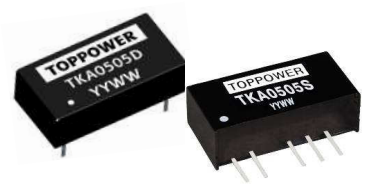
TOPPOWER

TKA Series



DESCRIPTION : **1W 3KV Isolated Miniature Dual 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℃ to 85℃
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	%	
TKA0303D	3.3	±3.3	±151	75	DIP
TKA0305D	3.3	±5	±100	80	DIP
TKA0309D	3.3	±9	±55	74	DIP
TKA0312D	3.3	±12	±43	79	DIP
TKA0315D	3.3	±15	±34	80	DIP
TKA0324D	3.3	±24	±21	82	DIP
TKA0303S	3.3	±3.3	±151	73	SIP
TKA0305S	3.3	±5	±100	80	SIP
TKA0309S	3.3	±9	±55	76	SIP
TKA0312S	3.3	±12	±43	77	SIP
TKA0315S	3.3	±15	±34	80	SIP
TKA0324S	3.3	±24	±21	82	SIP
TKA0503D	5	±3.3	±151	78	DIP
TKA0505D	5	±5	±100	72	DIP
TKA0509D	5	±9	±55	75	DIP
TKA0512D	5	±12	±43	77	DIP
TKA0515D	5	±15	±34	79	DIP
TKA0524D	5	±24	±21	82	DIP
TKA0503S	5	±3.3	±151	78	SIP
TKA0505S	5	±5	±100	72	SIP
TKA0509S	5	±9	±55	77	SIP
TKA0512S	5	±12	±43	78	SIP
TKA0515S	5	±15	±34	79	SIP
TKA0524S	5	±24	±21	82	SIP
TKA1205D	12	±5	±100	75	DIP
TKA1209D	12	±9	±55	79	DIP
TKA1212D	12	±12	±43	82	DIP
TKA1215D	12	±15	±34	82	DIP
TKA1224D	12	±24	±21	82	DIP
TKA1205S	12	±5	±100	73	SIP
TKA1209S	12	±9	±55	79	SIP
TKA1212S	12	±12	±43	81	SIP
TKA1215S	12	±15	±34	81	SIP
TKA1224S	12	±24	±21	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 ºC
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℃, nominal input voltage and rated output current unless otherwise specified.

GENERAL CHARACTERISTICS

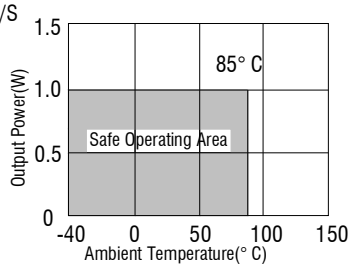
Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	3V input and 0503		95		kHz
Switching frequency	All other types		120		kHz

TEMPER ATURE CHARACTERISTICS

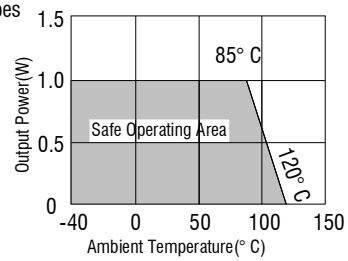
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All series	-40		85	°C
Storage		-50		130	°C
Case temperature rise above ambient	5V output types		30		°C
Case temperature rise above ambient	All other types		21		°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

TKA0303D/S,0305D/S
0309D/S,types only

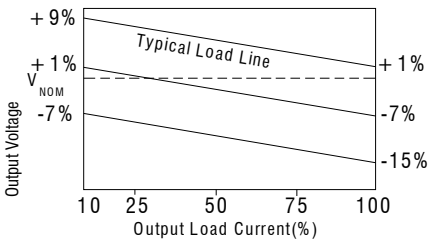


All other types

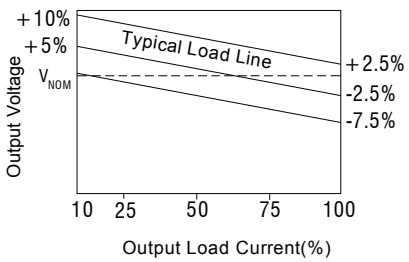


TOLERANCE ENVELOPES

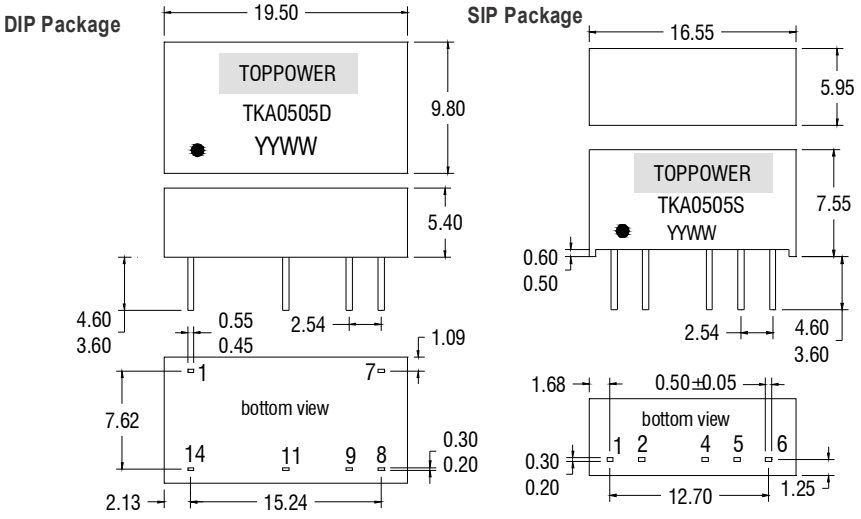
3.3V output types



All other types



MECHANICAL DIMENSIONS

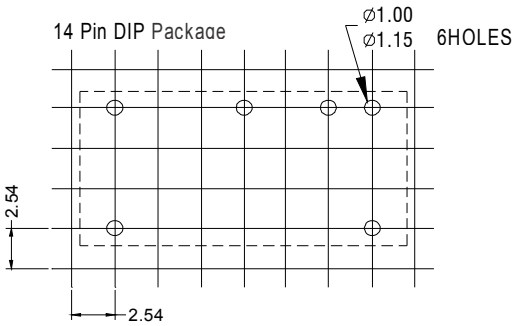


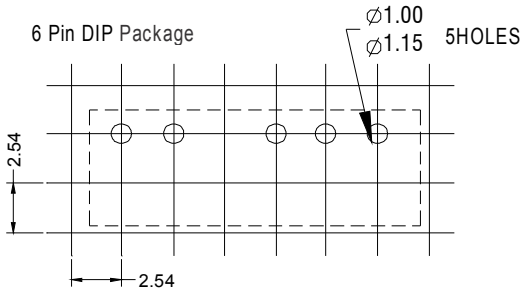
All dimensions in ±0.25mm . All pins on a 2.54 mm pitch and within ±0.25mm of true position
weight:1.4g(SIP) 1.9g(DIP)

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

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

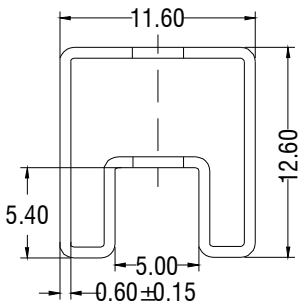
RECOMMENDED FOOTPRINT DETAILS



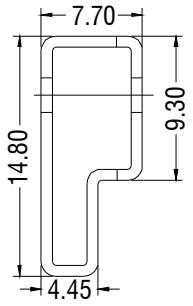


TUBE OUTLINE DIMENSIONS

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:25

SIP Tube Quantity:30

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.