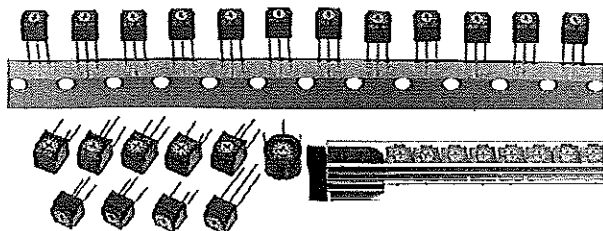


# SINGLE TURN CERMET TRIMMERS

# CT-6

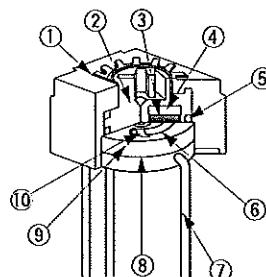
## RoHS compliant



## FEATURES

- RoHS compliant
- Various configurations to choose from
- Wide variety (14 types)
- "O" ring sealed and washable

## INTERNAL STRUCTURE



|   | Part name         | Material                       | Flammability |
|---|-------------------|--------------------------------|--------------|
| ① | Housing           | PBT(Polybutyleneterephthalate) | UL-94V-0     |
| ② | Rotor             |                                |              |
| ③ | Wiper             | Multi metal alloy              | —            |
| ④ | Rubber cushion    | Silicone rubber                |              |
| ⑤ | "O" ring          | Silicone rubber                | UL-94HB      |
| ⑥ | Resistive element | RuO <sub>2</sub> cermet        | —            |
| ⑦ | Terminal pin      | Copper, Tin-plated             |              |
| ⑧ | Adhesive          | Epoxy                          | UL-94V-0     |
| ⑨ | Base element      | Ceramic                        | —            |
| ⑩ | Electrode         | Ag-Pd cermet                   |              |

## PART NUMBER DESIGNATION

|                   |  |                                                                                      |     |                                                                                                             |           |                 |
|-------------------|--|--------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------|-----------|-----------------|
| Series name       |  | CT - 6                                                                               | ETV | 5 k                                                                                                         | ( 5 0 2 ) | Resistance code |
| Terminal pin      |  | E : Sn (Lead-free)                                                                   |     | Resistance value                                                                                            |           |                 |
| Form of packaging |  | T : Taping ( Ammo pack type )<br>M : Magazine (stick)<br>Blank : Bulk In plastic bag |     | Product shape                                                                                               |           |                 |
|                   |  |                                                                                      |     | P : Top adjustment<br>W : Top adjustment<br>R : Top adjustment<br>V : Top adjustment<br>F : Rear adjustment |           |                 |
|                   |  |                                                                                      |     | S : Side adjustment<br>X : Side adjustment<br>H : Side adjustment<br>N : Side adjustment                    |           |                 |

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

■ Specifications are subject to change without notice.

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### LIST OF PART NUMBERS

| Adjustment position                                                                                 | Shape of terminal (Top view)                                                        | Form of packaging         |                  |              | Remarks                                                       |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|------------------|--------------|---------------------------------------------------------------|
|                                                                                                     |                                                                                     | Taping                    | Magazine (stick) | Plastic bag  |                                                               |
| Top adjustment<br> |    | CT-6ETP<br>Ammo pack type | CT-6EMP          | CT-6EP       | The pin length of CT-6ETP & CT-6EMP is different from CT-6EP. |
|                                                                                                     |    |                           |                  | CT-6EW       | —                                                             |
|                                                                                                     |    |                           |                  | ⊕ CT-6ER     | —                                                             |
|                                                                                                     |    | CT-6ETV<br>Ammo pack type |                  | CT-6EV       | —                                                             |
| Side adjustment<br>( ↑ Adjustment direction )                                                       |    |                           | CT-6EMS          | CT-6ES       | The pin length of CT-6EMS is different from CT-6ES.           |
|                                                                                                     |  |                           |                  | CT-6EX       | —                                                             |
|                                                                                                     |  | CT-6ETH<br>Ammo pack type |                  | CT-6EH       | The pin length of CT-6ETH is different from CT-6EH.           |
|                                                                                                     |  |                           |                  | CT-6EN       | —                                                             |
| Rear adjustment                                                                                     |  |                           |                  | ⊕ CT-6EF     | —                                                             |
| Pieces in package                                                                                   |                                                                                     | 1000 pcs./taping          | 75 pcs./stick    | 50 pcs./pack | —                                                             |

⊕ : Not manufactured

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

<Nominal resistance values>

Fig. 1

|        |        |        |       |       |       |
|--------|--------|--------|-------|-------|-------|
| ⊕ 10 □ | ⊕ 20 □ | 50 □   | 100 □ | 200 □ | 500 □ |
| 1 k□   | 2 k□   | 5 k□   | 10 k□ | 20 k□ | 50 k□ |
| 100 k□ | 200 k□ | 500 k□ | 1 M□  | 2 M□  |       |

※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.

※Taping and magazine specifications are not sold separately and must be purchased in taping or stick units.

### ELECTRICAL CHARACTERISTICS

|                            |                                                                                                                                                       |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal resistance range   | 10 $\square$ ~ 2 M $\square$                                                                                                                          |
| Resistance tolerance       | $\pm 10 \%$                                                                                                                                           |
| Power ratings              | 0.5 W (70 °C) 0 W (120 °C)                                                                                                                            |
| Resistance law             | Linear law                                                                                                                                            |
| Maximum input voltage      | DC200 V or power rating, whichever is smaller                                                                                                         |
| Maximum wiper current      | 100 mA or power rating, whichever is smaller                                                                                                          |
| Effective electrical angle | 220 ° (1 turn)                                                                                                                                        |
| End resistance             | 1 % or 2 $\square$ , whichever is greater                                                                                                             |
| C.R.V.                     | 1 % or 3 $\square$ , whichever is greater                                                                                                             |
| Operating temp. range      | $\square$ 55 ~ 120 °C                                                                                                                                 |
| Temp. coefficient          | 10 $\square$ ~ 20 $\square$ : $\pm 250 10^{-6}/^{\circ}\text{C}$ maximum<br>50 $\square$ ~ 2 M $\square$ : $\pm 100 10^{-6}/^{\circ}\text{C}$ maximum |
| Insulation resistance      | 1000 M $\square$ minimum (DC500 V)                                                                                                                    |
| Dielectric strength        | AC900 V, 60 s                                                                                                                                         |
| Net weight                 | Approx. 0.51 g (CT-6EP, EW, ER, EV)<br>Approx. 0.65 g (CT-6ES, EX, EH, EN)<br>Approx. 0.92 g (CT-6EF)                                                 |

### MECHANICAL CHARACTERISTICS

|                  |                                                         |
|------------------|---------------------------------------------------------|
| Mechanical angle | 260 ° (1 turn)                                          |
| Operating torque | 2 ~ 20 mN·m (20 ~ 204 gf·cm)                            |
| Stop strength    | 50 mN·m (510 gf·cm) minimum                             |
| Rotational life  | 200 cycles [ $\Delta R/R \leq \pm (2 \square + 3 \%)$ ] |
| Tensile strength | 10 N (1.02 kgf) minimum (Tensile strength)              |
| Thrust to rotor  | 10 N (1.02 kgf) minimum                                 |
| Solderability    | 245 $\pm 3$ °C, 2 ~ 3 s                                 |

{ } : Reference only

### ENVIRONMENTAL CHARACTERISTICS

| Test item           | Test conditions                                                                                          | Specifications                                     |
|---------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Thermal shock       | $\square$ 65 ~ 125 °C (0.5 h), 5 cycles                                                                  | [ $\Delta R/R \leq 1 \%$ ]<br>[ S.S. $\leq 1 \%$ ] |
| Humidity            | $\square$ 10 ~ 65 °C (80 ~ 98 %),<br>10 cycles, 240 h                                                    | [ $\Delta R/R \leq 2 \%$ ]                         |
| Shock               | 981 m/s <sup>2</sup> , 6 ms<br>6 directions for 3 times each                                             | [ $\Delta R/R \leq 1 \%$ ]<br>[ S.S. $\leq 1 \%$ ] |
| Vibration           | Amplitude 1.52 mm or<br>Acceleration 196 m/s <sup>2</sup> ,<br>10 ~ 2000 Hz, 3 directions, 12 times each |                                                    |
| Load life           | 70 °C, 0.5 W, 1000 h                                                                                     | [ $\Delta R/R \leq 3 \%$ ]<br>[ S.S. $\leq 1 \%$ ] |
| Low temp. operation | $\square$ 55 °C, 2 h                                                                                     | [ $\Delta R/R \leq 2 \%$ ]<br>[ S.S. $\leq 2 \%$ ] |
| High temp. exposure | 120 °C, 250 h                                                                                            | [ $\Delta R/R \leq 3 \%$ ]<br>[ S.S. $\leq 2 \%$ ] |
| Immersion seal      | 85 °C, 60 s                                                                                              | No leaks (No continuous bubbles)                   |
| Soldering heat      | Flow : 260 $\pm 3$ °C, 5 ~ 6 s, two times<br>maximum<br>Manual soldering : 360 $\pm 10$ °C, 3 ~ 4 s      | [ $\Delta R/R \leq 1 \%$ ]                         |

$\Delta R/R$  : Change in total resistance  
S.S. : Setting stability

### MAXIMUM INPUT RATINGS

| Nominal resistance values ( $\square$ )               | Resistance code                        | Maximum input voltage (V)                    | Maximum wiper current (mA)                   |
|-------------------------------------------------------|----------------------------------------|----------------------------------------------|----------------------------------------------|
| $\oplus$ 10<br>$\oplus$ 20<br>50<br>100<br>200<br>500 | 100<br>200<br>500<br>101<br>201<br>501 | 1.00<br>2.00<br>5.00<br>7.07<br>10.0<br>15.8 | 100<br>100<br>100<br>70.7<br>50.0<br>31.6    |
| 1 k<br>2 k<br>5 k<br>10 k<br>20 k<br>50 k             | 102<br>202<br>502<br>103<br>203<br>503 | 22.4<br>31.6<br>50.0<br>70.7<br>100<br>158   | 22.4<br>15.8<br>10.0<br>7.07<br>5.00<br>3.16 |
| 100 k<br>200 k<br>500 k<br>1 M<br>2 M                 | 104<br>204<br>504<br>105<br>205        | 200<br>200<br>200<br>200<br>200              | 2.00<br>1.00<br>0.40<br>0.20<br>0.10         |

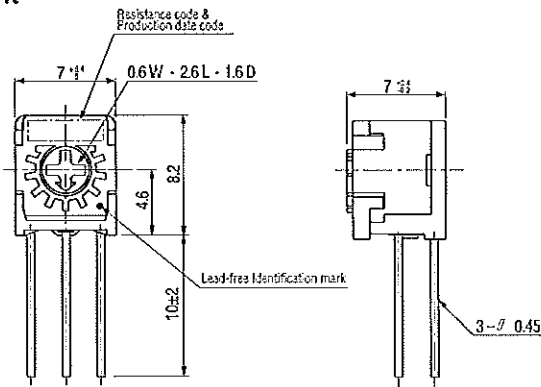
The products indicated by  $\oplus$  mark are manufactured upon receipt of order basis.



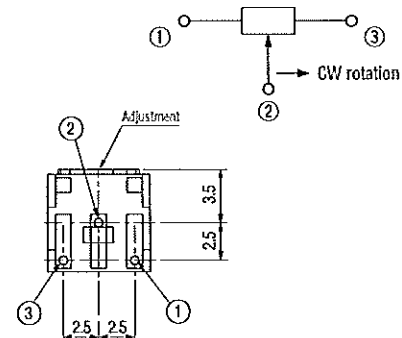
# CT-6 CERMET TRIMMERS

## OUTLINE DIMENSIONS

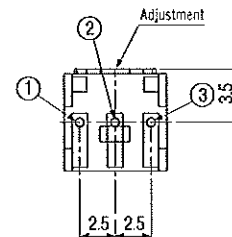
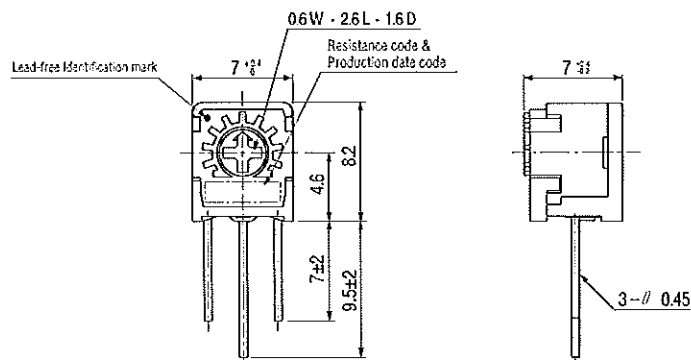
### ● CT-6EX Side adjustment



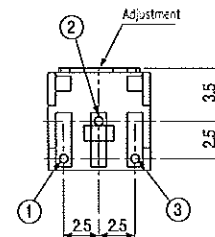
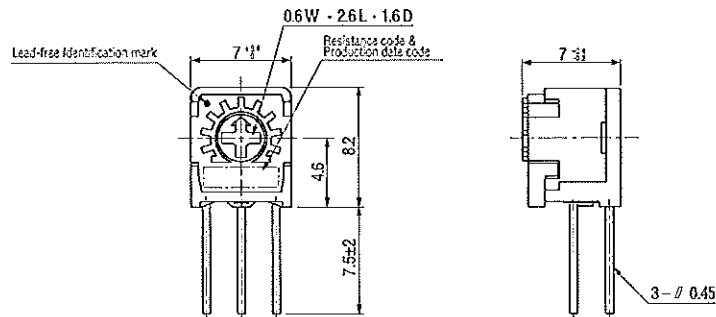
Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)



### ● CT-6EH Side adjustment



### ● CT-6EN Side adjustment

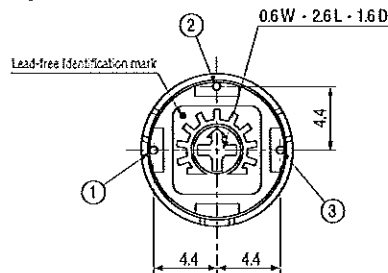


★Terminals ① & ③ position in N type is different from X type.

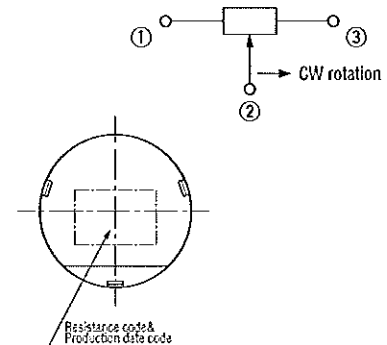
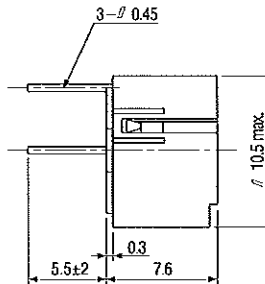
## OUTLINE DIMENSIONS

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

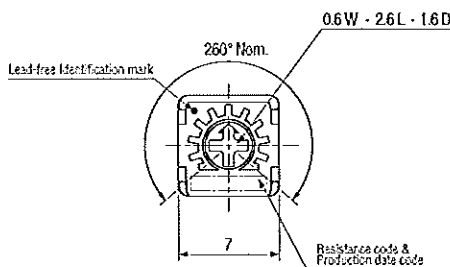
### CT-6EF Rear adjustment



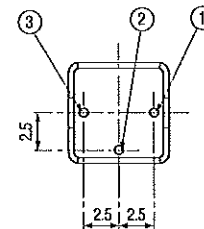
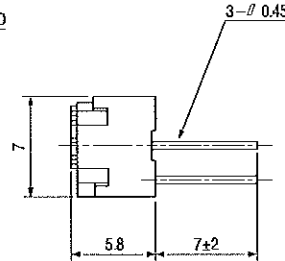
< Semi-standard products >



### CT-6ER Top adjustment



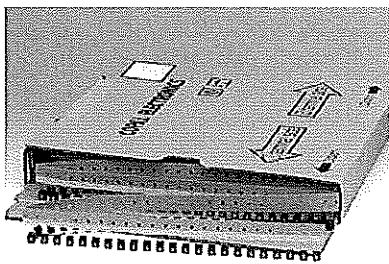
< Semi-standard products >



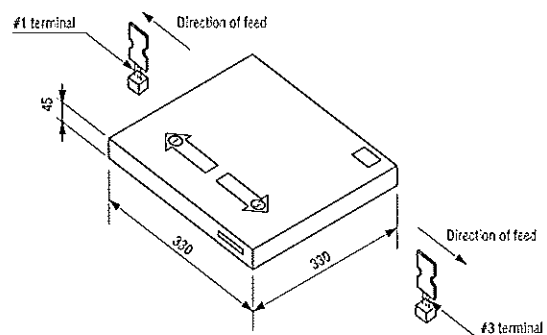
## PACKAGING SPECIFICATIONS

### <Taping packaging specifications>

- Taping version is packaged in 1000 pcs. per reel.  
Orders will be accepted for units of 1000 pcs., i.e., 1000, 2000, 3000 pcs., etc.
- Taping version (ammo pack type) is boxed with one reel (1000 pcs.).



Ammo pack type



### Ammo Pack

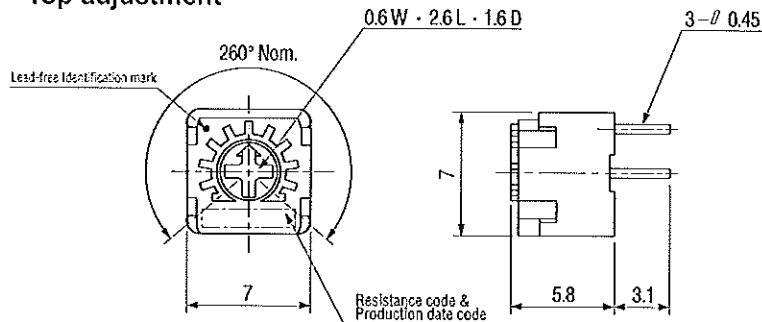
- Package size: 330 mm · 330 mm · 45 mm
- The leader and end of the tape have an empty part of minimum 300 mm respectively.
- There are two tape outlets on the package for different terminal alignment directions, for which details refer to the sketch above.  
(e.g.) When the tape is fed from the right outlet marked ③, #3 terminal comes out first.
- Gross weight of the boxing version
  - ETV : Approx. 840 g
  - ETH : Approx. 930 g
  - ETP : Approx. 850 g

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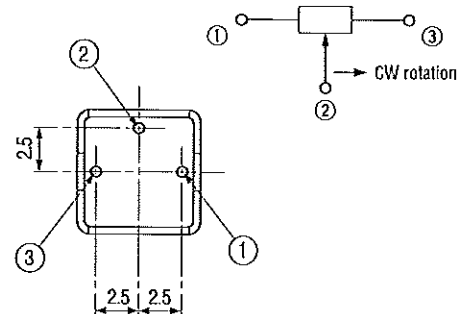


# CT-6 CERMET TRIMMERS

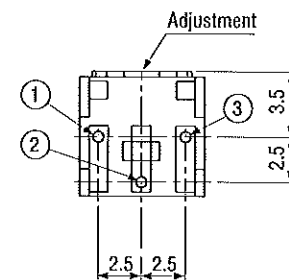
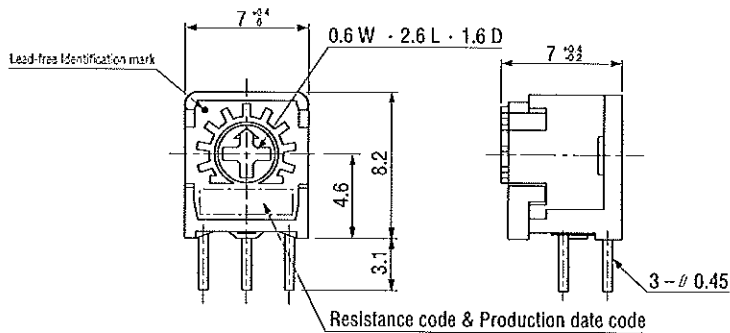
## ● CT-6EMP Top adjustment



Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)



## ● CT-6EMS Side adjustment



### <Bulk pack specifications>

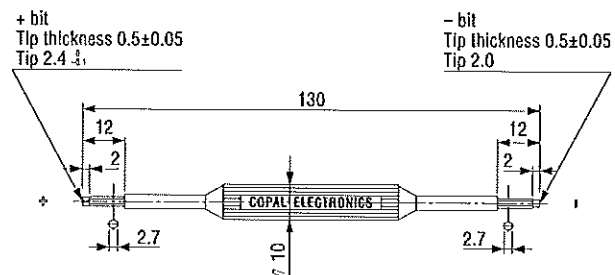
- Unit of bulk pack in a plastic bag is 50 pcs. per pack.
- Boxing of bulk in a plastic bag is performed with 200 pcs. (CT-6EF is 100 pcs.) per box.

## ■ ADJUSTMENT TOOL, MODEL TA-64

- Good for both minus and cross slot rotors / shafts.
- Recommended for use with the following copal trimmers.

| Recommended models |       |
|--------------------|-------|
| + bit              | ∅ bit |
| CT-6               | ST-4  |
| FT-63              | RJ-4  |
|                    | RJ-6  |
|                    | TM-7  |

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)



Material : Polyoxymethylene

※Note : Please do not use the tool for purposes other than adjustment of electronic components.

■ Specifications are subject to change without notice.

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