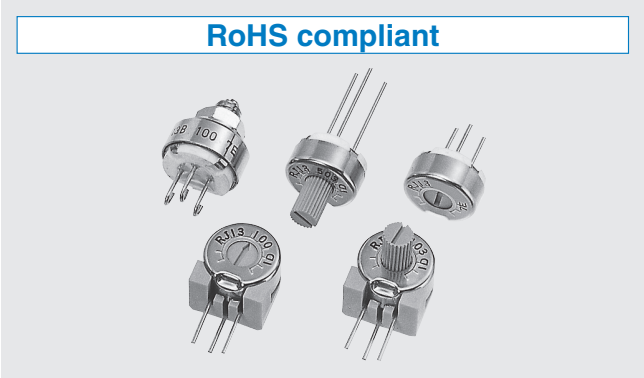


SINGLE TURN CERMET TRIMMERS

RJ-13



FEATURES

- RoHS compliant
- Wide resistance range from 10 Ω to 5 M Ω
- Precious metal alloy wiper

INTERNAL STRUCTURE			
Part name	Material	Flammability	
① Rotor	Polybutyleneterephthalate	—	
② Cover	Stainless steel		
③ Electrode	Ag-Pd cermet		
④ Resistive element	RuO ₂ cermet		
⑤ Base element	Ceramic		
⑥ Terminal pin	Nickel, Gold-plated		
⑦ Adhesive	Epoxy		
⑧ “O” ring	Silicone rubber	UL94HB	
⑨ Wiper	Multi metal alloy		
!0 Rubber cushion	Silicone rubber		

PART NUMBER DESIGNATION

RJ-13P20kΩ(203)

Series name

Product shape

P : Top adjustment
B : Panel mount
S : Side adjustment

PR : Top adjustment with knob
SR : Side adjustment with knob

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 		RJ-13P	50 pcs./pack
		RJ-13B	25 pcs./pack
		RJ-13PR	
Side adjustment (↑ Adjustment direction)		RJ-13S	
		RJ-13SR	

<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	➡ 25 k Ω	50 k Ω	100 k Ω	200 k Ω	➡ 250 k Ω	500 k Ω	1 M Ω	2 M Ω	➡ 5 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.

ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 5 M Ω
Resistance tolerance	± 10 %
Power ratings	0.75 W (70 °C) 0 W (120 °C)
Resistance law	(B) Linear law
Maximum input voltage	DC300 V or power rating, whichever is smaller
Maximum wiper current	100 mA or power rating, whichever is smaller
Effective electrical angle	230 ° (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 , 20 Ω , 5 M Ω : ± 250 10 ⁻⁶ /°C maximum 50 Ω ~ 2 M Ω : ± 100 10 ⁻⁶ /°C maximum
Insulation resistance	1000 M Ω minimum (DC500 V)
Dielectric strength	AC900 V, 60 s
Net weight	Approx. 1.90 g (RJ-13P) Approx. 4.50 g (RJ-13B) Approx. 2.15 g (RJ-13PR) Approx. 2.50 g (RJ-13S) Approx. 2.78 g (RJ-13SR)

MECHANICAL CHARACTERISTICS

Mechanical angle	270 ° (1 turn)
Operating torque	3 ~ 35 mN·m {30.6~357 gf·cm}
Stop strength	100 mN·m {1.02 kgf·cm}
Rotational life	200 cycles 10 Ω ~ 200 Ω [Δ R/R ≤ ± (0.5 Ω + 3 %)] 500 Ω ~ 5 M Ω [Δ R/R ≤ ± (0.5 Ω + 2 %)]
Terminal to strength	20 N {2.04 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, 0.75 W, 1000 h	[Δ R/R ≤ 2 %] [S.S. ≤ 1 %]
Low temp. operation	— 55 °C, 2 h	[Δ R/R ≤ 1 %] [S.S. ≤ 2 %]
High temp. exposure	120 °C, 250 h	[Δ R/R ≤ 2 %] [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 maximum	[Δ R/R ≤ 1 %]
	Manual soldering 380 ± 10 °C, 3 ~ 4 s	

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

RJ-13

CERMET TRIMMERS

MAXIMUM INPUT RATINGS

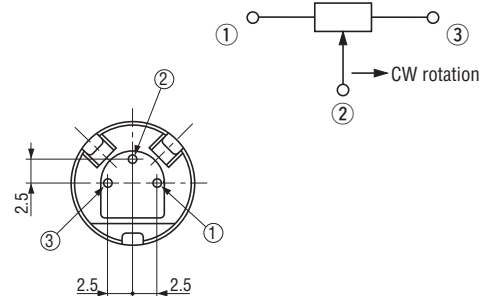
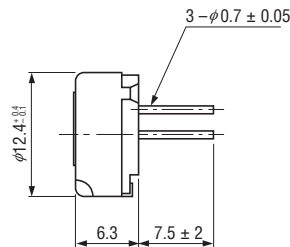
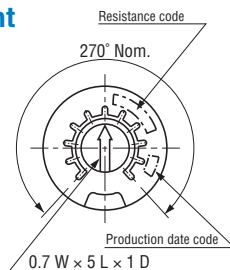
Nominal resistance value (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
$\rightarrow$ 10 $\rightarrow$ 20 50 100 200 500	100 200 500 101 201 501	1.00 2.00 5.00 8.66 12.2 19.4	100 100 100 86.6 61.0 38.8
1 k 2 k 5 k 10 k 20 k $\rightarrow$ 25 k 50 k	102 202 502 103 203 253 503	27.4 38.7 61.2 86.6 122 137 194	27.4 19.3 12.2 8.66 6.10 5.48 3.88
$\rightarrow$ 100 k $\rightarrow$ 200 k $\rightarrow$ 250 k $\rightarrow$ 500 k 1 M 2 M $\rightarrow$ 5 M	104 204 254 504 105 205 505	274 300 300 300 300 300 300	2.74 1.50 1.20 0.60 0.30 0.15 0.06

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

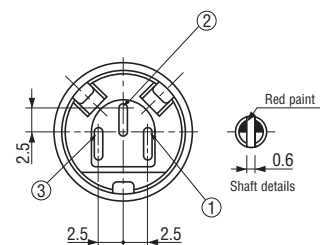
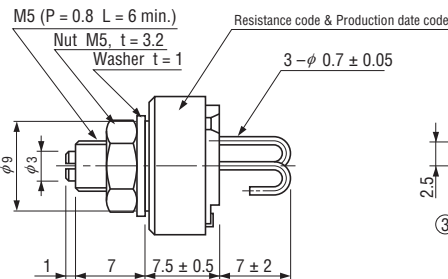
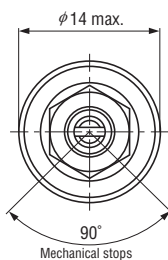
OUTLINE DIMENSIONS

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

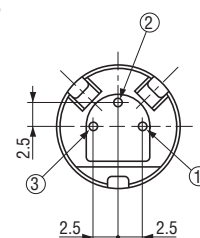
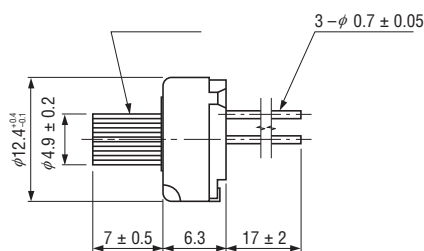
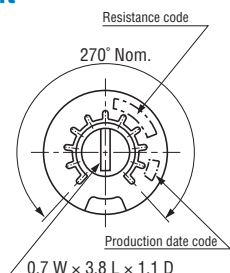
RJ-13P Top adjustment



RJ-13B Panel mount



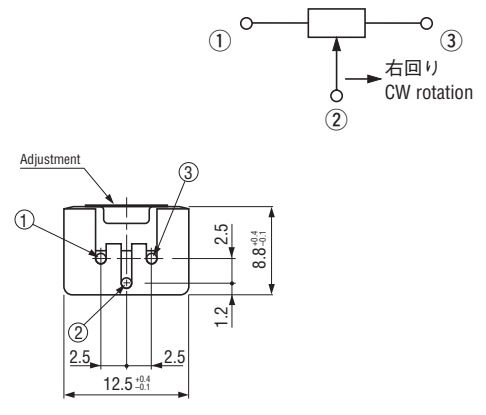
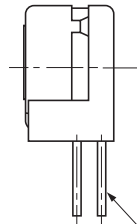
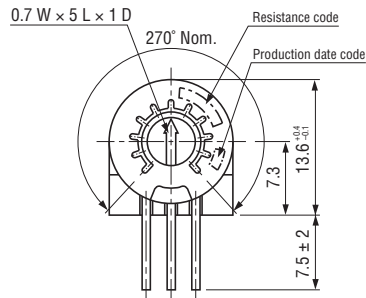
RJ-13PR Top adjustment with knob



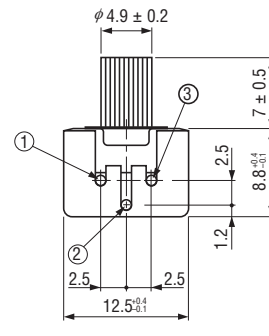
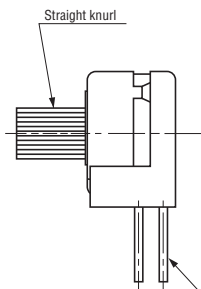
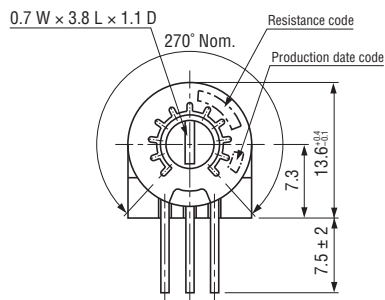
OUTLINE DIMENSIONS

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

● RJ-13S Side adjustment



● RJ-13SR Side adjustment with knob



PACKAGING SPECIFICATIONS

<Bulk pack specifications>

- Unit of bulk pack in a plastic bag is 25 pcs. per pack, only that RJ-13P is 50 pcs. per pack.
- Boxing of bulk in a plastic bag is performed with 50 pcs. per box, only that RJ-13P is 100 pcs. per box.

Mouser Electronics

Authorized Distributor

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

Nidec:

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[RJ-13SR505](#) [RJ-13SR203](#) [RJ-13SR204](#) [RJ-13SR205](#) [RJ-13SR253](#) [RJ-13SR254](#) [RJ-13SR500](#) [RJ-13SR103](#) [RJ-](#)
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