18 TURNS CERMET TRIMMERS CT-94

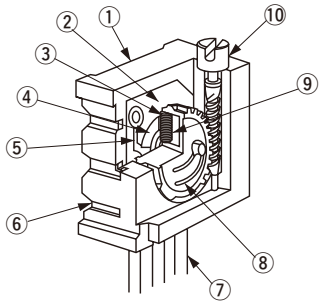
RoHS compatible



■ FEATURES

- Lead-free soldering, Cadmium-free
- Thin body design (4.8 mm thick)
- 18 turn, sealed, precision type

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_2 cermet	
⑤	Electrode		Ag-Pd cermet	
⑥	Adhesive		Epoxy	UL-94V-0
⑦	Terminal pin	Sn-Pb	Copper, Solder-plated	—
		Sn	Copper, Tin-plated	
⑧	Rotor gear		PA (Polyamide)	UL-94HB
⑨	Rubber cushion		Silicone rubber	—
⑩	Shaft		Brass, Nickel-plated	

CFCs, Halon, Carbon tetrachloride and designated bromic flame retardant PBBOs and PBBs are not used in our products.

■ PART NUMBER DESIGNATION

C T - 9 4 □ W 1 k Ω (1 0 2)

- Series name
- Terminal pin
  - Blank : Sn-Pb
  - E : Sn (Lead-free)
- Product shape
  - W, Y : Top adjustment
  - X, P, Z : Side adjustment
- Resistance value
- Resistance code

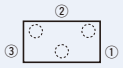
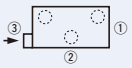
❋ Please refer to the LIST OF PART NUMBERS when placing orders.

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

Oct, 2004

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■ LIST OF PART NUMBERS

Adjustment position	Shape of terminal (Top view)	Form of packaging: Vinyl pack Sn-Pb	Form of packaging: Vinyl pack Sn (Lead-free)	Pieces in package
Top adjustment		CT-94W	CT-94EW	50 pcs./pack
		CT-94Y	CT-94EY	
Side adjustment (↑ Adjustment direction)		CT-94X	CT-94EX	
		CT-94P	CP-94EP	
		CT-94Z	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^{-6}/°C maximum 50 Ω ~ 2 MΩ : ± 100 10^{-6}/°C maximum
Insulation resistance	1000 MΩ minimum (DC500 V)
Dielectric strength	AC900 V, 60 s
Net weight	Approx. 0.88 g (CT-94P, EP) Approx. 0.92 g (CT-94W, X, Y, Z, EW, 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 products indicated by ➔ mark are manufactured upon receipt of order basis.

❋ 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.

■ 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	Sn-Pb : 235 °C, 2 s Sn (Lead-free) : 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 (Relative humidity 80 ~ 98 %), 10 cycles, 240 h	[Δ R/R ≦ 2 %]
Shock	981 m/s², 6 ms 6 directions for 3 times each	[Δ R/R ≦ 1 %] [S.S. ≦ 1 %]
Vibration	Amplitude 1.52 mm or Acceleration 196 m/s², 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	Sn-Pb 350 °C, 3 s	[Δ R/R ≦ 1 %]
	Sn Flow soldering : 260 ± 3 °C, 5 ~ 6 s, two times maximum Manual soldering : 380 ± 10 °C, 3 ~ 4 s	

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

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■ MAXIMUM INPUT RATINGS

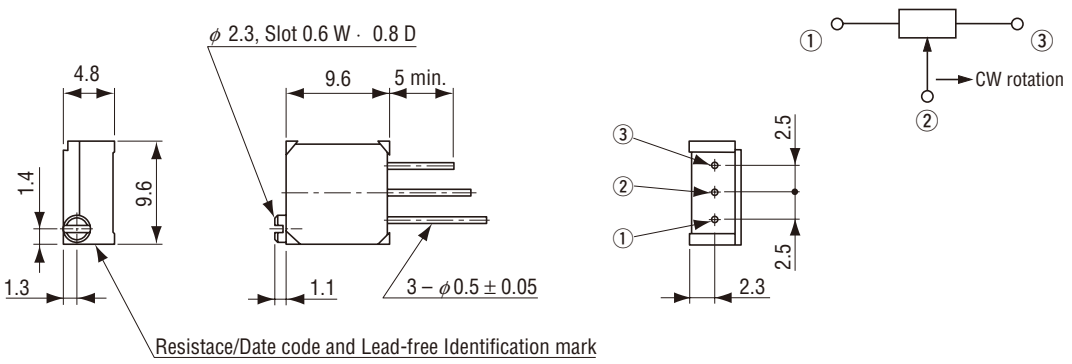
Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
➔ 10	100	1.00	100
➔ 20	200	2.00	100
50	500	5.00	100
100	101	7.07	70.7
200	201	10.0	50.0
500	501	15.8	31.6
1 k	102	22.4	22.4
2 k	202	31.6	15.8
5 k	502	50.0	10.0
10 k	103	70.7	7.07
20 k	203	100	5.00
➔ 25 k	253	112	4.48
50 k	503	158	3.16
100 k	104	224	2.24
200 k	204	300	1.50
➔ 250 k	254	300	1.20
500 k	504	300	0.60
1 M	105	300	0.30
2 M	205	300	0.15

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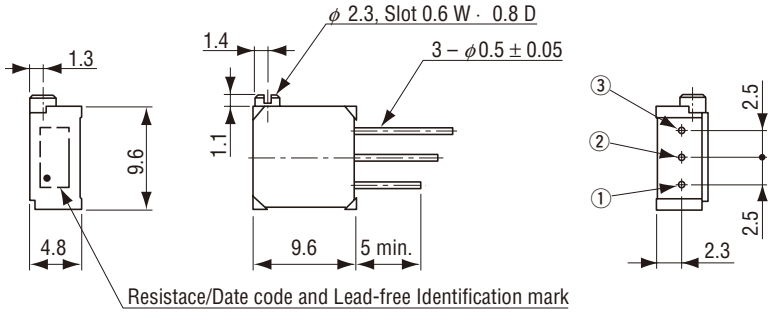
■ OUTLINE DIMENSIONS

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

● CT-94W, CT-94EW
Top adjustment



● CT-94X, CT-94EX
Side adjustment



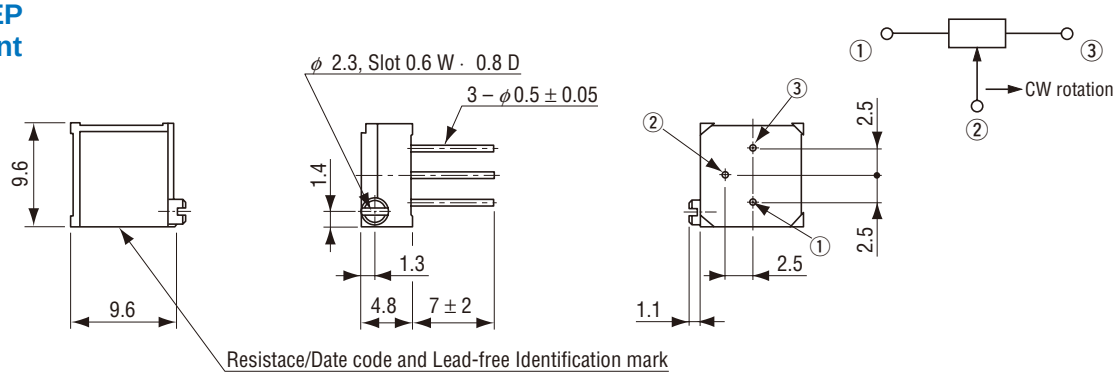
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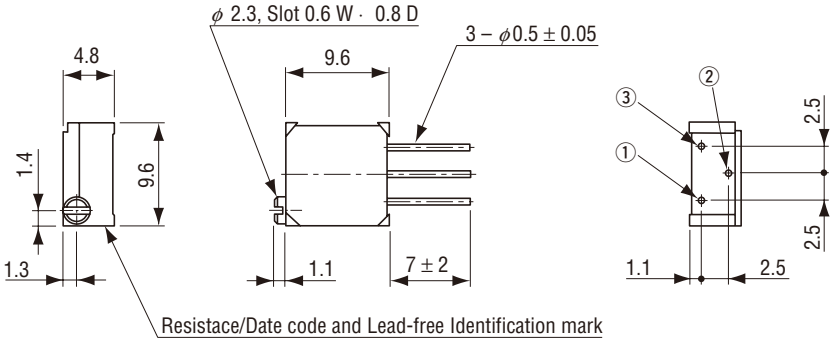
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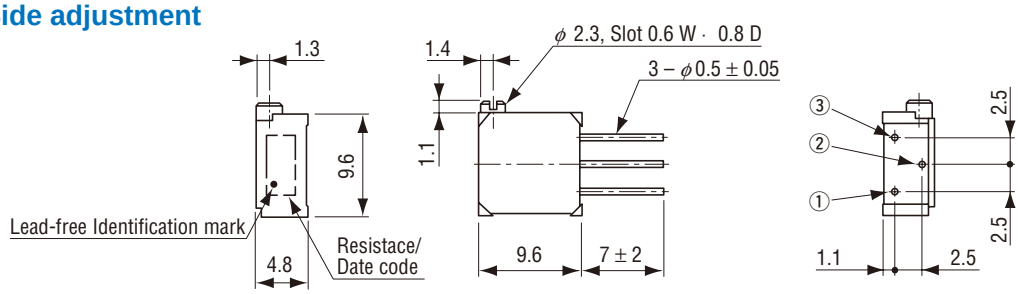
● CT-94P, CT-94EP
Side adjustment



● CT-94Y, CT-94EY
Top adjustment



● CT-94Z, CT-94EZ
Side adjustment



■ PACKAGING SPECIFICATIONS

<Vinyl bag packaging specifications>

- Unit of bulk in vinyl bag packaging is 50 pcs. per pack.
- Boxing of bulk in vinyl bags is performed with 100 pcs. per box.

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