

DESCRIPTION: 1W 3KV 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	Efficiency up to 83%	Operating temperature: -40°C to 85°C
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,24V

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency	Package Style
	V	V	mA	%	
TKA0303DA	3.3	3.3	303	75	DIP
TKA0305DA	3.3	5	200	80	DIP
TKA0309DA	3.3	9	111	75	DIP
TKA0312DA	3.3	12	83	80	DIP
TKA0315DA	3.3	15	67	80	DIP
TKA0324DA	3.3	24	42	82	DIP
TKA0303SA	3.3	3.3	303	74	SIP
TKA0305SA	3.3	5	200	80	SIP
TKA0309SA	3.3	9	111	76	SIP
TKA0312SA	3.3	12	83	77	SIP
TKA0315SA	3.3	15	67	80	SIP
TKA0324SA	3.3	24	42	82	SIP
TKA0503DA	5	3.3	303	78	DIP
TKA0505DA	5	5	200	72	DIP
TKA0509DA	5	9	111	75	DIP
TKA0512DA	5	12	83	78	DIP
TKA0515DA	5	15	67	80	DIP
TKA0524DA	5	24	42	82	DIP
TKA0503SA	5	3.3	303	78	SIP
TKA0505SA	5	5	200	72	SIP
TKA0509SA	5	9	111	77	SIP
TKA0512SA	5	12	83	78	SIP
TKA0515SA	5	15	67	80	SIP
TKA0524SA	5	24	42	82	SIP
TKA1205DA	12	5	200	75	DIP
TKA1209DA	12	9	111	82	DIP
TKA1212DA	12	12	83	82	DIP
TKA1215DA	12	15	67	82	DIP
TKA1224DA	12	24	42	82	DIP
TKA1205SA	12	5	200	74	SIP
TKA1209SA	12	9	111	79	SIP
TKA1212SA	12	12	83	81	SIP
TKA1215SA	12	15	67	81	SIP
TKA1224SA	12	24	42	82	SIP

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 °C
Internal power dissipation	540mW
Input voltage Vin, TKA03	5.5V
Input voltage Vin, TKA05	7V
Input voltage Vin, TKA12	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°C, nominal input voltage and rated output current unless otherwise specified.

GENERAL CHARACTERISTICS

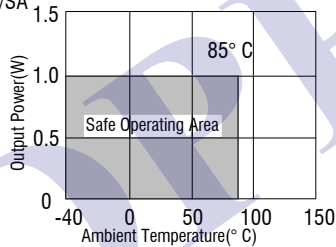
Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	3V input and 0503		95		kHz
Switching frequency	All other types		120		kHz

TEMPERATURE CHARACTERISTICS

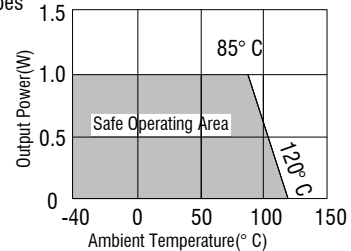
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All series	-40		85	°C
Storage		-50		130	°C
Case temperature rise above ambient	5V output types		30		°C
Case temperature rise above ambient	All other types		21		°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

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

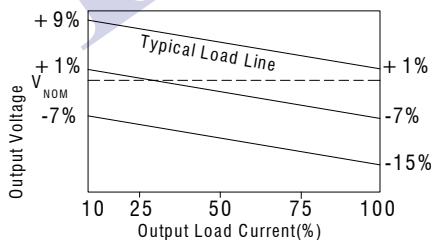


All other types

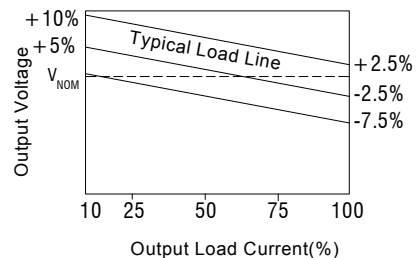


TOLERANCE ENVELOPES

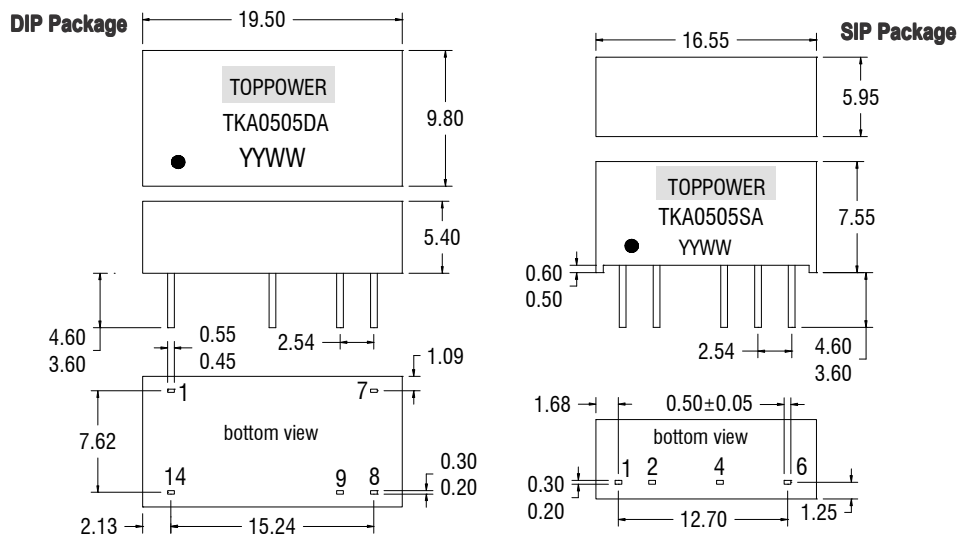
3.3V output types



All other types



MECHANICAL DIMENSIONS

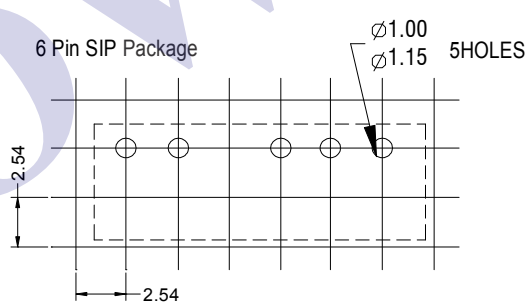
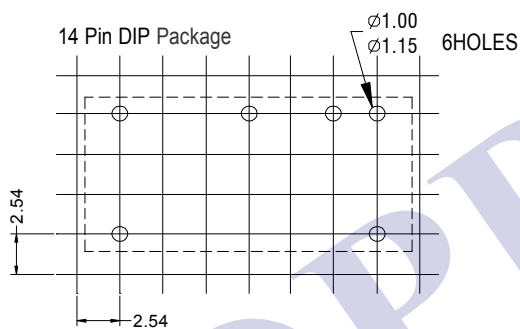


PIN CONNECTIONS-14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	OV
9	+Vout
14	+ Vin

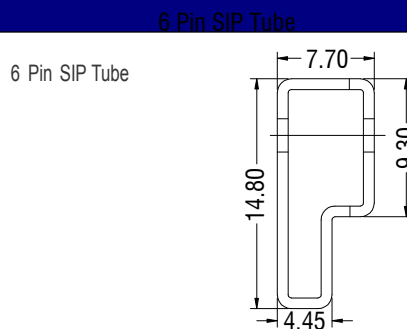
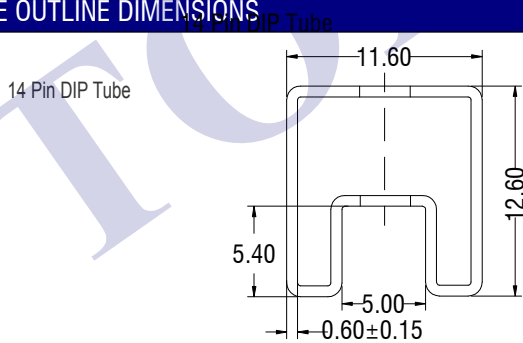
PIN CONNECTIONS-6 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
6	+Vout

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

RECOMMENDED FOOTPRINT DETAILS



TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in $\text{mm} \pm 0.5\text{mm}$

Tube length(14 Pin DIP): 520mm $\pm 2\text{mm}$

Tube length(6 Pin SIP): 525mm $\pm 2\text{mm}$

DIP Tube Quantity:25

SIP Tube Quantity:30

SOLDERING INFORMATION

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