

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

The TPG-3W series are miniature, isolated 3W DC/DC converters in a SIP 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 from 81% to 88%	Operating temperature :-40℃ to 105℃
UL 94V-0 package material	Industry standard pinout	3KVDC isolation
Input voltage: 3.3V, 5V, 12V, 15V, 24V,48V	Output voltage: 3.3V, 5V, 9V, 12V, 15V,24V	Internal SMD construction

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current(Max./Min)	Load Regulation (Max)	Efficiency (Typ.)
	V	V	mA	%	%
TPG0305S-3W	3.3	5	600/60	7.4	78
TPG0503S-3W	5	3.3	909/90.9	8.0	80
TPG0505S-3W	5	5	600/60	7.4	83
TPG0509S-3W	5	9	333/33.3	6.1	86
TPG0512S-3W	5	12	250/25	5.1	87
TPG0515S-3W	5	15	200/20	4.5	87
TPG0524S-3W	5	24	125/12.5	4.5	87
TPG1203S-3W	12	3.3	909/90.9	8.0	80
TPG1205S-3W	12	5	600/60	4.8	83
TPG1209S-3W	12	9	333/33.3	3.2	87
TPG1212S-3W	12	12	250/25	2.9	88
TPG1215S-3W	12	15	200/20	2.5	88
TPG1224S-3W	12	24	125/12.5	4.5	87
TPG1505S-3W	15	5	600/60	7.4	80
TPG1515S-3W	15	15	200/20	2.5	80
TPG2403S-3W	24	3.3	909/90.9	7.4	76
TPG2405S-3W	24	5	600/60	6.5	83
TPG2409S-3W	24	9	333/33.3	3.2	83
TPG2412S-3W	24	12	250/25	2.9	84
TPG2415S-3W	24	15	200/20	2.5	84
TPG2424S-3W	24	24	125/12.5	4.5	87
TPG4805S-3W	48	5	600/60	6.5	83
TPG4812S-3W	48	12	250/25	2.9	83

Add suffix “P” for continuous short circuit protection, for example TPG0505SP-3W.

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency			65		kHz

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	3.3V input types	2.9	3.3	3.6	V
Voltage range	5V input types	4.5	5	5.5	V
Voltage range	12V input types	11	12	13.2	V
Voltage range	15V input types	13.4	15	16.4	V
Voltage range	24V input types	21.6	24	26.4	V
Voltage range	48V input types	43	48	53	V
Reflected ripple current			8	15	mA p-p

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	TA=-40°C to 85°C			3	W
Voltage Set Point Accuracy	See tolerance envelope				
Line regulation	High Vin to low Vin		1.0	1.2	%/%

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ISOLATION CHARACTERISTICS

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

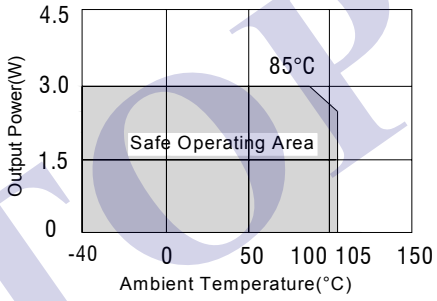
ABSOLUTE MAXIMUM RATINGS

Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	700mW
Input voltage Vin, TPG03	5.5V
Input voltage Vin, TPG05	7V
Input voltage Vin, TPG12	15V
Input voltage Vin, TPG15	18V
Input voltage Vin, TPG24	28V
Input voltage Vin, TPG48	54V

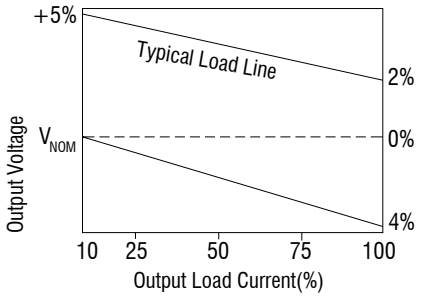
TEMPER ATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature ≥85°C	-40		105	°C
Storage		-50		150	°C
Case Temperature above ambient	TPG0505-3W			37	°C
Case Temperature above ambient	TPG1205-3W			37	°C
Case Temperature above ambient	All other output types			35	°C
Cooling	Free air convection				

TEMPERATURE DERATING GRAPHS

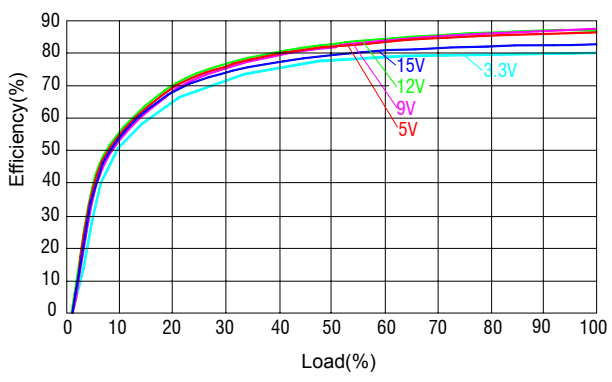


TOLERANCE ENVELOPES

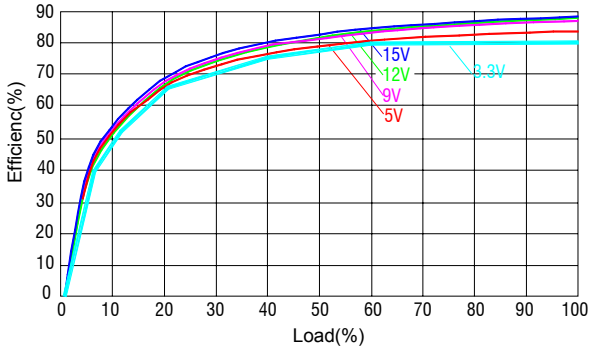


EFFICIENCY VS LOAD

TPG 5V Input Voltage



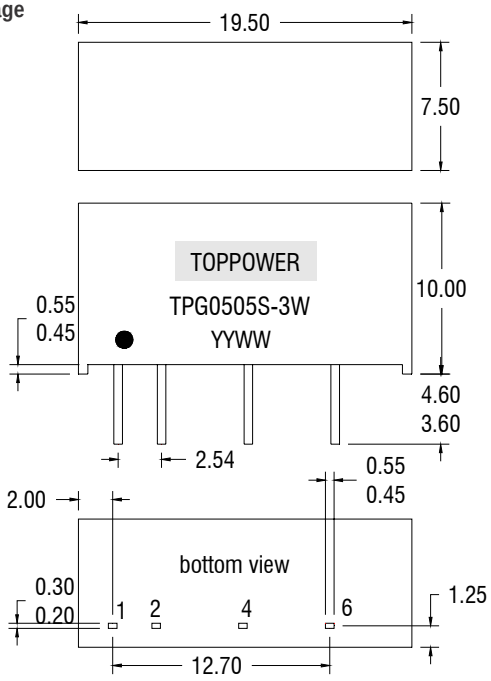
TPG 12V Input Voltage



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MECHANICAL DIMENSIONS

SIP Package



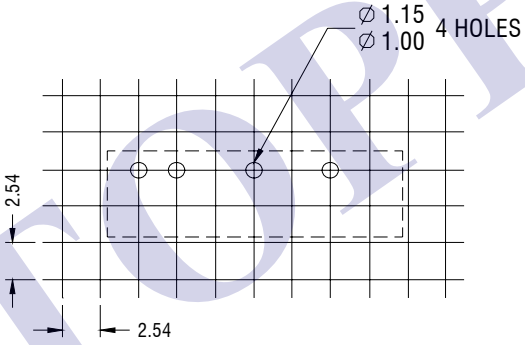
All dimensions in mm ±0.25mm . All pins on a 2.54mm pitch and within ±0.25mm of true position.

Weight: 2.8g

PIN CONNECTIONS

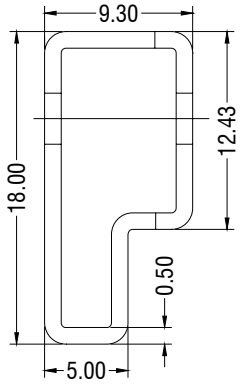
7 PIN SIP	
Pin	Function
1	+Vin
2	-Vin
4	-Vout
6	+Vout

RECOMMENDED FOOTPRINT DETAILS



Unless otherwise stated all dimensions in mm ±0.5mm.

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ±0.5mm.

Tube length : 520mm ±2mm.

Tube Quantity : 25PCS

SOLDERING INFORMATION

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

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