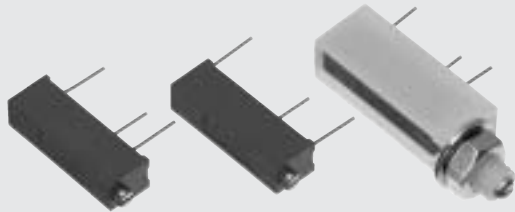


15 TURNS CERMET TRIMMERS

CT-20

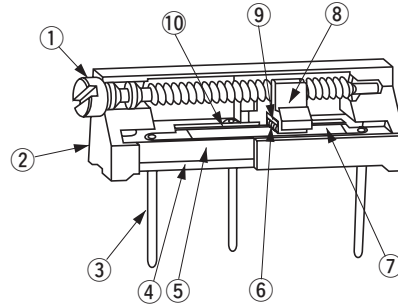
RoHS compliant



FEATURES

- Lead-free soldering, Cadmium-free
- General use type
- Wide resistance range from 10 Ω to 5 MΩ

INTERNAL STRUCTURE



Part name		Material	Flammability
①	Shaft	Brass, Nickel-plated	—
②	Housing	PBT (Polybutyleneterephthalate)	UL-94V-0
③	Terminal pin	Sn-Pb Copper, Solder-plated	—
		Sn Copper, Tin-plated	
④	Adhesive	Epoxy	UL-94V-0
⑤	Base element	Ceramic	—
⑥	Wiper	Multi metal alloy	
⑦	Resistive element	RuO ₂ cermet	
⑧	Slider block	PBT (Polybutyleneterephthalate)	UL-94HB
⑨	Rubber cushion	Silicone rubber	—
⑩	Electrode	Ag-Pd cermet	

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

PART NUMBER DESIGNATION

CT - 20 □ P 200 k Ω (204)

Series name

Terminal pin

Blank : Sn-Pb

E : Sn (Lead-free)

Product shape

P : Side adjustment

X : Side adjustment

PB : Panel mount

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)	
Side adjustment (↑ Adjustment direction)		CT-20P	CT-20EP	50 pcs./pack
		CT-20X	CT-20EX	
		CT-20PB	CT-20EPB	25 pcs./pack

ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 5 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	12 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, 5 MΩ : ± 250 10 ⁻⁶ /°C maximum 50 Ω ~ 2 MΩ : ± 100 10 ⁻⁶ /°C maximum
Insulation resistance	1000 MΩ minimum (DC500 V)
Dielectric strength	AC600 V, 60 s
Net weight	Approx. 1.08 g (CT-20P, X, EP, EX) Approx. 3.7 g (CT-20PB, EPB)

<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	50 kΩ	100 kΩ	200 kΩ	500 kΩ	1 MΩ	2 MΩ	↻ 5 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	15 turns
Operating torque	35 mN·m {357 gf·cm} maximum
Mechanical stop	Clutch action
Rotational life	200 cycles 10 Ω ~ 200 Ω [$\Delta R/R \leq \pm (0.5 \Omega + 3 \%)$] 500 Ω ~ 5 MΩ [$\Delta R/R \leq \pm (0.5 \Omega + 2 \%)$]
Terminal strength	9 N {917 gf} minimum (Tensile strength)
Thrust to rotor	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	[$\Delta R/R \leq 1 \%$]
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	[$\Delta R/R \leq 2 \%$] [S.S. $\leq 1 \%$]
Low temp. operation	-55 °C, 2 h	[$\Delta R/R \leq 1 \%$] [S.S. $\leq 2 \%$]
High temp. exposure	120 °C, 250 h	[$\Delta R/R \leq 2 \%$] [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

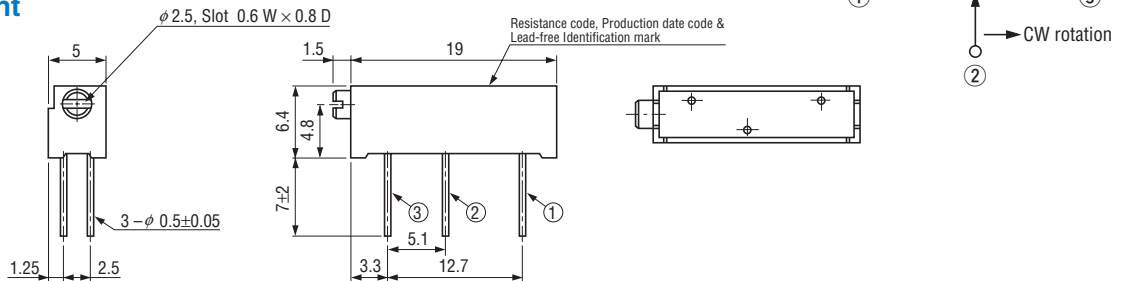
■ **MAXIMUM INPUT RATINGS**

Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
↻ 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
↻ 5 M	505	300	0.06

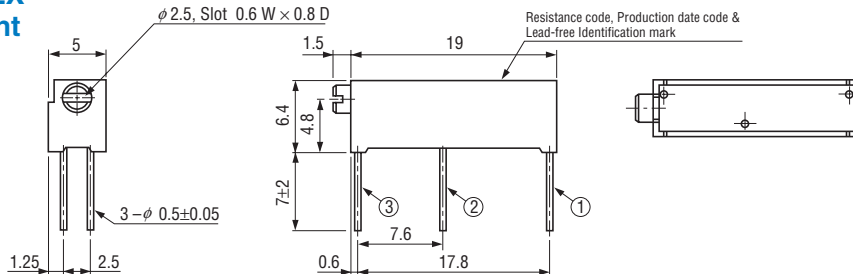
The products indicated by ↻ mark are manufactured upon receipt of order basis.

■ **OUTLINE DIMENSIONS**

● **CT-20P, CT-20EP**
Side adjustment



● **CT-20X, CT-20EX**
Side adjustment

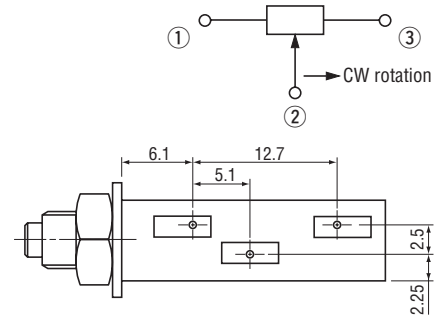
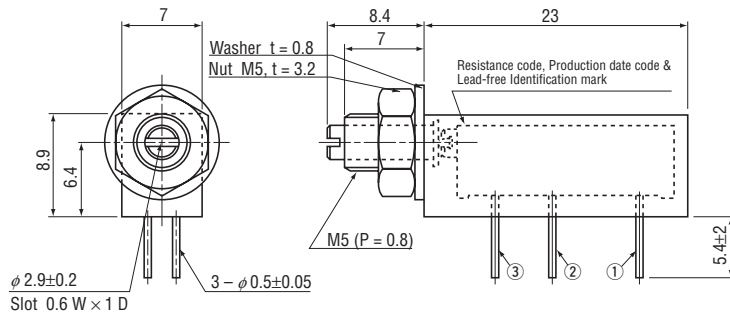


CT-20
CERMET TRIMMERS

OUTLINE DIMENSIONS

● **CT-20PB, CT-20EPB**

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



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Unit of bulk in a plastic bag is 50 pcs. (CT-20PB, CT-20EPB is 25 pcs.) per pack.
- Boxing of bulk in a plastic bag is performed with 100 pcs. (CT-20PB, CT-20EPB is 50 pcs.) per box.