

# 6mm potentiometer SMD

## PS-6 & PSX-6

### MAIN FEATURES



- Specifically designed for leadfree reflow soldering processes (excellent performance).
- Carbon resistive element.
- IP54 protection according to IEC 60529.
- Moisture sensitivity level 1 (PS-6).
- Embossed tape according to IEC 60286-3:2007.
- Wiper positioned at initial, 50% or fully clockwise.
- Full traceability.
- Also upon request:
  - Long life model for low cost control potentiometer applications.
  - Shaft - knob.
  - Self extinguishable plastic UL 94V-0 (PS-6).

### MECHANICAL SPECIFICATIONS

- Mechanical rotation angle:  $235^\circ \pm 5^\circ$
- Electrical rotation angle:  $200^\circ \pm 20^\circ$
- Torque: 0.2 to 2 Ncm.  
(0.3 to 2.7 in-oz)
- Stop torque: > 4 Ncm. (>7 in-oz)

### ELECTRICAL SPECIFICATIONS

- Range of values\*:  $1K\Omega$  to  $1.5M\Omega$  (Decad. 1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Std. tolerance\*:  $1K\Omega \leq R_n \leq 500K\Omega$  .....  $\pm 30\%$   
 $500K\Omega < R_n \leq 1.5M\Omega$  .....  $\pm 50\%$
- Taper\*: Linear
- Nominal Power: 0.1W @  $50^\circ C$  ( $122^\circ F$ )
- Operating temperature: PSX-6:  $-25^\circ C + 70^\circ C$   
PS-6:  $-40^\circ C + 85^\circ C$
- Residual resistance:  $\leq 5 \cdot 10^{-3} R_n$

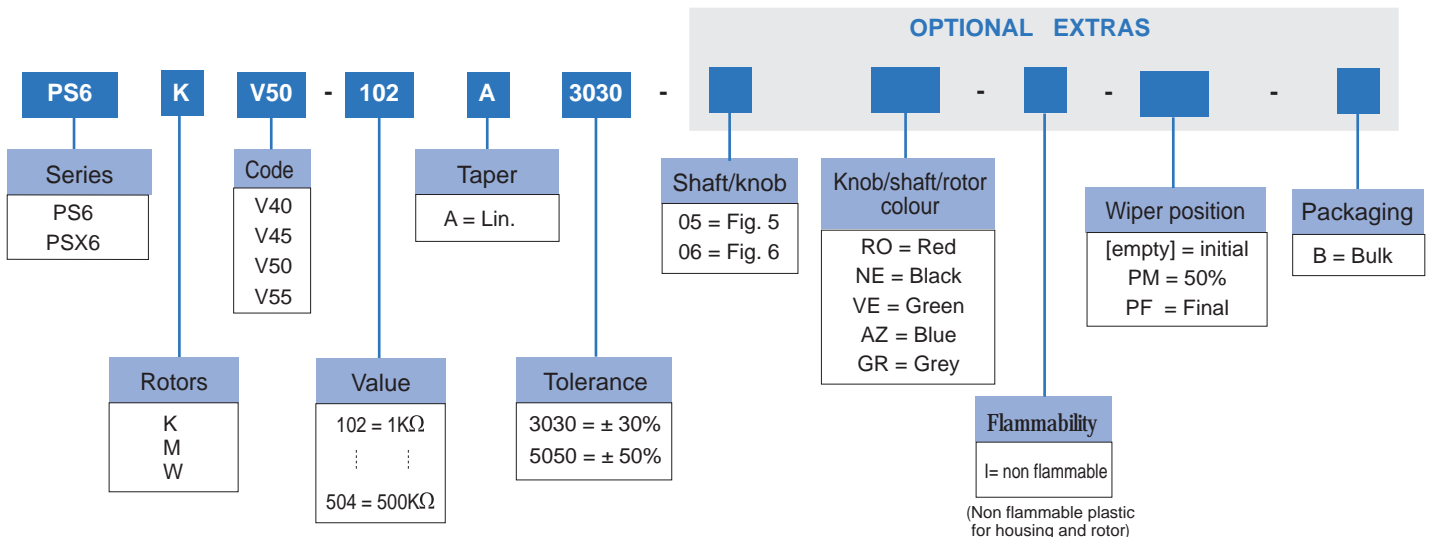
\* Others upon request

### HOW TO ORDER

Part number examples:

**PS6KV50-103A3030**: PS6 model with K rotor, V50 mounting type, 10K ohm resistive value, linear taper and 30% tolerance.

**PS6WV40-502A2525-06AZ-PF**: PS6 model with inserted knob fig. 6, 5K ohm resistive value, linear taper, 25% tolerance, color of the knob: blue; wiper positioned at the end of the travel.



All Piher products can be adapted to meet customer's requirements.

## HOW TO ORDER CUSTOM DRAWING

PS(x)-6KV50 + DRAWING NUMBER (Max. 16 characters)

This way of ordering should be used for options which are not included in the "How to order" standard and optional extras.

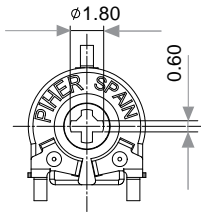
## STANDARD OPTIONS

	PSX-6	PS-6
Rotor colour .....	Black	Grey
Housing colour .....	Black	Grey
Wiper position .....	Initial	Initial
Packaging.....	Reel	Reel
Life .....	1000 cycles	1000 cycles
Detents.....	None	None

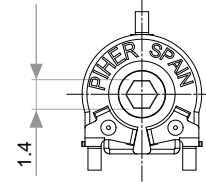
## ROTORS

Note: wipers are shown positioned at 50%. W model has an factory-inserted knob.

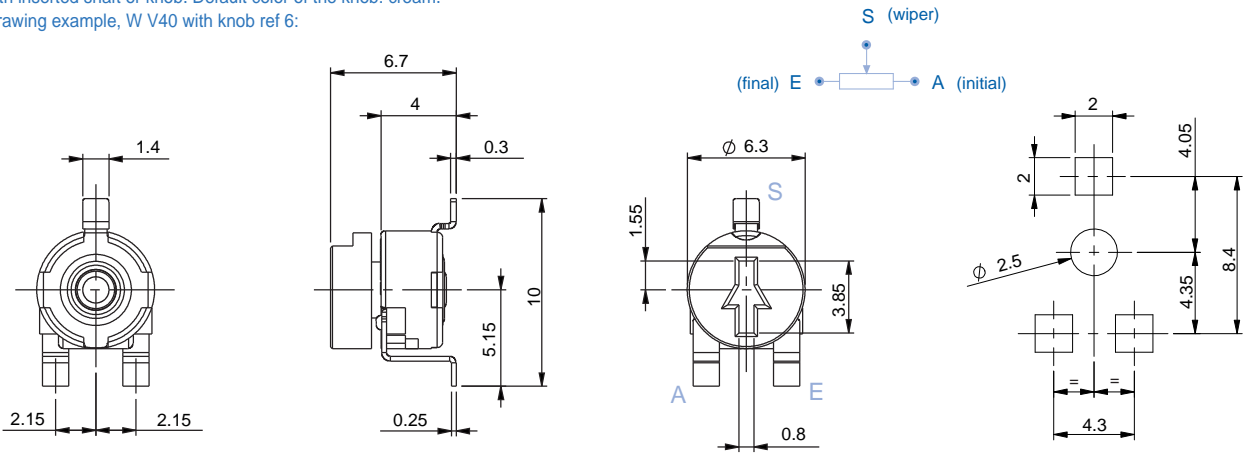
**K**= Cross slot thru hole



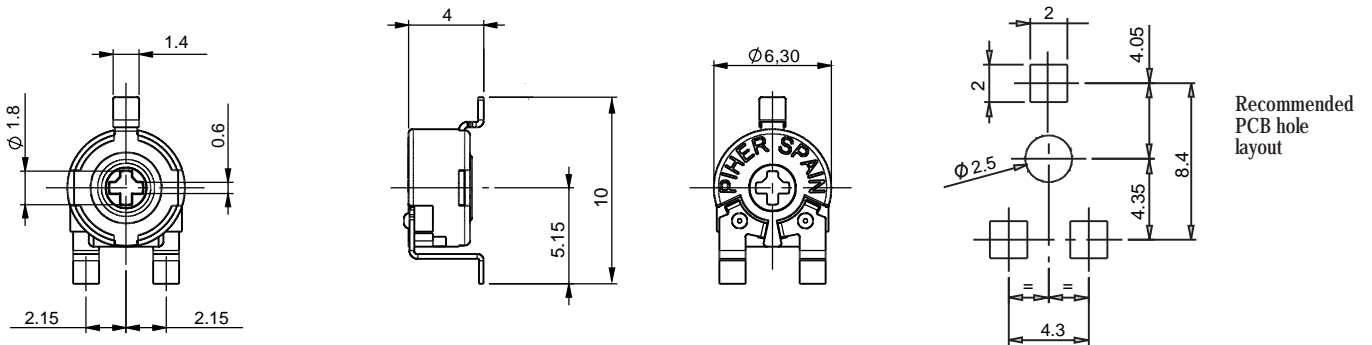
**M**= Hexagonal thru hole



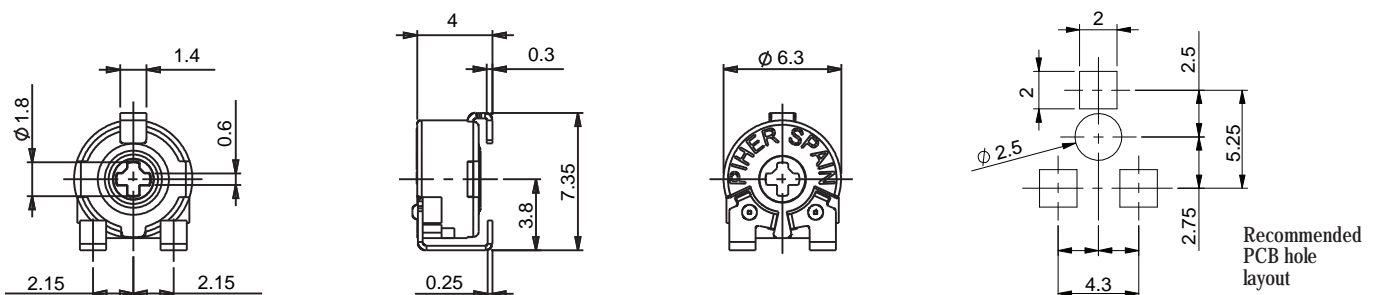
**W** = with inserted shaft or knob. Default color of the knob: cream.  
Drawing example, W V40 with knob ref 6:



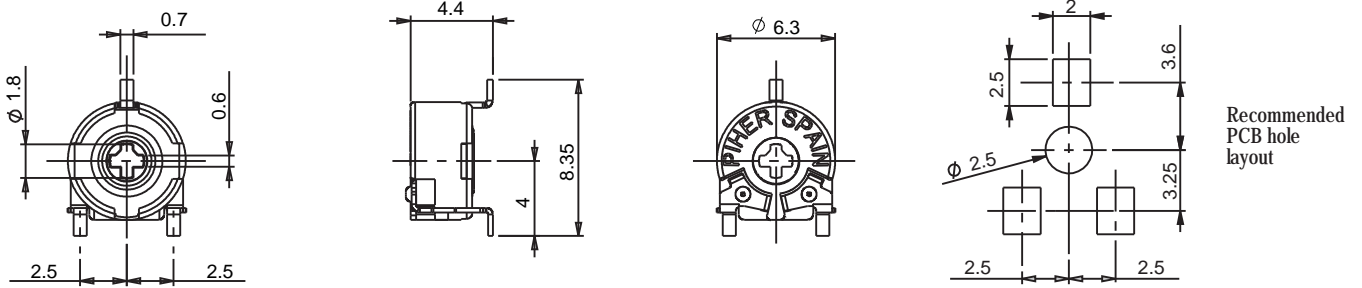
## DIMENSIONS - V40



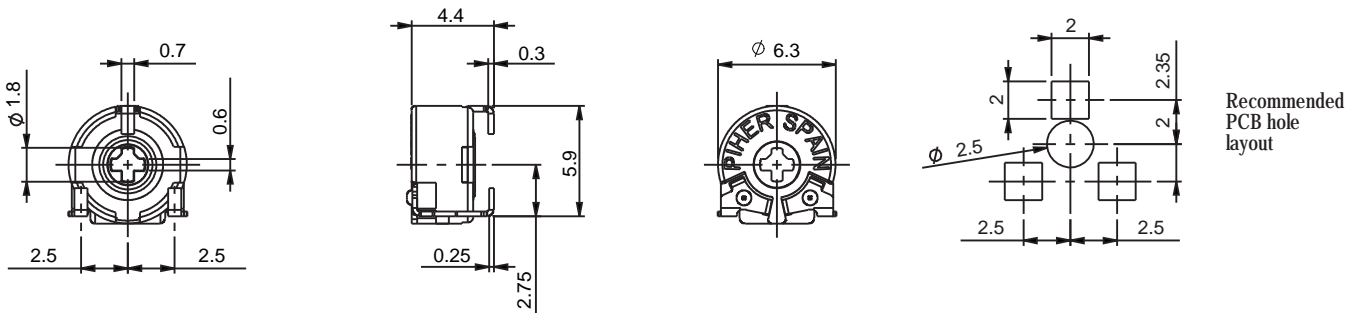
## DIMENSIONS - V45



## DIMENSIONS - V50

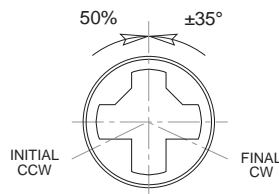


## DIMENSIONS - V55

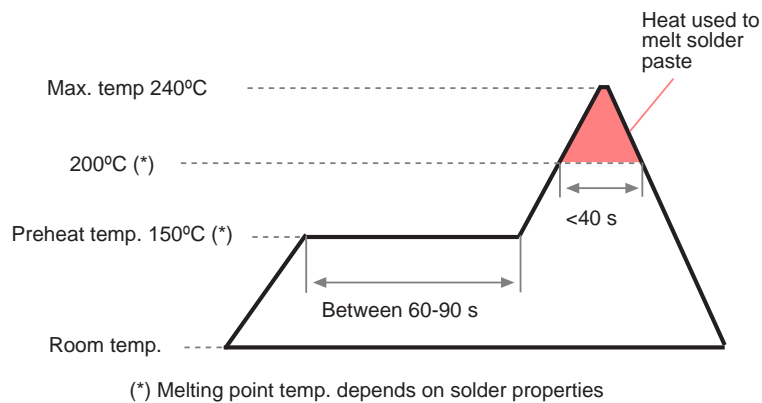


## POSITIONING

Std. Position = CCW



## PSX-6 RECOMMENDED REFLOW PROFILE



The recommended reflow profile is provided as a guideline. Optimal profile may differ due to oven type, assembly layout or other design or process variables. Customers should verify actual device performance in their specific application and reflow process. Please contact Piher if you require additional support.

## PSX-6 TESTS

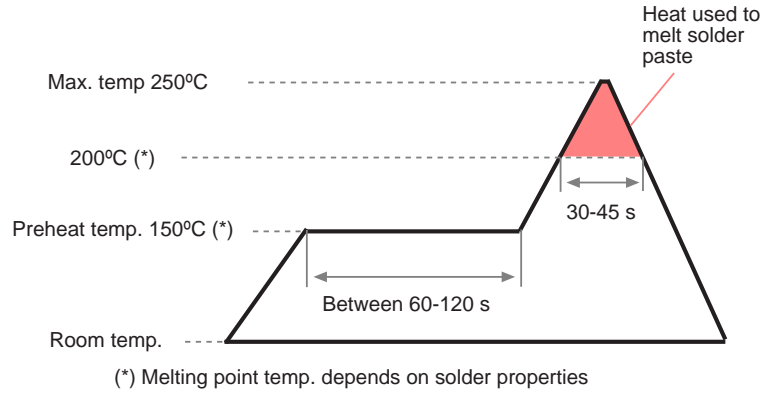
## VARIATIONS

ELECTRICAL LIFE	1.000 h. @ 50°C; 0.10 W	$\pm 10\%$
MECHANICAL LIFE (CYCLES)*	1000 @ 10 CPM ...15 CPM	$\pm 10\%$
TEMPERATURE COEFFICIENT	-25°C; +70°C	$\pm 1000$ ppm
THERMAL CYCLING	16 h. @ 85°C; 2h. @ -25°C	$\pm 5\%$
DAMP HEAT	500 h. @ 40°C @ 95% HR	$\pm 15\%$
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	$\pm 3\%$

\* Tests at room temperature. Other life cycles upon request.

NOTE: Out of range values may not comply these results. Please confirm with the factory all the information before designing in.

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### PS-6 TESTS

### VARIATIONS

ELECTRICAL LIFE	1.000 h. @ 50°C; 0.10 W	±10%
MECHANICAL LIFE (CYCLES)*	1000 @ 10 CPM ...15 CPM	±10 %
TEMPERATURE COEFFICIENT	-40°C; +85°C	±1500 ppm
	-25°C; +70°C	±1000 ppm
THERMAL CYCLING	16 h. @ 90°C; 2h. @ -40°C	±5 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±15 %
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	±3 %

\* Tests at room temperature. Other life cycles upon request.

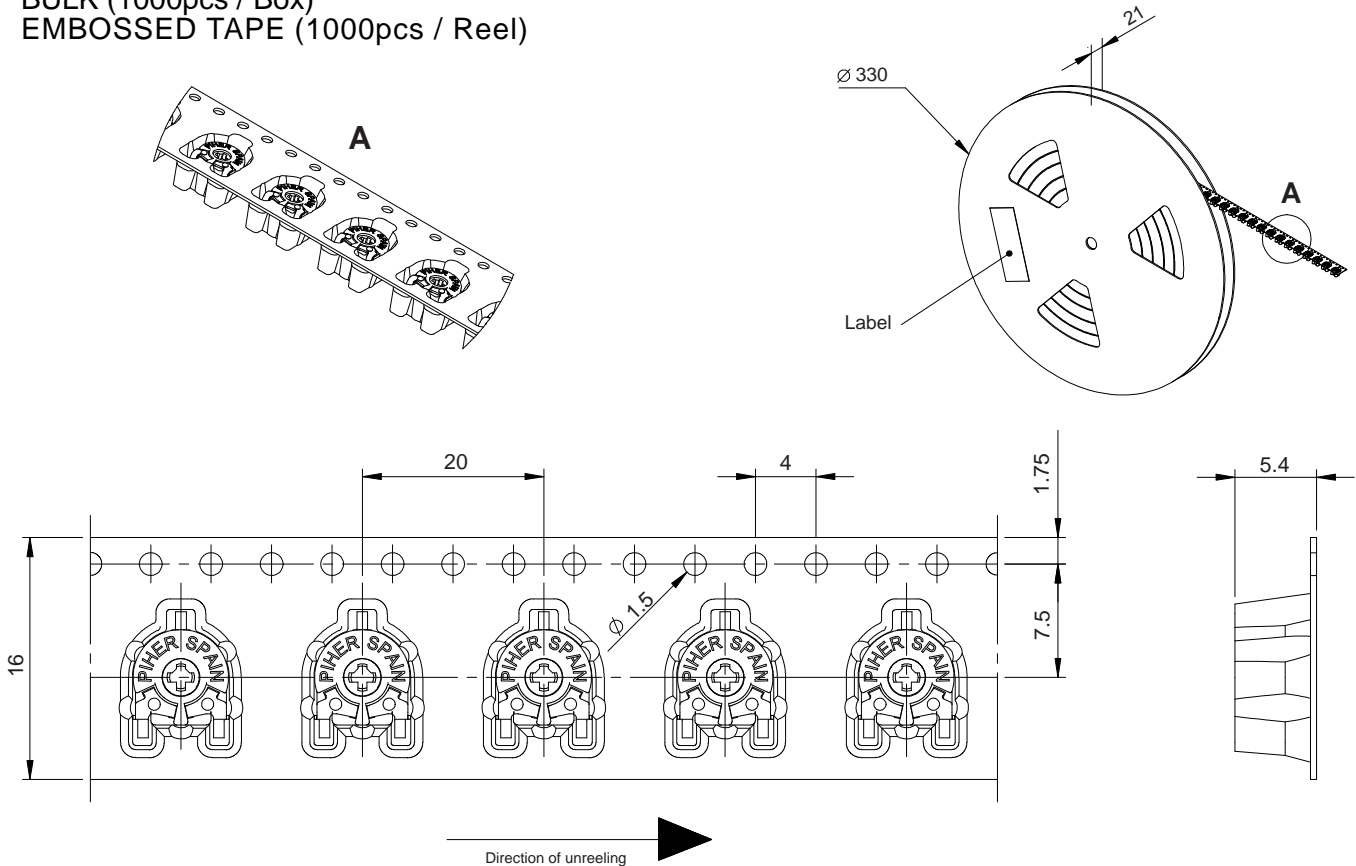
NOTE: Out of range values may not comply these results. Please confirm with the factory all the information before designing in.

### PACKAGING

#### V50 MODELS

BULK (1000pcs / Box)

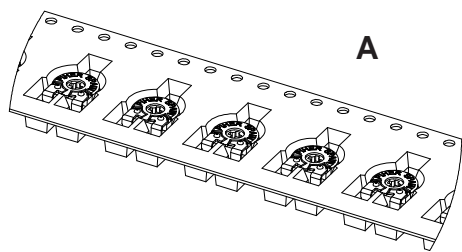
EMBOSSED TAPE (1000pcs / Reel)



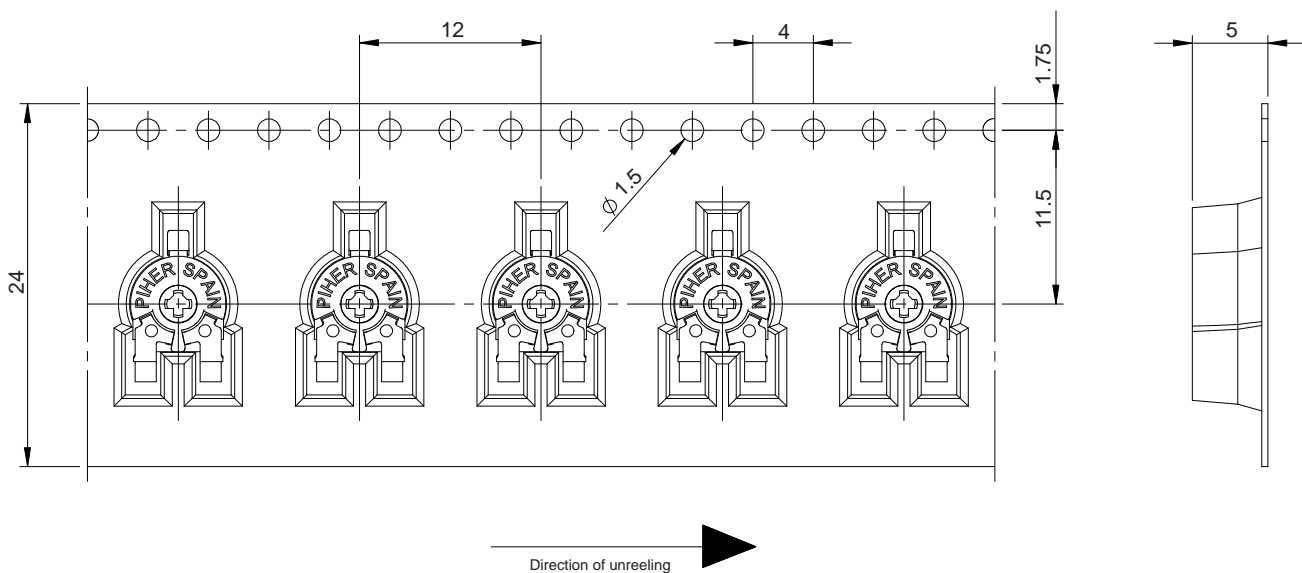
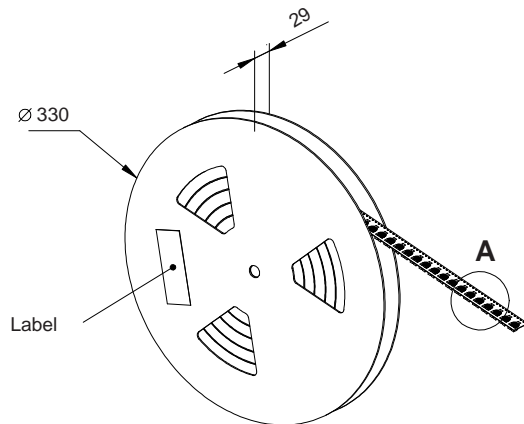
## PACKAGING

### V40 MODELS

BULK (1000pcs / Box)  
EMBOSSED TAPE (1000pcs / Reel)



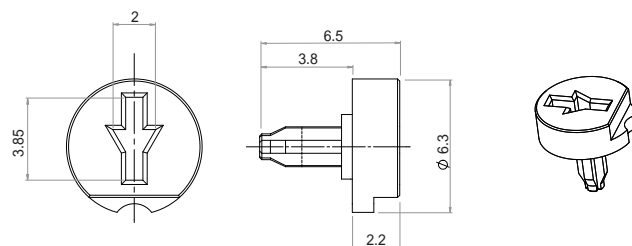
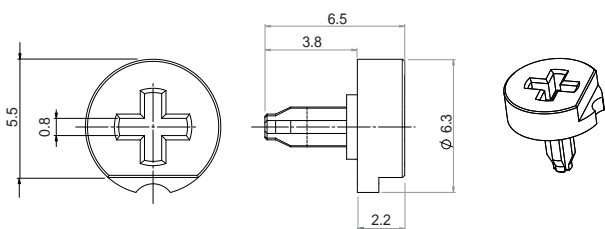
A



## SHAFT / KNOB

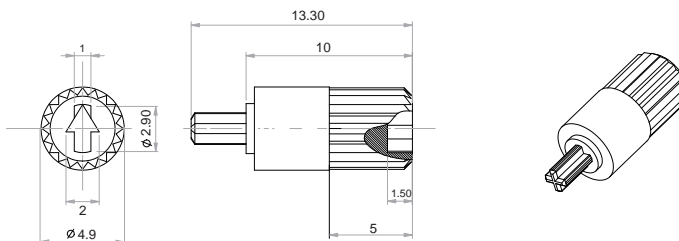
Ref.: 6148 / Fig. 5

Ref.: 6160 / Fig. 6



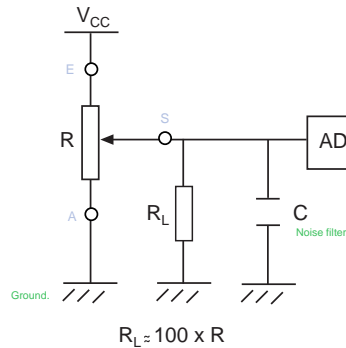
Ref.: 6144

For PS-6 models. Upon request.



## RECOMMENDED CONNECTIONS

Piher potentiometer's recommended connection circuit for a position sensor or control application. (voltage divider circuit electronic design).



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