



### FEATURES

- 10K cycles mechanical life version available
- Endless rotation upon request
- RoHS compliant materials ready
- Carbon resistive element
- Plastic substrate
- Over-moulding manufacturing technique
- SMD mounting
- RoHS reflow soldering capable
- Wiper positioned at 50%
- Both sides cross slot easy adjustment
- Accidental rotor movement protected
- Traceability insured through date code marking
- IP54 protection according to IEC 60529

### MECHANICAL SPECIFICATIONS

- Mechanical rotation angle:  $280^\circ \pm 10^\circ$
- Electrical rotation angle:  $245^\circ \pm 25^\circ$
- Torque: 0.2 to 3 Ncm. (0.28 to 4.2 in-oz)
- Stop torque: > 7.5 Ncm. ( 10.5 in-oz)
- Mechanical life\*: up to 10K cycles

\* depending on application

### ELECTRICAL SPECIFICATIONS

- Range of values\*

**"E" version:**  $1K\Omega \leq R_n \leq 500K\Omega$  (1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)

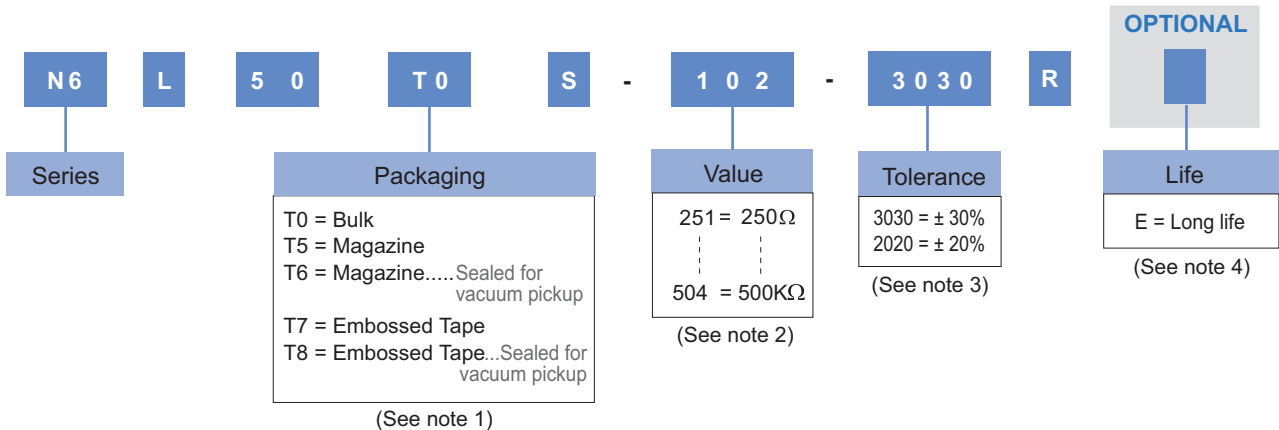
**Std version:**  $250\Omega \leq R_n \leq 500K\Omega$  (1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)

- Tolerance:  $250\Omega \leq R_n \leq 500K\Omega$  .....  $\pm 30\%$
- Max. Voltage: 100 VDC
- Nominal Power 50°C (122°F) (see power rating curve): 0.1W
- Taper: linear
- End resistance:  $\leq 2\% R_n$  (10Ω min.)
- Equivalent noise resistance:  $\leq 5\%$
- Operating temperature\*\*: -25°C + 70°C (-13°F + 158°F)

\* Others: check availability.

\*\* Up to 85°C depending on application.

### HOW TO ORDER



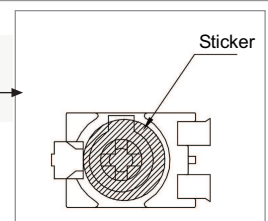
### NOTES:

(1) - "T7", "T8" Embossed Tape 750 Units per Reel. Diameter: 330 mm, aprox. thickness: 30 mm.  
 - "T6" and "T8" are sealed for vacuum pickup (sticker at the bottom side)

(2) Value: Example: Code: 10 2 = 1 K  
 Number of zeros  
 First two digits of the value.

(3) Standard is 30%. For 20% and below tolerances, please check availability.

(4) Life: • Standard = 100 cycles • Long = 10K cycles



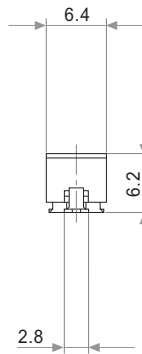
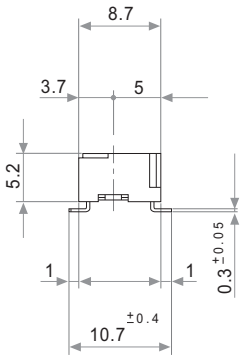
\* Version with sticker on TOP side is available under request

NOTE: The information contained here should be used for reference purposes only.

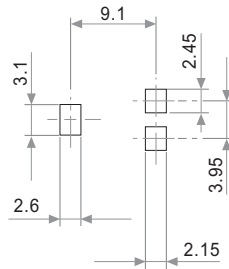
This project has been financially supported by the Spanish Technological Development Institute (CDTI).

## DIMENSIONS

N-6 L 50 T0 S

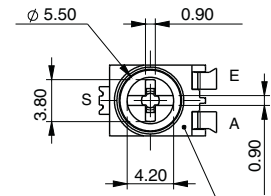


### SOLDER PADS

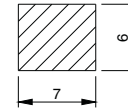


## STICKER ON TOP

Special Version  
100410-G



Sticker on this side

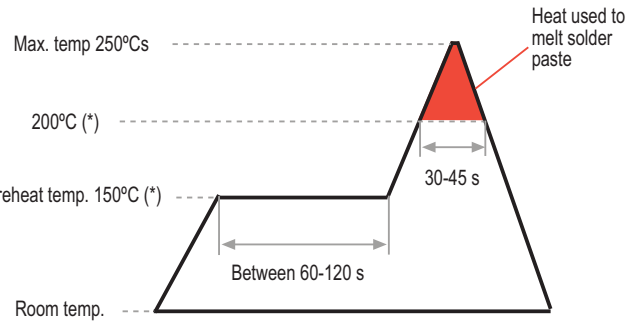
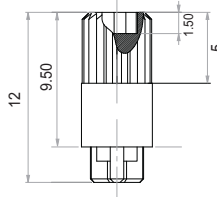
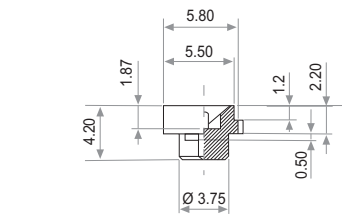


## KNOB Ref.: 5680

## SHAFT Ref.: 6133

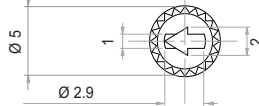
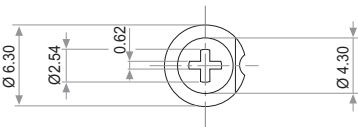
## RoHS RECOMMENDED REFLOW PROFILE

Please order both Knob and Shaft separately. They should be inserted after the reflow process. If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.

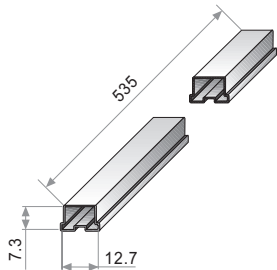


(\*) Melting point temp. depends on solder properties

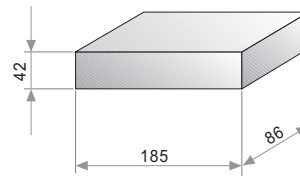
The recommended reflow profile is provided as a guideline. Optimal profile may differ due to oven type, assembly layout or other design or process variables. Customers should verify actual device performance in their specific application and reflow process. Please contact Piher if you require additional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



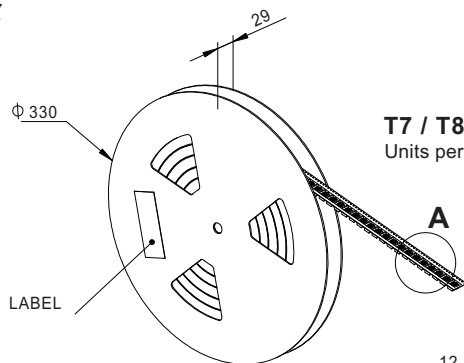
## PACKAGING



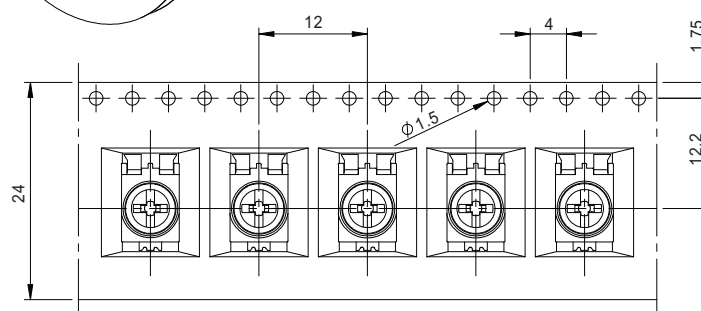
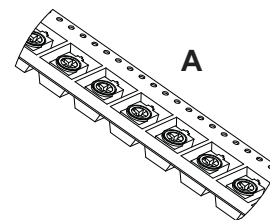
**T5 / T6 MAGAZINE**  
Units per magazine: 80



**T0 BULK**  
500 Units per box.



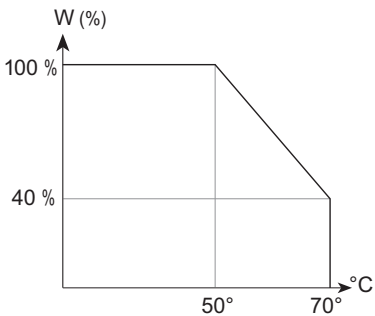
**T7 / T8 EMBOSSED TAPE**  
Units per reel: 750



DIRECTION OF UNREELING

**TESTS** **TYPICAL VARIATIONS** **POWER RATING CURVE**

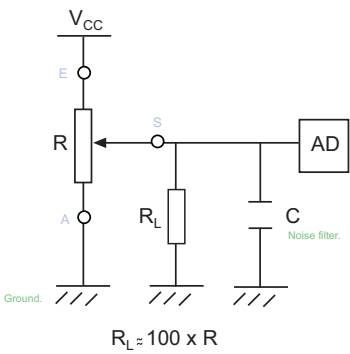
ELECTRICAL LIFE	1.000 h. @ 50°C: 0.1 W	±10 %
MECHANICAL LIFE (CYCLES)	<b>"E" version:</b> 10K @ 30 CPM	± 4 % (Rn < 1 M Ω)
	<b>Std version:</b> 100 @ 10 CPM ...15 CPM	±3 % (Rn < 1 M Ω)
TEMPERATURE COEFFICIENT	-25°C; +70°C	±300 ppm (1K ≤ Rn ≤ 100K)
THERMAL CYCLING	16 h. @ 85°C; 2h. @ -25°C	±5 %
DAMP HEAT	500 h. @ 40°C @ 95% HR	±5 %
VIBRATION (for each plane X,Y,Z)	2 h. @ 10 Hz. ... 55 Hz.	±2 %



NOTE: Out of range values may not comply with these results.

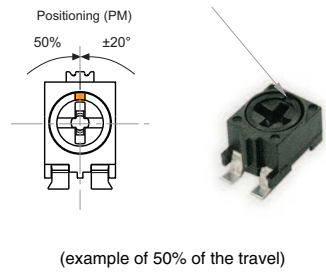
**RECOMMENDED CONNECTIONS**

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



**POSITIONING**

This mark in the rotor shows the wiper's position.



(example of 50% of the travel)

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