

SINGLE TURN CERMET TRIMMERS

RJ-4



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

RJ-4EWS2kΩ(202)

Series name

Terminal pin
E : Sn (Lead-free)

Product shape
W : Top adjustment
WS : Side adjustment

Resistance code

Resistance value

※ 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.

<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/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	
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

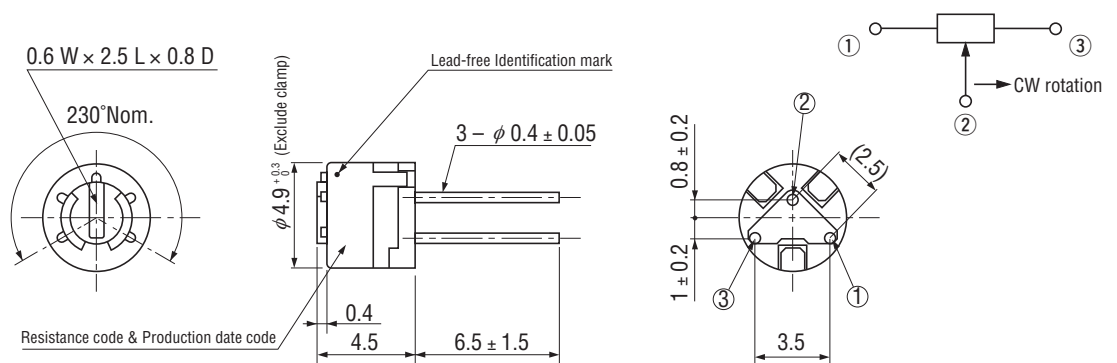
The products indicated by $\rightarrow$ mark are manufactured upon receipt of order basis.

OUTLINE DIMENSIONS

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

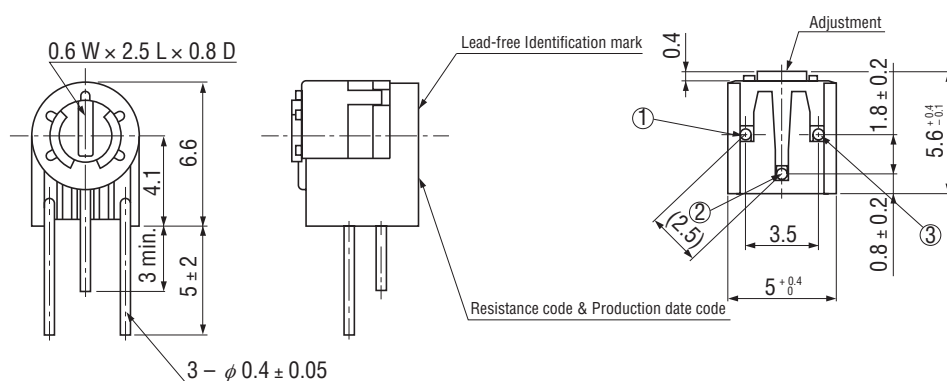
RJ-4EW

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Nidec:

[RJ-4EW501](#) [RJ-4EW100](#) [RJ-4EWS503](#) [RJ-4EWS504](#) [RJ-4EWS203](#) [RJ-4EWS204](#) [RJ-4EWS205](#) [RJ-4EWS500](#)
[RJ-4EWS501](#) [RJ-4EWS502](#) [RJ-4EWS103](#) [RJ-4EWS104](#) [RJ-4EWS105](#) [RJ-4EWS200](#) [RJ-4EWS201](#) [RJ-4EWS202](#)
[RJ-4EW502](#) [RJ-4EW503](#) [RJ-4EW504](#) [RJ-4EWS100](#) [RJ-4EWS101](#) [RJ-4EWS102](#) [RJ-4EW201](#) [RJ-4EW202](#) [RJ-](#)
[4EW203](#) [RJ-4EW204](#) [RJ-4EW205](#) [RJ-4EW500](#) [RJ-4EW101](#) [RJ-4EW102](#) [RJ-4EW103](#) [RJ-4EW104](#) [RJ-4EW105](#)
[RJ-4EW200](#)