



DESCRIPTION: 1W 6KVDC Isolated DC/DC Converters

The TPJ series are miniature, 6KVDC isolated 1 W DC/DC-converters in a SIP package with single and dual output voltage. 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	Single and dual outputs	Power density 0.42w/cm ³
Operating temperature: -40°C to 85°C	Footprint 1.91cm ²	UL 94V-0 package material
No heatsink required	6KVDC isolation	SIP package style
Input voltage: 3.3V, 5V, 12V	Output voltage: ±5V, ±9V, ±12V, ±15V / 3.3V, 5V, 9V, 12V, 15V	Custom solutions available

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency (Min.)
	V	V	mA	%
TPJ0505S	5	±5	±100	61
TPJ0509S	5	±9	±55	66
TPJ0512S	5	±12	±42	66
TPJ0515S	5	±15	±33	66
TPJ1205S	12	±5	±100	61
TPJ1209S	12	±9	±55	66
TPJ1212S	12	±12	±42	66
TPJ1215S	12	±15	±33	65
TPJ0303SA	3.3	3.3	303	66
TPJ0503SA	5	3.3	303	65
TPJ0505SA	5	5	200	68
TPJ0509SA	5	9	111	72
TPJ0512SA	5	12	83	70
TPJ0515SA	5	15	66	70
TPJ1205SA	12	5	200	69
TPJ1209SA	12	9	111	74
TPJ1212SA	12	12	83	74
TPJ1215SA	12	15	66	74

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	3.3V input	2.9	3.3	3.6	V
Voltage range	5V input	4.5	5	5.5	V
Voltage range	12V input	11	12	13	V

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage Vin, TPJ03	5V
Input voltage Vin, TPJ05	7V
Input voltage Vin, TPJ12	15V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Units
Rated Power	TA= -40°C to 85°C		1	W
Voltage Set Point Accuracy	See tolerance envelopes			
Line regulation	High Vin to low Vin		1.2	%/%
Load regulation Single outputs	xx03		11	%
Load regulation Single outputs	0505		8.0	%
Load regulation Single outputs	0509, 0512, 0515		6.0	%
Load regulation Single outputs	12xx		6.0	%
Load regulation	5V output types		10.0	%
Load regulation	9V output types		6.4	%
Load regulation	12V output types		6.4	%
Load regulation	15V output types		6.4	%

ISOLATION CHARACTERISTICS

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

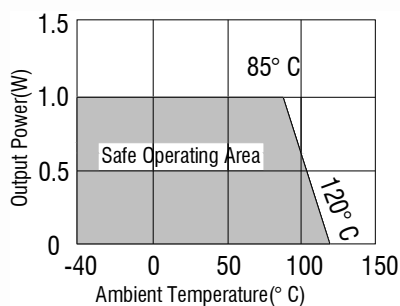
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	Single output		45		kHz
Switching frequency	Dual output		70		kHz

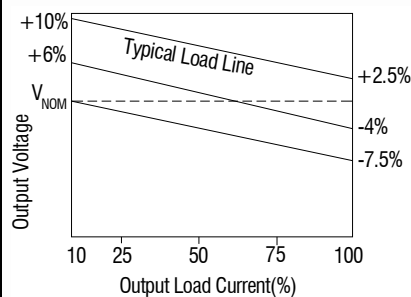
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	-40		85	°C
Storage		-55		130	°C
Case Temperature above ambient	All output types			33	°C
Cooling	Free air convection				

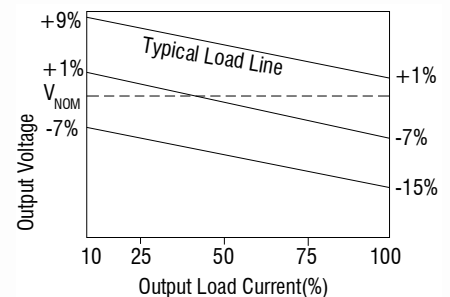
TEMPERATURE DERATING GRAPHS



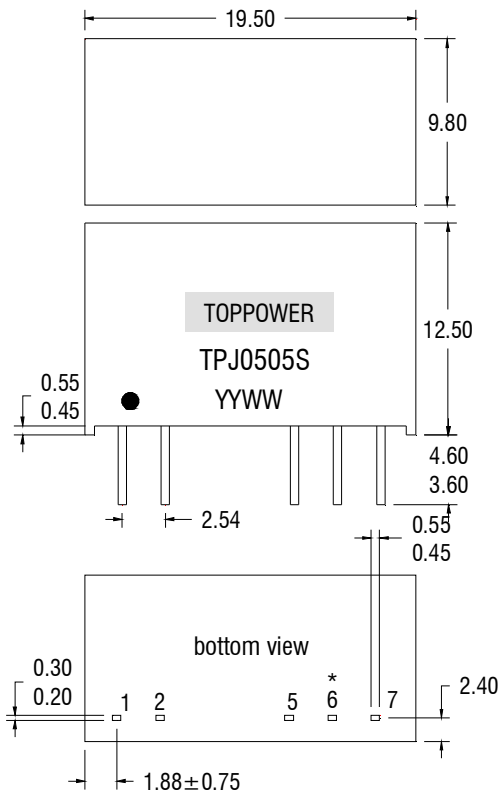
TOLERANCE ENVELOPE



TOLERANCE ENVELOPE, 3.3Vin, 3Vout type



MECHANICAL DIMENSIONS



Weight: 4.3g

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

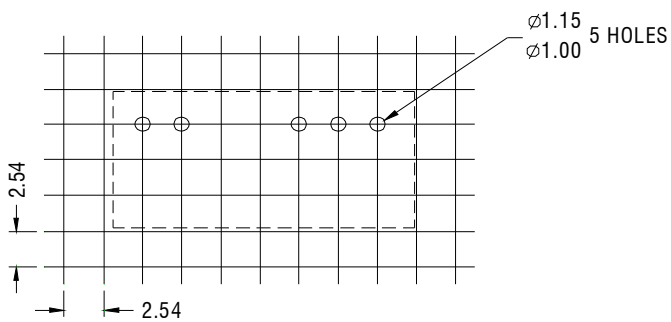
* Pin not fitted on single output variants.

PIN CONNECTIONS

Dual Output	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
6	OV
7	+Vout

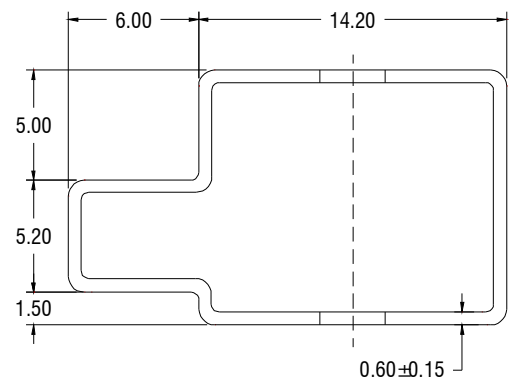
Single Output	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

RECOMMENDED FOOTPRINT DETAILS



All dimensions in mm ±0.25mm

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in ±mm ±0.5mm.

Tube length : 25mm ± 2mm.

Tube Quantity : 25