

18 TURNS CERMET TRIMMERS

CT-94

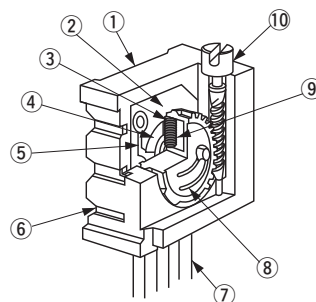
RoHS compliant



FEATURES

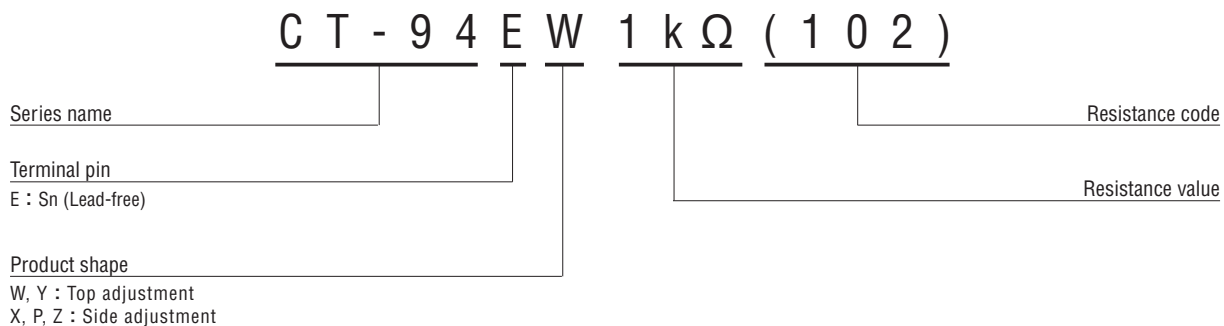
- RoHS compliant
- Thin body design (4.8 mm thick)
- 18 turns, sealed, precision type

INTERNAL STRUCTURE





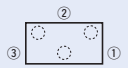


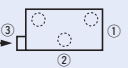
| | Part name | Material | Flammability |
|---|-------------------|---------------------------|--------------|
| ① | Housing | Polybutyleneterephthalate | UL94V-0 |
| ② | Base element | Ceramic | — |
| ③ | Wiper | Multi metal alloy | |
| ④ | Resistive element | RuO ₂ cermet | |
| ⑤ | Electrode | Ag-Pd cermet | UL94V-0 |
| ⑥ | Adhesive | Epoxy | |
| ⑦ | Terminal pin | Copper, Tin-plated | — |
| ⑧ | Rotor gear | Polyamide | UL94HB |
| ⑨ | Rubber cushion | Silicone rubber | — |
| ⑩ | Shaft | Brass, Nickel-plated | |

PART NUMBER DESIGNATION



※ Please refer to the LIST OF PART NUMBERS when placing orders.

LIST OF PART NUMBERS

| Adjustment position | Shape of terminal (Top view) | Form of packaging | Pieces in package |
|---|--|-------------------|-------------------|
| | | Plastic bag | |
| Top adjustment  |  | CT-94EW | 50 pcs./pack |
| |  | CT-94EY | |
| Side adjustment (↑ Adjustment direction) |  | CT-94EX | |
| |  | CP-94EP | |
| |  | CT-94EZ | |
| | | | |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------|---|
| Nominal resistance range | 10 Ω ~ 2 M Ω |
| Resistance tolerance | ± 10 % |
| Power ratings | 0.5 W (70 °C) 0 W (125 °C) |
| Resistance law | (B) Linear law |
| Maximum input voltage | DC300 V or power rating, whichever is smaller |
| Maximum wiper current | 100 mA or power rating, whichever is smaller |
| Effective electrical turn | 15 turns |
| End resistance | 1 % or 2 Ω , whichever is greater |
| C.R.V. | 1 % or 3 Ω , whichever is greater |
| Operating temp. range | − 55 ~ 125 °C |
| Temp. coefficient | 10 Ω , 20 Ω : ± 250 10 ⁻⁶ /°C maximum 50 Ω ~ 2 M Ω : ± 100 10 ⁻⁶ /°C maximum |
| Insulation resistance | 1000 M Ω minimum (DC500 V) |
| Dielectric strength | AC900 V, 60 s |
| Net weight | Approx. 0.88 g (CT-94EP) Approx. 0.92 g (CT-94EW, EX, EY, EZ) |

<Nominal resistance values>

| | | | | | | | | | |
|--------|--------|----------|--------|---------|---------|-----------|---------|-------|-------|
| ⊕ 10 Ω | ⊕ 20 Ω | 50 Ω | 100 Ω | 200 Ω | 500 Ω | 1 k Ω | 2 k Ω | 5 k Ω | |
| 10 k Ω | 20 k Ω | ⊕ 25 k Ω | 50 k Ω | 100 k Ω | 200 k Ω | ⊕ 250 k Ω | 500 k Ω | 1 M Ω | 2 M Ω |

Fig.1

※ The above part numbers are all available with the respective combination of <Nominal resistance values> (Fig. 1).

※ Verify the above part numbers when placing orders.

The products indicated by ⊕ mark are manufactured upon receipt of order basis.

MECHANICAL CHARACTERISTICS

| | |
|-------------------|---|
| Mechanical turn | 18 turns |
| Operating torque | 35 mN·m {357 gf·cm} maximum |
| Mechanical stop | Clutch action |
| Rotational life | 200 cycles [Δ R/R ≤ ± (2 Ω + 3 %)] |
| Terminal strength | 10 N {1.02 kgf} minimum (Tensile strength) |
| Thrust to shaft | 10 N {1.02 kgf} minimum |
| Solderability | 245 ± 3 °C, 2 ~ 3 s |

{ } : Reference only

ENVIRONMENTAL CHARACTERISTICS

| Test item | Test conditions | Specifications |
|---------------------|--|----------------------------------|
| Thermal shock | − 65 ~ 125 °C (0.5 h), 5 cycles | [Δ R/R ≤ 1 %] [S.S. ≤ 1 %] |
| Humidity | − 10 ~ 65 °C (80 ~ 98 %), 10 cycles, 240 h | [Δ R/R ≤ 2 %] |
| Shock | 981 m/s ² , 6 ms 6 directions for 3 times each | [Δ R/R ≤ 1 %] [S.S. ≤ 1 %] |
| Vibration | (Amplitude) 1.52 mm or (Acceleration) 196 m/s ² , 10 ~ 2000 Hz, 3 directions, 12 times each | |
| Load life | 70 °C, 0.5 W, 1000 h | [Δ R/R ≤ 3 %] [S.S. ≤ 1 %] |
| Low temp. operation | − 55 °C, 2 h | [Δ R/R ≤ 2 %] [S.S. ≤ 2 %] |
| High temp. exposure | 125 °C, 250 h | [Δ R/R ≤ 3 %] [S.S. ≤ 2 %] |
| Immersion seal | 85 °C, 60 s | No leaks (No continuous bubbles) |
| Soldering heat | Flow 260 ± 3 °C, 5 ~ 6 s, two times maximum Manual soldering 380 ± 10 °C, 3 ~ 4 s | [Δ R/R ≤ 1 %] |

Δ R/R : Change in total resistance
S.S. : Setting stability

CT-94

CERMET TRIMMERS

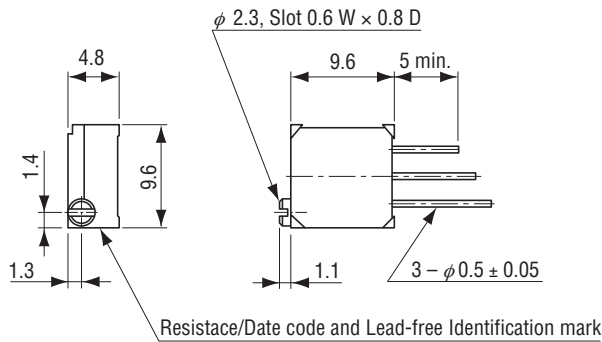
MAXIMUM INPUT RATINGS

| Nominal resistance values (Ω) | Resistance code | Maximum input voltage (V) | Maximum wiper current (mA) |
|---|---|---|--|
| <ul style="list-style-type: none"> ↻ 10 ↻ 20 50 100 200 500 | <ul style="list-style-type: none"> 100 200 500 101 201 501 | <ul style="list-style-type: none"> 1.00 2.00 5.00 7.07 10.0 15.8 | <ul style="list-style-type: none"> 100 100 100 70.7 50.0 31.6 |
| <ul style="list-style-type: none"> 1 k 2 k 5 k 10 k 20 k ↻ 25 k 50 k | <ul style="list-style-type: none"> 102 202 502 103 203 253 503 | <ul style="list-style-type: none"> 22.4 31.6 50.0 70.7 100 112 158 | <ul style="list-style-type: none"> 22.4 15.8 10.0 7.07 5.00 4.48 3.16 |
| <ul style="list-style-type: none"> ↻ 100 k 200 k 250 k 500 k 1 M 2 M | <ul style="list-style-type: none"> 104 204 254 504 105 205 | <ul style="list-style-type: none"> 224 300 300 300 300 300 | <ul style="list-style-type: none"> 2.24 1.50 1.20 0.60 0.30 0.15 |

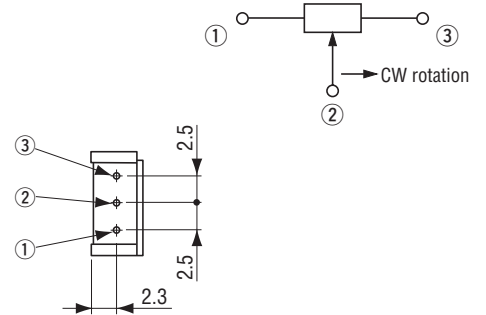
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OUTLINE DIMENSIONS

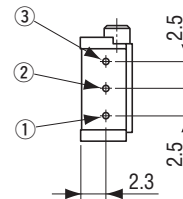
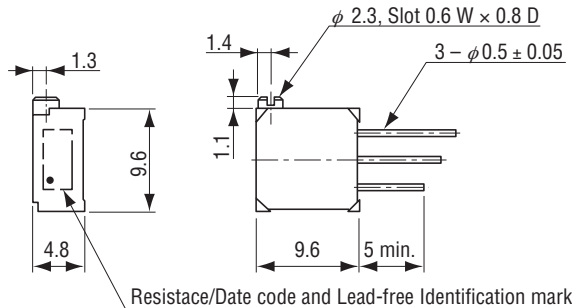
CT-94EW Top adjustment



Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

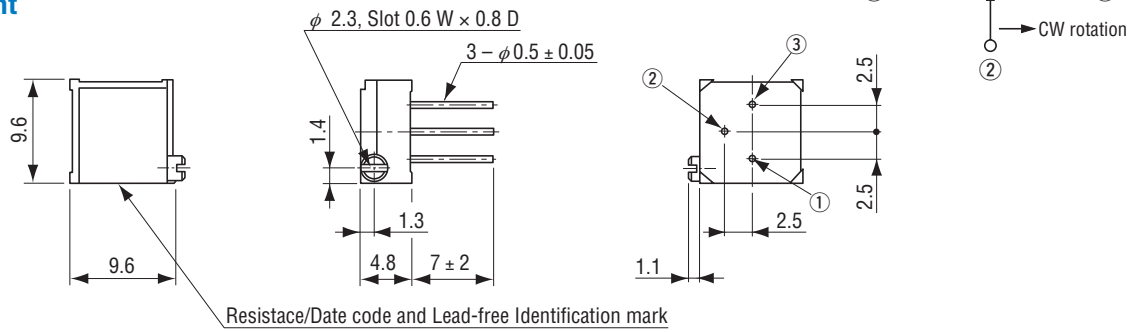


CT-94EX Side adjustment

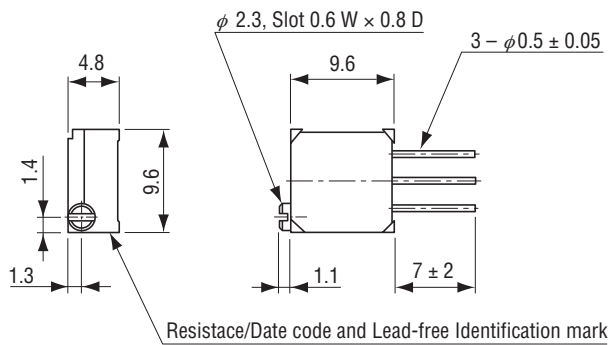


OUTLINE DIMENSIONS

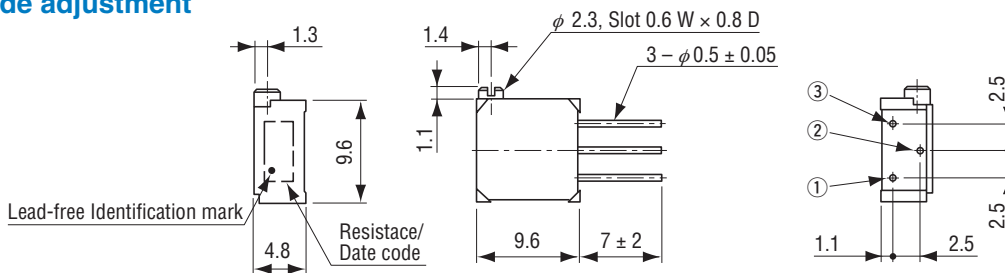
CT-94EP Side adjustment



CT-94EY Top adjustment



CT-94EZ Side adjustment



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Unit of bulk in a plastic bag is 50 pcs. per pack.
- Boxing of bulk in a plastic bag is performed with 100 pcs. per box.