



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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# 18 TURNS CERMET TRIMMERS

# CT-9

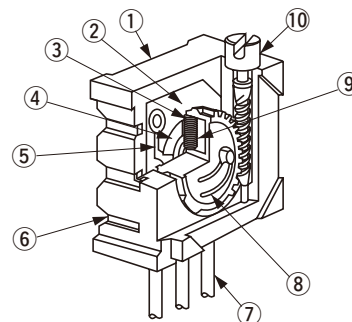
RoHS compatible



## 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 <sub>2</sub> 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 PBBs and PBBs are not used in our products.

## PART NUMBER DESIGNATION


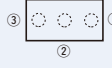
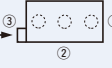
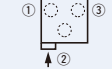
C T - 9		W	1 M Ω ( 1 0 5 )	
Series name				Resistance code
Terminal pin				Resistance value
Blank : Sn-Pb				
E : Sn (Lead-free)				
Product shape				
W : Top adjustment		X : Side adjustment		
		P : Side adjustment		

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

# CT-9

## CERMET TRIMMERS

### LIST OF PART NUMBERS

Adjustment position	Shape of terminal (Top view)	Form of packaging		Pieces in package
		Vinyl pack		
		Sn-Pb	Sn (Lead-free)	
Top adjustment 		CT-9W	CT-9EW	50 pcs./pack
Side adjustment ( ↑ Adjustment direction)		CT-9X	CT-9EX	
		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 <sup>-6</sup> /°C maximum 50 Ω ~ 2 MΩ : ± 100 10 <sup>-6</sup> /°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>



 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	

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 [ $\Delta R/R \leq \pm (2 \Omega + 3 \%)$ ]
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 (Relative humidity 80 ~ 98 %), 10 cycles, 240 h	[ $\Delta R/R \leq 2 \%$ ]
Shock	981 m/s <sup>2</sup> , 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 <sup>2</sup> , 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	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	[ $\Delta R/R \leq 1 \%$ ]
	Sn Flow soldering : 260 ± 3 °C, 5 ~ 6 s, two times maximum Manual soldering : 380 ± 10 °C, 3 ~ 4 s	

$\Delta R/R$  : Change in total resistance  
S.S. : Setting stability



## ■ MAXIMUM INPUT RATINGS

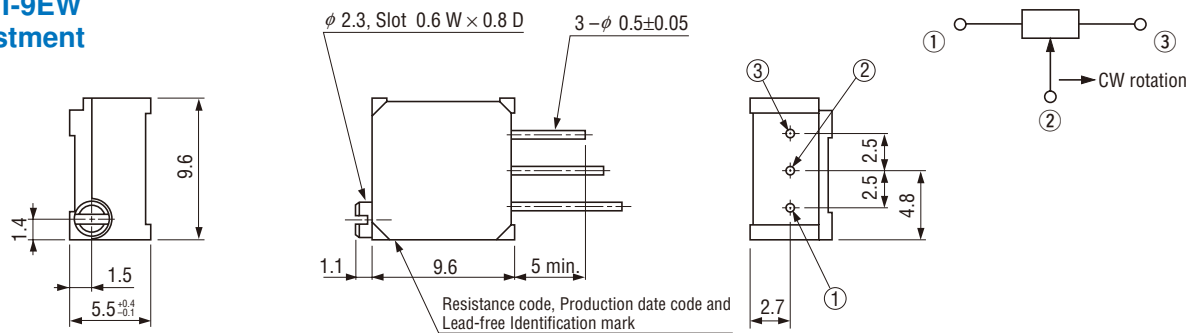
Nominal resistance values ( $\Omega$ )	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
$\rightarrow$ 10 $\rightarrow$ 20 50 100 200 500	100 200 500 101 201 501	1.00 2.00 5.00 7.07 10.0 15.8	100 100 100 70.7 50.0 31.6
1 k 2 k 5 k 10 k 20 k 50 k	102 202 502 103 203 503	22.4 31.6 50.0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

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

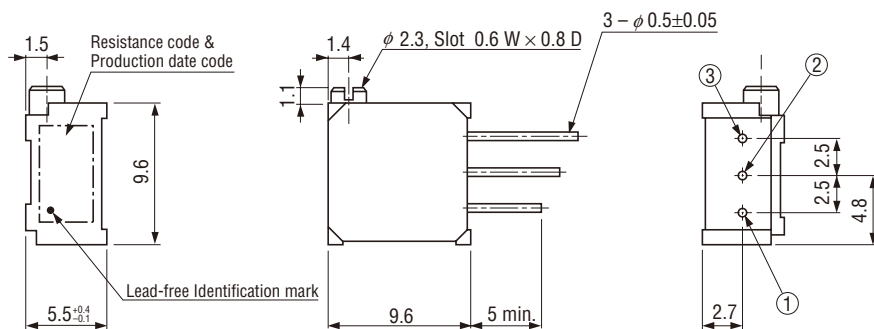
## ■ OUTLINE DIMENSIONS

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)

### ● CT-9W, CT-9EW Top adjustment



### ● CT-9X, CT-9EX Side adjustment



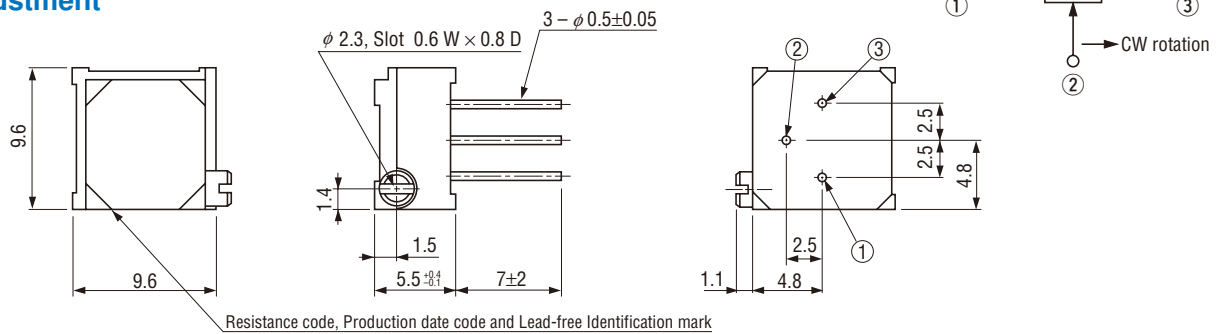
# CT-9

## CERMET TRIMMERS

### OUTLINE DIMENSIONS

#### CT-9P, CT-9EP Side adjustment

Unless otherwise specified, tolerance:  $\pm 0.3$  (Unit: mm)



### 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.