

DESCRIPTION : 0.25W 3KVDC Isolated Single and Dual Output DC/DC Converters

The TKA-W25series are miniature, isolated 0.25W 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	%	
TKA0303DA-W25	3.3	3.3	75.8/7.58	75	DIP
TKA0305DA-W25	3.3	5	50/5	80	DIP
TKA0309DA-W25	3.3	9	27.8/2.78	75	DIP
TKA0312DA-W25	3.3	12	21/2.1	80	DIP
TKA0315DA-W25	3.3	15	16.7/1.67	80	DIP
TKA0303SA-W25	3.3	3.3	75.8/7.58	74	SIP
TKA0305SA-W25	3.3	5	50/5	80	SIP
TKA0309SA-W25	3.3	9	27.8/2.78	76	SIP
TKA0312SA-W25	3.3	12	21/2.1	77	SIP
TKA0315SA-W25	3.3	15	16.7/1.67	80	SIP
TKA0503DA-W25	5	3.3	75.8/7.58	78	DIP
TKA0505DA-W25	5	5	50/5	72	DIP
TKA0509DA-W25	5	9	27.8/2.78	75	DIP
TKA0512DA-W25	5	12	21/2.1	78	DIP
TKA0515DA-W25	5	15	16.7/1.67	80	DIP
TKA0503SA-W25	5	3.3	75.8/7.58	78	SIP
TKA0505SA-W25	5	5	50/5	72	SIP
TKA0509SA-W25	5	9	27.8/2.78	77	SIP
TKA0512SA-W25	5	12	21/2.1	78	SIP
TKA0515SA-W25	5	15	16.7/1.67	80	SIP
TKA1205DA-W25	12	5	50/5	75	DIP
TKA1209DA-W25	12	9	27.8/2.78	82	DIP
TKA1212DA-W25	12	12	21/2.1	82	DIP
TKA1215DA-W25	12	15	16.7/1.67	82	DIP
TKA1205SA-W25	12	5	50/5	74	SIP
TKA1209SA-W25	12	9	27.8/2.78	79	SIP
TKA1212SA-W25	12	12	21/2.1	81	SIP
TKA1215SA-W25	12	15	16.7/1.67	81	SIP
TKA0303D-W25	3.3	±3.3	±37.8/±3.78	75	DIP
TKA0305D-W25	3.3	±5	±25/±2.5	80	DIP
TKA0309D-W25	3.3	±9	±13.9/±1.39	74	DIP
TKA0312D-W25	3.3	±12	±10.5/±1.05	79	DIP
TKA0315D-W25	3.3	±15	±8.35/±0.84	80	DIP
TKA0303S-W25	3.3	±3.3	±37.8/±3.78	73	SIP
TKA0305S-W25	3.3	±5	±25/±2.5	80	SIP
TKA0309S-W25	3.3	±9	±13.9/±1.39	76	SIP
TKA0312S-W25	3.3	±12	±10.5/±1.05	77	SIP
TKA0315S-W25	3.3	±15	±8.35/±0.84	80	SIP

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SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency	Package Style
	V	V	mA	%	
TKA0503D-W25	5	±3.3	±37.8/±3.78	78	DIP
TKA0505D-W25	5	±5	±25/±2.5	72	DIP
TKA0509D-W25	5	±9	±13.9/±1.39	75	DIP
TKA0512D-W25	5	±12	±10.5/±1.05	77	DIP
TKA0515D-W25	5	±15	±8.35/±0.84	79	DIP
TKA0503S-W25	5	±3.3	±37.8/±3.78	78	SIP
TKA0505S-W25	5	±5	±25/±2.5	72	SIP
TKA0509S-W25	5	±9	±13.9/±1.39	77	SIP
TKA0512S-W25	5	±12	±10.5/±1.05	78	SIP
TKA0515S-W25	5	±15	±8.35/±0.84	79	SIP
TKA1205D-W25	12	±5	±25/±2.5	75	DIP
TKA1209D-W25	12	±9	±13.9/±1.39	79	DIP
TKA1212D-W25	12	±12	±10.5/±1.05	82	DIP
TKA1215D-W25	12	±15	±8.35/±0.84	82	DIP
TKA1205S-W25	12	±5	±25/±2.5	73	SIP
TKA1209S-W25	12	±9	±13.9/±1.39	79	SIP
TKA1212S-W25	12	±12	±10.5/±1.05	81	SIP
TKA1215S-W25	12	±15	±8.35/±0.84	81	SIP

Add suffix “P” for continuous short circuit protection, for example TKA0505SAP-W25.

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 ℃
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	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				

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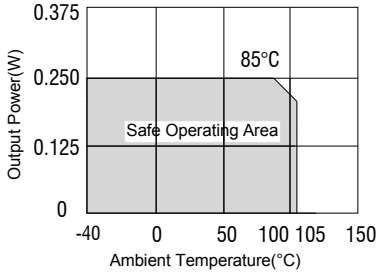
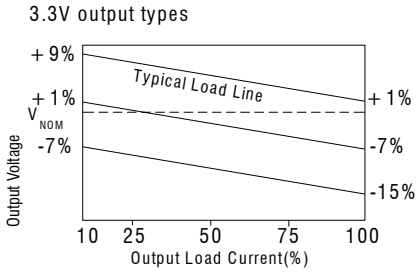
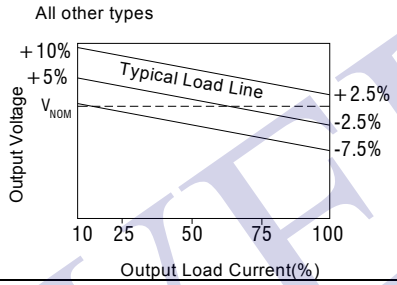
TEMPERATURE DERATING GRAPHS

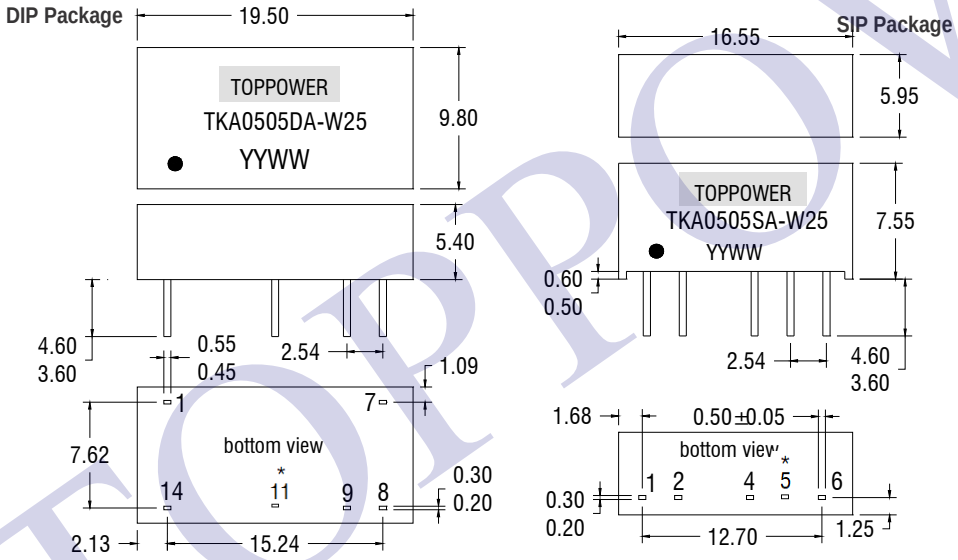


TOLERANCE ENVELOPES





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 not fitted on single output variants.

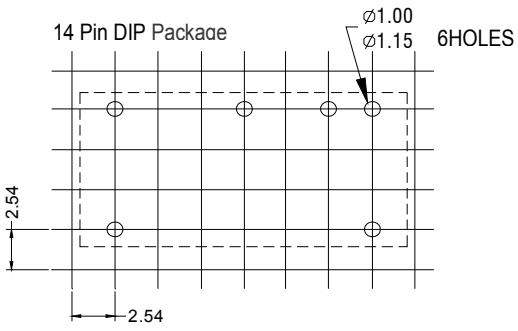
PIN CONNECTIONS

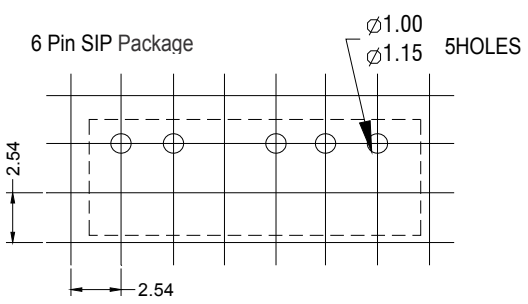
14 PIN DIP	
Pin	Function
1	-Vin
7	NC
8	OV
9	+Vout
*11	-Vout
14	+ Vin

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





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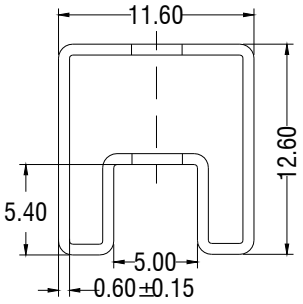
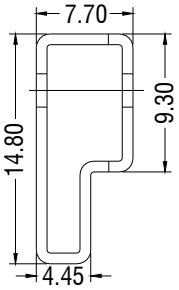
TUBE OUTLINE DIMENSIONS

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.

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