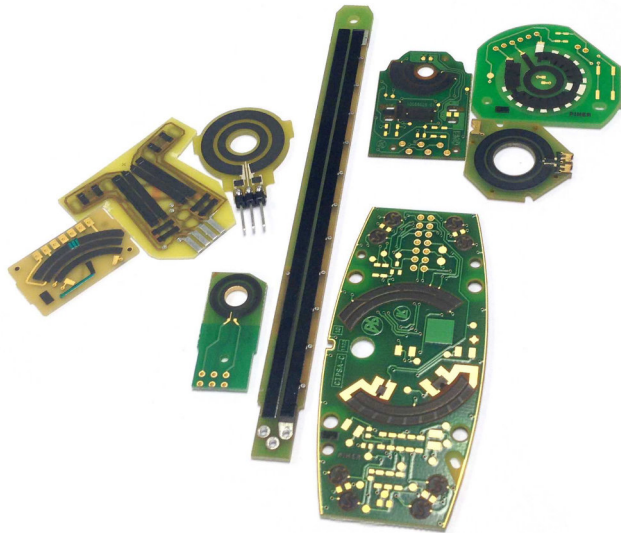


# Printed PCB Resistors

## Printed Polymer Resistors for PCBs



Rotary and linear printed potentiometers. Depending on the design, the resistance can be configured with either linear or logarithmic characteristics.

### POTENTIAL APPLICATIONS

#### ■ AUTOMOTIVE:

- Climate control:
  - Temperature
  - Air flow
  - Distribution
- Headlight positioning control.
- Steering column module switches.
- Mirror position sensor.
- Headlight position sensor.
- Fuel tank level sensor.
- Pedal sensors.
- Instrument panel controls.
- Dimmers for lighting.
- Seat position sensor.

#### ■ HOME and BUILDING AUTOMATION:

- Light dimmers.
- Speed control for hand power tools.

#### ■ INDUSTRIAL & MARINE:

- Heavy-duty equipment.
- Material handling equipment (e.g. forklifts)
- Marine grade sensors.
- AG and farm equipment.

#### ■ MEDICAL

PIHER's Printed Resistors use advanced thick-film polymer technology to integrate custom resistive elements — such as fixed resistors, potentiometer tracks, switches and conductors — onto a wide range of substrates, including FR4, flexible materials, and high-temperature ceramics. Screen-printable polymer pastes enable cost-effective, tailor-made designs for virtually any PCB shape or size, offering high layout flexibility even in low to medium volumes.

### FEATURES

- **Flexible Substrate Options:** Compatible with rigid, semi-flex, or fully flexible circuit boards.
- **High Design Versatility:** Enables compact, low-profile designs ideal for space-constrained applications.
- **Cost-Effective Customization:** Efficient production with reduced material and assembly costs.
- **Precision Tuning:** Laser trimming provides tight tolerances and high-volume consistency.
- **In-Process Calibration:** Enables tight resistance matching and stable voltage-divider performance.
- **Durable & Reliable:** Excellent thermal and electrical stability, even under harsh conditions.
- **Integrated Functions:** Combine multiple passive components in a single print layer to reduce BOM complexity.
- **Custom Contact Solutions:** Standard or tailor-made wiper/contact assemblies to match customer specifications.

Ideal for applications requiring miniaturization, precision, and reliability, PIHER's Printed Resistors using polymer thick-film technology deliver scalable performance for modern electronic designs.

### MAIN SPECIFICATIONS

- Resistance range: 10Ω to 1MΩ
- TCR: Better than 300 ppm/°C.
- Tolerances\*:
  - Ohmic value:
    - Non-trimmed resistors: ± 30%, ±20%  
— (depending on values, shapes and substrates)
    - Trimmed resistors: ±5%
    - Matching capability: ±2%, ±1%
  - Voltage Ratio:
    - Non-trimmed resistors: ±10%
    - Trimmed resistors: ±2%
- Rotational Life (potential dividers only):  
From 10 thousand to 5 million cycles  
(depending on each individual case)

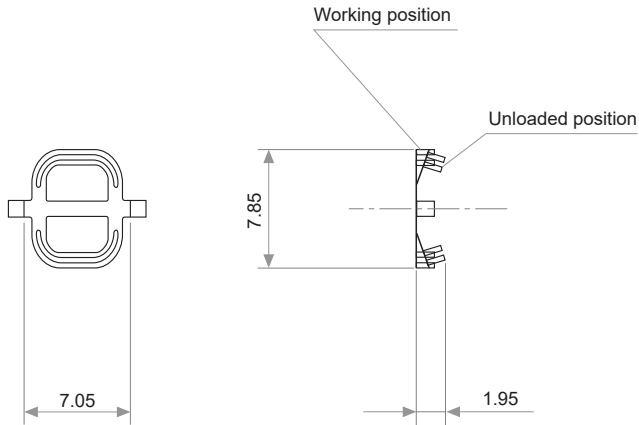
\* Others upon request

### ADVANTAGES

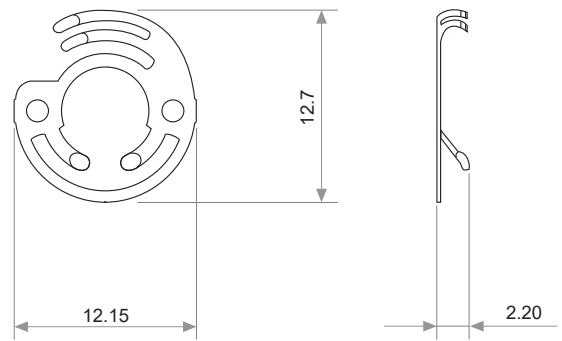
- Low profile and lightweight
- Cost-effective
- No insertion costs or errors
- No soldering issues
- Unlimited combinations of fixed and variable resistors
- Excellent high-frequency performance
- Calibrated voltage dividers available
- Custom ohmic values available
- Functional (in-circuit) trimming
- Laser trimming capabilities
- Shipping from Europe, America, and China

WIPER EXAMPLES (technical specifications upon request)

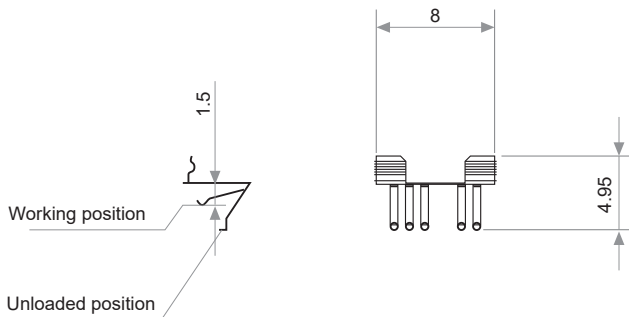
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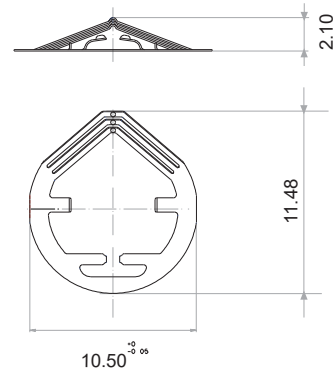
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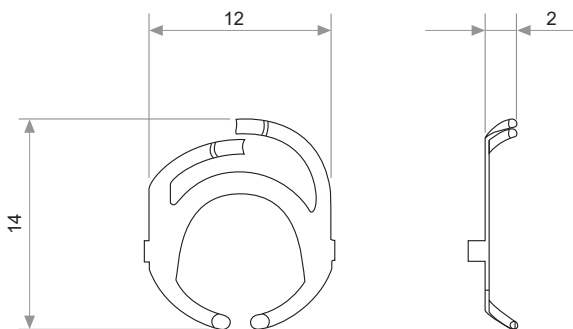
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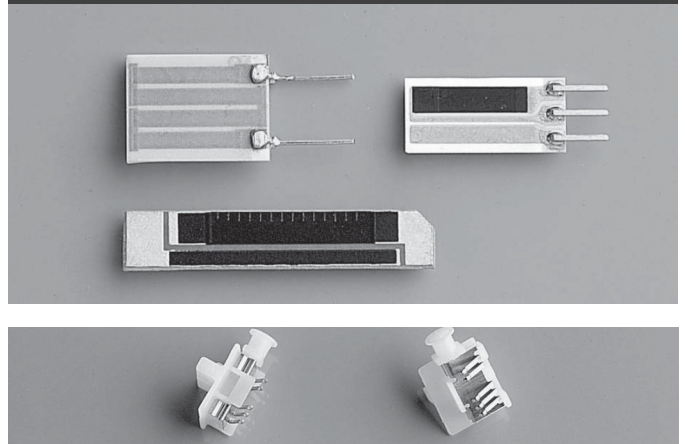
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Ref. 5184



Example images



One Stop Shop  
Multiple Advantages



Engineering  
design-in  
support



Output  
customization



Cable harness and  
connector assembly



One-stop solution provider for  
different sensing  
technologies

Hall-effect

TMR

Resistive

Inductive

Printed electronics



Global  
footprint



Manufacturing  
capabilities for high  
and low volume  
programs



Diverse portfolio of standard and customized  
sensors: Tilt, Position, Speed and Current.



To ensure you have the most up-to-date information, we recommend always downloading the latest version of this datasheet from [www.piher.net](http://www.piher.net)

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