



DESCRIPTION:

1W 6KVDC Isolated Single and Dual Output DC/DC Converters

The PPJ 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, CE certification	Single and dual outputs	Power density 0.42w/cm ³
Operating temperature: -40°C to 105°C	Footprint 1.91cm ²	UL 94V-0 package material
No heatsink required	6KVDC isolation	SIP package style
Input voltage: 3.3V, 5V, 12V, 15V, 24V	Output voltage: ±5V, ±9V, ±12V, ±15V / 3.3V, 5V, 9V, 12V, 15V, 24V	Custom solutions available

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency (Min.)
	V	V	mA	%
PPJ0505S	5	±5	±100/±10	61
PPJ0509S	5	±9	±55/±5.5	66
PPJ0512S	5	±12	±42/±4.2	66
PPJ0515S	5	±15	±33/±3.3	66
PPJ1205S	12	±5	±100/±10	61
PPJ1209S	12	±9	±55/±5.5	66
PPJ1212S	12	±12	±42/±4.2	66
PPJ1215S	12	±15	±33/±3.3	65
PPJ1505S	15	±5	±100/±10	80
PPJ1515S	15	±15	±33/±3.3	81
PPJ2412S	24	±12	±42/±4.2	80
PPJ2415S	24	±15	±33/±3.3	81
PPJ0303SA	3.3	3.3	303/30.3	66
PPJ0305SA	3.3	5	200/20	66
PPJ0503SA	5	3.3	303/30.3	65
PPJ0505SA	5	5	200/20	68
PPJ0509SA	5	9	111/11.1	72
PPJ0512SA	5	12	83/8.3	70
PPJ0515SA	5	15	66/6.6	70
PPJ0524SA	5	24	42/4.2	80
PPJ1205SA	12	5	200/20	69
PPJ1209SA	12	9	111/11.1	74
PPJ1212SA	12	12	83/8.3	74
PPJ1215SA	12	15	66/6.6	74
PPJ1505SA	15	5	200/20	80
PPJ1509SA	15	9	111/11.1	80
PPJ2403SA	24	3.3	303/30.3	72
PPJ2405SA	24	5	200/20	80
PPJ2412SA	24	12	84/8.4	80
PPJ2415SA	24	15	67/6.7	80
PPJ2424SA	24	24	42/4.2	80

Add suffix "P" for continuous short circuit protection, for example PPJ0505SP.

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
Voltage range	15V input	13.4	15	16.4	V
Voltage range	24V input	21.6	24	26.4	V

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage V_{in} , PPJ03	5V
Input voltage V_{in} , PPJ05	7V
Input voltage V_{in} , PPJ12	15V
Input voltage V_{in} , PPJ15	18V
Input voltage V_{in} , PPJ24	28V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Units
Rated Power	$T_A = -40^\circ\text{C}$ to 85°C		1	W
Voltage Set Point Accuracy	See tolerance envelopes			
Line regulation	High V_{IN} to low V_{IN} (voltage variation $\pm 5\%$)		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 & 24V 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

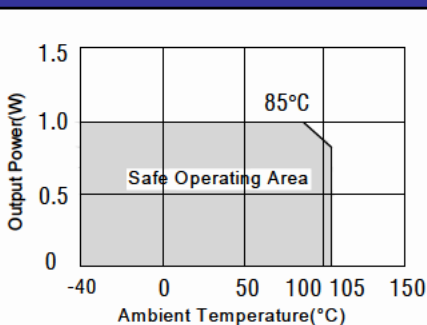
GENERAL CHARACTERISTICS

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

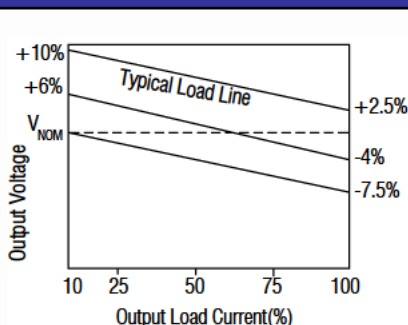
TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature $\geq 85^\circ\text{C}$	-40		105	°C
Storage		-55		130	°C
Case Temperature above ambient	All output types			33	°C
Cooling	Free air convection				

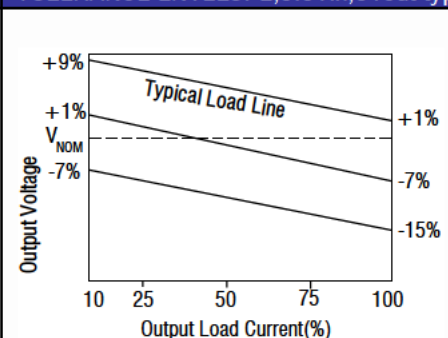
TEMPERATURE DERATING GRAPHS



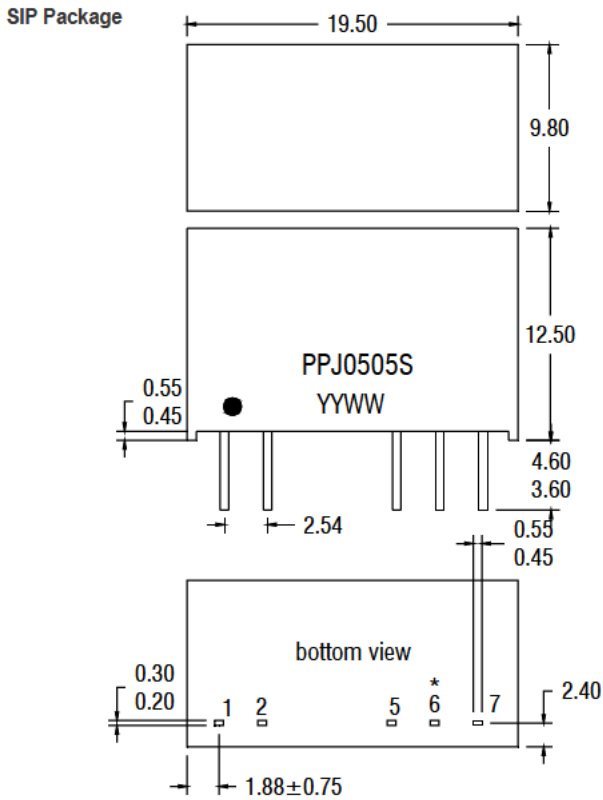
TOLERANCE ENVELOPE



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.

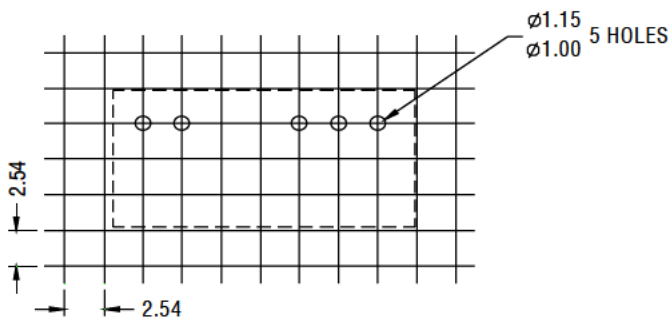
* Pin not fitted on single output variants.

PIN CONNECTIONS

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

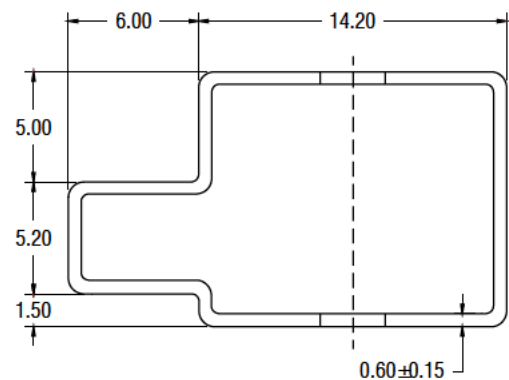
7 PIN SIP Single Output	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

RECOMMENDED FOOTPRINT DETAILS



All dimensions in mm ± 0.25 mm

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length : 25mm ± 2 mm.

Tube Quantity : 25PCS