0g

PIN CONNECTIONS

24 PIN DIP	
Pin	Function
2	-Vin
3	-Vin
9	0V
11	-Vout
14	+Vout
16	0V
22	+Vin
23	+Vin



TUBE OUTLINE DIMENSIONS

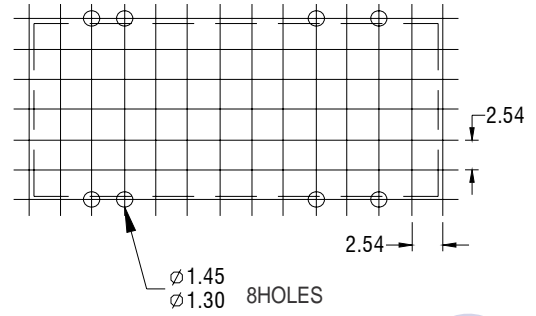


All dimensions in mm ±0.5mm.

Tube length : 520mm ±2mm.

Tube Quantity:15

RECOMMENDED FOOTPRINT DETAILS



All dimensions in mm ±0.25mm.

All pins on a 2.54mm pitch and within ± 0.25mm of true position.

SOLDERING INFORMATION

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

TOPPOWER