



# THE DATASHEET OF CT94EX103



# 18 TURNS CERMET TRIMMERS

# CT-94

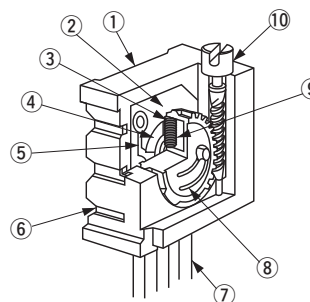
RoHS compliant



## 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 <sub>2</sub> 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

CT - 94 E W 1 k Ω ( 1 0 2 )

Series name

Terminal pin

E : Sn (Lead-free)

Product shape

W, Y : Top adjustment



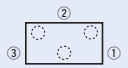


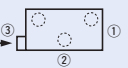

X, P, Z : Side adjustment

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 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 <sup>-6</sup> /°C maximum 50 Ω ~ 2 M Ω : ± 100 10 <sup>-6</sup> /°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 <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	
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

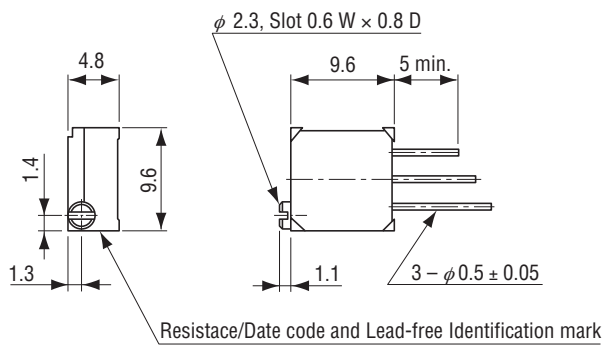
### MAXIMUM INPUT RATINGS

Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
<ul style="list-style-type: none"> <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>➡ 25 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>253</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>112</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>4.48</li> <li>3.16</li> </ul>
<ul style="list-style-type: none"> <li>➡ 100 k</li> <li>200 k</li> <li>250 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>254</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> <li>300</li> </ul>	<ul style="list-style-type: none"> <li>2.24</li> <li>1.50</li> <li>1.20</li> <li>0.60</li> <li>0.30</li> <li>0.15</li> </ul>

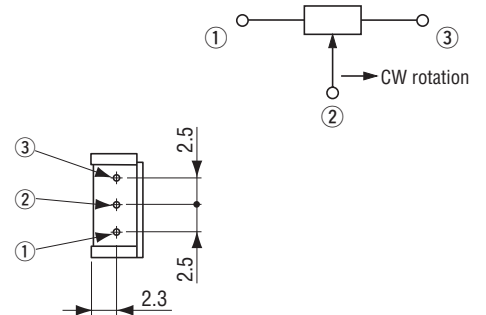
The products indicated by ➡ mark are manufactured upon receipt of order basis.

### OUTLINE DIMENSIONS

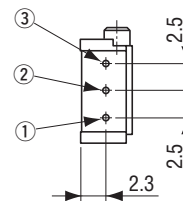
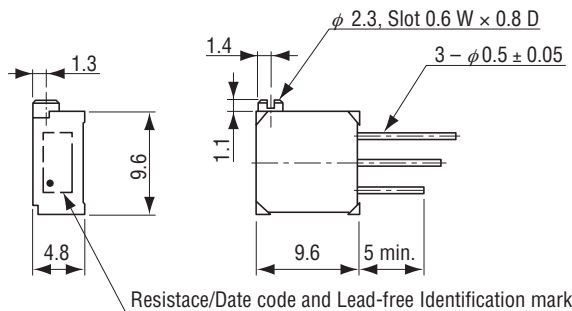
#### CT-94EW Top adjustment



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

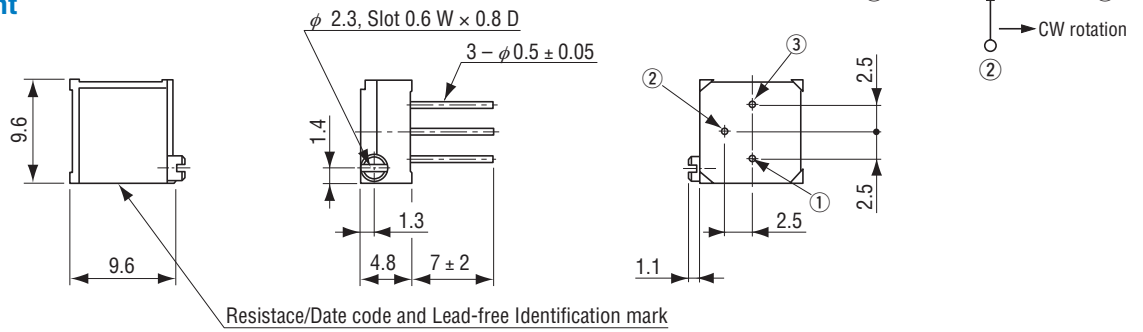


#### CT-94EX Side adjustment

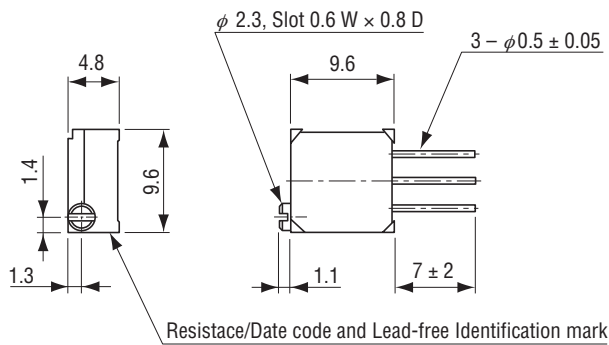


## OUTLINE DIMENSIONS

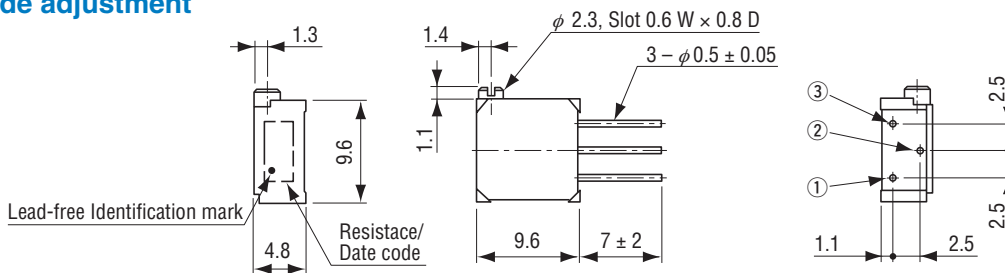
### CT-94EP Side adjustment



### 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.

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