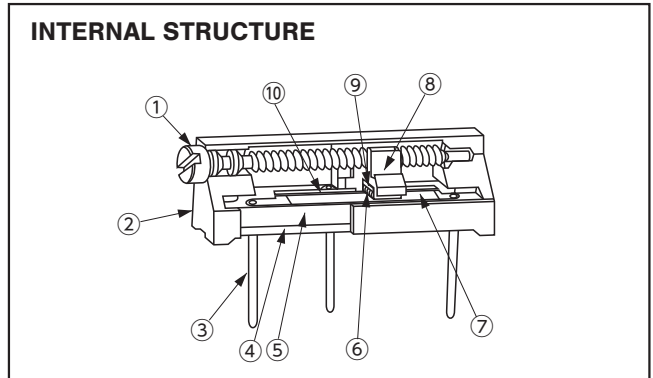
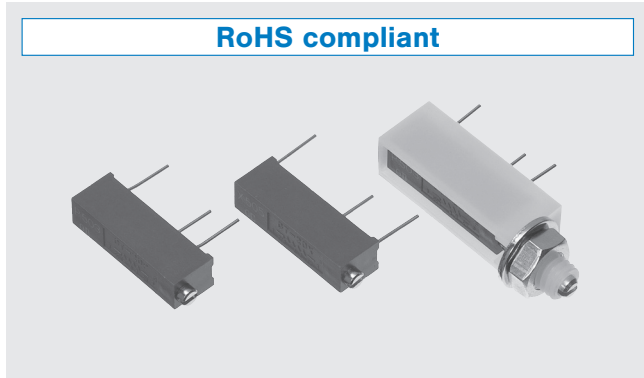




THE DATASHEET OF CT-20EP502



15 TURNS CERMET TRIMMERS **CT-20**

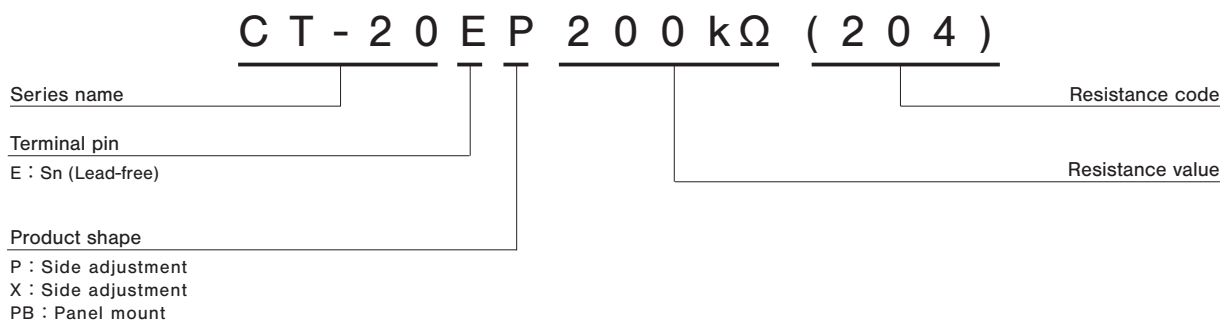


FEATURES

- RoHS compliant
- General use type
- Wide resistance range from 10 Ω to 5 MΩ
- Resin material is UL Recognized 94V-0 (Excluding adhesives)

| Part name | Material |
|---------------------|---------------------------------|
| ① Shaft | Brass, Nickel-plated |
| ② Housing | PBT (Polybutyleneterephthalate) |
| ③ Terminal pin | Copper, Tin-plated |
| ④ Adhesive | Epoxy |
| ⑤ Base element | Ceramic |
| ⑥ Wiper | Multi metal alloy |
| ⑦ Resistive element | RuO ₂ cermet |
| ⑧ Slider block | PBT (Polybutyleneterephthalate) |
| ⑨ Rubber cushion | Silicone rubber |
| ⑩ Electrode | Ag-Pd cermet |

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 | |
| Side adjustment (↑ Adjustment direction) | | CT-20EP | 50 pcs./pack |
| | | CT-20EX | |
| | | CT-20EPB | 25 pcs./pack |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------|---|
| Nominal resistance range | 10 Ω ~ 5 MΩ |
| Resistance tolerance | ± 10 % |
| Power ratings | 0.5 W (70 °C) 0 W (120 °C) |
| Resistance law | Linear law (B) |
| 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 | 12 turns |
| End resistance | 1 % or 2 Ω, whichever is greater |
| C.R.V. | 1 % or 3 Ω, whichever is greater |
| Operating temp. range | -55 ~ 120 °C |
| Temp. coefficient | 10 Ω, 20 Ω, 5 MΩ : ± 250 10 ⁻⁶ /°C maximum 50 Ω ~ 2 MΩ : ± 100 10 ⁻⁶ /°C maximum |
| Insulation resistance | 1000 MΩ minimum (DC500 V) |
| Dielectric strength | AC600 V, 60 s |
| Net weight | Approx. 1.08 g (CT-20EP, EX) Approx. 3.7 g (CT-20EPB) |

<Nominal resistance values>

| | | | | | | | | |
|-------|-------|-------|--------|--------|--------|------|------|-------|
| ⊖10 Ω | ⊖20 Ω | 50 Ω | 100 Ω | 200 Ω | 500 Ω | 1 kΩ | 2 kΩ | 5 kΩ |
| 10 kΩ | 20 kΩ | 50 kΩ | 100 kΩ | 200 kΩ | 500 kΩ | 1 MΩ | 2 MΩ | ⊖5 MΩ |

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 | 15 turns |
| Operating torque | 35 mN·m {357 gf·cm} maximum |
| Mechanical stop | Clutch action |
| Rotational life | 200 cycles 10 Ω ~ 200 Ω [ΔR/R ≤ ± (0.5 Ω + 3 %)] 500 Ω ~ 5 MΩ [ΔR/R ≤ ± (0.5 Ω + 2 %)] |
| Terminal strength | 9 N {917 gf} minimum (Tensile strength) |
| Thrust to rotor | 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 | [ΔR/R ≤ 1 %] [S.S. ≤ 1 %] |
| Humidity | -10 ~ 65 °C (Relative humidity 80 ~ 98 %), 10 cycles, 240 h | [ΔR/R ≤ 1 %] |
| Shock | 981 m/s ² , 6 ms 6 directions for 3 times each | [ΔR/R ≤ 1 %] [S.S. ≤ 1 %] |
| Vibration | Amplitude 1.52 mm or Acceleration 196 m/s ² , 10 ~ 2000 Hz, 3 directions, 12 times each | [ΔR/R ≤ 1 %] [S.S. ≤ 1 %] |
| Load life | 70 °C, 0.5 W, 1000 h | [ΔR/R ≤ 2 %] [S.S. ≤ 1 %] |
| Low temp. operation | -55 °C, 2 h | [ΔR/R ≤ 1 %] [S.S. ≤ 2 %] |
| High temp. exposure | 120 °C, 250 h | [ΔR/R ≤ 2 %] [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 | [ΔR/R ≤ 1 %] |

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

CT-20

CERMET TRIMMERS

MAXIMUM INPUT RATINGS

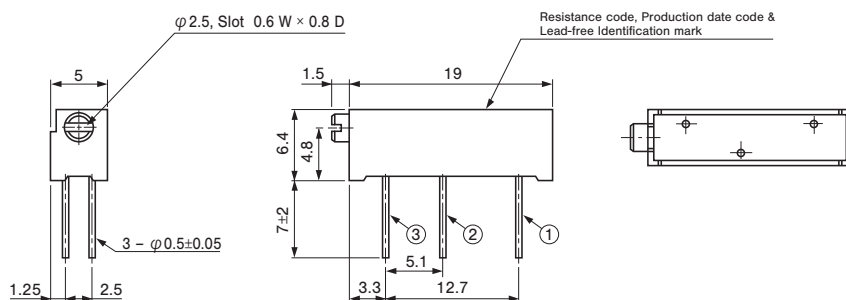
| Nominal resistance values (Ω) | Resistance code | Maximum input voltage (V) | Maximum wiper current (mA) |
|--|-----------------|---------------------------|----------------------------|
| ⊖ 10 | 100 | 1.00 | 100 |
| ⊖ 20 | 200 | 2.00 | 100 |
| ⊖ 50 | 500 | 5.00 | 100 |
| ⊖ 100 | 101 | 7.07 | 70.7 |
| ⊖ 200 | 201 | 10.0 | 50.0 |
| ⊖ 500 | 501 | 15.8 | 31.6 |
| 1 k | 102 | 22.4 | 22.4 |
| 2 k | 202 | 31.6 | 15.8 |
| 5 k | 502 | 50.0 | 10.0 |
| 10 k | 103 | 70.7 | 7.07 |
| 20 k | 203 | 100 | 5.00 |
| 50 k | 503 | 158 | 3.16 |
| 100 k | 104 | 224 | 2.24 |
| 200 k | 204 | 300 | 1.50 |
| 500 k | 504 | 300 | 0.60 |
| 1 M | 105 | 300 | 0.30 |
| 2 M | 205 | 300 | 0.15 |
| ⊖ 5 M | 505 | 300 | 0.06 |

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

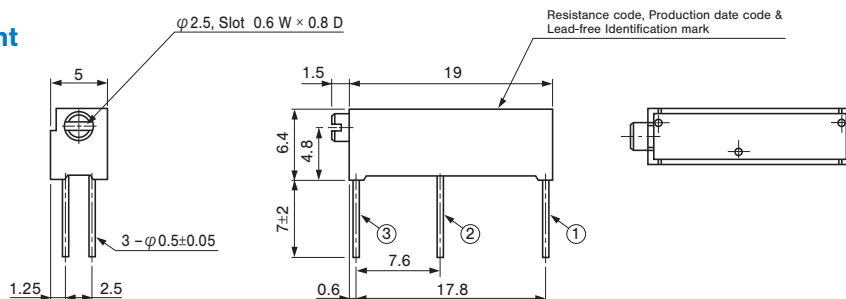
OUTLINE DIMENSIONS

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

CT-20EP Side adjustment



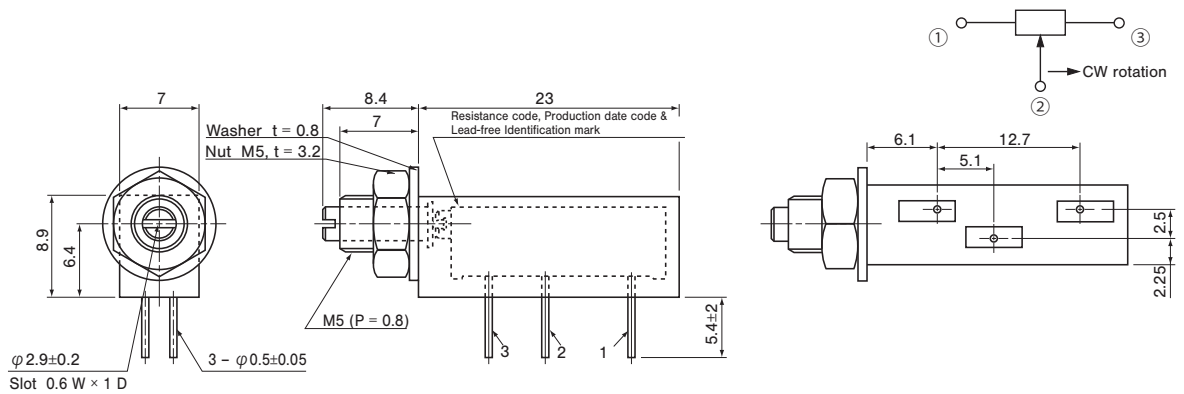
CT-20EX Side adjustment



OUTLINE DIMENSIONS

CT-20EPB

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



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Unit of bulk in a plastic bag is 50 pcs. (CT-20EPB is 25 pcs.) per pack.
- Boxing of bulk in a plastic bag is performed with 100 pcs. (CT-20EPB is 50 pcs.) per box.

Looking for pricing, stock, or lifecycle information?

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