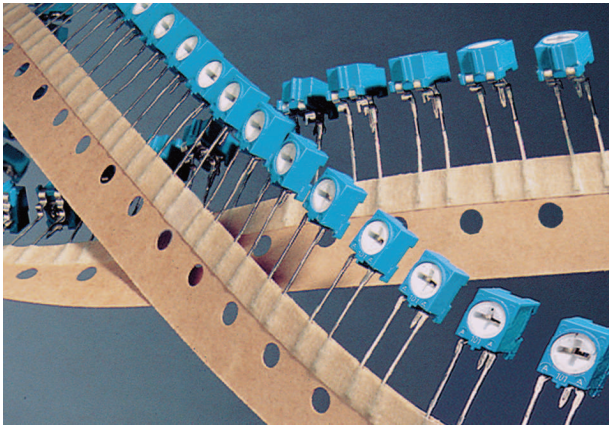


N-6

6 mm Carbon Potentiometer



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)

* Others check availability.

** Up to 85°C depending on application.

FEATURES

- RoHS compliant materials.
- Carbon resistive element.
- Plastic substrate.
- Over-moulding manufacturing technique.
- SMD or through hole.
- Embossed Tape (for SMD), Tape on reel, Ammopack and Magazine packaging for automatic insertion and bulk for manual assembly.
- Wiper positioned at 50%.
- Both sides cross slot easy adjustment.
- Accidental rotor movement protected.
- Traceability insured through date code marking.
- Assembly method: stand up and lay down.

ELECTRICAL SPECIFICATIONS

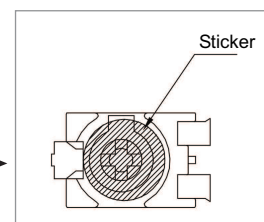
- Range of values*
 $100\Omega \leq R_n \leq 1M\Omega$ (1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Tolerance*: $100\Omega \leq R_n \leq 1M\Omega$ $\pm 30\%$
- Max. Voltage: 100 VDC
- Nominal Power 50°C (122°F) (see power rating curve): 0.1W
- Taper: linear
- End resistance: $\leq 2\%$ R_n (10 Ω min.)
- Equivalent noise resistance: $\leq 5\%$ R_n
- Operating temperature** : -25°C + 70°C (-13°F + 158°F)

HOW TO ORDER

N 6	L	3 0	T 0	N - 1 0 2 - 3 0 3 0	
Series	Mounting method	Terminal style	Packaging	Crimping	Tolerance
	S = Stand up L = Lay down	25 = 2.5 mm. 30 = 3.0 mm. 50 = 5.0 mm. (See note 1)	T0 = Bulk T1 = Reel A = 20 T2 = Reel A = 21.5 T3 = Ammopack... A = 20 T4 = Ammopack... A = 21.5 T5 = Magazine T6 = Magazine.... Sealed for vacuum pickup T7 = Embossed Tape T8 = Embossed Tape...Sealed for vacuum pickup (See note 2)	S = SMD N = Not crimped C = Crimped (See note 3)	3030 = $\pm 30\%$ 2020 = $\pm 20\%$ 1010 = $\pm 10\%$ (See note 5)
					Value
					101 = 100 Ω 105 = 1M Ω (See note 4)
					RoHS reflowable
					(See N6R datasheet at www.piher.net) (See note 6)

NOTES:

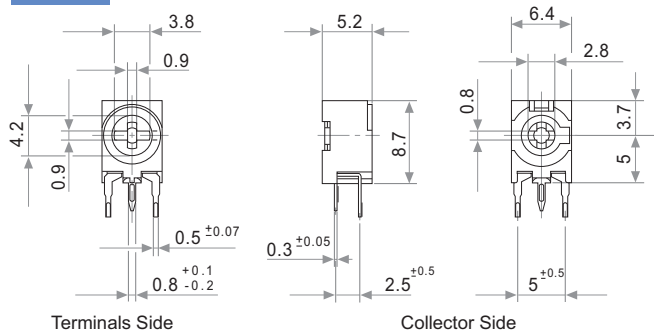
- (1) - Type "N-6 S" is only available with terminal style "25".
- Terminal style "50" is only available with bulk packing "T0", "T1", "T3", "T5", "T6", "T7", "T8"
- (2) - Delivery for "T2" and "T4" only available in: N-6 S 25 and N-6 L 30
- "T5", "T6", "T7" and "T8" only available in SMD.
- "T7", "T8" 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)
- (3) - Crimped terminals are only available in bulk packing "T0".
- Type "S" is only available in N-6 L 50 T0, N-6 L 50 T5, N-6 L 50 T6, N-6 L 50 T7, N-6 L 50 T8
- (4) Value: Example: Code: 10 2 = 1 K
Number of zeros
First two digits of the value.
- (5) - Default tolerance is $\pm 30\%$. For $\pm 10\%$, $\pm 20\%$ and others: check availability.
- (6) - Option R: black housing & rotor colour. Range of values: $250\Omega \leq R_n \leq 500K\Omega$ (see separate datasheet "N6R" at www.piher.net)



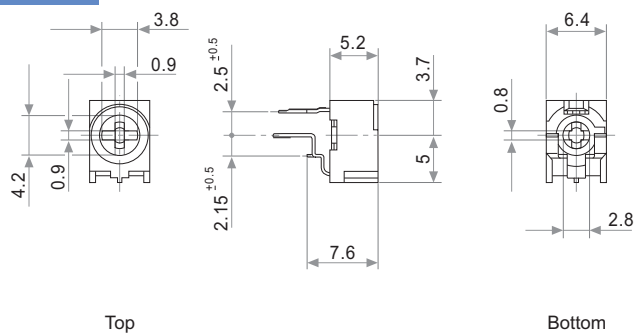
This project has been financially supported by the Spanish Technological Development Institute (CDTI).

MOUNTING METHOD

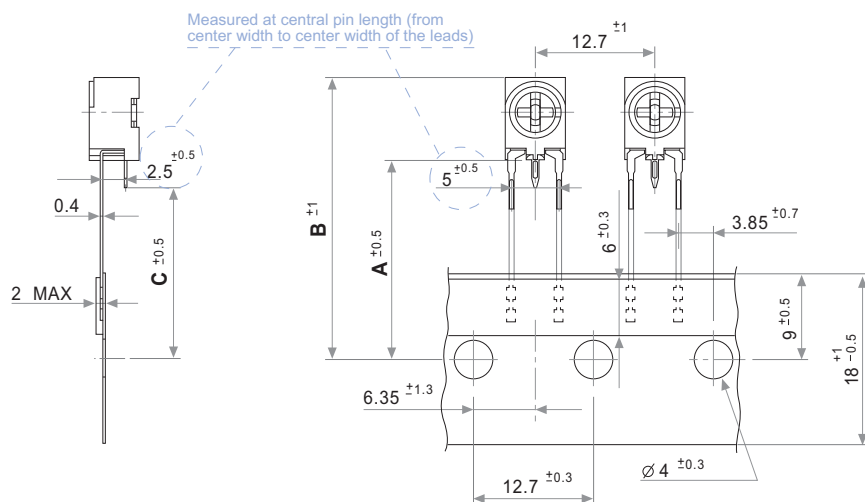
Type S



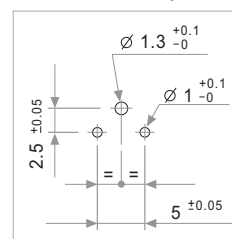
Type L



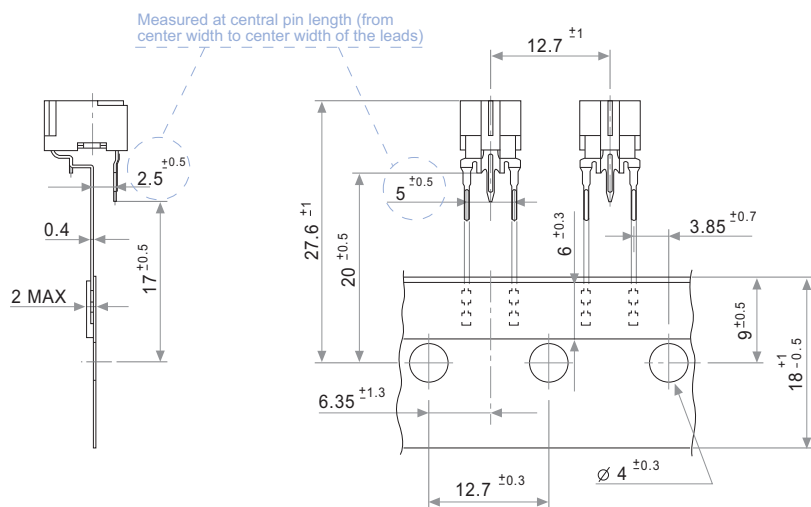
TAPE



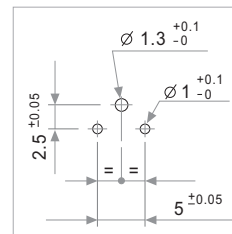
PCB Hole Layout



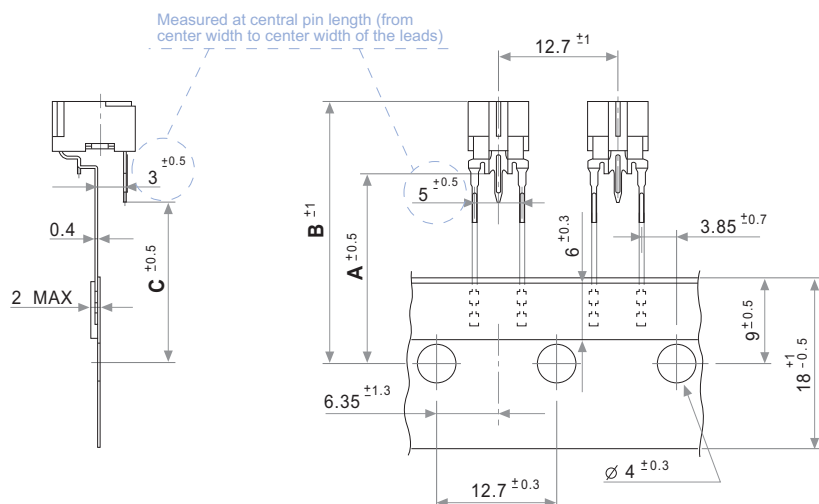
MODEL	A	B	C
N-6 S 25 T1 / T3	20	28.7	17
N-6 S 25 T2 / T4	21.5	30.2	18.5



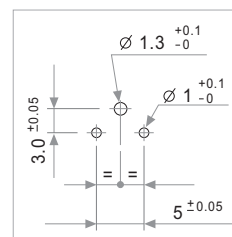
PCB Hole Layout



N-6 L 25 T1 / T3



PCB Hole Layout



MODEL	A	B	C
N-6 L 30 T1 / T3	20	27.6	17
N-6 L 30 T2 / T4	21.5	29.1	18.5

BULK TYPE L



BULK TYPE S



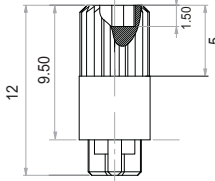
CRIMPING DETAIL "C"

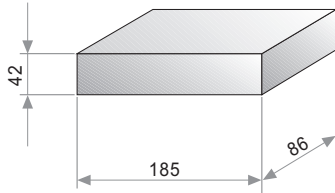


KNOB Ref.: 5680

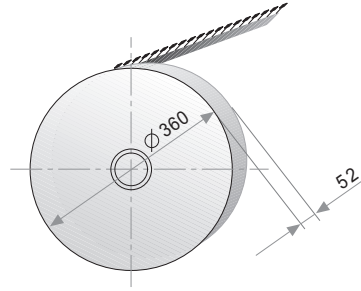
SHAFT Ref.: 6133

Please order both Knob and Shaft separately. If you wish to use your own custom plastic shaft/knob/actuator please contact Piher for advice about compatible materials.

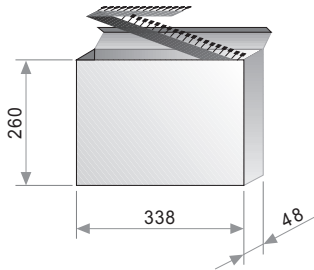




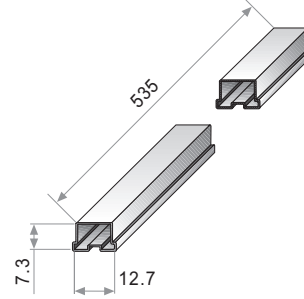
T0 BULK
500 Units per box.



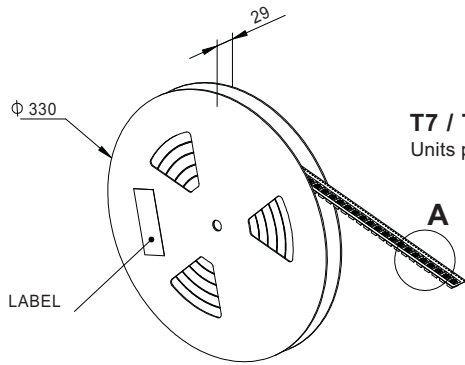
T1 / T2 TAPE ON REEL
Units per Reel according to type:
S: 1.000
L: 750



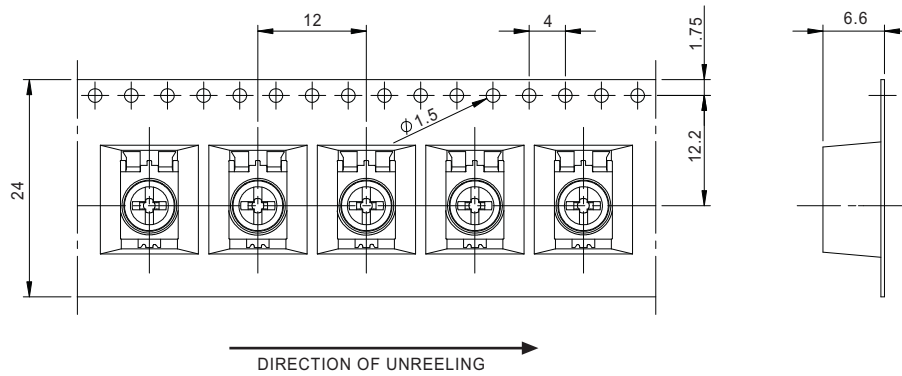
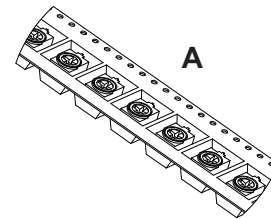
T3 / T4 AMMOPACK
Units per Box according to type.
S: 1.000
L: 750



T5 / T6 MAGAZINE
Units per magazine: 80



T7 / T8 EMBOSSED TAPE
Units per reel: 750



AVAILABLE COMBINATIONS	TAPE				MAGAZINE		EMB.	BULK	
	T1	T2	T3	T4	T5	T6	T7/T8	SMD	CRIMP
N-6 S 25	•	•	•	•					•
N-6 L 25	•		•						•
N-6 L 30	•	•	•	•					•
N-6 L 50	•		•		•	•	•	•	•

TESTS		TYPICAL VARIATIONS	POWER RATING CURVE
ELECTRICAL LIFE	1.000 h. @ 50°C: 0.1 W	±10 %	
MECHANICAL LIFE (CYCLES)	100 @ 10 CPM ...15 CPM	±3 % ($R_n < 1 \text{ M}\Omega$)	
TEMPERATURE COEFFICIENT	-25°C; +70°C	±300 ppm ($1\text{K} \leq R_n \leq 100\text{K}$)	
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).

$R_L \approx 100 \times R$

POSITIONING

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

(example of 50% of the travel)

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