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SINGLE TURN CERMET TRIMMERS RJ-4

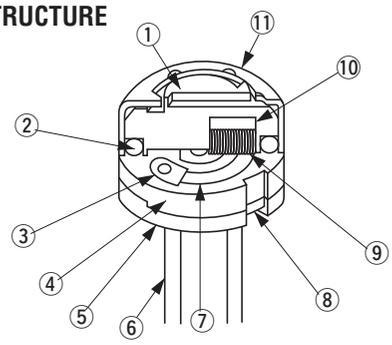
RoHS compliant



FEATURES

- RoHS compliant
- Compact with power rating of 0.5 W
- Precious metal alloy wiper

INTERNAL STRUCTURE



Part name		Material	Flammability
①	Rotor	Polybutyleneterephthalate	UL94HB
②	"O" ring	Silicone rubber	
③	Electrode	Ag-Pd cermet	—
④	Base element	Ceramic	
⑤	Base	Polyphenylenesulphide	UL94V-0
⑥	Terminal pin	Copper alloy, Tin-plated	—
⑦	Resistive element	RuO_2 cermet	
⑧	Adhesive	Epoxy	
⑨	Wiper	Multi metal alloy	
⑩	Rubber cushion	Silicone rubber	
⑪	Cover	Stainless steel	

PART NUMBER DESIGNATION

R J - 4 E W S 2 kΩ (2 0 2)

- Series name
- Terminal pin
  E : Sn (Lead-free)
- Product shape
  W : Top adjustment
  WS : Side adjustment
- Resistance value
- Resistance code

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

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CERMET TRIMMERS

LIST OF PART NUMBERS

Adjustment position	Form of packaging	Pieces in package
	Plastic bag	
Top adjustment	RJ-4EW	50 pcs./pack
Side adjustment	RJ-4EWS	

※ 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.

〈Nominal resistance values〉

➔10 Ω	➔20 Ω	50 Ω	100 Ω	200 Ω	500 Ω	1 k Ω	2 k Ω	5 k Ω
10 k Ω	20 k Ω	50 k Ω	100 k Ω	200 k Ω	500 k Ω	1 M Ω	2 M Ω	

Fig. 1

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

ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 2 M Ω
Resistance tolerance	± 10 %
Power ratings	0.5 W (70 °C) 0 W (120 °C)
Resistance law	Linear law
Maximum input voltage	DC200 V or power rating, whichever is smaller
Maximum wiper current	100 mA or power rating, whichever is smaller
Effective electrical angle	200 ° (1 turn)
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 ~ 50 Ω : ± 250 10^{-6}/°C maximum 100 Ω ~ 2 M Ω : ± 100 10^{-6}/°C maximum
Insulation resistance	1000 M Ω minimum (DC500 V)
Dielectric strength	AC500 V, 60 s
Net weight	Approx. 0.26 g (RJ-4EW) Approx. 0.35 g (RJ-4EWS)

MECHANICAL CHARACTERISTICS

Mechanical angle	230 ° (1 turn)
Operating torque	15 mN·m {153 gf·cm} maximum
Stop strength	45 mN·m {459 gf·cm} minimum
Rotational life	200 cycles 10 Ω ~ 200 Ω [Δ R/R ≦ ± (0.5 Ω +3 %)] 500 Ω ~ 2 M Ω [Δ R/R ≦ ± (0.5 Ω +2 %)]
Terminal strength	10 N {1.02 kgf} 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/s², 6 ms 6 directions for 3 times each	[Δ R/R ≦ 1 %] [S.S. ≦ 1 %]
Vibration	(Amplitude) 1.52 mm or (Acceleration) 196 m/s², 10 ~ 2000 Hz, 3 directions, 12 times each	
Load life	70 °C, 0.5 W 1000 h	[Δ R/R ≦ 3 %] [S.S. ≦ 1 %]
Low temp. operation	– 55 °C, 2 h	[Δ R/R ≦ 2 %] [S.S. ≦ 2 %]
High temp. exposure	120 °C, 250 h	[Δ R/R ≦ 3 %] [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 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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MAXIMUM INPUT RATINGS

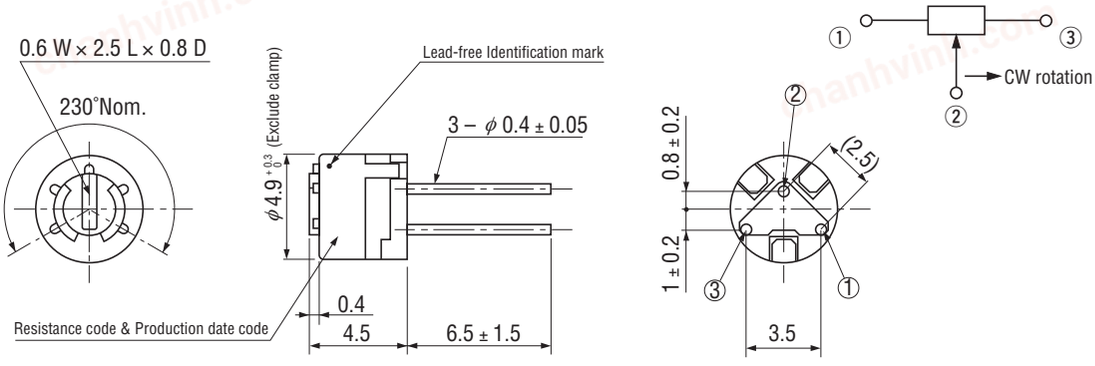
Nominal resistance values (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
➔ 10	100	1.00	100
➔ 20	200	2.00	100
50	500	5.00	100
100	101	7.07	70.7
200	201	10.0	50.0
500	501	15.8	31.6
1 k	102	22.4	22.4
2 k	202	31.6	15.8
5 k	502	50.0	10.0
10 k	103	70.7	7.07
20 k	203	100	5.00
50 k	503	158	3.16
100 k	104	200	2.00
200 k	204	200	1.00
500 k	504	200	0.40
1 M	105	200	0.20
2 M	205	200	0.10

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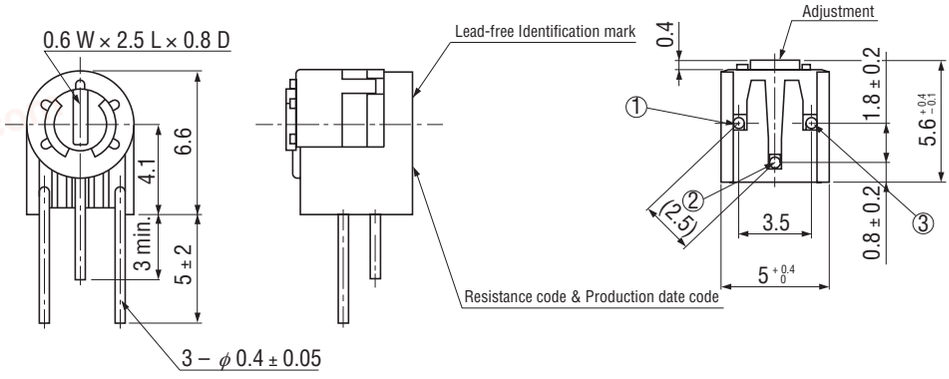
OUTLINE DIMENSIONS

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

● RJ-4EW
Top adjustment



● RJ-4EWS
Side adjustment



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Unit of bulk pack in a plastic bag is 50 pcs. per pack.
- Boxing of bulk in a plastic bag is performed with 200 pcs. per box.