Patron
Passive Elektronic

PKA Series

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

The PKA 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, lower output ripple noise and 3KVDC isolation.

FEATURES

RoHS compliant、CE certification	Efficiency up to 83%	Operating temperature:-40℃ to 105℃
UL 94V-0 package material	Internal SMD construction	Industry standard pinout
Power sharing on output	Input voltage :3.3V, 5V,12V	Output voltage: 3.3V, 5V, 9V, 12V,15V / ±3.3V,±5V,±9V,±12V,±15V

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Package Style
	V	V	mA	%	
PKA0303DA	3.3	3.3	303/30.3	75	DIP
PKA0305DA	3.3	5	200/20	80	DIP
PKA0309DA	3.3	9	111/11.1	75	DIP
PKA0312DA	3.3	12	83/8.3	80	DIP
PKA0315DA	3.3	15	67/6.7	80	DIP
PKA0303SA	3.3	3.3	303/30.3	74	SIP
PKA0305SA	3.3	5	200/20	80	SIP
PKA0309SA	3.3	9	111/11.1	76	SIP
PKA0312SA	3.3	12	83/8.3	77	SIP
PKA0315SA	3.3	15	67/6.7	80	SIP
PKA0503DA	5	3.3	303/30.3	78	DIP
PKA0505DA	5	5	200/20	72	DIP
PKA0509DA	5	9	111/11.1	75	DIP
PKA0512DA	5	12	83/8.3	78	DIP
PKA0515DA	5	15	67/6.7	80	DIP
PKA0503SA	5	3.3	303/30.3	78	SIP
PKA0505SA	5	5	200/20	72	SIP
PKA0509SA	5	9	111/11.1	77	SIP
PKA0512SA	5	12	83/8.3	78	SIP
PKA0515SA	5	15	67/6.7	80	SIP
PKA1205DA	12	5	200/20	75	DIP
PKA1209DA	12	9	111/11.1	82	DIP
PKA1212DA	12	12	83/8.3	82	DIP
PKA1215DA	12	15	67/6.7	82	DIP
PKA1205SA	12	5	200/20	74	SIP
PKA1209SA	12	9	111/11.1	79	SIP
PKA1212SA	12	12	83/8.3	81	SIP
PKA1215SA	12	15	67/6.7	81	SIP
PKA0303D	3.3	±3.3	±151/±15.1	75	DIP
PKA0305D	3.3	±5	±100/±10	80	DIP
PKA0309D	3.3	±9	±55/±5.5	74	DIP
PKA0312D	3.3	±12	±43/±4.3	79	DIP
PKA0315D	3.3	±15	±34/±3.4	80	DIP
PKA0303S	3.3	±3.3	±151/±15.1	73	SIP
PKA0305S	3.3	±5	±100/±10	80	SIP
PKA0309S	3.3	±9	±55/±5.5	76	SIP
PKA0312S	3.3	±12	±43/±4.3	77	SIP
PKA0315S	3.3	±15	±34/±3.4	80	SIP

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Package Style
	V	V	mA	%	
PKA0503D	5	±3.3	±151/±15.1	78	DIP
PKA0505D	5	±5	±100/±10	72	DIP
PKA0509D	5	±9	±55/±5.5	75	DIP
PKA0512D	5	±12	±43/±4.3	77	DIP
PKA0515D	5	±15	±34/±3.4	79	DIP
PKA0503S	5	±3.3	±151/±15.1	78	SIP
PKA0505S	5	±5	±100/±10	72	SIP
PKA0509S	5	±9	±55/±5.5	77	SIP
PKA0512S	5	±12	±43/±4.3	78	SIP
PKA0515S	5	±15	±34/±3.4	79	SIP
PKA1205D	12	±5	±100/±10	75	DIP
PKA1209D	12	±9	±55/5.5	79	DIP
PKA1212D	12	±12	±43/±4.3	82	DIP
PKA1215D	12	±15	±34/±3.4	82	DIP
PKA1205S	12	±5	±100/±10	73	SIP
PKA1209S	12	±9	±55/±5.5	79	SIP
PKA1212S	12	±12	±43/±4.3	81	SIP
PKA1215S	12	±15	±34/±3.4	81	SIP

Add suffix “P” for continuous short circuit protection, for example PKA0505SP.

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	4.5	5	5.6	V
Voltage range	12V input variants	10.7	12	13.1	V
Reflected ripple current	3.3V input		30	60	mA p-p
Reflected ripple current	All other		25	37	mA p-p

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 12 seconds	300 ºC
Internal power dissipation	540mW
Input voltage Vin, PKA03	5.5V
Input voltage Vin,PKA05	7V
Input voltage Vin, PKA12	15V

ISOLATION CHARACTERISTICS

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

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

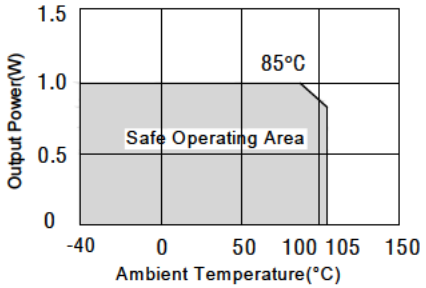
GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	3V input and 0503		95		kHz
Switching frequency	All o her types		120		kHz

TEMPER ATURE CHARACTERISTICS

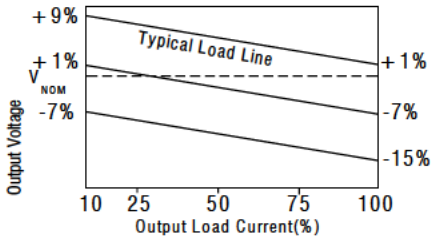
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature ≥85°C	-40		105	°C
Storage		-50		130	°C
Case temperature rise above ambient	5V output types		30		°C
Case temperature rise above ambient	All other types		21		°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

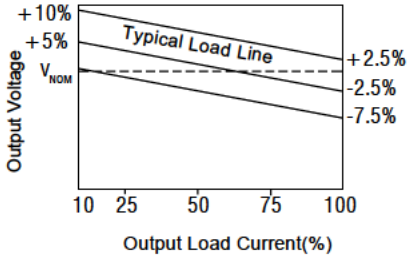


TOLERANCE ENVELOPES

3.3V output types

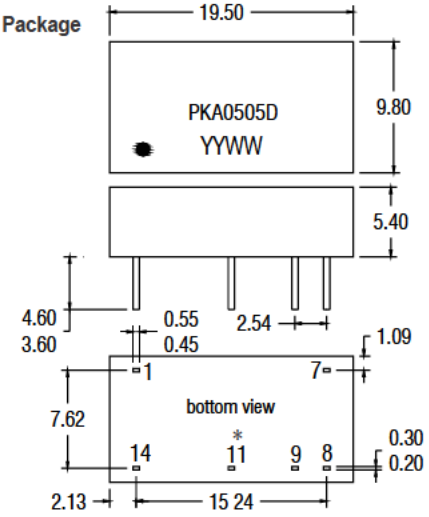


All other types

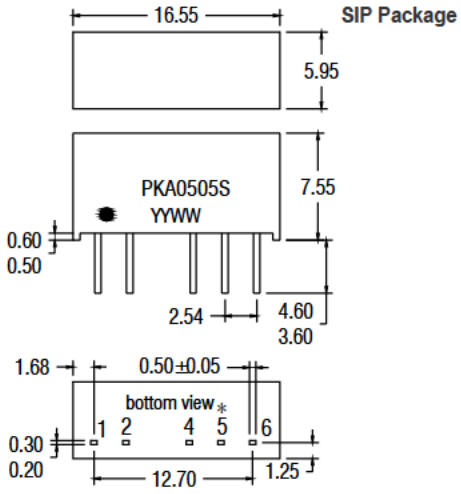


MECHANICAL DIMENSIONS

DIP Package



SIP Package



All dimensions in ±0.25mm . All pins on a 2.54 mm pitch and within ±0.25mm of true position
weight:1.4g(SIP) 1.9g(DIP) * Pin not fitted on single output variants.

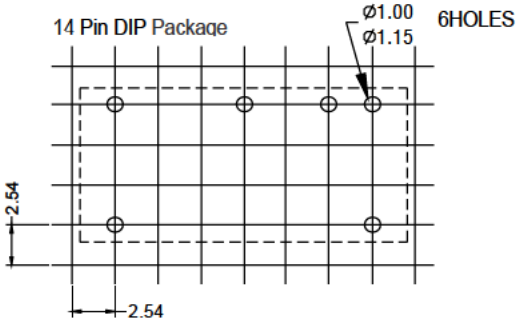
PIN CONNECTIONS

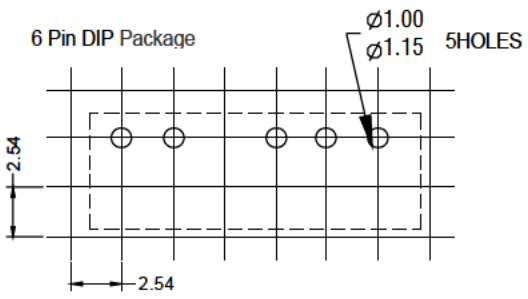
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	OV
9	+Vout
*11	-Vout
14	+ Vin

6 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
*5	OV
6	+Vout

* Pin not fitted on single output variants.

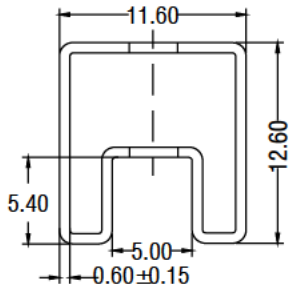
RECOMMENDED FOOTPRINT DETAILS



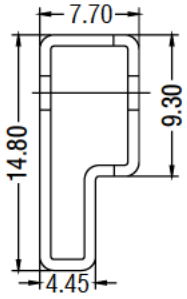


TUBE OUTLINE DIMENSIONS

14 Pin DIP Tube



6 Pin SIP Tube



Unless otherwise stated all dimensions in mm±0.5mm

Tube length(14 Pin DIP): 520mm ±2mm

Tube length(6 Pin SIP): 525mm ±2mm

DIP Tube Quantity:30PCS

SIP Tube Quantity:30PCS

SOLDERING INFORMATION

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