

**SERIES:** PTN10 | **DESCRIPTION:** TRIMMER POTENTIOMETER**FEATURES**

- carbon element
- dust proof enclosure
- multiple rotor options
- linear, logarithmic, and reverse logarithmic tapers

**SPECIFICATIONS**

| parameter                     | conditions/description                         | min | typ | max   | units      |
|-------------------------------|------------------------------------------------|-----|-----|-------|------------|
| maximum operating voltage     |                                                |     |     | 200   | Vdc        |
| power rating                  | at 70°C                                        |     |     | 0.15  | W          |
| taper                         | linear, logarithmic, and reverse logarithmic   |     |     |       |            |
| standard resistance range     | see Resistance Table                           | 1.0 |     | 2,000 | k $\Omega$ |
| standard resistance tolerance | $\pm 10\%$ or $\pm 20\%$ , see Part Number Key |     |     |       |            |
| residual resistance           |                                                |     |     | 10    | $\Omega$   |
| sliding noise                 |                                                |     |     | 68    | mV         |
| operating temperature         |                                                | -10 |     | 70    | °C         |
| hand soldering                | for 3 seconds max                              |     |     | 350   | °C         |
| wave soldering                | for 5 $\pm$ 1 seconds                          | 255 | 260 | 265   | °C         |
| RoHS                          | yes                                            |     |     |       |            |

**MECHANICAL**

| parameter         | conditions/description | min | typ | max    | units  |
|-------------------|------------------------|-----|-----|--------|--------|
| mechanical angle  |                        | 225 | 235 | 245    | °      |
| rotational torque |                        | 10  |     | 80     | gf-cm  |
| stop strength     |                        | 400 |     |        | gf-cm  |
| rotational life   |                        |     |     | 10,000 | cycles |
| weight            | varies by model        | 0.5 |     | 0.7    | g      |

PART NUMBER KEY

**PTN10 - X XX X X XX**

Base Number

Terminal Configuration:  
A = Horizontal, Straight Inward Terminals  
B = Horizontal, Crimped Terminals  
C = Horizontal, Straight Outward Terminals  
D = Vertical, Crimped Terminals  
E = Vertical, Straight Terminals

Resistance:  
01 = 1 kΩ  
02 = 2 kΩ  
05 = 5 kΩ  
10 = 10 kΩ  
20 = 20 kΩ  
25 = 25 kΩ  
50 = 50 kΩ  
100 = 100 kΩ  
200 = 200 kΩ  
500 = 500 kΩ  
11 = 1 MΩ  
22 = 2 MΩ

Resistance Taper:  
A = Logarithmic  
B = Linear  
C = Reverse Logarithmic

Rotor Type:  
S = Screwdriver  
H = Hexagonal  
C = Cross Slot  
D = D-Cut

Tolerance:  
10 = ±10%  
20 = ±20%

SCHEMATIC/TAPERS

A schematic diagram of a trimmer potentiometer. It consists of a zigzag line representing the resistive track. Terminal 1 is at the left end, terminal 3 is at the right end, and terminal 2 is at the center, indicated by an arrow pointing to the track.

| Resistance Table |      |
|------------------|------|
| Resistance (KΩ)  | Code |
| 1                | 01   |
| 2                | 02   |
| 5                | 05   |
| 10               | 10   |
| 20               | 20   |
| 25               | 25   |
| 50               | 50   |
| 100              | 100  |
| 200              | 200  |
| 500              | 500  |
| 1,000            | 11   |
| 2,000            | 22   |

**A (Logarithmic Tapers)**

Graph A shows a logarithmic taper. The y-axis is 'Terminal 1-2 Output Voltage / Terminal 1-3 Input Voltage x 100 (%)' from 0 to 100. The x-axis is 'Rotational Travel (%)' from 0 to 100. The curve starts at (0,0) and rises slowly until about 40% travel, then rises more steeply to reach 100% at 100% travel. A point on the curve is labeled '15A'.

**B (Linear Tapers)**

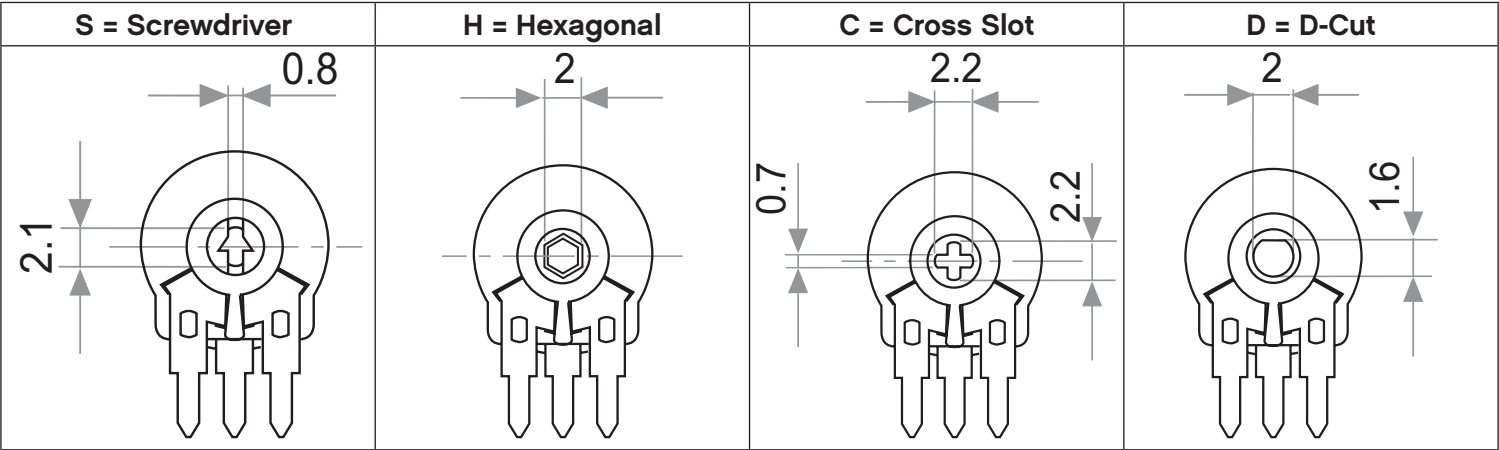
Graph B shows a linear taper. The axes are the same as Graph A. The curve is a straight line from (0,0) to (100,100). A point on the line is labeled '50B'.

**C (Reverse Logarithmic Tapers)**

Graph C shows a reverse logarithmic taper. The axes are the same as Graph A. The curve starts at (0,100) and falls slowly until about 40% travel, then falls more steeply to reach 0% at 100% travel. A point on the curve is labeled '15C'.

ROTOR TYPE

units: mm  
tolerance:  $\pm 0.3$  mm  
unless otherwise noted



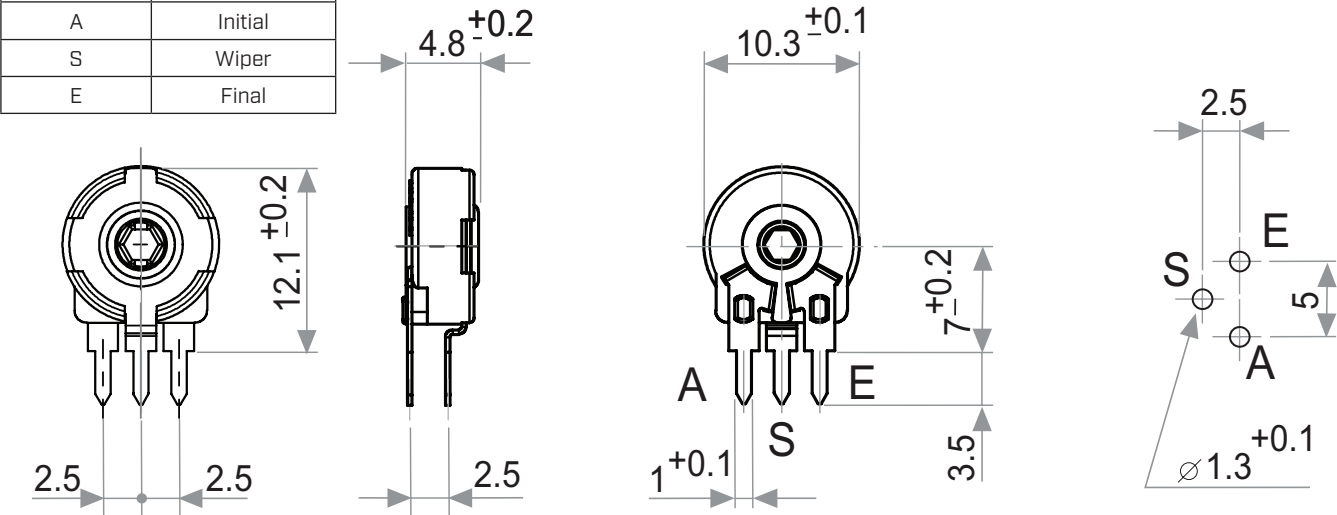
Note: Default delivery is at initial position of wiper.

MECHANICAL DRAWING (HORIZONTAL, STRAIGHT INWARD TERMINALS)

units: mm  
tolerance:  
 $X \leq 10$ :  $\pm 0.3$  mm  
 $10 < X \leq 30$ :  $\pm 0.5$  mm  
 $30 < X \leq 100$ :  $\pm 1.0$  mm  
unless otherwise noted

| ITEM | DESCRIPTION | MATERIAL     | PLATING/COLOR |
|------|-------------|--------------|---------------|
| A    | housing     | PA6 [UL94HB] | black         |
| B    | terminals   | steel        | tin           |
| C    | reed        | tin bronze   |               |

| TERMINAL CONNECTIONS |             |
|----------------------|-------------|
| TERMINAL             | DESCRIPTION |
| A                    | Initial     |
| S                    | Wiper       |
| E                    | Final       |

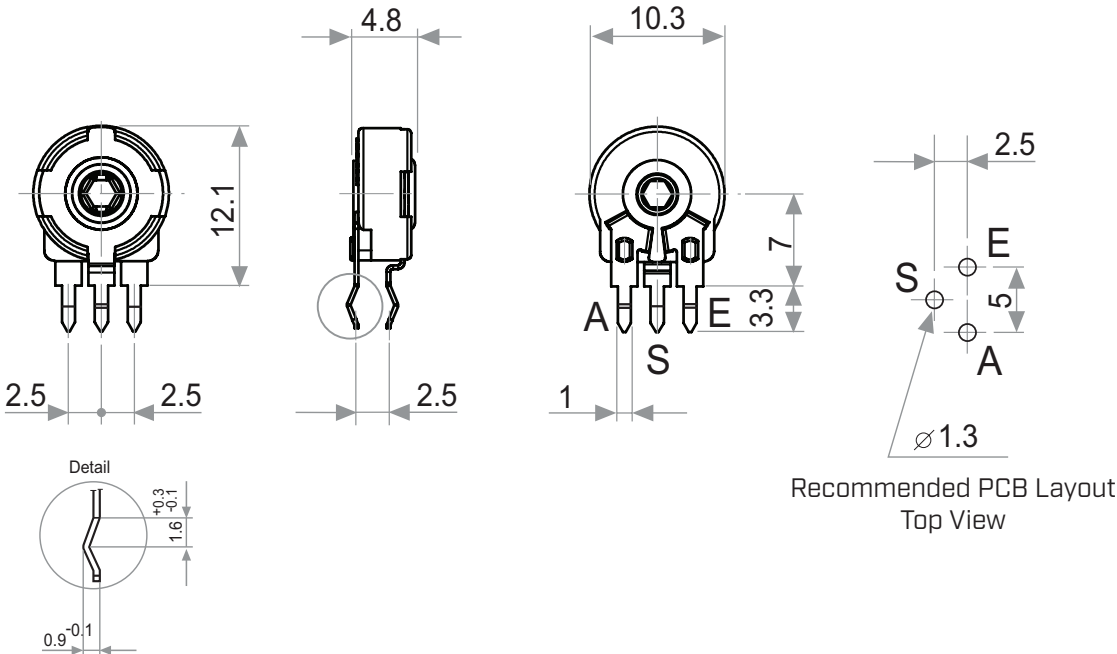


Recommended PCB Layout  
Top View

MECHANICAL DRAWING (HORIZONTAL, CRIMPED TERMINALS)

units: mm  
tolerance:  
X≤10: ±0.3 mm  
10<X≤30: ±0.5 mm  
30<X≤100: ±1.0 mm  
unless otherwise noted

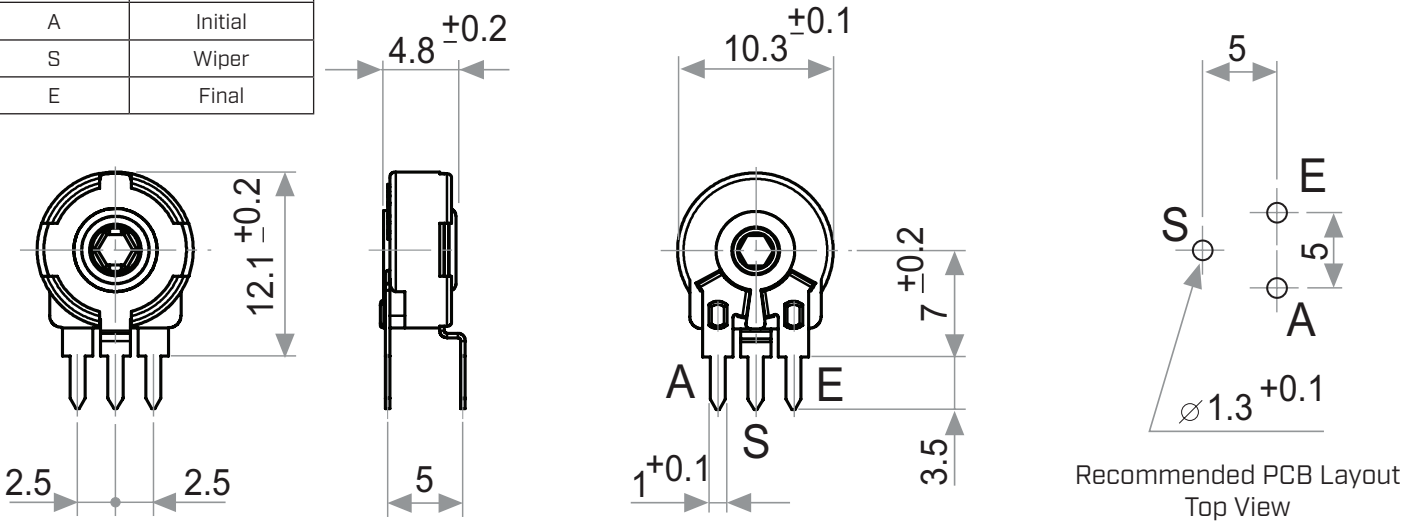
| TERMINAL CONNECTIONS |             |
|----------------------|-------------|
| TERMINAL             | DESCRIPTION |
| A                    | Initial     |
| S                    | Wiper       |
| E                    | Final       |



MECHANICAL DRAWING (HORIZONTAL, STRAIGHT OUTWARD TERMINALS)

units: mm  
tolerance:  
X≤10: ±0.3 mm  
10<X≤30: ±0.5 mm  
30<X≤100: ±1.0 mm  
unless otherwise noted

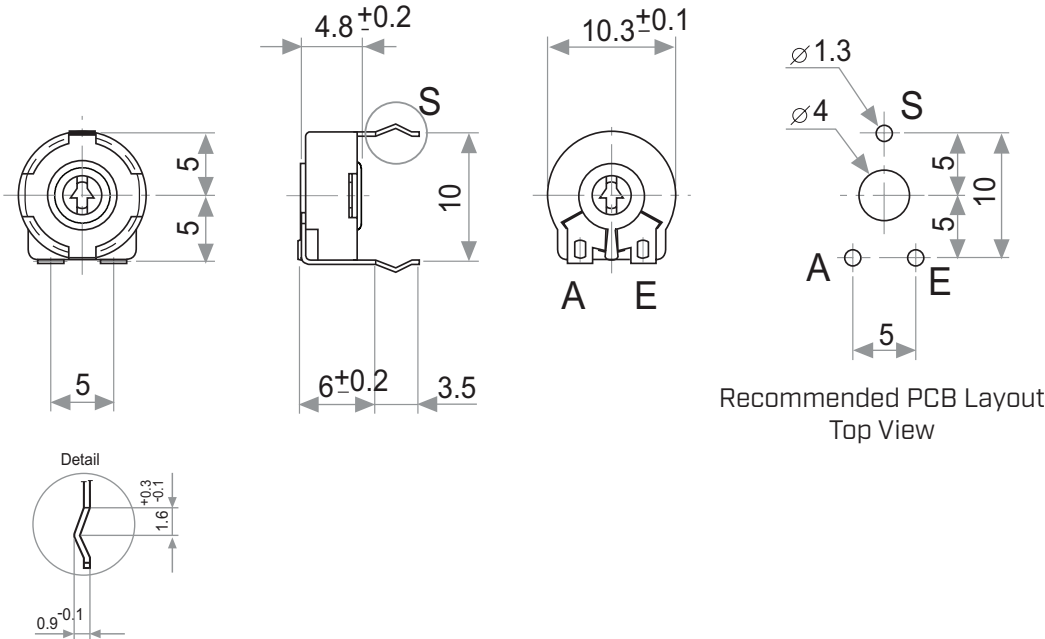
| TERMINAL CONNECTIONS |             |
|----------------------|-------------|
| TERMINAL             | DESCRIPTION |
| A                    | Initial     |
| S                    | Wiper       |
| E                    | Final       |



MECHANICAL DRAWING (VERTICAL, CRIMPED TERMINALS)

units: mm  
tolerance:  
X≤10: ±0.3 mm  
10<X≤30: ±0.5 mm  
30<X≤100: ±1.0 mm  
unless otherwise noted

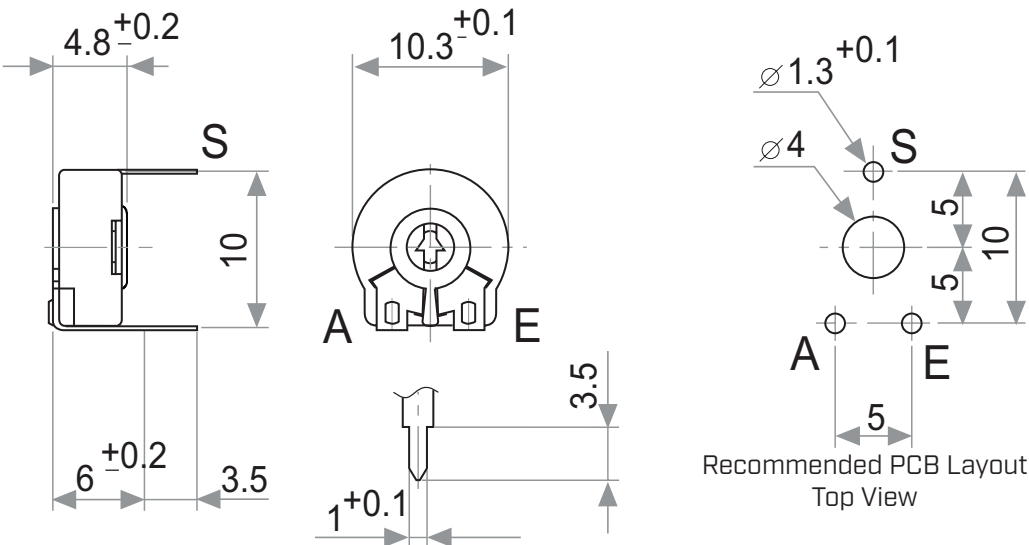
| TERMINAL CONNECTIONS |             |
|----------------------|-------------|
| TERMINAL             | DESCRIPTION |
| A                    | Initial     |
| S                    | Wiper       |
| E                    | Final       |



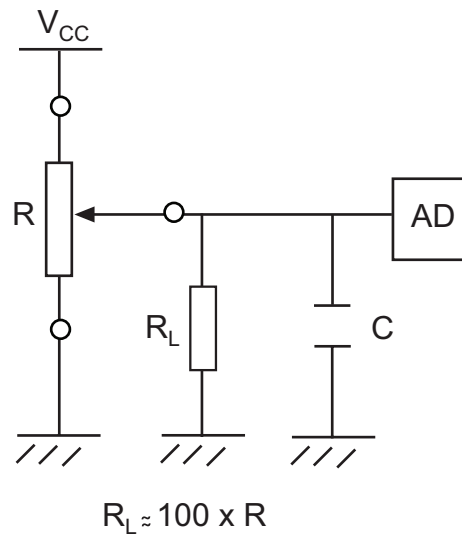
MECHANICAL DRAWING (VERTICAL, STRAIGHT TERMINALS)

units: mm  
tolerance:  
X≤10: ±0.3 mm  
10<X≤30: ±0.5 mm  
30<X≤100: ±1.0 mm  
unless otherwise noted

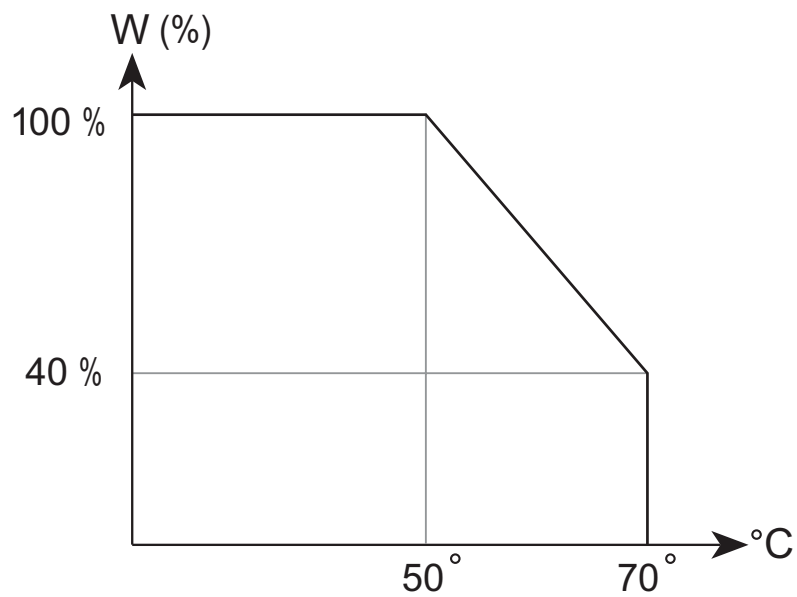
| TERMINAL CONNECTIONS |             |
|----------------------|-------------|
| TERMINAL             | DESCRIPTION |
| A                    | Initial     |
| S                    | Wiper       |
| E                    | Final       |



## RECOMMENDED CIRCUIT



## POWER DERATING CURVE



REVISION HISTORY

| rev. | description                       | date       |
|------|-----------------------------------|------------|
| 1.0  | initial release                   | 06/22/2022 |
| 1.01 | logo, datasheet style update      | 08/05/2022 |
| 1.02 | updated taper detail              | 01/15/2024 |
| 1.03 | updated datasheet                 | 04/16/2024 |
| 1.04 | CUI Devices rebranded to Same Sky | 09/12/2024 |

The revision history provided is for informational purposes only and is believed to be accurate.



Same Sky offers a one (1) year limited warranty. Complete warranty information is listed on our website.

Same Sky reserves the right to make changes to the product at any time without notice. Information provided by Same Sky is believed to be accurate and reliable. However, no responsibility is assumed by Same Sky for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

Same Sky products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

**sameskydevices.com**