
DESCRIPTION: 2W 6KVDC Isolated DC/DC Converters

The TPJ-2W series are miniature, 6KVDC isolated 2W 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	UL 94V-0 package material
Operating temperature: -40°C to 85°C	Footprint 1.91cm ²	SIP package style
No heatsink required	6KVDC isolation	Custom solutions available
Input voltage: 3.3V, 5V, 12V	Output voltage: 3.3V, 5V, 9V, 12V, 15V / $\pm 5V$, $\pm 9V$, $\pm 12V$, $\pm 15V$	/

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency (Min.)
	V	V	mA	%
TPJ0505S-2W	5	± 5	± 200	73
TPJ0509S-2W	5	± 9	± 110	75
TPJ0512S-2W	5	± 12	± 84	76
TPJ0515S-2W	5	± 15	± 68	76
TPJ1205S-2W	12	± 5	± 200	73
TPJ1209S-2W	12	± 9	± 110	75
TPJ1212S-2W	12	± 12	± 84	76
TPJ1215S-2W	12	± 15	± 68	76
TPJ0303SA-2W	3.3	3.3	606	65
TPJ0503SA-2W	5	3.3	606	66
TPJ0505SA-2W	5	5	400	67
TPJ0509SA-2W	5	9	222	72
TPJ0512SA-2W	5	12	166	75
TPJ0515SA-2W	5	15	133	75
TPJ1205SA-2W	12	5	400	66
TPJ1209SA-2W	12	9	222	68
TPJ1212SA-2W	12	12	166	75
TPJ1215SA-2W	12	15	133	75

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	Ten minutes
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage V_{in} , TPJ03	5V
Input voltage V_{in} , TPJ05	7V
Input voltage V_{in} , 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

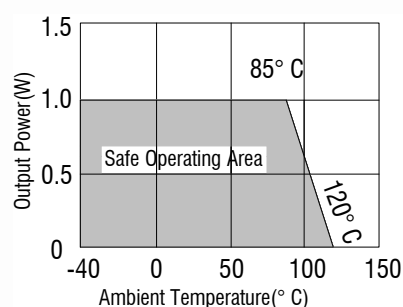
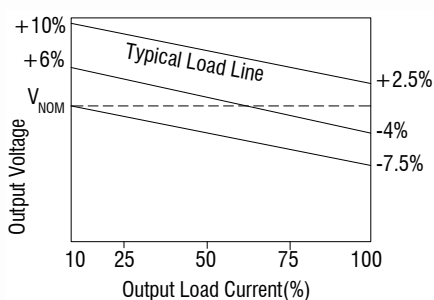
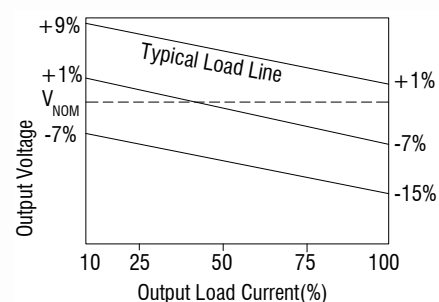
Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Flash tested for 1 second	6000			VDC
Resistance	Viso= 1000VDC	1			GΩ

GENERAL CHARACTERISTICS

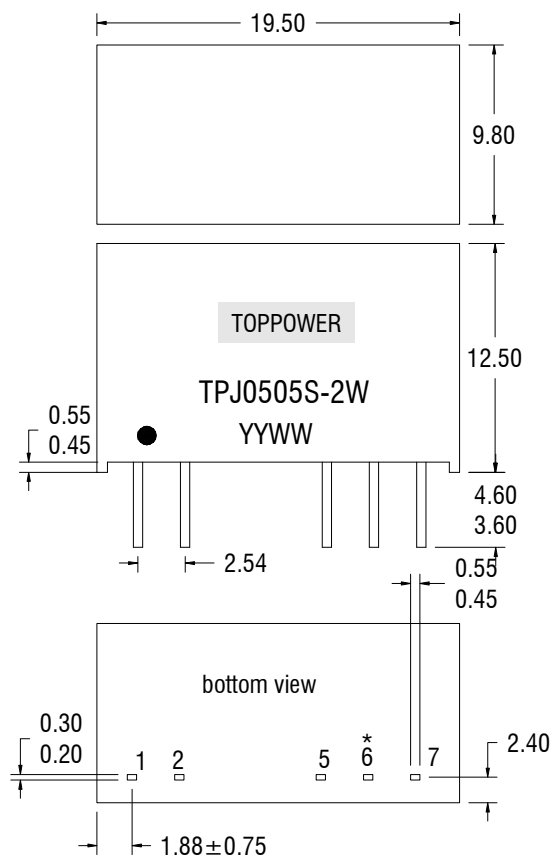
Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	Single output		45		kHz
Switching frequency	Dual output		70		kHz

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

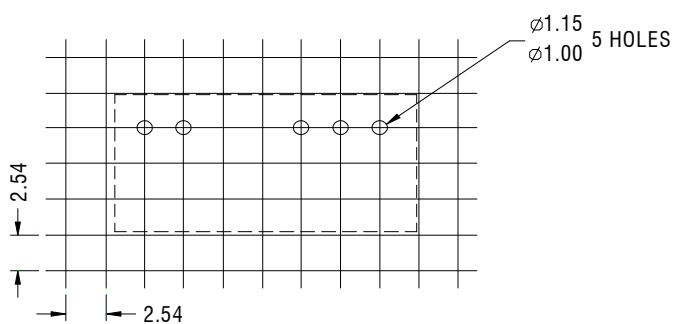
All dimensions in mm ± 0.25 mm. All pins on a 2.54mm pitch and within ± 0.25 mm of true position. * Pin not fitted on single output variants.

PIN CONNECTIONS

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

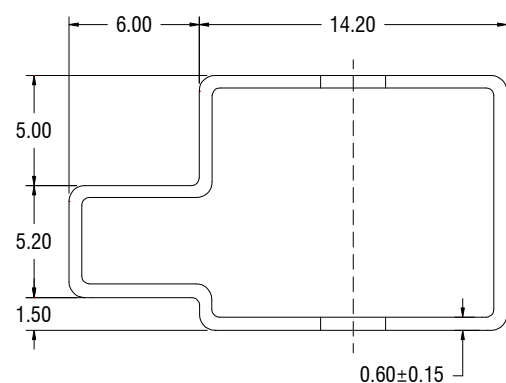
Single Output	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

RECOMMENDED FOOTPRINT DETAILS



All dimensions in mm±0.25mm

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in $\pm\text{mm} \pm 0.5\text{mm}$.

Tube length : 25mm±2mm.

Tube Quantity : 25