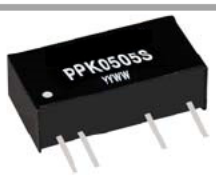
Patron

Passive Elektronic

PPK Series



DESCRIPTION: **2W 3KVDC Isolated Single And Dual Output DC/DC Converters**

The PPK series are miniature, isolated 2W DC/DC converters in a SIP 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, lower output ripple noise and 3KVDC isolation.

FEATURES

RoHS compliant	Efficiency from 80%	Input voltage: 3.3V, 5V,9V,12V, 15V,24V,48V
Operating temperature: -40℃to 105℃	UL 94V-0 package material	Output voltage: 3.3V,5V, 9V, 12V, 15V,18V, ,24V / ±5V, ±9V, ±12V, ±15V,±24V
Industry standard pinout	3KVDC isolation (1 minute)	CE certification

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current(Max./Min)	Load Regulation (Max)	Efficiency (Typ.)	Package Style
	V	V	mA	%	%	
PPK0303SA	3.3	3.3	606/60.6	7.2	82	SIP
PPK0305SA	3.3	5	400/40	7.2	82	SIP
PPK0312SA	3.3	12	167/16.7	5.0	84	SIP
PPK0503SA	5	3.3	606/60.6	7.2	82	SIP
PPK0505SA	5	5	400/40	7.2	82	SIP
PPK0509SA	5	9	222/22.2	5.8	86	SIP
PPK0512SA	5	12	167/16.7	5.0	86	SIP
PPK0515SA	5	15	133/13.3	4.6	87	SIP
PPK0909SA	9	9	222/22.2	5.8	86	SIP
PPK1205SA	12	5	400/40	4.9	82	SIP
PPK1209SA	12	9	222/22.2	3.0	87	SIP
PPK1212SA	12	12	167/16.7	2.9	87	SIP
PPK1215SA	12	15	133/13.3	2.5	89	SIP
PPK1224SA	12	24	83.3/8.33	5.0	83	SIP
PPK1515SA	15	15	133/13.3	2.5	84	SIP
PPK2405SA	24	5	400/40	4.9	82	SIP
PPK2412SA	24	12	167/16.7	5.0	84	SIP
PPK2415SA	24	15	133/13.3	2.5	84	SIP
PPK2418SA	24	18	111/11.1	2.5	84	SIP
PPK2424SA	24	24	83.3/8.33	5.0	83	SIP
PPK0315S	3.3	±15	±67/±6.7	5.3	87	SIP
PPK0505S	5	±5	±200/±20	6.3	82	SIP
PPK0509S	5	±9	±111/±11.1	5.4	86	SIP
PPK0512S	5	±12	±83/±8.3	4.8	86	SIP
PPK0515S	5	±15	±67/±6.7	5.3	87	SIP
PPK0524S	5	±24	±41.65/±4.165	5.0	83	SIP
PPK1205S	12	±5	±200/±20	3.9	82	SIP
PPK1209S	12	±9	±111/±11.1	2.9	86	SIP
PPK1212S	12	±12	±83/±8.3	2.8	87	SIP
PPK1215S	12	±15	±67/±6.7	2.5	87	SIP
PPK1509S	15	±9	±111±/11.1	5.4	86	SIP
PPK1515S	15	±15	±67/±6.7	2.5	87	SIP
PPK2405S	24	±5	±200/±20	3.9	82	SIP
PPK2409S	24	±9	±111/±11.1	2.9	86	DIP
PPK2412S	24	±12	±83/±8.3	2.8	87	SIP
PPK2415S	24	±15	±67/±6.7	2.5	87	SIP
PPK2424S	24	±24	±41.65/±4.165	5.0	83	SIP
PPK0305DA	3.3	5	400/40	7.2	82	DIP
PPK0505DA	5	5	400/40	7.2	82	DIP
PPK0509DA	5	9	222/22.2	5.8	86	DIP
PPK0512DA	5	12	167/16.7	5.0	86	DIP
PPK0515DA	5	15	133/13.3	4.6	87	DIP
PPK1205DA	12	5	400/40	4.9	82	DIP
PPK1209DA	12	9	222/22.2	3.0	87	DIP
PPK1212DA	12	12	167/16.7	2.9	87	DIP
PPK1215DA	12	15	133/13.3	2.5	89	DIP
PPK1515DA	15	15	133/13.3	2.5	84	DIP
PPK2405DA	24	5	400/40	4.9	82	DIP
PPK2412DA	24	12	167/16.7	5.0	84	DIP
PPK2424DA	24	24	83.3/8.33	5.0	83	DIP
PPK0505D	5	±5	±200/±20	6.3	82	DIP
PPK0509D	5	±9	±111±/11.1	5.4	86	DIP
PPK0512D	5	±12	±83/±8.3	4.8	86	DIP
PPK0515D	5	±15	±67/±6.7	5.3	87	DIP
PPK1205D	12	±5	±200/±20	3.9	82	DIP
PPK1209D	12	±9	±111/±11.1	2.9	86	DIP
PPK1212D	12	±12	±83/±8.3	2.8	87	DIP
PPK1215D	12	±15	±67/±6.7	2.5	87	DIP
PPK1515D	15	±15	±67/±6.7	2.5	87	DIP
PPK2405D	24	±5	±200/±20	3.9	82	DIP
PPK2412D	24	±12	±83/±8.3	2.8	87	DIP
PPK2424D	24	±24	±41.65/±4.164	5.0	83	DIP
PPK4805SA	48	5	400/40	4.9	78	SIP
PPK4818SA	48	18	111/11.1	2.9	78	SIP

Add Suffix "P" for Continuous Short Circuit Protection, for example PPK0505SAP.

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	9V input	8 03	9	10	V
Voltage range	12V input	11	12	13	V
Voltage range	15V input	13.4	15	16.4	V
Voltage range	24V input	22	24	26	V
Voltage range	48V input	43	48	53	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				
Line regulation	High VIN to low VIN (voltage variation +/-5%)		1.0	1.2	%/%

ABSOLUTE MAXIMUM RATINGS

Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	650mW
Input voltage Vin, PPK03	5.5V
Input voltage Vin, PPK05	7V
Input voltage Vin, PPK09	11.5V
Input voltage Vin, PPK12	15V
Input voltage Vin, PPK15	18V
Input voltage Vin, PPK24	28V
Input voltage Vin, PPK48	54V

ISOLATION CHARACTERISTICS

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

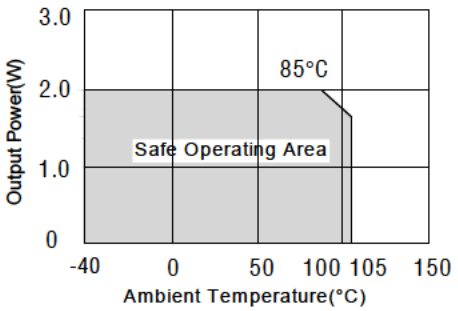
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency			65		kHz

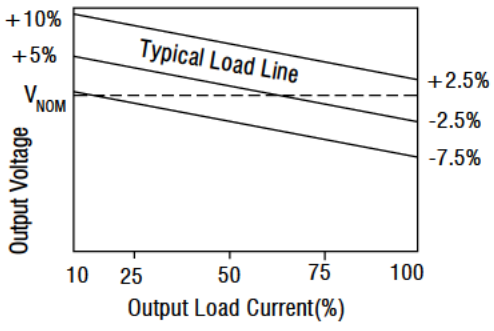
TEMPER ATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature ≥85°C	-40		105	℃
Storage		-50		150	℃
Case Temperature above ambient	5V output			30	℃
Case Temperature above ambient	All other output			30	℃
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

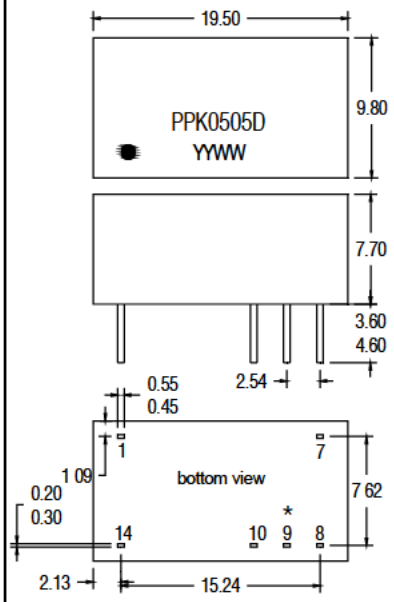


TOLERANCE ENVELOPES

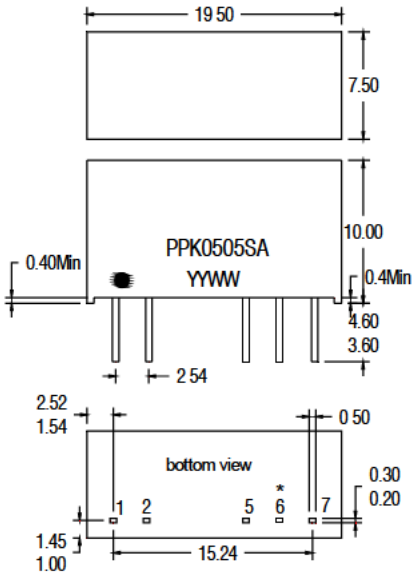


MECHANICAL DIMENSIONS

DIP Package



SIP Package



All dimensions in mm ±0.25mm .

All pins on a 2.54mm pitch and within ±0.25mm of true position. Weight: 2.8g

* Pin not fitted on single output variants

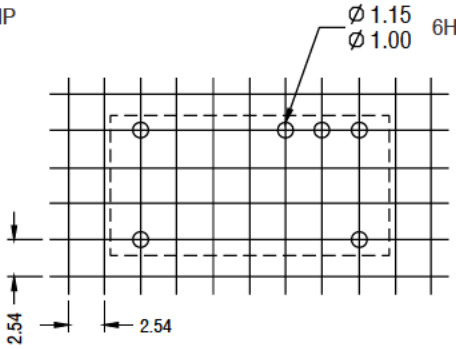
PIN CONNECTIONS

Dual Output Variants	
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	+Vout
9	0V
10	-Vout
14	+Vin
7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
6	0V
7	+Vout

Single output variants	
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	+Vout
10	-Vout
14	+Vin
7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
5	-Vout
7	+Vout

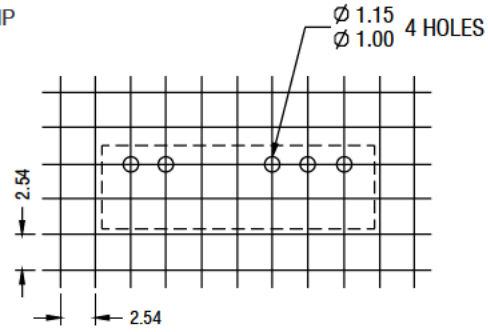
RECOMMENDED FOOTPRINT DETAILS

14Pin DIP



Unless otherwise stated all dimensions in mm ±0.5mm.

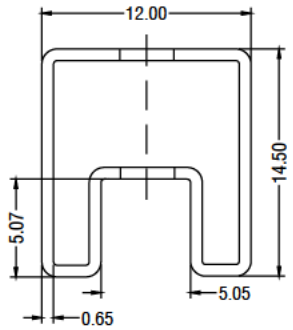
7Pin SIP



Unless otherwise stated all dimensions in mm ±0.5mm.

TUBE OUTLINE DIMENSIONS

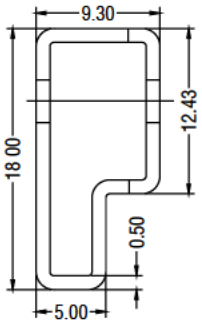
14Pin DIP



Unless otherwise stated all dimensions in mm ±0.5mm.

Tube length : 520mm ±2mm. Tube Quantity : 25PCS

7Pin SIP



Unless otherwise stated all dimensions in mm ±0.5mm.

Tube length : 520mm ±2mm. Tube Quantity : 25PCS

SOLDERING INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300℃ for 10 seconds. The series is backward compatible with Sn/Pb soldering systems