

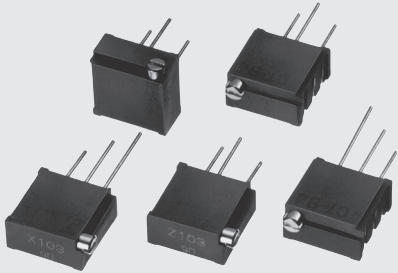


# THE DATASHEET OF CT-94EX203



# 18 TURNS CERMET TRIMMERS **CT-94**

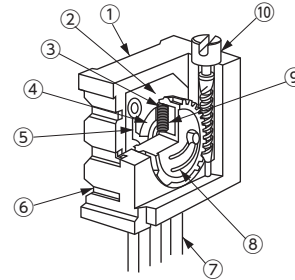
RoHS compliant



## FEATURES

- RoHS compliant
- Thin body design (4.8 mm thick)
- 18 turns, sealed, precision type
- Resin material is UL Recognized 94V-0 (Excluding adhesives)

## INTERNAL STRUCTURE



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

## PART NUMBER DESIGNATION

**CT - 94 E W 1 kΩ ( 1 0 2 )**

Series name

Terminal pin

E : Sn (Lead-free)

Product shape

W, Y : Top adjustment



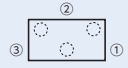
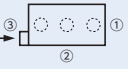

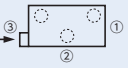
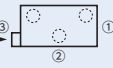
X, P, Z : Side adjustment

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 (1 Adjustment direction) 		CT-94EX	
		CP-94EP	
		CT-94EZ	

## ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 2 MΩ
Resistance tolerance	± 10 %
Power ratings	0.5 W (70 °C) 0 W (125 °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	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 MΩ : ± 100 10 <sup>-6</sup> /°C maximum
Insulation resistance	1000 MΩ minimum (DC500 V)
Dielectric strength	AC900 V, 60 s
Net weight	Approx. 0.88 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 kΩ	2 kΩ	5 kΩ	
10 kΩ	20 kΩ	⊖25 kΩ	50 kΩ	100 kΩ	200 kΩ	⊖250 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 [ $\Delta R/R \leq \pm (2 \Omega + 3 \%)$ ]
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

{ } : 参考値 Reference only

## ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Specifications
Thermal shock	-65 ~ 125 °C (0.5 h), 5 cycles	$[\Delta R/R \leq 1 \%]$ [S.S. $\leq 1 \%$ ]
Humidity	-10 ~ 65 °C (Relative humidity 80 ~ 98 %), 10 cycles, 240 h	$[\Delta R/R \leq 2 \%]$
Shock	981 m/s <sup>2</sup> , 6 ms 6 directions for 3 times each	$[\Delta R/R \leq 1 \%]$ [S.S. $\leq 1 \%$ ]
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	$[\Delta R/R \leq 3 \%]$ [S.S. $\leq 1 \%$ ]
Low temp. operation	-55 °C, 2 h	$[\Delta R/R \leq 2 \%]$ [S.S. $\leq 2 \%$ ]
High temp. exposure	125 °C, 250 h	$[\Delta R/R \leq 3 \%]$ [S.S. $\leq 2 \%$ ]
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	$[\Delta R/R \leq 1 \%]$

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

# CT-94

## CERMET TRIMMERS

### MAXIMUM INPUT RATINGS

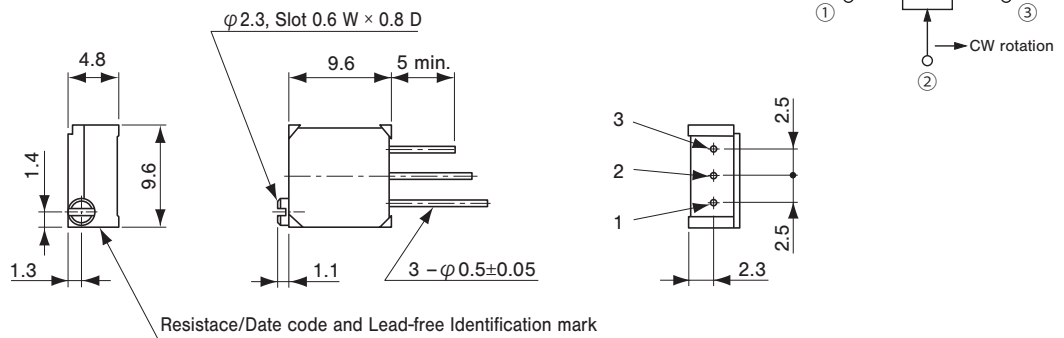
Nominal resistance values ( $\Omega$ )	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
$\ominus$ 10 $\ominus$ 20 50 100 200 500	100	1.00	100
	200	2.00	100
	500	5.00	100
	101	7.07	70.7
	201	10.0	50.0
	501	15.8	31.6
1 k 2 k 5 k 10 k $\ominus$ 20 k $\ominus$ 25 k 50 k	102	22.4	22.4
	202	31.6	15.8
	502	50.0	10.0
	103	70.7	7.07
	203	100	5.00
	503	158	3.16
$\ominus$ 100 k $\ominus$ 200 k $\ominus$ 250 k $\ominus$ 500 k 1 M 2 M	104	224	2.24
	204	300	1.50
	254	300	1.20
	504	300	0.60
	105	300	0.30
	205	300	0.15

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

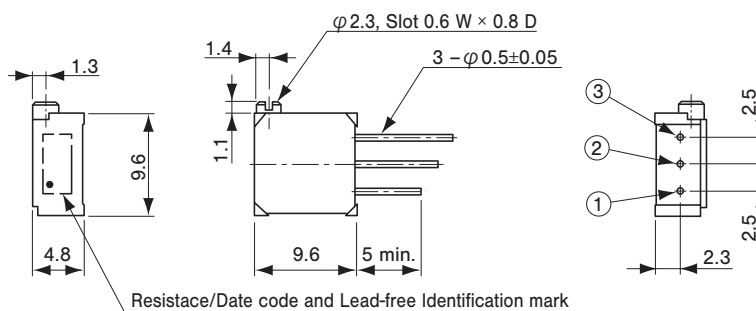
### OUTLINE DIMENSIONS

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

#### CT-94EW Top adjustment



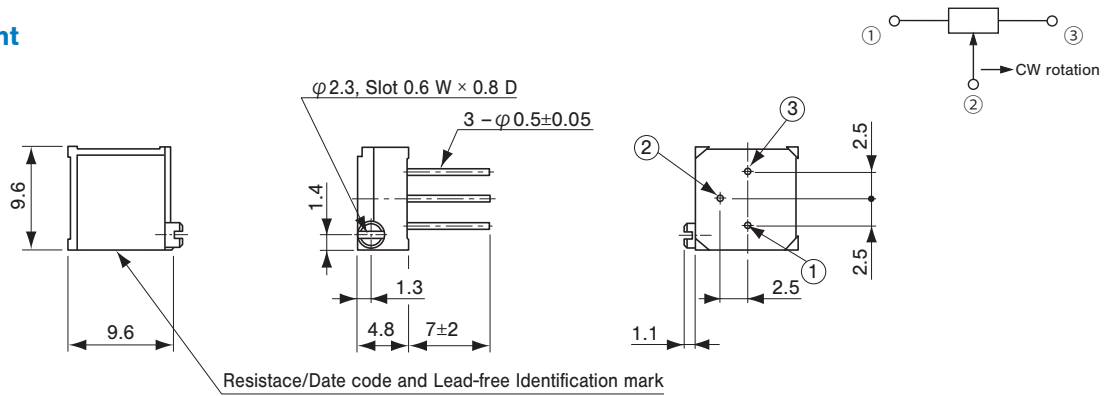
#### CT-94EX Side adjustment



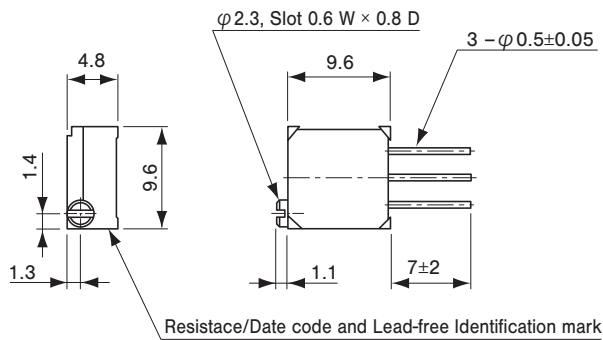
### OUTLINE DIMENSIONS

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

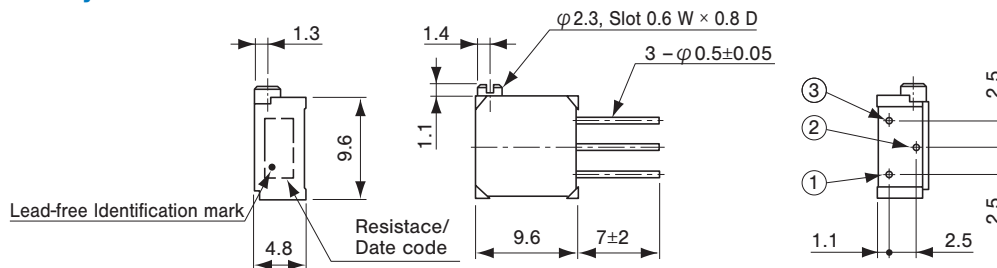
#### CT-94EP Side adjustment



#### 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.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View CT-94EX203 on WIN SOURCE](#)
- ⊖ [Nidec Copal Electronics Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management