



**DESCRIPTION:** 1W 3KVDC Isolated Single & Dual Output DC/DC Converters

The PPV series are miniature, isolated 1W DC/DC converters in a SIP and DIP package. 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 and 3KVDC isolation.

### FEATURES

RoHS compliant	Efficiency to 80%	Power density up to 0.85W/cm <sup>3</sup>
Operating temperature: -40°C to 105°C	Single or dual output	UL 94V-0 package material
Power sharing on dual output	3KVDC isolation (1 minute)	Input voltage: 3.3V,5V,9V,12V,15V
CE certification	/	Output voltage: 3.3V,5V,9V,12V,15V,24V /±5V,±9V,±12V,±15V, ±24V

### SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Max. Capacitive Load(µF)	Package Style
	V	V	mA	%		
PPV0303DA	3.3	3.3	303/30.3	72	220	DIP
PPV0305DA	3.3	5	200/20	72	220	DIP
PPV0503DA	5	3.3	303/30.3	73	220	DIP
PPV0505DA	5	5	200/20	72	220	DIP
PPV0509DA	5	9	111/11.1	75	220	DIP
PPV0512DA	5	12	84/8.4	76	220	DIP
PPV0515DA	5	15	67/6.7	78	220	DIP
PPV0524DA	5	24	42/4.2	79	220	DIP
PPV0303SA	3.3	3.3	303/30.3	72	220	SIP
PPV0305SA	3.3	5	200/20	72	220	SIP
PPV0503SA	5	3.3	303/30.3	73	220	SIP
PPV0505SA	5	5	200/20	75	220	SIP
PPV0509SA	5	9	111/11.1	75	220	SIP
PPV0512SA	5	12	84/8.4	76	220	SIP
PPV0515SA	5	15	67/6.7	78	220	SIP
PPV0524SA	5	24	42/4.2	79	220	SIP
PPV0909SA	9	9	111/11.1	79	220	SIP
PPV0915SA	9	15	67/6.7	82	220	SIP
PPV1205DA	12	5	200/20	72	220	DIP
PPV1209DA	12	9	111/11.1	75	220	DIP
PPV1212DA	12	12	84/8.4	77	220	DIP
PPV1215DA	12	15	67/6.7	78	220	DIP
PPV1203SA	12	3.3	303/30.3	70	220	SIP
PPV1205SA	12	5	200/20	72	220	SIP
PPV1209SA	12	9	111/11.1	75	220	SIP
PPV1212SA	12	12	84/8.4	77	220	SIP
PPV1215SA	12	15	67/6.7	78	220	SIP
PPV1224SA	12	24	42/4.2	79	220	SIP
PPV1505DA	15	5	200/20	69	220	DIP
PPV1505SA	15	5	200/20	72	220	SIP
PPV1509SA	15	9	111/11.1	73	220	SIP
PPV1512SA	15	12	84/8.4	74	220	SIP
PPV1515SA	15	15	67/6.7	78	220	SIP
PPV0505D	5	±5	±100/±10	72	110	DIP
PPV0509D	5	±9	±55/±5.5	77	110	DIP
PPV0512D	5	±12	±43/±4.3	78	110	DIP
PPV0515D	5	±15	±33/±3.3	80	110	DIP
PPV0305S	3.3	±5	±100/±10	72	110	SIP
PPV0315S	3.3	±15	±33/±3.3	80	110	SIP
PPV0505S	5	±5	±100/±10	72	110	SIP
PPV0509S	5	±9	±55/±5.5	77	110	SIP
PPV0512S	5	±12	±43/±4.3	78	110	SIP
PPV0515S	5	±15	±33/±3.3	80	110	SIP
PPV0524S	5	±24	±21/±2.1	75	110	SIP
PPV1205D	12	±5	±100/±10	72	110	DIP
PPV1209D	12	±9	±55/±5.5	74	110	DIP
PPV1212D	12	±12	±43/±4.3	76	110	DIP
PPV1215D	12	±15	±33/±3.3	77	110	DIP

### SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Max. Capacitive Load(μF)	Package Style
	V	V	mA	%		
PPV1205S	12	±5	±100/±10	72	110	SIP
PPV1209S	12	±9	±55/±5.5	74	110	SIP
PPV1212S	12	±12	±43/±4.3	76	110	SIP
PPV1215S	12	±15	±33/±3.3	77	110	SIP
PPV1505S	15	±5	±100/±10	72	110	SIP
PPV1512S	15	±12	±43/±4.3	74	110	SIP
PPV1515S	15	±15	±33/±3.3	78	110	SIP

Add suffix "P" for continuous short circuit protection, for example PPV0505SAP.

### INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	3.3V input variants	2.9	3.3	3.6	V
Voltage range	5V input variants	4.4	5	5.6	V
Voltage range	9V input variants	8.03	9	10	V
Voltage range	12V input variants	11	12	13.3	V
Voltage range	15V input variants	13.4	15	16.4	V

### ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	540mW
Input voltage Vin, PPV03 variants	5.5V
Input voltage Vin, PPV05 variants	6.6V
Input voltage Vin, PPV09 variants	11.5V
Input voltage Vin, PPV12 variants	14.5V
Input voltage Vin, PPV15 variants	18V

### OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA=-45°C to 85°C			1	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High VIN to low VIN (voltage variation +/-5%)		1.0	1.2	%/%
Ripple & Noise	20MHz bandwidth			80	mVp-p
Load Regulation (10%load to rated load)	3.3V output		14	15	%
Load Regulation (10%load to rated load)	5V output		12	15	%
Load Regulation (10%load to rated load)	9V output		9	10	%
Load Regulation (10%load to rated load)	12V output		7.5	9.5	%
Load Regulation (10%load to rated load)	15V output		7.0	8.5	%

### ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 minute	3000			VDC
Resistance	Viso= 1000VDC	1			G°C

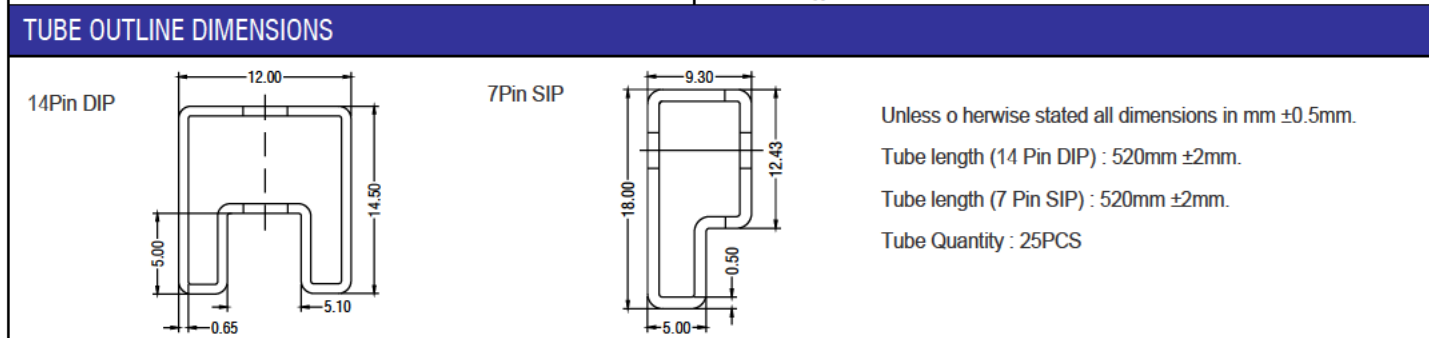
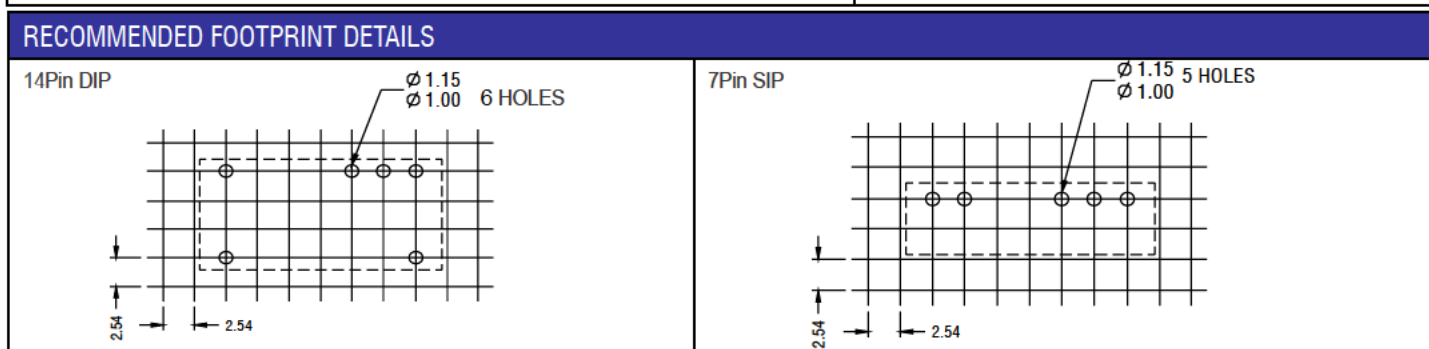
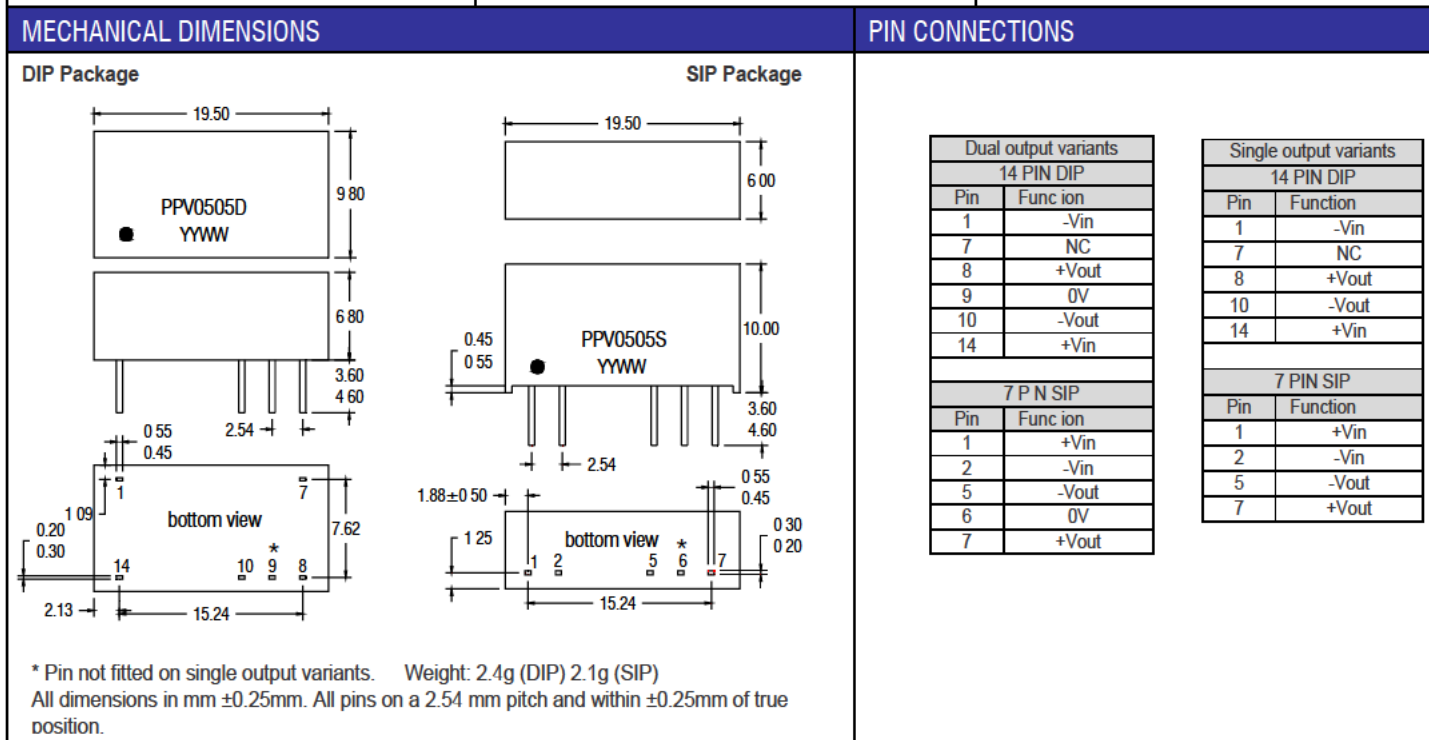
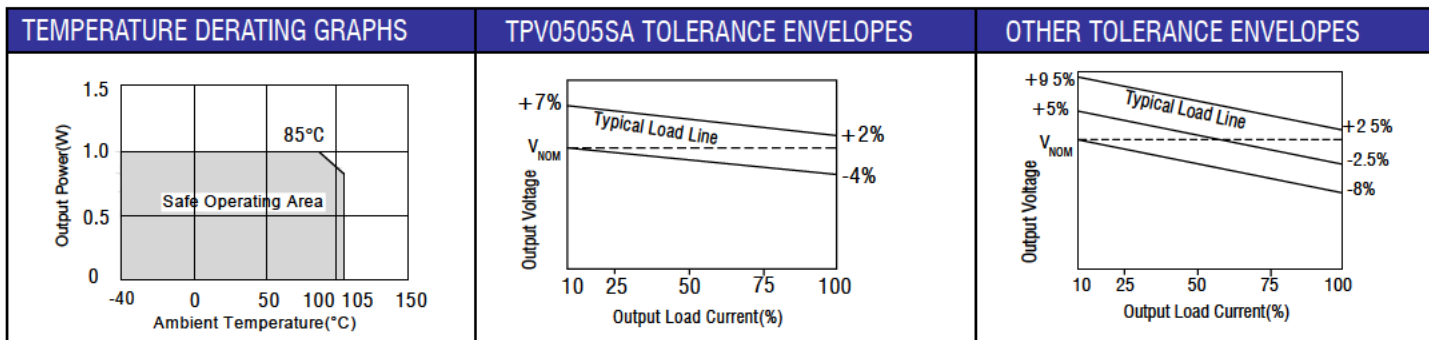
### GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	3.3V input variants		95		kHz
Switching frequency	5V input variants		120	140	kHz
Switching frequency	9V input variants		120	140	kHz
Switching frequency	12V input variants		145	180	kHz
Switching frequency	15V input variants		90	180	kHz
MTBF	MIL-HDBK-217F@25°C		3500		K hours

### TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature ≥85°C	-40		105	°C
Storage		-50		130	°C
Case Temperature above ambient	5V output variants			30	°C
Case Temperature above ambient	All other output variants			30	°C
Cooling	Free air convection				

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



**SOLDERING INFORMATION**

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