

Product Specification

Number: L-KLS4-3296W-xxxJ

Name: Cermet Potentiometer

Customer: _____

Date: 2026-08-21

Customer Signature:



WWW.KLSELE.COM

NINGBO KLS ELECTRONIC CO; LTD

Tel : 0086-574-86828566

Fax : 0086-574-86824882

**ADD : NO. 8-1, RONGXIA RD. XIAPU SHANQIAN
INDUSTRIAL ZONE BEILUN NINGBO ZHEJIANG.**

Compi	Check	Review	Approval
Jenny	Jack.C		

dzFeatures:

- Adopts cermet resistive element, high rated power.
- Fully enclosed structure, excellent comprehensive performance.
- Small size, suitable for high-density mounting.
- Worm gear drive, fine adjustment.
- Excellent heat resistance and moisture resistance.

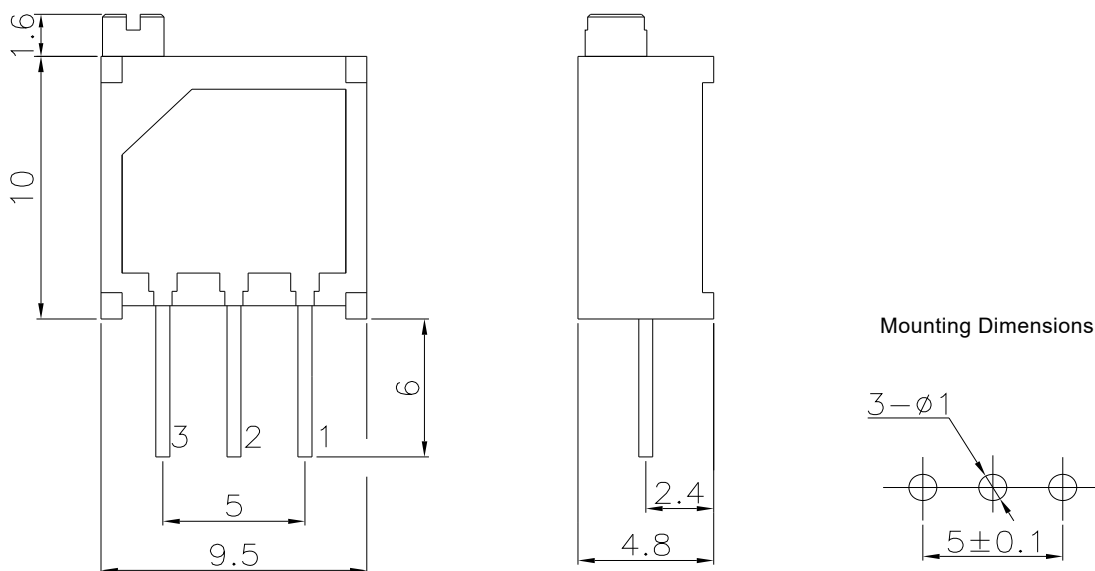
dzApplications

- Various instruments and meters.

dzRecommended Mounting Method: Insert the potentiometer leads into the printed circuit board, press it tightly against the board, and solder firmly with tin.

1.0 Outline and mounting dimensions see Appendix. "General Tolerances - Tolerances for Linear Dimensions Without Individual Tolerance Indications" shall comply with national standard GB/T1804-92! Unspecified tolerance dimensions shall comply with IT.

Appendix 3296W



ORDER INFORMATION

Product NO.: L-KLS4-3296 W-xxx J

Pos. NO. _____ Tolerance $\pm 5\%$
 3296:Model _____ Resistance Code
 W:Style _____

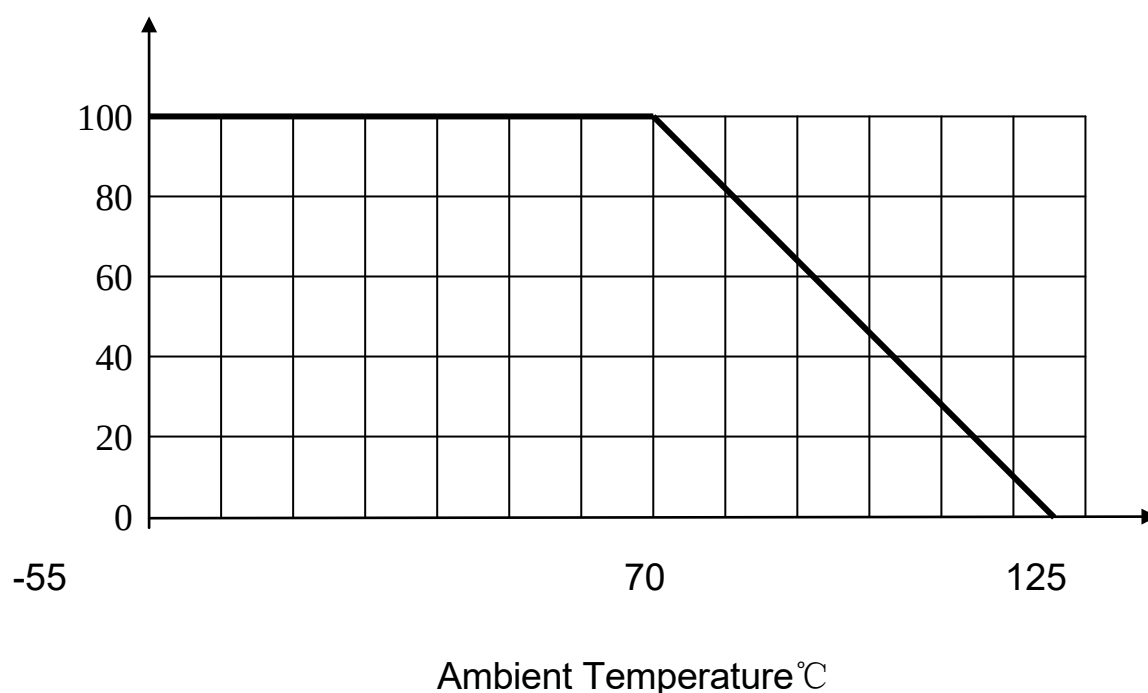
2.0 Electrical Characteristics

- 2.1 Nominal Resistance Range: $10\Omega \sim 2M\Omega$
- 2.2 Resistance Tolerance: $\pm 5\%$
- 2.3 Resistance Taper: A (Linear) Characteristic
- 2.4 Rated Power (at 70°C): 0.5W
- 2.5 Contact Resistance Variation: $\leq 3\%R$ or 5Ω (whichever is greater)
- 2.6 Temperature Coefficient of Resistance: $\leq \pm 200 \times 10^{-6}/^\circ\text{C}$ ($-55^\circ\text{C} \sim +125^\circ\text{C}$)
- 2.7 Zero-ohm Resistance: $\leq 10\Omega$ or ($100\Omega \leq R \leq 1\text{ k}\Omega$) or $\leq 1\%$ of R (for $R > 1\text{ k}\Omega$)
- 2.8 Stability Class: 10%
- 2.9 Limiting Element Voltage: 220 V (DC or AC RMS)
- 2.10 Temperature Variation: $-55^\circ\text{C} \sim +125^\circ\text{C}$
- 2.11 Temperature Variation Test: $\Delta R \leq \pm 2\% R$ $\Delta U_{12} / \Delta U_{13} \leq \pm 1\%$

3.0 Mechanical Characteristics

- 3.1 Total Mechanical Travel: (28 ± 2) turns
- 3.2 Starting Torque: $\leq 35\text{ mN.m}$
- 3.3 Solderability: Solder bath, $235^\circ\text{C} \pm 5^\circ\text{C}$, $2\text{s} \pm 0.5\text{s}$, immerse the terminations in the solder bath; after removal, solder coverage area $> 90\%$.

4.0 Derating Curve



5.0 Environmental Tests

5.1 Resistance to Temperature Change

Dry Heat: Place in an oven at $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$ with relative humidity not exceeding $\pm 20\%$ for (24 ± 4) hours. After removal from the oven, the potentiometer shall be cooled in a desiccator containing appropriate desiccant and maintained until the specified test begins.

$-55^{\circ}\text{C} \sim +20^{\circ}\text{C}$	$\Delta R/R \leq \pm 1.5\%$
$+20^{\circ}\text{C} \sim +70^{\circ}\text{C}$	$\Delta R/R \leq \pm 1\%$
$+20^{\circ}\text{C} \sim +125^{\circ}\text{C}$	$\Delta R/R \leq \pm 2.1\%$

5.2 Climatic Sequence

5.2.1 Dry Heat: Temperature 70°C , duration 16 hours. Appearance shall show no visible damage, marking shall be clear.

5.2.2 Cyclic Damp Heat Test Db (First Cycle): Gradually raise temperature from room temperature to 55°C , maintain for a period, then return to room temperature; total duration 24 hours.

5.2.3 Cold: Temperature -55°C , duration 2 hours. Starting torque $\leq 35 \text{ mN}\cdot\text{m}$.

5.2.4 Low Air Pressure: Air pressure 8.5 kPa , test temperature between 15°C and 35°C , duration 1 hour. No breakdown or flashover shall occur during or after the test.

5.2.5 DC Charge: Per Clause 4.38.7 (following clauses all reference General Specification GB/T15298-94). Final Inspection: Appearance marking shall be clear with no visible damage; $\Delta R \leq \pm(3\%R + 0.5\Omega)$; Insulation Resistance $\geq 100 \text{ M}\Omega$; Starting Torque $\leq 35 \text{ mN}\cdot\text{m}$.

5.3 Termination Strength

With the termination in its normal position and fixed by the component body, apply a force of 5 N along its axial direction, acting in the direction away from the component body. The tensile force shall be applied gradually (without any shock), then maintained for (10 ± 1) seconds. $\Delta R \leq \pm(5\%R + 0.1\Omega)$. Appearance shall show no visible damage.

5.4 Resistance to Soldering Heat

Dry Heat: Temperature $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$, relative humidity not exceeding 20% , duration (24 ± 4) hours; Method 1A: In a solder bath at $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$, maintain for $(5 \pm 1) \text{ s}$. $\Delta R \leq \pm(3\%R + 0.1\Omega)$.

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5.5 Vibration

Frequency 10Hz~500Hz, amplitude 0.75 mm, maintain 2 hours in each of X, Y, Z directions. Appearance shall show no visible damage; $\Delta R \leq \pm(1\%R+0.1\Omega)$; simultaneously, no electrical discontinuity greater than 100 μs shall occur.

5.6 Bump

Acceleration: 390 m/s², 4000 bumps. $\Delta R \leq \pm(1\%R+0.1\Omega)$.

5.7 Electrical Endurance at 70℃

Temperature 70℃ $\pm$ 3℃, apply rated voltage or limiting element voltage (whichever is smaller) at terminals 1.3, 1.5 hours ON and 0.5 hours OFF as one cycle, duration 1000 hours. Inspect at 48 hours, 500 hours, and 1000 hours. Appearance marking shall be clear with no visible damage; ΔR at terminals 1.3 $\leq \pm(3\%R+0.5\Omega)$; Temperature 70℃ $\pm$ 3℃, apply rated voltage or limiting element voltage (whichever is smaller) at terminals 1.2, with terminal 2 at 95% of the electrical travel, 1.5 hours ON and 0.5 hours OFF as one cycle, duration 1000 hours. Inspect at 48 hours, 500 hours, and 1000 hours. Appearance marking shall be clear; ΔR at terminals 1.2 $\leq \pm(3\%R+0.5\Omega)$.

All samples inspected at 1000 hours: Insulation Resistance $\geq 1 G\Omega$; CRV $\leq \pm 3\%R$ or 5 Ω (whichever is greater).

5.8 Mechanical Endurance

Speed 5~10 cycles/min, rotate 200 cycles. Appearance shall show no visible damage; $\Delta R \leq \pm 5\%R$; CRV $\leq \pm 3\%R$ or 5 Ω (whichever is greater); Starting Torque $\leq 35 mN\cdot m$.

5.9 Steady-State Damp Heat

Per Clause 4.39.2.1, Group 1: 2 samples, Group 2: 3 samples, Group 3: 3 samples; Per Clause 4.39.2.2, Group 1: 4 samples, Group 2: 4 samples.

Final Measurement: Appearance shall show no visible damage, marking shall be clear; resistive element resistance $\Delta R \leq \pm 3\%R$; Insulation Resistance $\geq 100 M\Omega$.