


DESCRIPTION: 2W 6KVDC Isolated Dual Output DC/DC Converters

The TPS series are miniature, 6KVDC isolated 2W DC/DC-converters in a DIP package with dual output. 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.

FEATURES

RoHS compliant	Dual outputs	Efficiency to 82%
Power density up to 0.44W/cm ³	No heatsink required	Low profile package
UL 94V-0 package material	6KVDC isolation	Footprint 4.75cm ²
Input voltage: 5V, 12V	Output voltage: $\pm 5V$, $\pm 9V$, $\pm 12V$, $\pm 15V$	Operating temperature: -40°C to 85°C

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency
	V	V	mA	%
TPS0505	5	± 5	± 200	73
TPS0509	5	± 9	± 110	75
TPS0512	5	± 12	± 84	77
TPS0515	5	± 15	± 68	77
TPS1205	12	± 5	± 200	78
TPS1209	12	± 9	± 110	80
TPS1212	12	± 12	± 84	82
TPS1215	12	± 15	± 68	82

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	5V input	4.5	5	5.5	V
Voltage range	12V input	11	12	13.2	V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA= -40°C to 85°C			2	W
Voltage Set Point Accuracy	See tolerance envelope			10	%
Line regulation	High VIN to low VIN		1.0	1.2	%/%
Load Regulation(10% load to rated load)	5V output		9	16	%
Load Regulation(10% load to rated load)	9V output		7	16	%
Load Regulation(10% load to rated load)	12V output		7	16	%
Load Regulation(10% load to rated load)	15V output		7	16	%

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	890mW
Input voltage Vin, TPS05	7V
Input voltage Vin, TPS12	15V

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 second	6000			VDC
Resistance	Viso= 1000VDC	1			GΩ

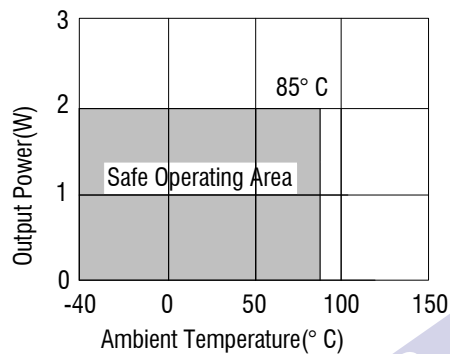
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	All input types		40		kHz

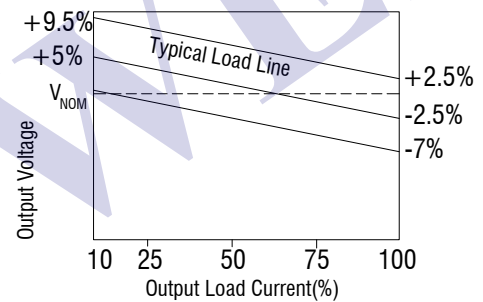
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	-40		85	℃
Storage		-50		130	℃
Case Temperature above ambient	All output types			35	℃
Cooling	Free air convection				

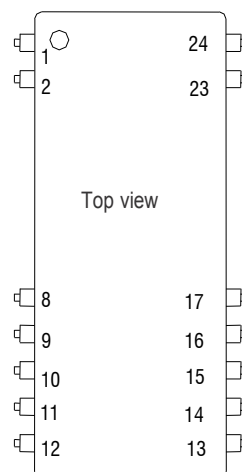
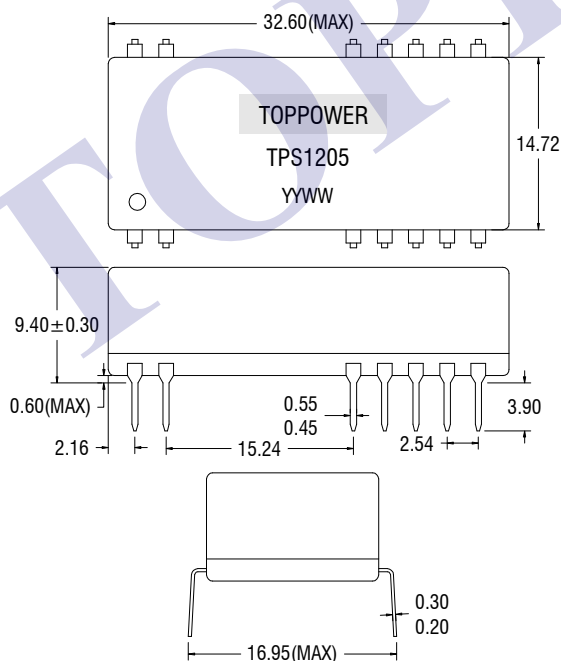
TEMPERATURE DERATING GRAPHS



TOLERANCE ENVELOPES



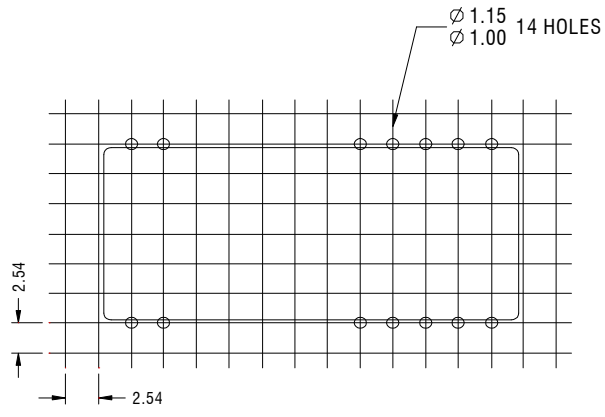
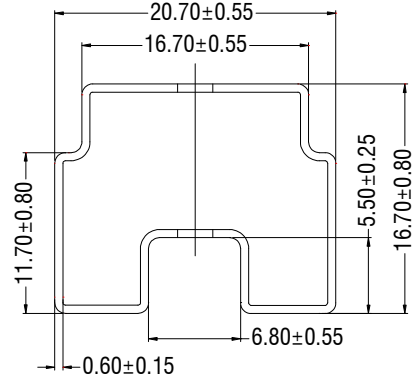
MECHANICAL DIMENSIONS



PIN CONNECTIONS

Pin	Function
1	+Vin
2	-Vin
8	-Vout
9	NC
10	OV
11	NC
12	+Vout
13	+Vout
14	NC
15	OV
16	NC
17	-Vout
23	NC
24	NC

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

RECOMMENDED FOOTPRINT DETAILS	TUBE OUTLINE DIMENSIONS
 $\varnothing 1.15$ $\varnothing 1.00$ 14 HOLES 2.54 2.54 Unless otherwise stated all dimensions in mm$\pm$0.5mm.	 20.70 ± 0.55 16.70 ± 0.55 11.70 ± 0.80 5.50 ± 0.25 16.70 ± 0.80 6.80 ± 0.55 0.60 ± 0.15 Unless otherwise stated all dimensions in mm$\pm$0.5mm. Tube length : 520mm$\pm$2mm. Tube Quantity : 15
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