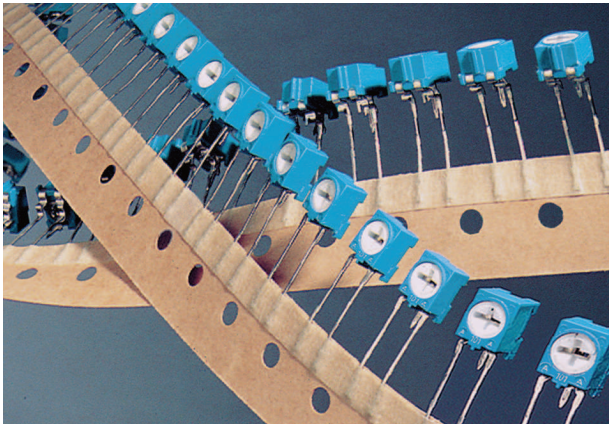


N-6

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

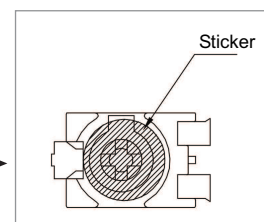
- Range of values*
 $100\Omega \leq R_n \leq 1M\Omega$ (1.0 - 2.0 - 2.2 - 2.5 - 4.7 - 5.0)
- Tolerance*: $100\Omega \leq R_n \leq 1M\Omega$ $\pm 30\%$
- Max. Voltage: 100 VDC
- Nominal Power 50°C (122°F) (see power rating curve): 0.1W
- Taper: linear
- End resistance: $\leq 2\%$ R_n (10 Ω min.)
- Equivalent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

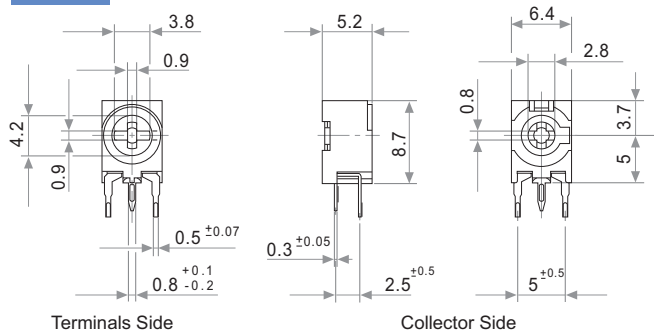
- (1) - Type "N-6 S" is only available with terminal style "25".
- Terminal style "50" is only available with bulk packing "T0", "T1", "T3", "T5", "T6", "T7", "T8"
- (2) - Delivery for "T2" and "T4" only available in: N-6 S 25 and N-6 L 30
- "T5", "T6", "T7" and "T8" only available in SMD.
- "T7", "T8" 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)



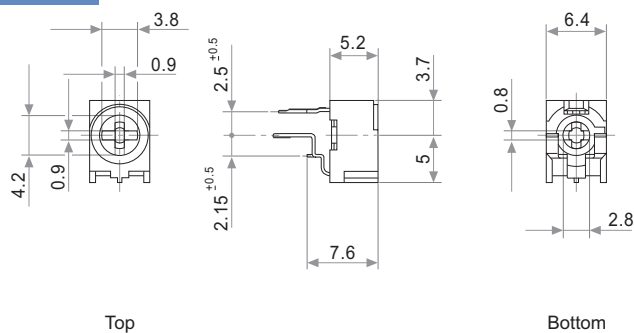
This project has been financially supported by the Spanish Technological Development Institute (CDTI).

MOUNTING METHOD

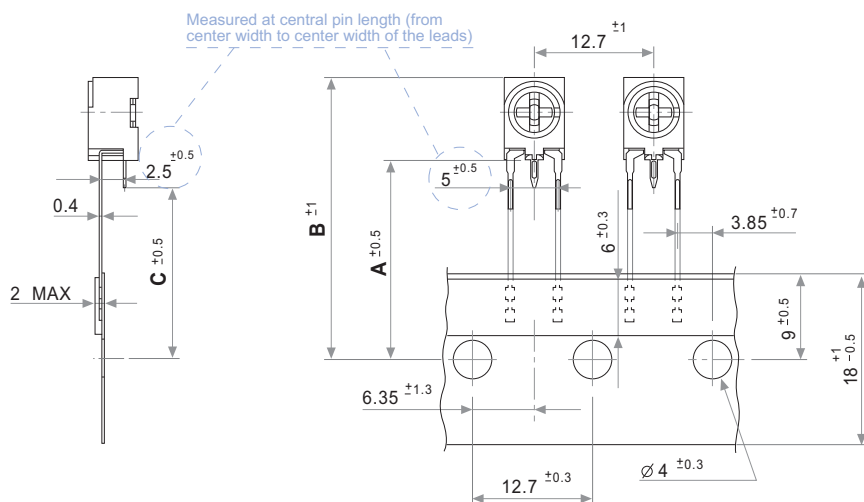
Type S



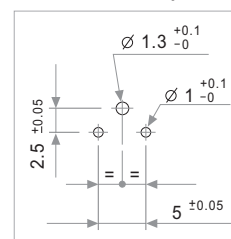
Type L



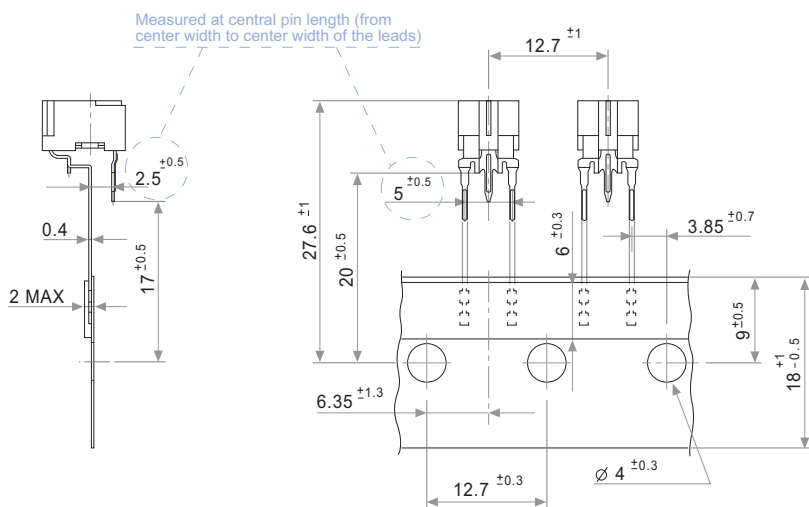
TAPE



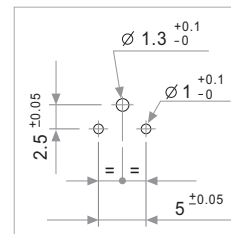
PCB Hole Layout



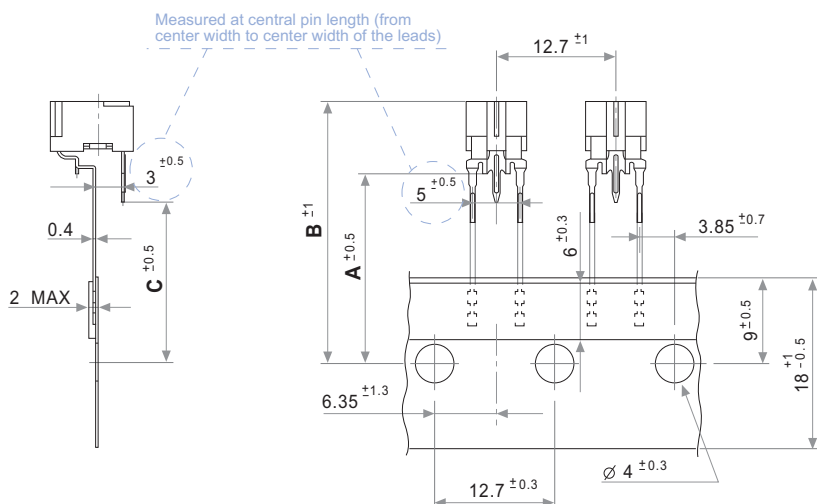
MODEL	A	B	C
N-6 S 25 T1 / T3	20	28.7	17
N-6 S 25 T2 / T4	21.5	30.2	18.5



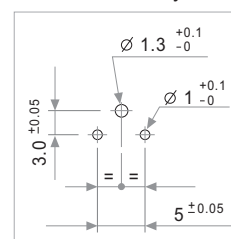
PCB Hole Layout



N-6 L 25 T1 / T3

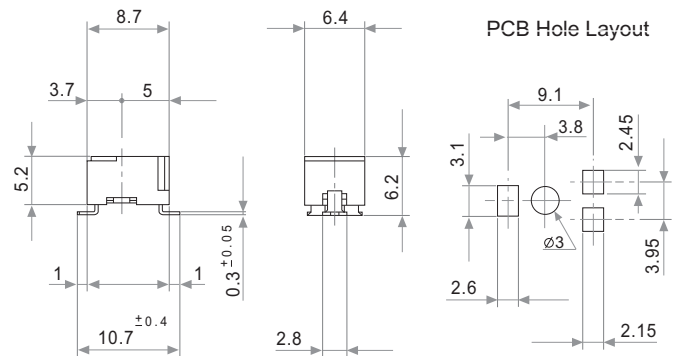
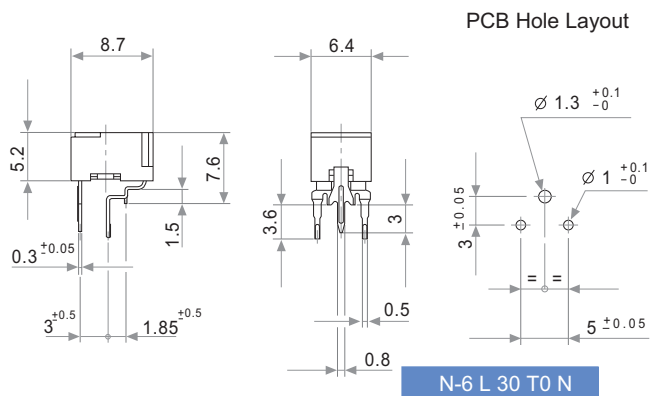
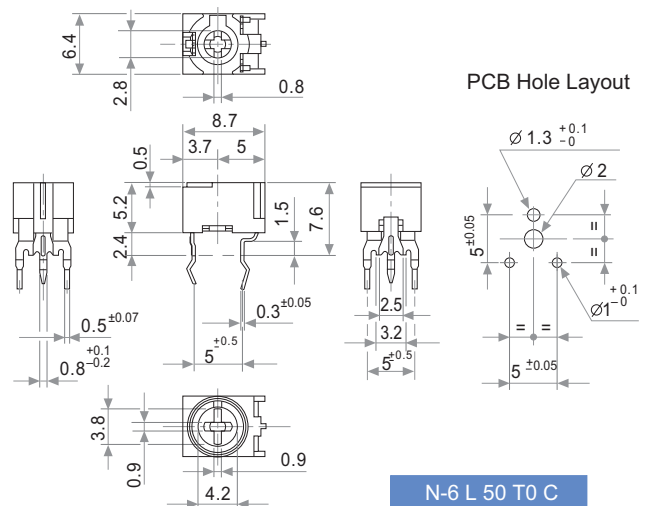
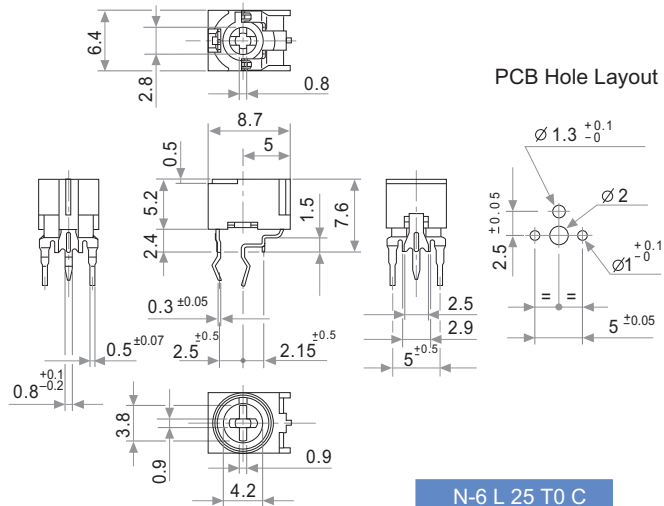


PCB Hole Layout

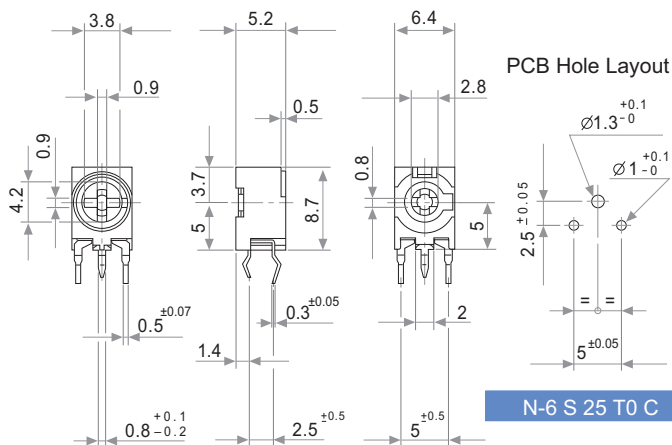


MODEL	A	B	C
N-6 L 30 T1 / T3	20	27.6	17
N-6 L 30 T2 / T4	21.5	29.1	18.5

BULK TYPE L



BULK TYPE S

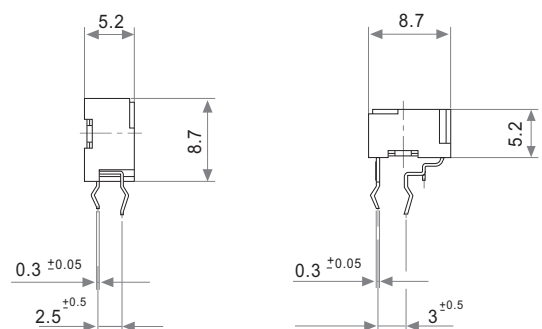


N-6 L 50 T0 S

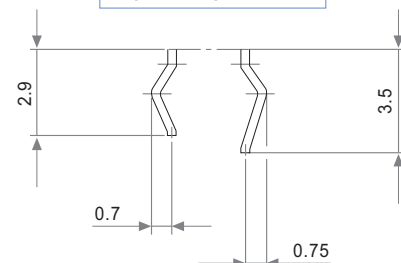
CRIMPING DETAIL "C"

Type S

Type L



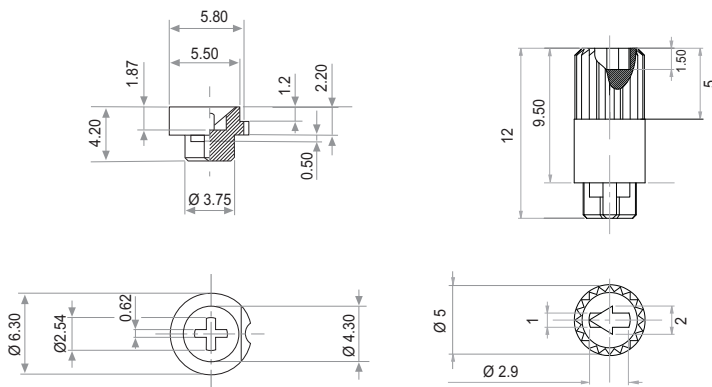
CRIMPING DETAIL

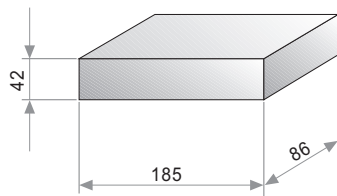


KNOB Ref.: 5680

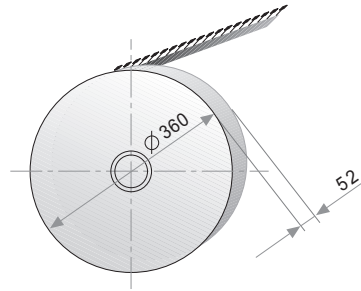
SHAFT Ref.: 6133

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.

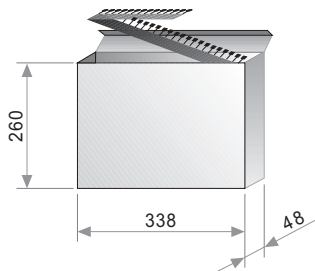




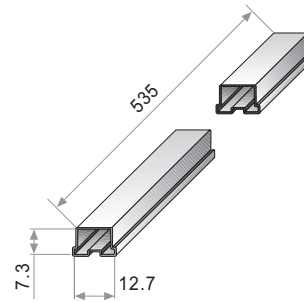
T0 BULK
500 Units per box.



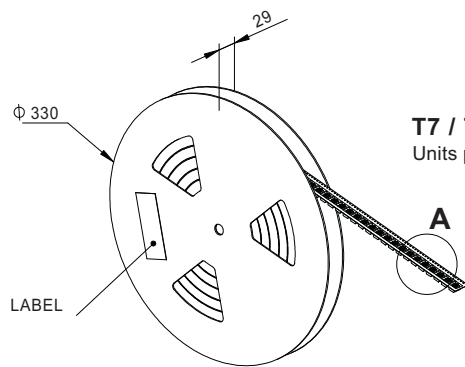
T1 / T2 TAPE ON REEL
Units per Reel according to type:
S: 1.000
L: 750



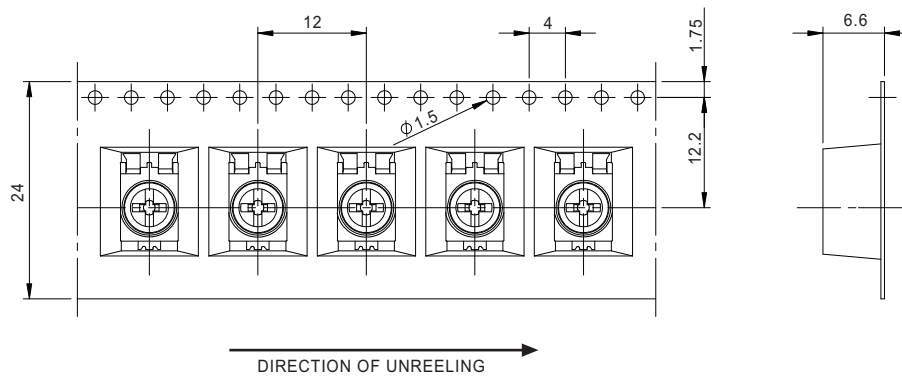
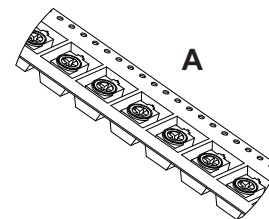
T3 / T4 AMMOPACK
Units per Box according to type.
S: 1.000
L: 750



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)

Disclaimer

The product information in this catalogue is for reference purposes. Please consult for the most up to date and accurate design information.

Piher Sensors & Controls S.A., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Piher"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product described herein.

Piher disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Piher's terms and conditions of sale, including but not limited to the warranty expressed therein, which apply to these products.

No licence, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Piher.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Piher products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Piher for any damages arising or resulting from such use or sale. Please contact authorised Piher personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Information contained in and/or attached to this catalogue may be subject to export control regulations of the European Community, USA, or other countries. Each recipient of this document is responsible to ensure that usage and/or transfer of any information contained in this document complies with all relevant export control regulations. If you are in any doubt about the export control restrictions that apply to this information, please contact the sender immediately. For any Piher Sensors & Controls Exports, Note: All products / technologies are EAR99 Classified commodities. Exports from the United States are in accordance with the Export Administration Regulations. Diversion contrary to US law is prohibited.



All Piher products can be adapted to meet customer's requirements.
Please always use the latest updated datasheets published at our website www.piher.net.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Piher:

[N6-L50T0C-103](#) [N6L30T1N-102](#) [N6L30T1N-503](#) [N6-S25T0C-104](#) [N6-S25T0C-105](#) [N6-S25T0C-102](#) [N6-L50T0C-104](#) [N6L30T0N-223](#) [N6L25T0N-223](#) [N6-L50T0C-105](#) [N6-L50T0C-102](#) [N6L30T0103N](#) [N6-S25T0C-103](#) [N6S25T0C-104-3030](#) [N6L50T0C-103-3030](#) [N6S25T0C-103-3030](#)