

DESCRIPTION : 3W Triple Output DC/DC Converters

The TPT 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 1KVDC isolation and providing three output voltages of -24V, -48V and -72V from a single isolated 5V or 12V input voltage.

FEATURES

RoHS compliant	Triple outputs (-24V, -48V & -72V)	Input/output isolation 1KVDC
Power sharing on outputs	Industrial temperature range	UL 94V-0 package material
Operating temperature -40°C to 85°C	Toroidal magnetics	Power density 1.65W/cm ³

SELECTION GUIDE

Part Number	Nominal Input Voltage V	Output V	Rated Output Current V	Output Current		Output Current	
				Min. Load	Full Load	Min. Load	Full Load
				mA	mA	mA	mA
TPT0572S	5	-V _{OUT1}	-24	1.5	43	4.3	125
		-V _{OUT2}	-48	0.7	22	2.2	64
		-V _{OUT3}	-72	0.6	14	1.5	45
TPT1272S	12	-V _{OUT1}	-24	1.4	43	4.2	127
		-V _{OUT2}	-48	0.7	22	2.2	64
		-V _{OUT3}	-72	0.6	14	1.5	43

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	TPT0572S	4.5	5.0	5.5	V
Voltage range	TPT1272S	11	12	13.3	V
Zero load input current (ICCZL)	TPT0572S, 0% output load		55	75	mA
Zero load input current (ICCZL)	TPT1272S, 0% output load		28	52	mA

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Typ.	Units
Total Rated Power (POUT)	Total of all outputs or any single output	0.1		3.0	W
Single Channel Voltage Set Point Accuracy	Pout = 100mW	0		10	%
Single Channel Voltage Set Point Accuracy	Pout = 3W	-7.5		2.5	%
Output Voltage - Vout1	Pout = 100mW	24		26.3	V
Output Voltage - Vout1	Pout = 3W	22.2		24.5	V
Output Voltage- Vout2	Pout = 100mW	48		53	V
Output Voltage- Vout2	Pout = 3W	44.4		50	V
Output Voltage- Vout3	Pout = 100mW	72		80	V
Output Voltage- Vout3	Pout = 3W	66.6		74	V
Line regulation	Vin = 90% to 110% of nominal		1.0	1.2	%
Load regulation	Pout = 100mW to 3W		8	15	%

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Input Voltage Vin, TPT0572S	7V
Input voltage Vin, TPT1272S	15V

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation test voltage	Tested for 1 second	1000			VDC
Isolation Capacitance	TPT0572S, 1MHz, 1V		70		pF
Isolation Capacitance	TPT1272S, 1MHz, 1V		125		pF
Insulation Resistance	1000VDC	1			GΩ

GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Efficiency	All channels or any single channel	75	85		%
Switching frequency			80		kHz

TEMPERATURE CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating temperature		-40		85	°C
Storage		-50		125	°C

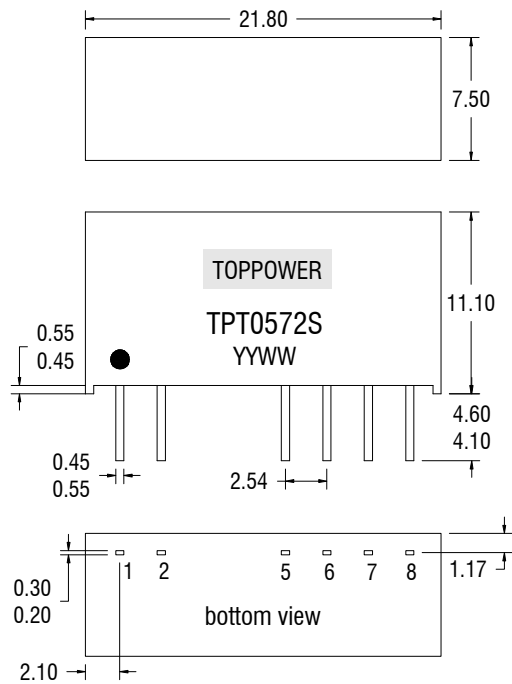
OUTPUT VOLTAGE CONFIGURATION

Channel Name	Standard Ref	Option 1	Option 2	Option 3
+Vout	0V	+24V	+48V	+72V
-Vout1	-24V	0V	+24V	+48V
-Vout2	-48V	-24V	0V	+24V
-Vout3	-72V	-48V	-24V	0V

POWER SHARING

The 3W total power delivery can be taken from either single channel or any combination of all three channels. This allows an enormous amount of flexibility, especially when combined with the selectable output OV reference. For example, using the option 2 output configuration; -24V at 0.5W, +24V at 1W and +48V at 1.5W power supplies are available from a single TPT device.

MECHANICAL DIMENSIONS



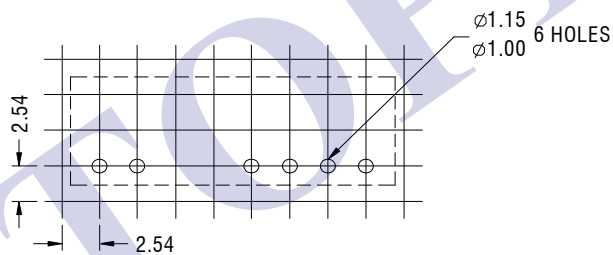
PIN CONNECTIONS-8 PIN SIP

Pin	Function
1	+Vin
2	-Vin
5	+Vout
6	-Vout1
7	-Vout2
8	-Vout3

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

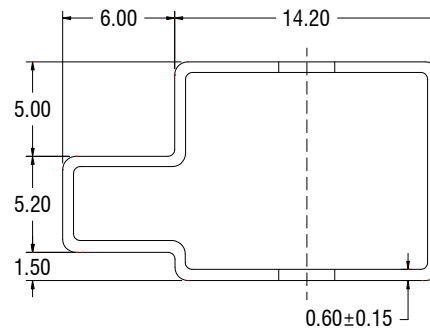
Weight: 3.85g

RECOMMENDED FOOTPRINT DETAILS



Unless otherwise stated all dimensions in mm ± 0.5 mm.

TUBE OUTLINE DIMENSIONS



Unless otherwise stated all dimensions in mm ± 0.5 mm.

Tube length : 520mm ± 2 mm.

Tube Quantity : 23

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.