

SINGLE TURN CERMET TRIMMERS

# RJ-4

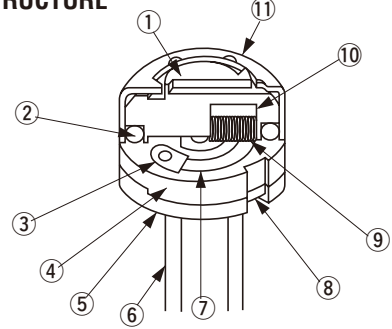
RoHS compliant



## FEATURES

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

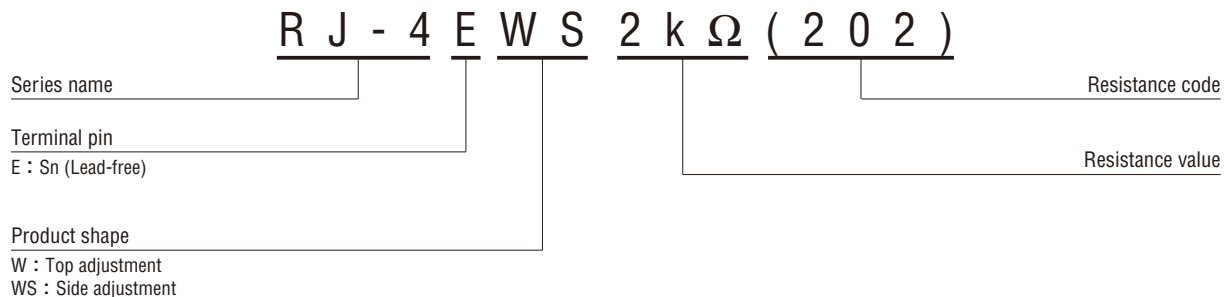
### INTERNAL STRUCTURE



Part name	Material	Flammability
① Rotor	Polybutyleneterephthalate	UL-94HB
② "O" ring	Silicone rubber	
③ Electrode	Ag-Pd cermet	—
④ Base element	Ceramic	
⑤ Base	Polyphenylenesulphide	UL-94V-0
⑥ Terminal pin	Copper alloy, Tin-plated	—
⑦ Resistive element	RuO <sub>2</sub> cermet	
⑧ Adhesive	Epoxy	
⑨ Wiper	Multi metal alloy	
⑩ Rubber cushion	Silicone rubber	
⑪ Cover	Stainless steel	

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

## PART NUMBER DESIGNATION



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

### ■ 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	

### <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.

### ■ 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
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 <sup>-6</sup> /°C maximum 100 Ω ~ 2 MΩ : ± 100 10 <sup>-6</sup> /°C maximum
Insulation resistance	1000 MΩ 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 [ ΔR/R ≤ ± (0.5 Ω + 3 %) ] 500 Ω ~ 2 MΩ [ ΔR/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	[ ΔR/R ≤ 1 % ] [ S.S. ≤ 1 % ]
Humidity	-10 ~ 65 °C (80 ~ 98 %), 10 cycles, 240 h	[ ΔR/R ≤ 1 % ]
Shock	981 m/s <sup>2</sup> , 6 ms 6 directions for 3 times each	[ ΔR/R ≤ 1 % ] [ S.S. ≤ 1 % ]
Vibration	Amplitude 1.52 mm or Acceleration 196 m/s <sup>2</sup> , 10 ~ 2000 Hz, 3 directions, 12 times each	[ ΔR/R ≤ 1 % ] [ S.S. ≤ 1 % ]
Load life	70 °C, 0.5 W 1000 h	[ ΔR/R ≤ 3 % ] [ S.S. ≤ 1 % ]
Low temp. operation	-55 °C, 2 h	[ ΔR/R ≤ 2 % ] [ S.S. ≤ 2 % ]
High temp. exposure	120 °C, 250 h	[ ΔR/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	[ ΔR/R ≤ 1 % ]

ΔR/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	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

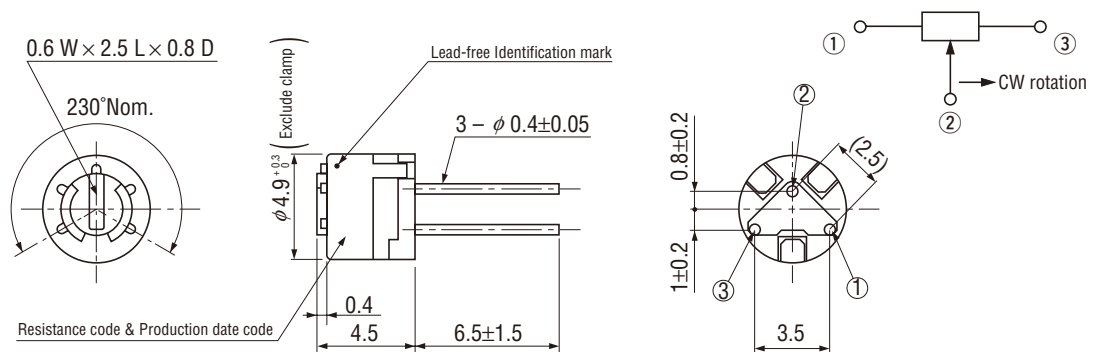
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■ **OUTLINE DIMENSIONS**

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

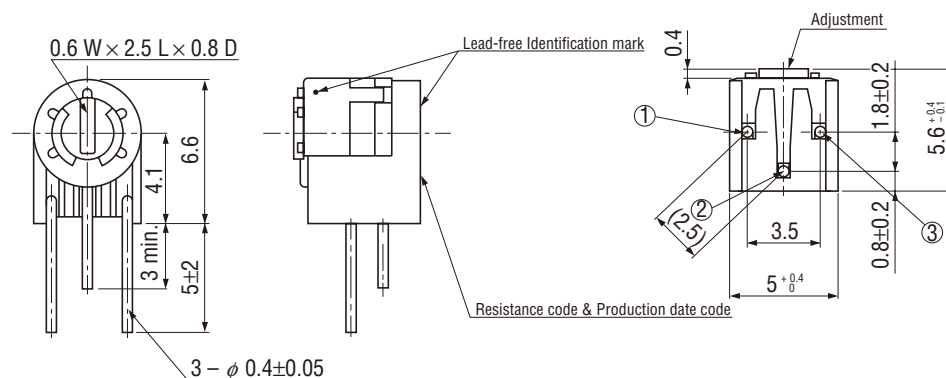
● **RJ-4EW**

**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.