



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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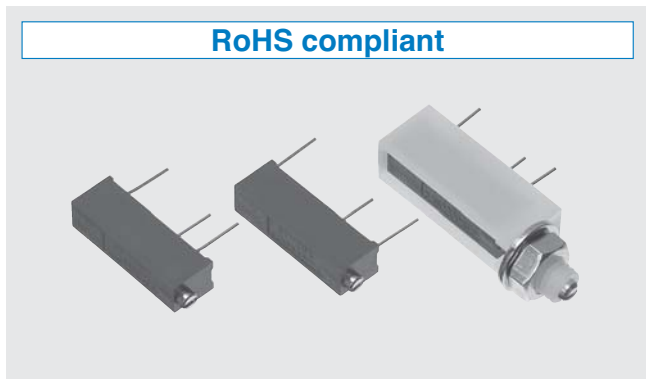
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



15 TURNS CERMET TRIMMERS

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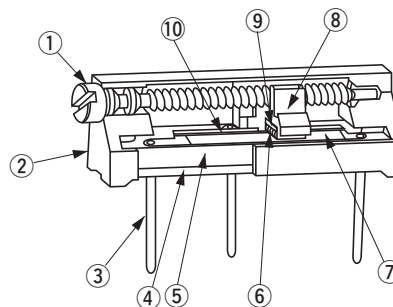
RoHS compliant



FEATURES

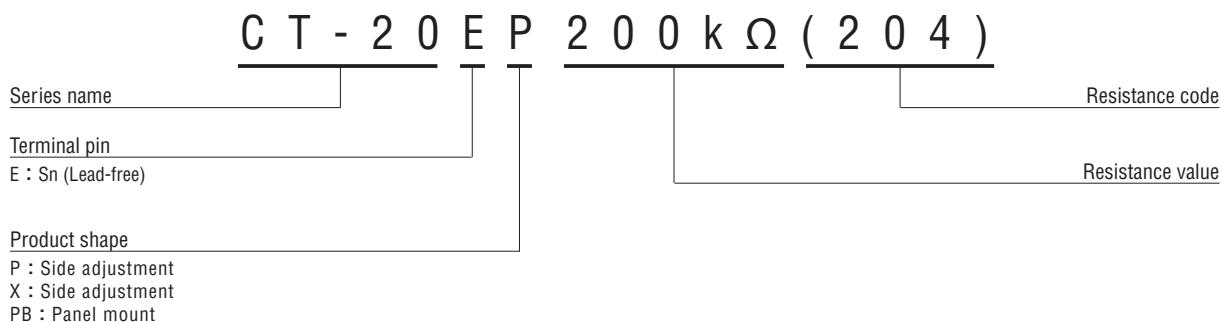
- RoHS compliant
- General use type
- Wide resistance range from 10 Ω to 5 MΩ

INTERNAL STRUCTURE



Part name	Material	Flammability
① Shaft	Brass, Nickel-plated	—
② Housing	Polybutyleneterephthalate	UL94V-0
③ Terminal pin	Copper, Tin-plated	—
④ Adhesive	Epoxy	UL94V-0
⑤ Base element	Ceramic	—
⑥ Wiper	Multi metal alloy	
⑦ Resistive element	RuO ₂ cermet	UL94HB
⑧ Slider block	Polybutyleneterephthalate	
⑨ Rubber cushion	Silicone rubber	—
⑩ Electrode	Ag-Pd cermet	

PART NUMBER DESIGNATION



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

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CERMET TRIMMERS

LIST OF PART NUMBERS

Adjustment position	Shape of terminal (Top view)	Form of packaging	Pieces in package
		Plastic bag	
Side adjustment (↑ Adjustment direction)		CT-20EP	50 pcs./pack
		CT-20EX	
		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	(B) Linear law
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-20EP, EX) Approx. 3.7 g (CT-20EPB)

<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 [Δ R/R ≤ ± (0.5 Ω + 3 %)] 500 Ω ~ 5 MΩ [Δ R/R ≤ ± (0.5 Ω + 2 %)]
Terminal strength	9 N {917 gf} minimum (Tensile strength)
Thrust to rotor	10 N {1.02 kgf} minimum
Solderability	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 (80 ~ 98 %), 10 cycles, 240 h	[Δ R/R ≤ 1 %]
Shock	981 m/s ² , 6 ms 6 directions for 3 times each	[Δ R/R ≤ 1 %] [S.S. ≤ 1 %]
Vibration	(Amplitude) 1.52 mm or (Acceleration) 196 m/s ² , 10 ~ 2000 Hz, 3 directions, 12 times each	[Δ R/R ≤ 1 %] [S.S. ≤ 1 %]
Load life	70 °C, 0.5 W, 1000 h	[Δ R/R ≤ 2 %] [S.S. ≤ 1 %]
Low temp. operation	-55 °C, 2 h	[Δ R/R ≤ 1 %] [S.S. ≤ 2 %]
High temp. exposure	120 °C, 250 h	[Δ R/R ≤ 2 %] [S.S. ≤ 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	[Δ R/R ≤ 1 %]

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

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CERMET TRIMMERS

MAXIMUM INPUT RATINGS

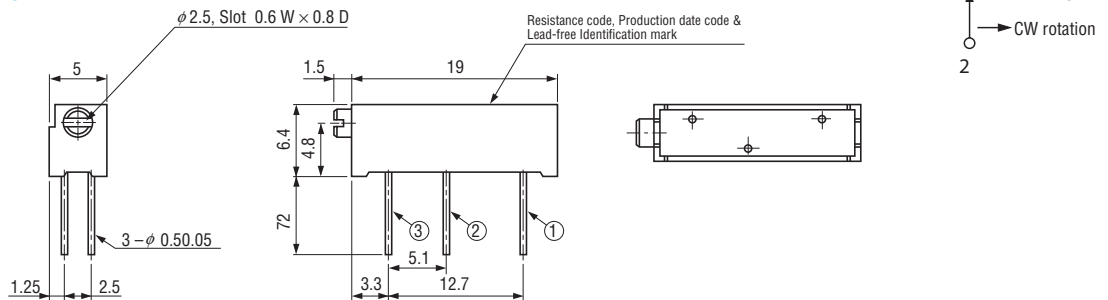
Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
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<ul style="list-style-type: none"> 1 k 2 k 5 k 10 k 20 k 50 k 	<ul style="list-style-type: none"> 102 202 502 103 203 503 	<ul style="list-style-type: none"> 22.4 31.6 50.0 70.7 100 158 	<ul style="list-style-type: none"> 22.4 15.8 10.0 7.07 5.00 3.16
<ul style="list-style-type: none"> 100 k 200 k 500 k 1 M 2 M ➔ 5 M 	<ul style="list-style-type: none"> 104 204 504 105 205 505 	<ul style="list-style-type: none"> 224 300 300 300 300 300 	<ul style="list-style-type: none"> 2.24 1.50 0.60 0.30 0.15 0.06

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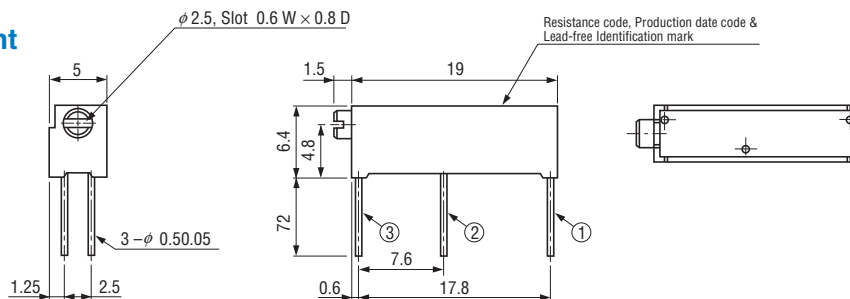
OUTLINE DIMENSIONS

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

CT-20EP Side adjustment



CT-20EX Side adjustment



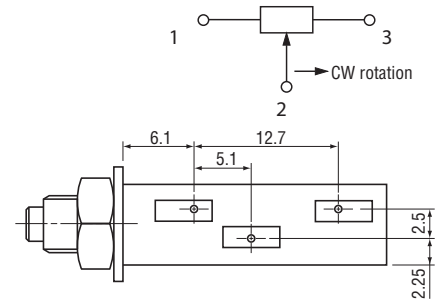
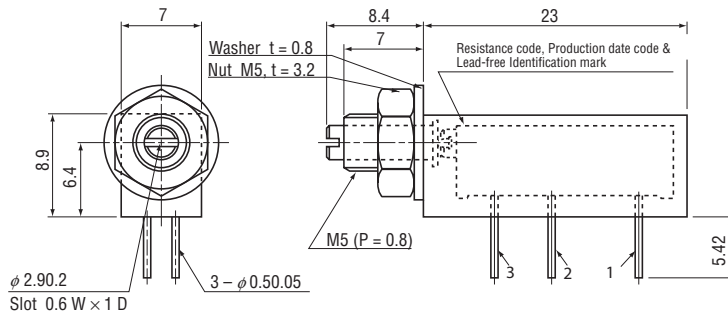
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CERMET TRIMMERS

OUTLINE DIMENSIONS

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