

18 TURNS CERMET TRIMMERS

CT-94

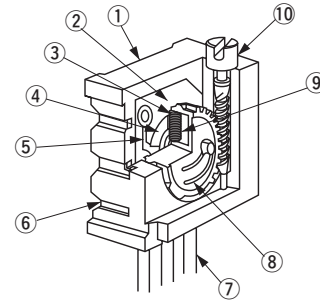
RoHS compliant



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	UL-94V-0
⑥	Adhesive	Epoxy	
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 PBBs and PBBs are not used in our products.

PART NUMBER DESIGNATION

CT - 94 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 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		
		Sn-Pb	Sn (Lead-free)	
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	↻ 25 kΩ	50 Ω	100 Ω	200 Ω	↻ 250 kΩ	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	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	[$\Delta R/R \leq 1 \%$] [S.S. $\leq 1 \%$]
Humidity	-10 ~ 65 °C (80 ~ 98 %), 10 cycles, 240 h	[$\Delta R/R \leq 2 \%$]
Shock	981 m/s ² , 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 ² , 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	Sn-Pb 350 °C, 3 s Sn Flow soldering : 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

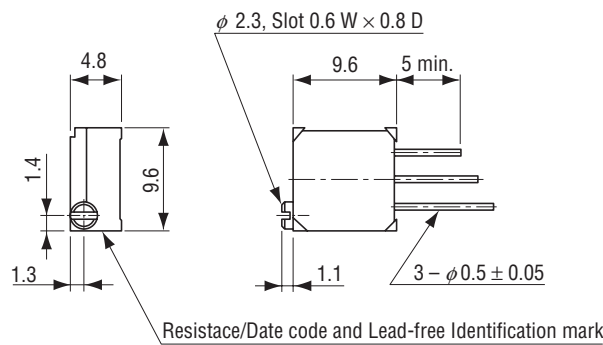
MAXIMUM INPUT RATINGS

Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
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<ul style="list-style-type: none"> 1 k 2 k 5 k 10 k 20 k ➔ 25 k 50 k 	<ul style="list-style-type: none"> 102 202 502 103 203 253 503 	<ul style="list-style-type: none"> 22.4 31.6 50.0 70.7 100 112 158 	<ul style="list-style-type: none"> 22.4 15.8 10.0 7.07 5.00 4.48 3.16
<ul style="list-style-type: none"> ➔ 100 k ➔ 200 k ➔ 250 k ➔ 500 k 1 M 2 M 	<ul style="list-style-type: none"> 104 204 254 504 105 205 	<ul style="list-style-type: none"> 224 300 300 300 300 300 	<ul style="list-style-type: none"> 2.24 1.50 1.20 0.60 0.30 0.15

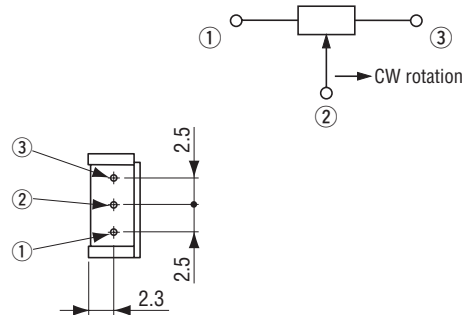
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OUTLINE DIMENSIONS

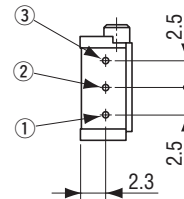
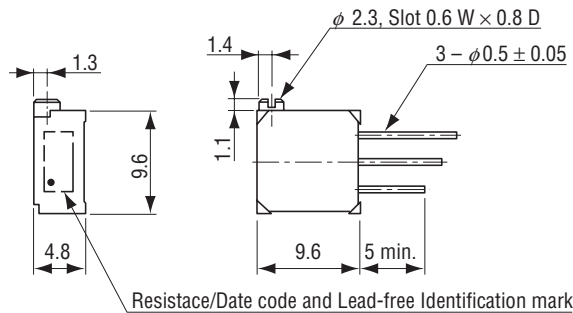
CT-94W, CT-94EW
Top adjustment



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



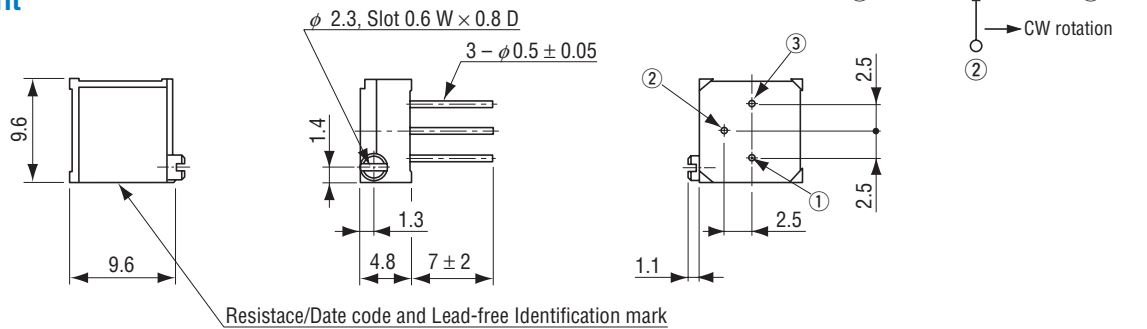
CT-94X, CT-94EX
Side adjustment



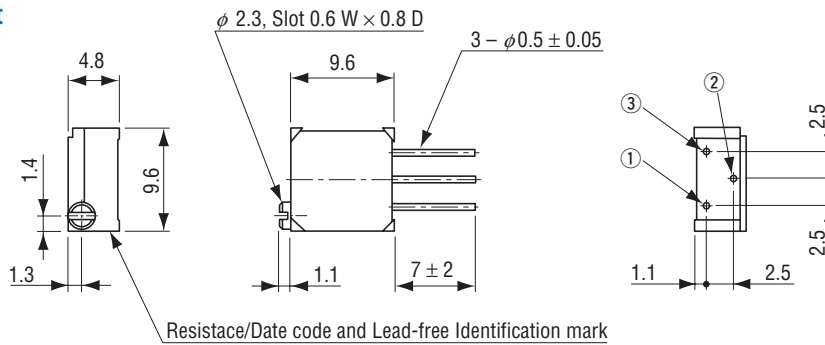
CT-94 CERMET TRIMMERS

OUTLINE DIMENSIONS

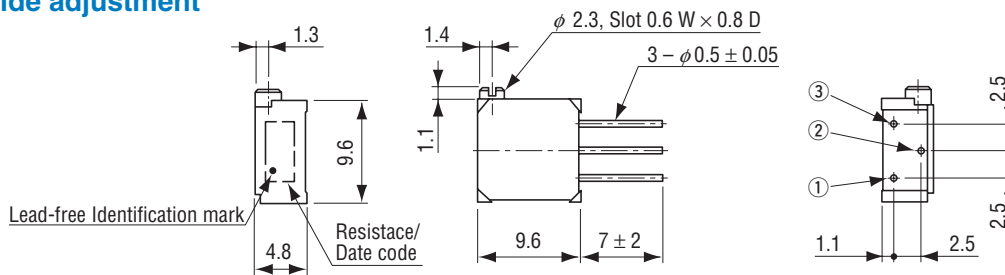
● CT-94P, CT-94EP Side adjustment



● CT-94Y, CT-94EY Top adjustment



● CT-94Z, 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.