

DESCRIPTION: 1W 3KVDC Isolated Miniature Single Output DC/DC Converters

The TKA 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 85℃
UL 94V-0 package material	Internal SMD construction	Industry standard pinout
Power sharing on output	Input voltage :3.3V, 5V ,12V ,24V	Output voltage: 3.3V, 5V, 9V,12V,15V,24V

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Package Style
	V	V	mA	%	
TKA0303DA	3.3	3.3	303/30.3	75	DIP
TKA0305DA	3.3	5	200/20	80	DIP
TKA0309DA	3.3	9	111/11.1	75	DIP
TKA0312DA	3.3	12	83/8.3	80	DIP
TKA0315DA	3.3	15	67/6.7	80	DIP
TKA0324DA	3.3	24	42/4.2	82	DIP
TKA0303SA	3.3	3.3	303/30.3	74	SIP
TKA0305SA	3.3	5	200/20	80	SIP
TKA0309SA	3.3	9	111/11.1	76	SIP
TKA0312SA	3.3	12	83/8.3	77	SIP
TKA0315SA	3.3	15	67/6.7	80	SIP
TKA0324SA	3.3	24	42/4.2	82	SIP
TKA0503DA	5	3.3	303/30.3	78	DIP
TKA0505DA	5	5	200/20	72	DIP
TKA0509DA	5	9	111/11.1	75	DIP
TKA0512DA	5	12	83/8.3	78	DIP
TKA0515DA	5	15	67/6.7	80	DIP
TKA0524DA	5	24	42/4.2	82	DIP
TKA0503SA	5	3.3	303/30.3	78	SIP
TKA0505SA	5	5	200/20	72	SIP
TKA0509SA	5	9	111/11.1	77	SIP
TKA0512SA	5	12	83/8.3	78	SIP
TKA0515SA	5	15	67/6.7	80	SIP
TKA0524SA	5	24	42/4.2	82	SIP
TKA1205DA	12	5	200/20	75	DIP
TKA1209DA	12	9	111/11.1	82	DIP
TKA1212DA	12	12	83/8.3	82	DIP
TKA1215DA	12	15	67/6.7	82	DIP
TKA1224DA	12	24	42/4.2	82	DIP
TKA1205SA	12	5	200/20	74	SIP
TKA1209SA	12	9	111/11.1	79	SIP
TKA1212SA	12	12	83/8.3	81	SIP
TKA1215SA	12	15	67/6.7	81	SIP
TKA1224SA	12	24	42/4.2	82	SIP
TKA2405DA	24	5	200/20	70	DIP
TKA2409DA	24	9	111/11.1	73	DIP
TKA2412DA	24	12	83/8.3	75	DIP
TKA2415DA	24	15	67/6.7	78	DIP
TKA2424DA	24	24	42/4.2	77	DIP
TKA2405SA	24	5	200/20	70	SIP
TKA2409SA	24	9	111/11.1	73	SIP
TKA2412SA	24	12	83/8.3	75	SIP
TKA2415SA	24	15	67/6.7	78	SIP
TKA2424SA	24	24	42/4.2	77	SIP

Add suffix “P” for continuous short circuit protection, for example TKA0505SAP.

TOPPOWER

Downloaded from alldatasheet.com

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
Voltage range	24V input variants	22	24	26.5	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, TKA03	5.5V
Input voltage Vin, TKA05	7V
Input voltage Vin, TKA12	15V
Input voltage Vin, TKA24	28V

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

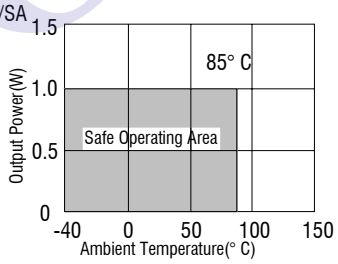
Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	3V input and 0503		95		kHz
Switching frequency	All other types		120		kHz

TEMPER ATURE CHARACTERISTICS

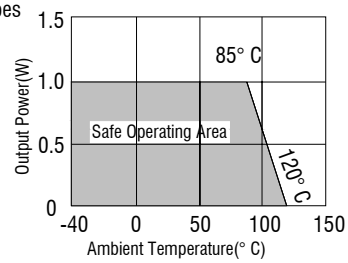
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All series	-40		85	°C
Storage		-50		130	°C
Case temperature rise above ambient	5V output types		30		°C
Case temperature rise above ambient	All other types		21		°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

TKA0303DA/SA,0305DA/SA
0309DA/SA,types only

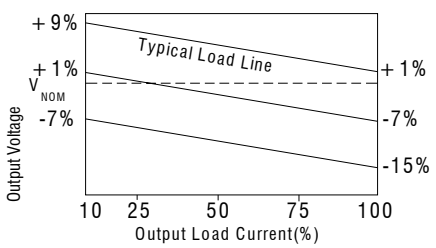


All other types

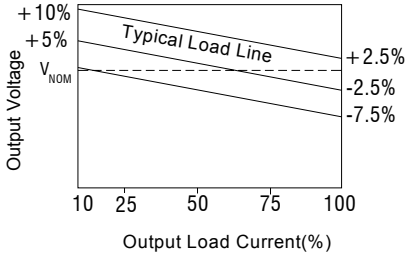


TOLERANCE ENVELOPES

3.3V output types

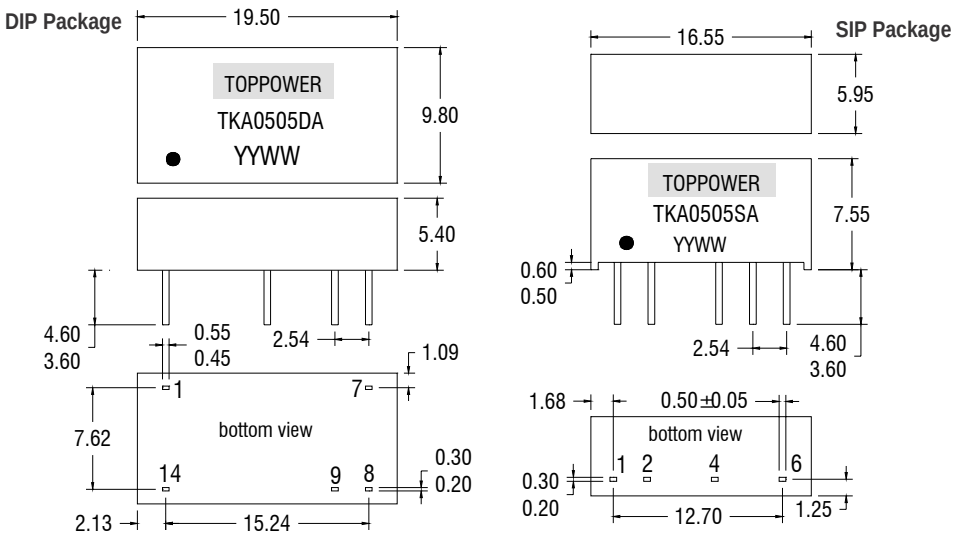


All other types



Downloaded from alldatasheet.com

MECHANICAL DIMENSIONS



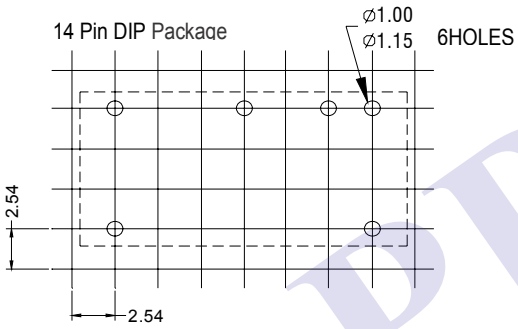
All dimensions in ±0.25mm All pins on a 2.54mm pitch and within ±0.25 of true position
weight:1.4g(SIP) 1.9g(DIP)

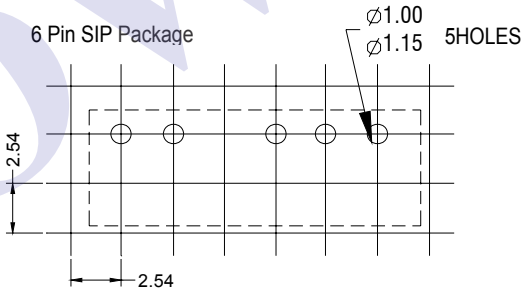
PIN CONNECTIONS

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

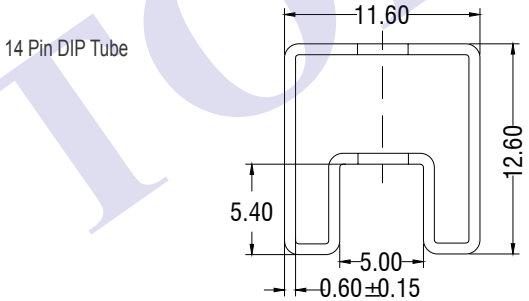
6 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
6	+Vout

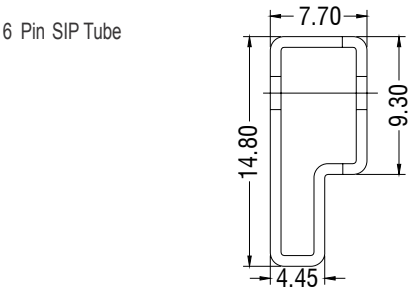
RECOMMENDED FOOTPRINT DETAILS





TUBE OUTLINE DIMENSIONS





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.

Downloaded from alldatasheet.com