

# 18 TURNS CERMET TRIMMERS

# CT-9

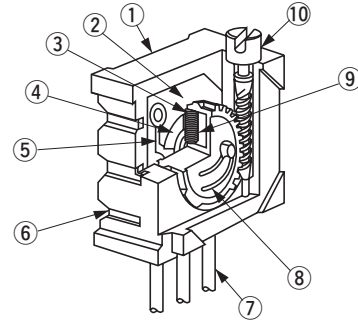
RoHS compliant



## FEATURES

- RoHS compliant
- General use type
- Fine setting is possible with 18 turns configuration

## INTERNAL STRUCTURE



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

## PART NUMBER DESIGNATION

CT - 9 E W 1 M Ω ( 1 0 5 )

Series name

Terminal pin

E : Sn (Lead-free)

Product shape

W : Top adjustment

X : Side adjustment


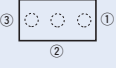

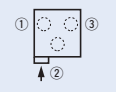
P : Side adjustment

Resistance code

Resistance value

※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 pack	
Top adjustment 		CT-9EW	50 pcs./pack
Side adjustment (↑ Adjustment direction)		CT-9EX	
		CT-9EP	

### ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 2 MΩ
Resistance tolerance	± 10 %
Power ratings	0.5 W (70 °C) 0 W (120 °C)
Resistance law	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 ~ 120 °C
Temp. coefficient	10 Ω, 20 Ω : ± 250 10 <sup>-6</sup> /°C maximum 50 Ω ~ 2 MΩ : ± 100 10 <sup>-6</sup> /°C maximum
Insulation resistance	1000 MΩ minimum (DC500 V)
Dielectric strength	AC900 V, 60 s
Net weight	Approx. 0.94 g (CT-9EP) Approx. 0.95 g (CT-9EX, EW)

### <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	

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 <sup>2</sup> , 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 <sup>2</sup> , 10 ~ 2000 Hz, 3 directions, 12 times each	[ Δ R/R ≤ 1 % ] [ S.S. ≤ 1 % ]
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	120 °C, 250 h	[ Δ R/R ≤ 3 % ] [ S.S. ≤ 2 % ]
Immersion seal	85 °C, 60 s	No leaks (No continuous bubbles)
Soldering heat	Flow soldering 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

**MAXIMUM INPUT RATINGS**

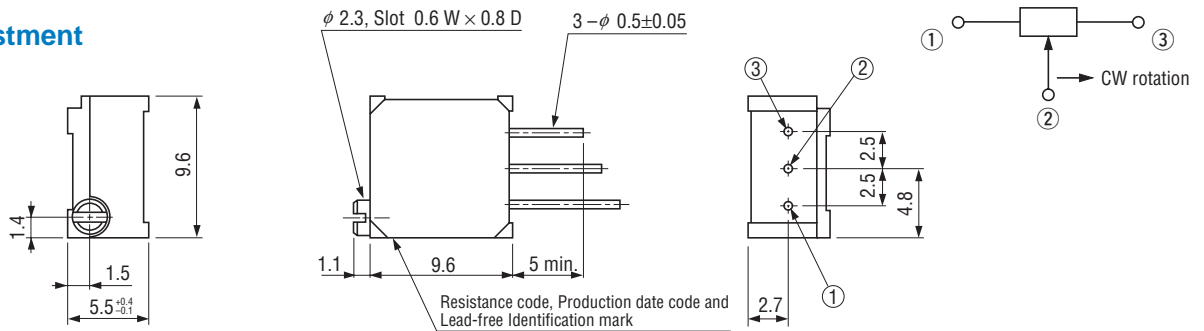
Nominal resistance values ( $\Omega$ )	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
<ul style="list-style-type: none"> <li>➔ 10</li> <li>➔ 20</li> <li>50</li> <li>100</li> <li>200</li> <li>500</li> </ul>	<ul style="list-style-type: none"> <li>100</li> <li>200</li> <li>500</li>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

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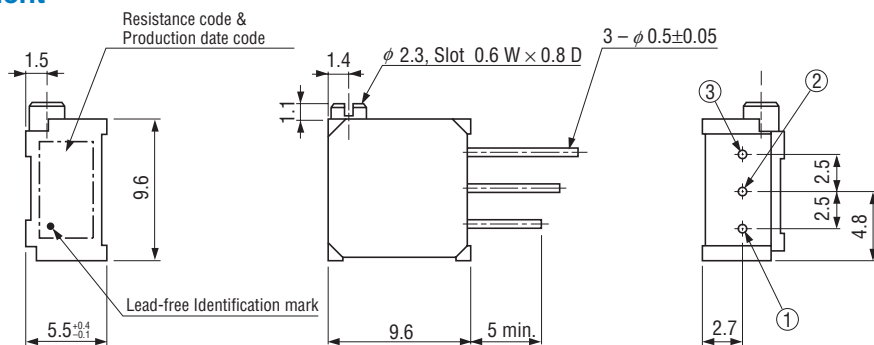
**OUTLINE DIMENSIONS**

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

● **CT-9EW**  
Top adjustment



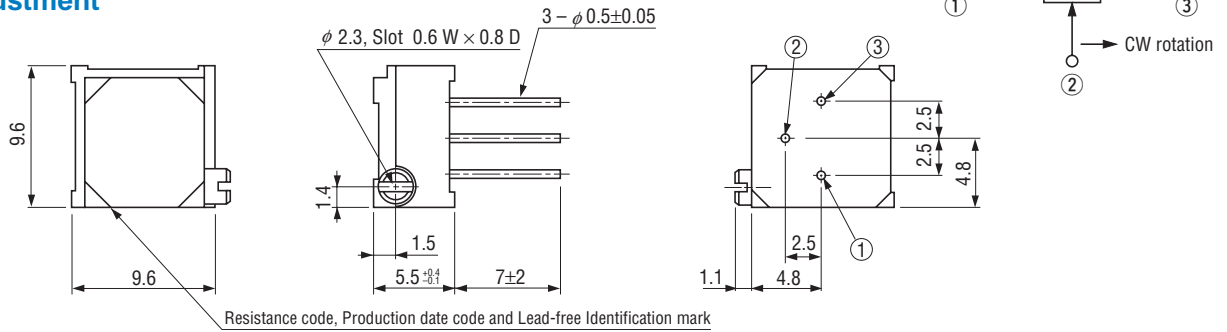
● **CT-9EX**  
Side adjustment



**OUTLINE DIMENSIONS**

● **CT-9EP**  
**Side adjustment**

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



**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.