



**DESCRIPTION:** 0.5W 3KVDC Isolated Single Output SMD DC/DC Converters

Miniature surface mounted DC/DC Converters are an ideal and economical solution for many applications where noise reduction, voltage isolation, voltage conversion in distributed power systems is required. These converters are qualified for the higher temperatures requested by lead-free reflow solder processes, especially for automated SMD production lines.

## FEATURES

RoHS compliant, CE certification	Efficiency up to 80%	Single isolated output
3KVDC isolation	Custom solutions available	Power density 1.8W/cm <sup>3</sup>
UL 94V-0 package material	Footprint over pins 1.37cm <sup>2</sup>	Operating temperature: -40°C to 105°C
Input voltage: 3.3V, 5V, 12V, 15V	Output voltage: 3.3V, 5V, 9V, 12V, 15V	/

## SELECTION GUIDE

Part Number	Nominal Input Voltage	Output Voltage	Output Current (Max./Min)	Efficiency
	V	V	mA	%
PPET0303-W5	3.3	3.3	152	70
PPET0305-W5	3.3	5	100	70
PPET0309-W5	3.3	9	55.5	72
PPET0312-W5	3.3	12	41.7	75
PPET0315-W5	3.3	15	33.3	80
PPET0503-W5	5	3.3	152	70
PPET0505-W5	5	5	100	70
PPET0509-W5	5	9	55.5	72
PPET0512-W5	5	12	41.7	75
PPET0515-W5	5	15	33.3	80
PPET1203-W5	12	3.3	152	70
PPET1205-W5	12	5	100	70
PPET1209-W5	12	9	55.5	72
PPET1212-W5	12	12	41.7	75
PPET1215-W5	12	15	33.3	80
PPET1505-W5	15	5	100	70
PPET1515-W5	15	15	33.3	80

Add suffix "P" for continuous short circuit protection, for example PPET0505P-W5. Add suffix "X" has not 5,10,12 pin, for example PPET0505X-W5.

## 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	5.0	5.5	V
Voltage range	12V input variants	11	12.0	13.3	V
Voltage range	15V input variants	13.4	15	16.4	V

## ISOLATION CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Tested for 1 second	3000			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, PPET03xx	5.5V
Input voltage Vin, PPET05xx	7V
Input voltage Vin, PPET12xx	15V
Input voltage Vin, PPET15xx	18V

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

## OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated power	TA=-40°C to 85°C			0.5	W
Voltage set point accuracy	See tolerance envelope				
Line regulation	High VIN to low VIN (voltage variation +/-5%)		1.0	1.2	%/%
Load regulation(10% load to rated load)	03XX,0503,1203		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)	0515,1215,1515		6	7.0	%

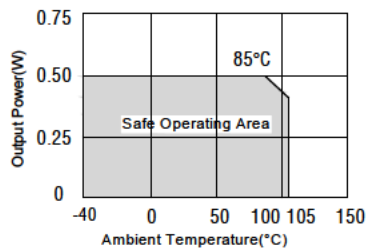
## GENERAL CHARACTERISTICS

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

## TEMPERATURE CHARACTERISTICS

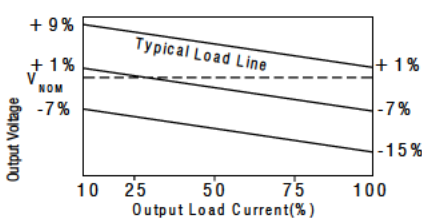
Parameter	Conditions	Min.	Typ.	Max.	Units
Specification	Derating if the temperature $\geq 85^\circ\text{C}$	-40		105	$^\circ\text{C}$
Storage		-55		125	$^\circ\text{C}$
Reflow Soldering Temperature		Peak temp. $\leq 245^\circ\text{C}$ , maximum duration time $\leq 60\text{s}$ at $217^\circ\text{C}$ . For actual application, please refer to IPC/JEDEC J-STD-020D.1.			
Cooling	Free air convection				

## TEMPERATURE DERATING GRAPHS

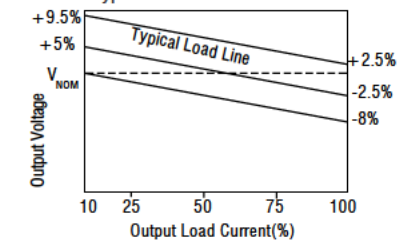


## TOLERANCE ENVELOPES

3.3V output types

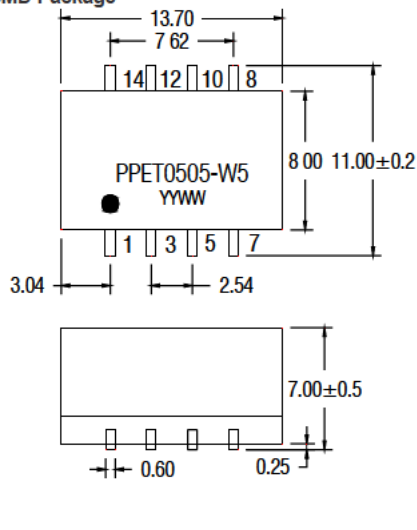


All other types

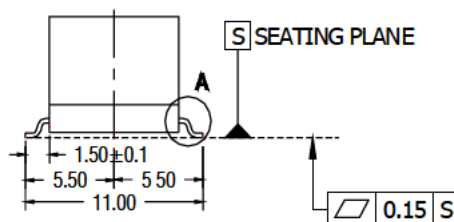


## MECHANICAL DIMENSIONS

SMD Package



(Magnification of A)



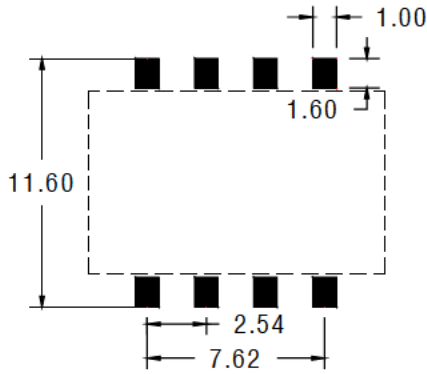
All dimensions in mm  $\pm 0.25\text{mm}$ . All pins on a 2.54mm pitch and within  $\pm 0.25\text{mm}$  of true position.  
Weight: 1.21g

## PIN CONNECTIONS

8 PIN SMD		
Pin	Function	Add suffix "X" function
1	-Vin	-Vin
3	+Vin	+Vin
5	NA	No Pin
7	-Vout	-Vout
8	+Vout	+Vout
10	NA	No Pin
12	NA	No Pin
14	NA	NA

NA - Not available for electrical connection.

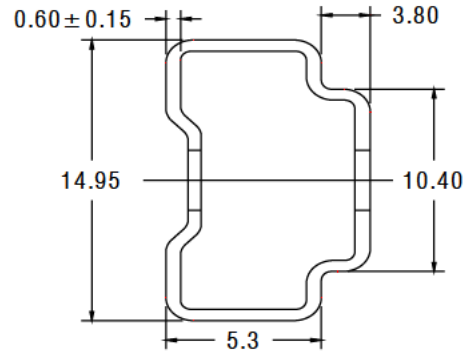
## RECOMMENDED FOOTPRINT DETAILS



All pins on a 2.54mm pitch.

Unless otherwise stated all dimensions in mm ± 0.5mm.

## TUBE OUTLINE DIMENSIONS

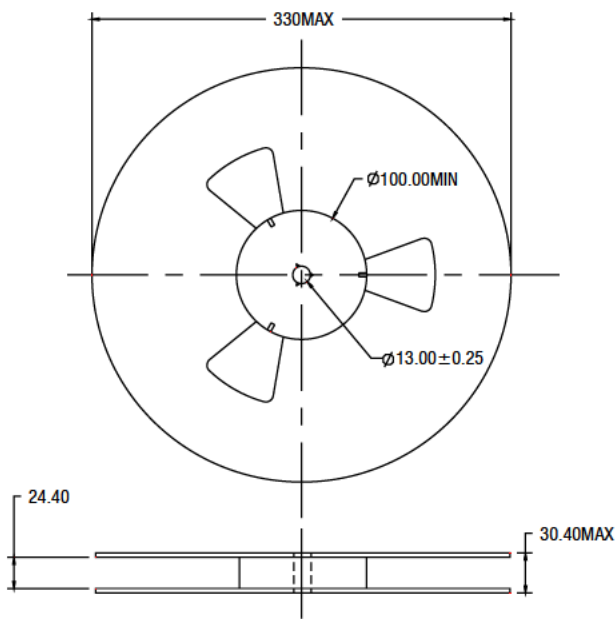


Unless otherwise stated all dimensions in mm ± 0.5mm.

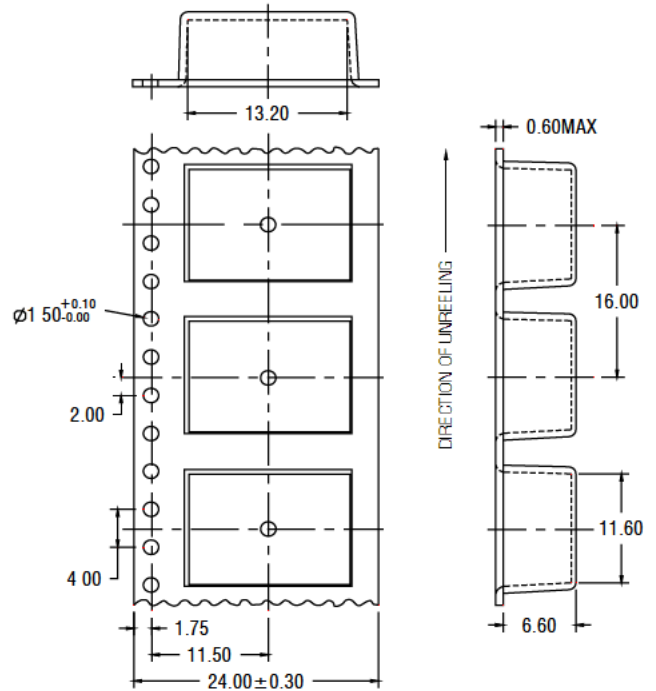
Tube length: 475mm ± 2.0mm

Tube Quantity: 35PCS

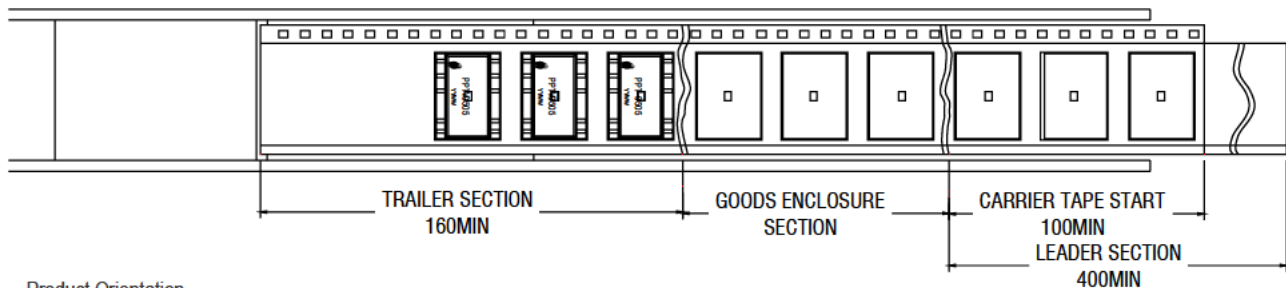
## REEL OUTLINE DIMENSIONS



## TAPE OUTLINE DIMENSIONS



## REEL PACKAGING DETAILS



Product Orientation

Pin 1, located nearest to carrier drive sprocket

Reel Quantity : 500PCS