

18 TURNS CERMET TRIMMERS

CT-9

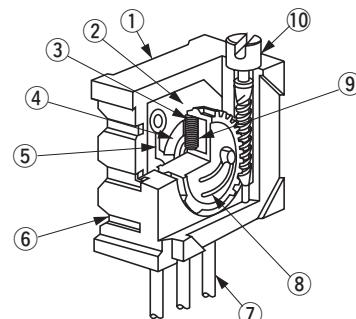
RoHS compliant



■ FEATURES

- Lead-free soldering, Cadmium-free
- 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 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 W 1 M Ω (1 0 5)

Series name

Terminal pin

Blank : Sn-Pb
E : Sn (Lead-free)

Product shape

W : Top adjustment

X : Side adjustment

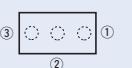
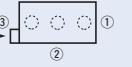
P : Side adjustment

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			
		Sn-Pb	Sn (Lead-free)		
Top adjustment	③ 	CT-9W	CT-9EW	50 pcs./pack	
	③ 	CT-9X	CT-9EX		
	① 	CT-9P	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 (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 ~ 120 °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. 0.94 g (CT-9P, EP) Approx. 0.95 g (CT-9X, W, EX, EW)

<Nominal resistance values>

④ 10 Ω	④ 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 ④ 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	[$\Delta R/R \leq 3 \%$] [S.S. $\leq 1 \%$]
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	120 °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	[$\Delta R/R \leq 1 \%$]

ΔR/R : Change in total resistance

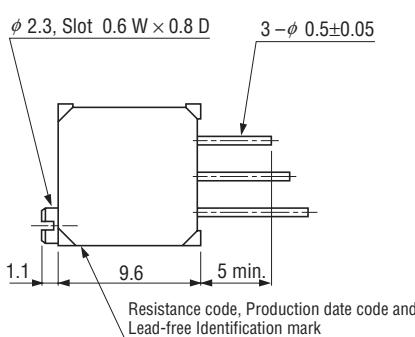
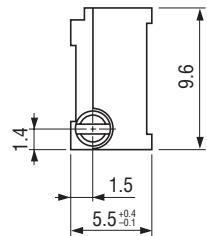
S.S. : Setting stability

■ MAXIMUM INPUT RATINGS

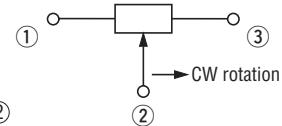
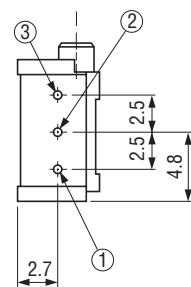
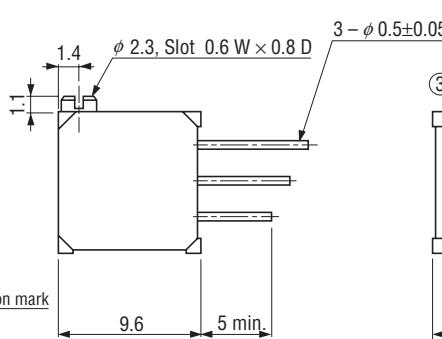
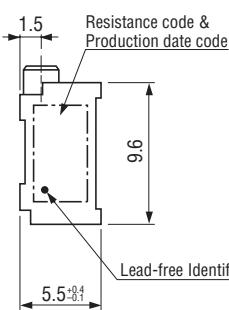
Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
10	100	1.00	100
20	200	2.00	100
50	500	5.00	100
100	101	7.07	70.7
200	201	10.0	50.0
500	501	15.8	31.6
1 k	102	22.4	22.4
2 k	202	31.6	15.8
5 k	502	50.0	10.0
10 k	103	70.7	7.07
20 k	203	100	5.00
50 k	503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

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

■ OUTLINE DIMENSIONS

● CT-9W, CT-9EW
Top adjustment

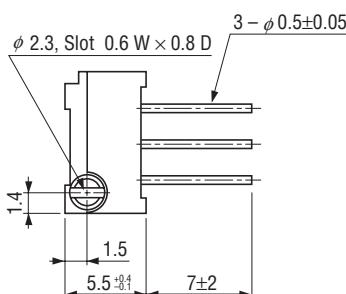
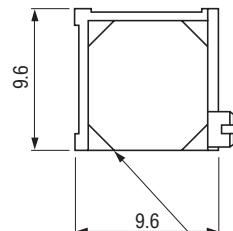
Unless otherwise specified, tolerance: ± 0.3 (Unit: mm)

● CT-9X, CT-9EX
Side adjustment



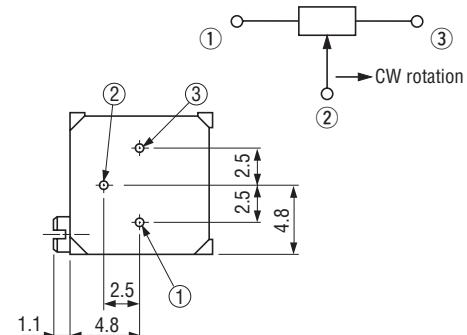
■ OUTLINE DIMENSIONS

● CT-9P, CT-9EP Side adjustment



Resistance code, Production date code and Lead-free Identification mark

Unless otherwise specified, tolerance: ± 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.