

SINGLE TURN CERMET TRIMMERS

RJ-4

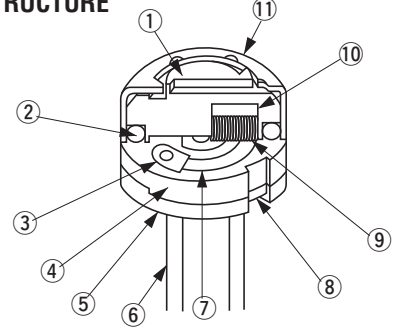
RoHS compliant



FEATURES

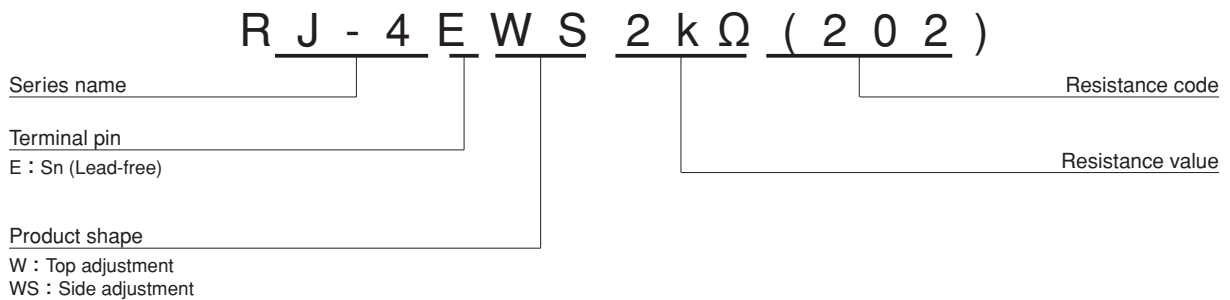
- RoHS compliant
- Compact with power rating of 0.5 W
- Precious metal alloy wiper

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



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

RJ-4

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.

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)

<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.

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/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 ≤ 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

MAXIMUM INPUT RATINGS

Nominal resistance values (Ω)	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	200 200 200 200 200	2.00 1.00 0.40 0.20 0.10

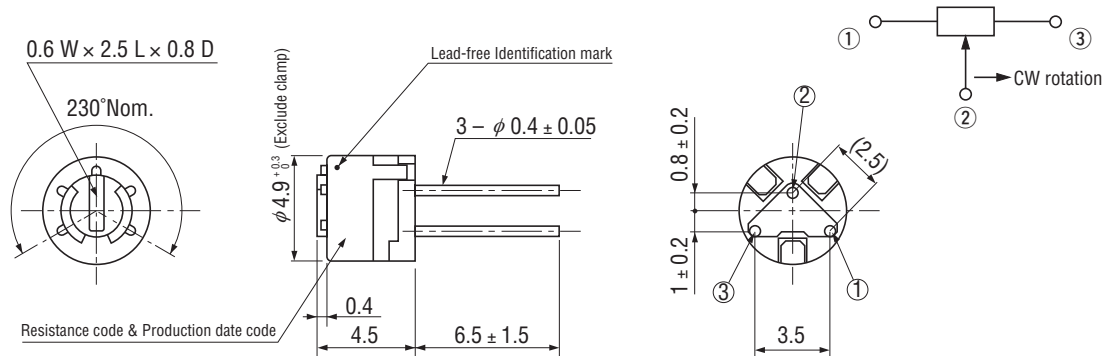
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OUTLINE DIMENSIONS

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

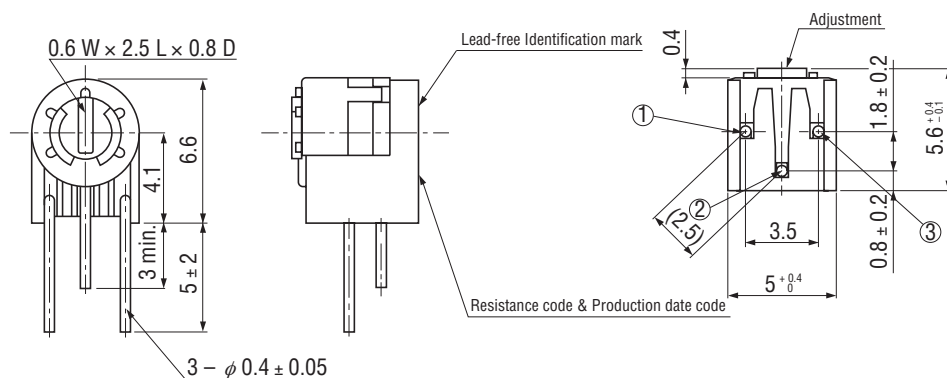
RJ-4EW

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.