


DESCRIPTION:
0.25W Isolated Single Output SMD DC/DC Converters

Miniature surface mounted DC/DC Converters are a 0.25W low power and high efficiency DC/DC converters in SMD package, are an ideal and economical solution for many applications where noise reduction, voltage isolation, voltage conversion in distributed power systems is required. The internal SMD construction with leadframe technology makes it possible to offer a product with high performance, these converters are qualified for the higher temperatures requested by lead-free reflow solder processes, especially for automated SMD production lines.

FEATURES

RoHS compliant	Lead frame technology	Single isolated output
1KVDC isolation	Efficiency up to 76%	Power density 1.8W/cm ³
Operating temperature: -40°C to 85°C	UL 94V-0 package material	Footprint over pins 1.37cm ²
Input voltage: 3.3V, 5V, 12V	Output voltage: 3.3V, 5V, 9V, 12V, 15V	Custom solutions available

SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current	Efficiency
	V	V	mA	%
TPTE0303-W2	3.3	3.3	75.7	68
TPTE0305-W2	3.3	5	51	70
TPTE0309-W2	3.3	9	28	70
TPTE0312-W2	3.3	12	21	70
TPTE0315-W2	3.3	15	17	72
TPTE0503-W2	5	3.3	75.7	68
TPTE0505-W2	5	5	51	71
TPTE0509-W2	5	9	28	74
TPTE0512-W2	5	12	21	76
TPTE0515-W2	5	15	17	76
TPTE1205-W2	12	5	51	71
TPTE1209-W2	12	9	28	74
TPTE1212-W2	12	12	21	76
TPTE1215-W2	12	15	17	76

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Voltage range	3.3V input variants	2.9	3.3	3.6	
Voltage range	5V input variants	4.5	5.0	5.5	V
Voltage range	12V input variants	11	12.0	13.3	V

ISOLATION CHARACTERISTICS

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

ABSOLUTE MAXIMUM RATINGS

Short-circuit protection	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Internal power dissipation	610mW
Input voltage Vin, TPTE03xx	5.5V
Input voltage Vin, TPTE05xx	7V
Input voltage Vin, TPTE12xx	15V

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated power	TA=-40°C to 85°C			0.25	W
Voltage set point accuracy	See tolerance envelope				
Line regulation	High VIN to low VIN		1.0	1.2	%/%
Load regulation(10% load to rated load)	03XX, 0503		10	14	
Load regulation(10% load to rated load)	0505 & 1205		13	15	
Load regulation(10% load to rated load)	0509 & 1209		8.0	9.0	
Load regulation(10% load to rated load)	0512 & 1212		6.5	7.5	%
Load regulation(10% load to rated load)	0515 & 1215		6	7.0	%

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

GENERAL CHARACTERISTICS

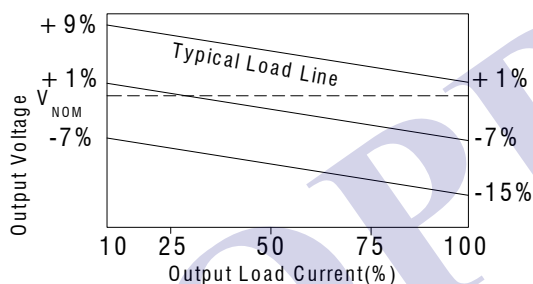
Parameter	Conditions	Min.	Typ.	Max.	Units
Switching frequency	All output types		120		kHz

TEMPERATURE CHARACTERISTICS

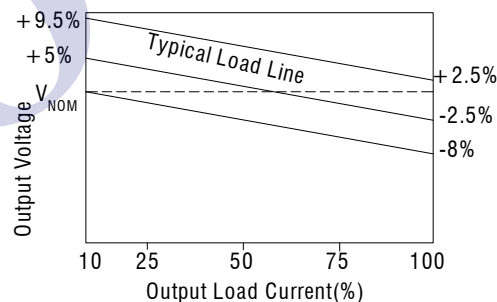
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	All output types	-40		85	°C
Storage		-55		125	°C
Cooling	Free air convection				

TOLERANCE ENVELOPES

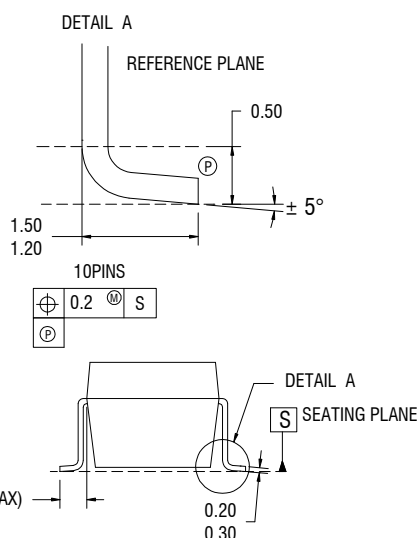
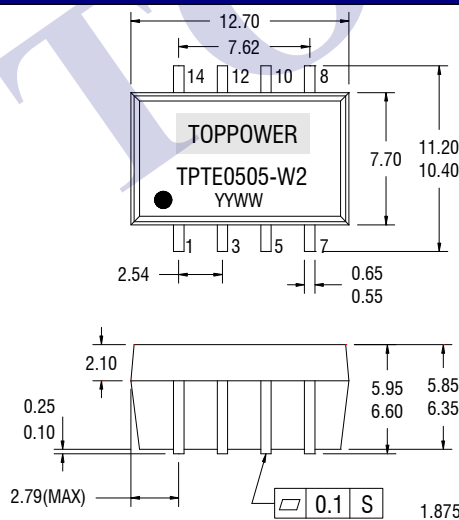
3.3V output types



All other types



MECHANICAL DIMENSIONS



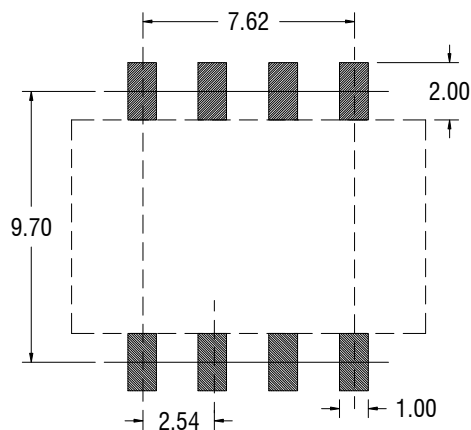
PIN CONNECTIONS	
Pin	Function
1	-Vin
3	+Vin
5	NA
7	-Vout
8	+Vout
10	NA
12	NA
14	NA

NA - Not available or electrical connection.

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

Weight: 1.21g

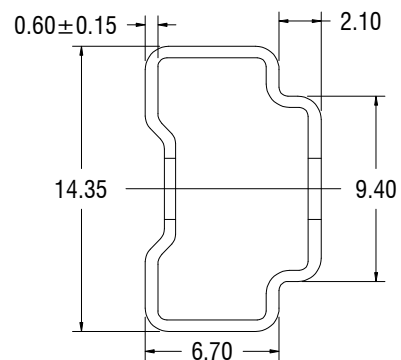
RECOMMENDED FOOTPRINT DETAILS



All pins on a 2.54mm pitch.

Unless otherwise stated all dimensions in mm ± 0.5 mm.

TUBE OUTLINE DIMENSIONS

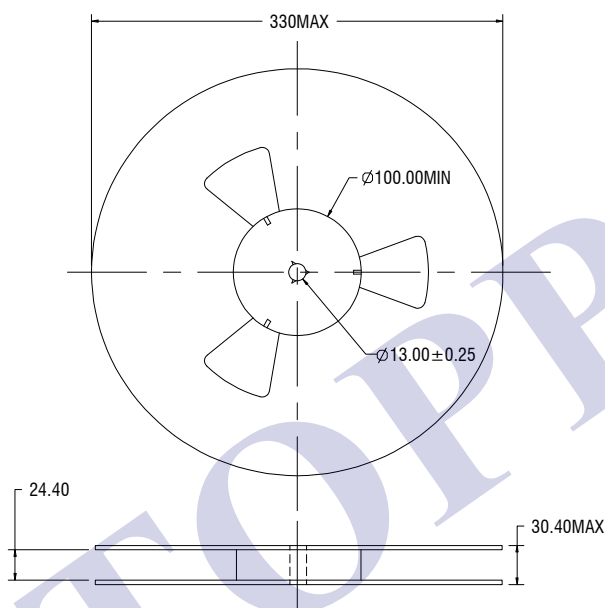


Unless otherwise stated all dimensions in mm ± 0.5 mm.

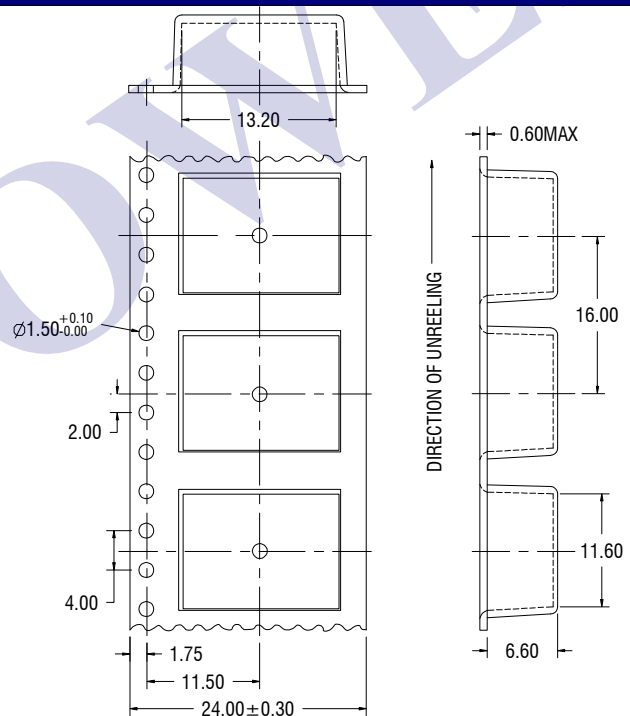
Tube length: 475mm ± 2.0 mm

Tube Quantity: 35

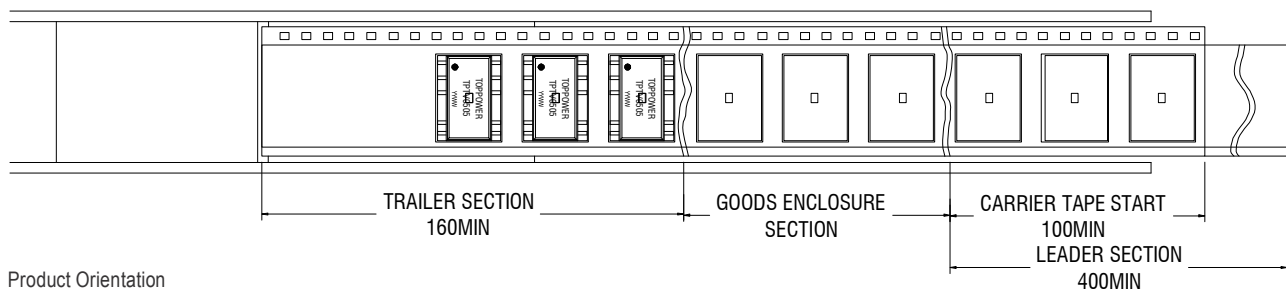
REEL OUTLINE DIMENSIONS



TAPE OUTLINE DIMENSIONS



REEL PACKAGING DETAILS



Product Orientation

Pin 1 located nearest to carrier drive sprocket

Reel quantity : 500