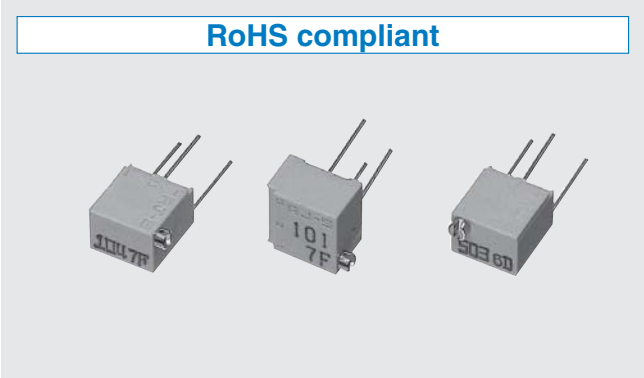


14 TURNS CERMET TRIMMERS

RJ-5



FEATURES

- RoHS compliant
- Fine setting is possible
- Sealed construction (Washable: Refer to 698)

| INTERNAL STRUCTURE |                   |                           |              |
|--------------------|-------------------|---------------------------|--------------|
| Part name          |                   | Material                  | Flammability |
| ①                  | Housing           | Polybutyleneterephthalate | UL94V-0      |
| ②                  | Base element      | Ceramic                   | —            |
| ③                  | Electrode         | Ag-Pd cermet              |              |
| ④                  | Resistive element | RuO <sub>2</sub> cermet   |              |
| ⑤                  | Adhesive          | Epoxy                     |              |
| ⑥                  | Wiper             | Multi metal alloy         |              |
| ⑦                  | Terminal pin      | Copper, Tin-plated        | UL94HB       |
| ⑧                  | Rubber cushion    | Silicone rubber           |              |
| ⑨                  | Rotor gear        | Polyamide                 | —            |
| !0                 | Shaft             | Brass, Nickel-plated      |              |

PART NUMBER DESIGNATION

RJ-5EW100kΩ(104)

Series name

Terminal pin

E : Sn (Lead-free)

Product shape

W : Top adjustment    X : Side adjustment

P : Side adjustment

Resistance code

Resistance value

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

### LIST OF PART NUMBERS

| Adjustment position                                                                                 | Shape of terminal (Top view)                                                      | Form of packaging | Pieces in package |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------|-------------------|
|                                                                                                     |                                                                                   | Plastic bag       |                   |
| Top adjustment<br> |  | RJ-5EW            | 50 pcs./pack      |
| Side adjustment<br>(↑ Adjustment direction)                                                         |  | RJ-5EX            |                   |
|                                                                                                     |  | RJ-5EP            |                   |

### ELECTRICAL CHARACTERISTICS

|                           |                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------|
| Nominal resistance range  | 10 Ω ~ 2 M Ω                                                                                           |
| Resistance tolerance      | ± 10 %                                                                                                 |
| Power ratings             | 0.25 W (85 °C) 0 W (120 °C)                                                                            |
| Resistance law            | (B)<br>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 turn | 11 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 ~ 50 Ω : ± 250 10 <sup>-6</sup> /°C maximum<br>100 Ω ~ 2 M Ω : ± 100 10 <sup>-6</sup> /°C maximum |
| Insulation resistance     | 1000 M Ω minimum (DC500 V)                                                                             |
| Dielectric strength       | AC600 V, 60 s                                                                                          |
| Net weight                | Approx. 0.37 g                                                                                         |

### <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 above part numbers are all available with the respective combination of <Nominal resistance values> (Fig. 1).

※ Verify the above part numbers when placing orders.

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

### MECHANICAL CHARACTERISTICS

|                   |                                                                                                   |
|-------------------|---------------------------------------------------------------------------------------------------|
| Mechanical turn   | 14 turns                                                                                          |
| Operating torque  | 20 mN·m {204 gf·cm} maximum                                                                       |
| Mechanical stop   | Clutch action                                                                                     |
| Rotational life   | 200 cycles<br>10 Ω ~ 200 Ω [ Δ R/R ≤ ± (0.5 Ω + 3 %)]<br>500 Ω ~ 2 M Ω [ Δ R/R ≤ ± (0.5 Ω + 2 %)] |
| Terminal strength | 10 N {1.02 kgf} minimum<br>(Tensile strength)                                                     |
| Thrust to shaft   | 5 N {0.51 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 %]<br>[S.S. ≤ 1 %]   |
| Humidity            | — 10 ~ 65 °C (80 ~ 98 %),<br>10 cycles, 240 h                                                                | [ Δ R/R ≤ 1 %]                   |
| Shock               | 981 m/s <sup>2</sup> , 6 ms<br>6 directions for 3 times each                                                 | [ Δ R/R ≤ 1 %]<br>[S.S. ≤ 1 %]   |
| Vibration           | (Amplitude) 1.52 mm or<br>(Acceleration) 196 m/s <sup>2</sup> ,<br>10 ~ 2000 Hz, 3 directions, 12 times each |                                  |
| Load life           | 85 °C, 0.25 W, 1000 h                                                                                        | [ Δ R/R ≤ 2 %]<br>[S.S. ≤ 1 %]   |
| Low temp. operation | — 55 °C, 2 h                                                                                                 | [ Δ R/R ≤ 2 %]<br>[S.S. ≤ 2 %]   |
| High temp. exposure | 120 °C, 250 h                                                                                                |                                  |
| Immersion seal      | 85 °C, 60 s                                                                                                  | No leaks (No continuous bubbles) |
| Soldering heat      | Flow<br>260 ± 3 °C, 5 ~ 6 s, two times maximum<br>Manual soldering<br>380 ± 10 °C, 3 ~ 4 s                   | [ Δ R/R ≤ 1 %]                   |

Δ R/R : Change in total resistance  
S.S. : Setting stability

# RJ-5

## CERMET TRIMMERS

### MAXIMUM INPUT RATINGS

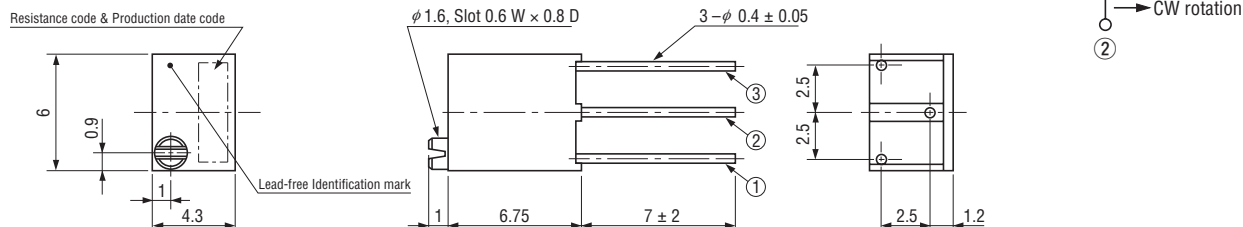
| Nominal resistance values ( $\Omega$ )                          | Resistance code                        | Maximum input voltage (V)                    | Maximum wiper current (mA)                   |
|-----------------------------------------------------------------|----------------------------------------|----------------------------------------------|----------------------------------------------|
| $\rightarrow$ 10<br>$\rightarrow$ 20<br>50<br>100<br>200<br>500 | 100<br>200<br>500<br>101<br>201<br>501 | 1.00<br>2.00<br>3.53<br>5.00<br>7.07<br>11.1 | 100<br>100<br>70.7<br>50.0<br>35.3<br>22.3   |
| 1 k<br>2 k<br>5 k<br>10 k<br>20 k<br>50 k                       | 102<br>202<br>502<br>103<br>203<br>503 | 15.8<br>22.3<br>35.3<br>50.0<br>70.7<br>111  | 15.8<br>11.1<br>7.07<br>5.00<br>3.53<br>2.23 |
| 100 k<br>200 k<br>500 k<br>1 M<br>2 M                           | 104<br>204<br>504<br>105<br>205        | 158<br>200<br>200<br>200<br>200              | 1.58<br>1.00<br>0.40<br>0.20<br>0.10         |

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

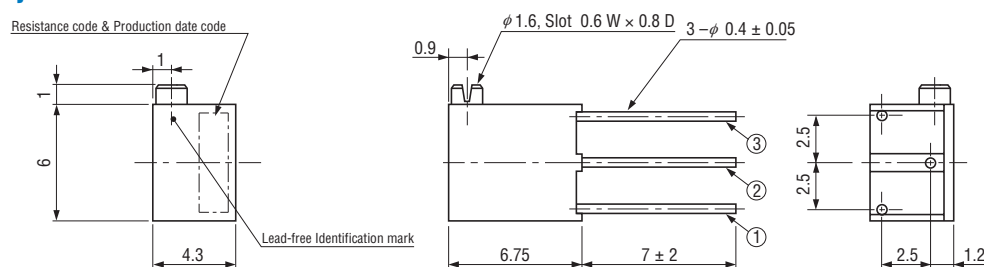
### OUTLINE DIMENSIONS

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

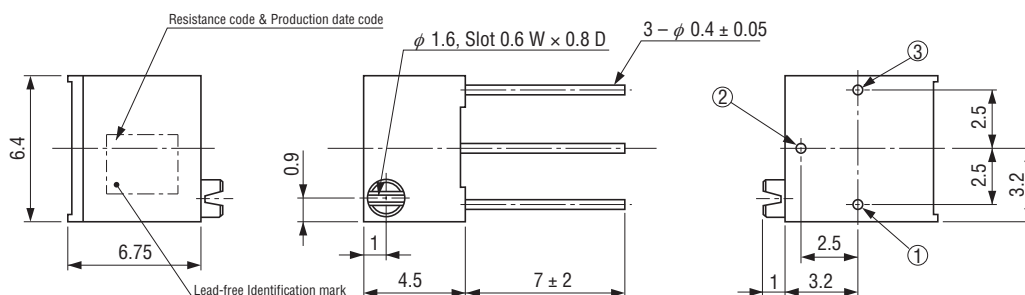
#### RJ-5EW Top adjustment



#### RJ-5EX Side adjustment



#### RJ-5EP Side adjustment



## ■ PACKAGING SPECIFICATIONS

### <Bulk pack specifications>

- Unit of bulk 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:

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[RJ-5EX202](#) [RJ-5EX203](#) [RJ-5EX204](#) [RJ-5EX205](#) [RJ-5EX500](#) [RJ-5EX501](#) [RJ-5EX102](#) [RJ-5EX103](#) [RJ-5EX104](#) [RJ-](#)  
[5EX105](#) [RJ-5EX200](#) [RJ-5EX201](#) [RJ-5EW501](#) [RJ-5EW502](#) [RJ-5EW503](#) [RJ-5EW504](#) [RJ-5EX100](#) [RJ-5EX101](#) [RJ-](#)  
[5EW201](#) [RJ-5EW202](#) [RJ-5EW203](#) [RJ-5EW204](#) [RJ-5EW205](#) [RJ-5EW500](#) [RJ-5EW101](#) [RJ-5EW102](#) [RJ-5EW103](#)  
[RJ-5EW104](#) [RJ-5EW105](#) [RJ-5EW200](#) [RJ-5EP500](#) [RJ-5EP501](#) [RJ-5EP502](#) [RJ-5EP503](#) [RJ-5EP504](#) [RJ-5EW100](#)  
[RJ-5EP200](#) [RJ-5EP201](#) [RJ-5EP202](#) [RJ-5EP203](#) [RJ-5EP204](#) [RJ-5EP205](#)