

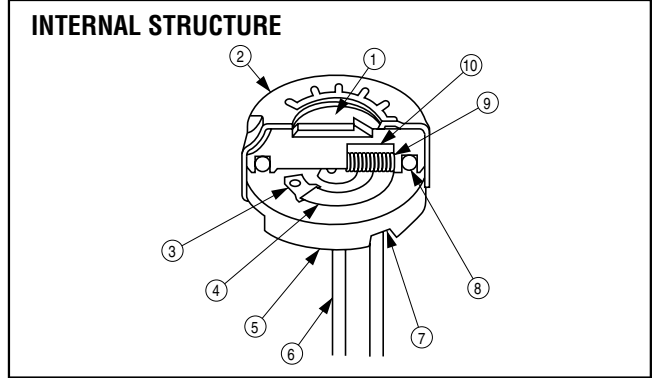
SINGLE TURN CERMET TRIMMERS **RJ-13**

CERMET TRIMMERS



FEATURES

- Wide resistance range from 10 Ω to 5 MΩ
- Precious metal alloy wiper

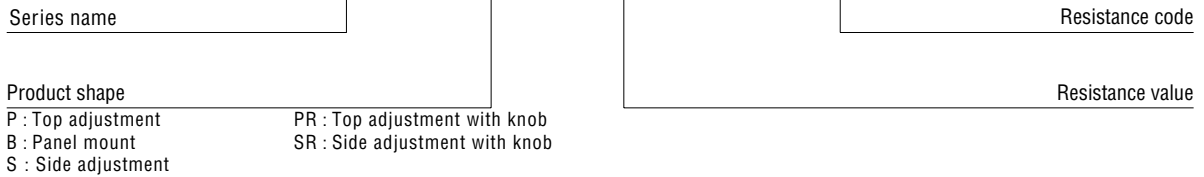


Part name	Material	Flammability
① Rotor	PBT (Polybutyleneterephthalate)	UL-94HB
② Cover	Stainless steel	—
③ Electrode	Ag-Pd cermet	
④ Resistive element	RuO ₂ cermet	
⑤ Base element	Ceramic	
⑥ Terminal pin	Nickel, Gold-plated	
⑦ Adhesive	Epoxy	UL-94HB
⑧ "O" ring	Silicone rubber	
⑨ Wiper	Multi metal alloy	
⑩ Rubber cushion	Silicone rubber	—

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








PART NUMBER DESIGNATION

R J - 1 3 P 2 0 k Ω (2 0 3)



* 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
		Bulk packaging	
 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 kΩ	2 kΩ	5 kΩ	10 kΩ
20 kΩ	↻ 25 kΩ	50 kΩ	100 kΩ	200 kΩ	↻ 250 kΩ	500 kΩ	1 MΩ	2 MΩ	↻ 5 MΩ

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.

↻ : Semi-standard

ELECTRICAL CHARACTERISTICS

Nominal resistance range	10 Ω ~ 5 MΩ
Total resistance tolerance	± 10 %
Power ratings	0.75 W (70 °C) 0 W (125 °C)
Resistance law	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 ~ +125 °C
Temp. coefficient	10 Ω, 20Ω, 5 MΩ : ± 250 ppm/°C maximum 50 Ω ~ 2 MΩ : ± 100 ppm/°C maximum
Insulation resistance	1000 MΩ 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) minimum
Rotational life	200 cycles 10 Ω ~ 200Ω [ΔR/R ≤ ± (0.5 Ω + 3 %)] 500 Ω ~ 5 MΩ [ΔR/R ≤ ± (0.5 Ω + 2 %)]
Terminal strength	20 N {2.04 kgf} minimum (Tensile strength)
Thrust to rotor	10 N {1.02 kgf} minimum
Solderability	235 °C, 2 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 %RH), 10 cycles, 240 h	[ΔR/R ≤ 1 %]
Shock	981 m/s ² , 6 ms 6 directions for 3 times each	[ΔR/R ≤ 1 %] [S.S. ≤ 1 %]
Vibration	Amplitude of 1.52 mm or Acceleration of 196 m/s ² , 10~2000 Hz, 3 directions, 12 times each	
Load life	70 °C, 0.75 W, 1000 h	[ΔR/R ≤ 2 %] [S.S. ≤ 1 %]
Low temp. operation	-55 °C, 2 h	[ΔR/R ≤ 1 %] [S.S. ≤ 2 %]
High temp. exposure	125 °C, 250 h	[ΔR/R ≤ 2 %] [S.S. ≤ 2 %]
Immersion seal	85 °C, 60 s	No leaks (No continuous bubbles)
Soldering heat	350 °C, 3 s	[ΔR/R ≤ 1 %]

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

RJ-13

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MAXIMUM INPUT RATINGS

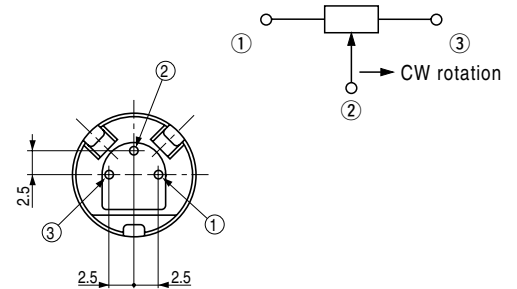
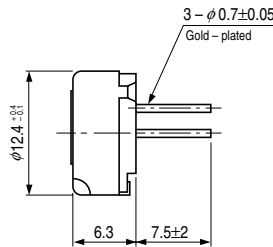
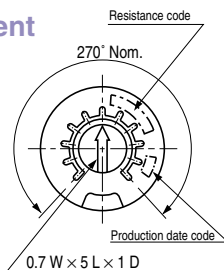
Nominal resistance value (Ω)	Resistance code	Maximum input voltage (V)	Maximum wiper current (mA)
↪ 10	100	1.00	100
↪ 20	200	2.00	100
↪ 50	500	5.00	100
↪ 100	101	8.66	86.6
↪ 200	201	12.2	61.0
↪ 500	501	19.4	38.8
↪ 1 k	102	27.4	27.4
↪ 2 k	202	38.7	19.3
↪ 5 k	502	61.2	12.2
↪ 10 k	103	86.6	8.66
↪ 20 k	203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

↪ : Semi-standard

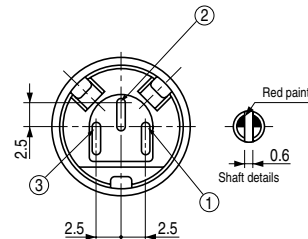
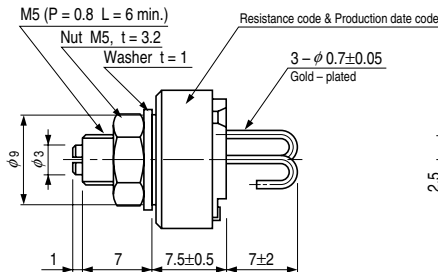
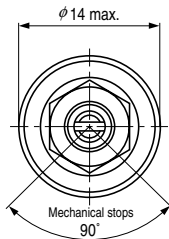
OUTLINE DIMENSIONS

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

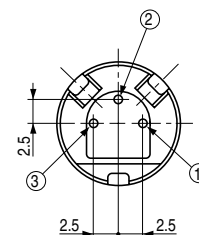
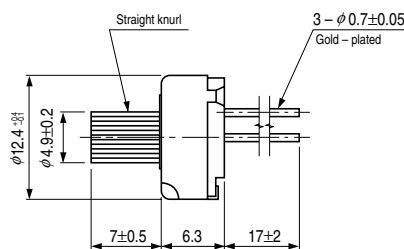
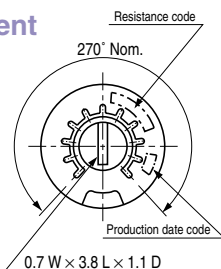
RJ-13P Top adjustment



RJ-13B Panel mount



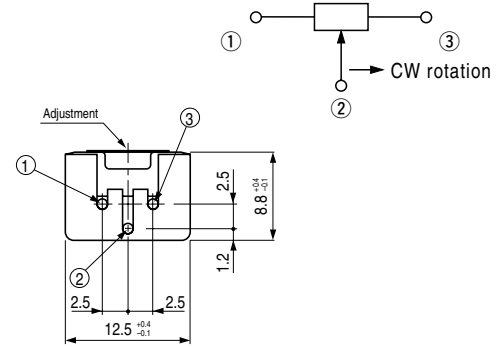
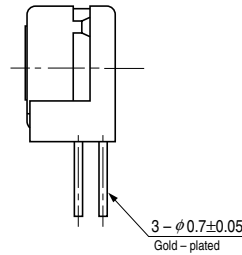
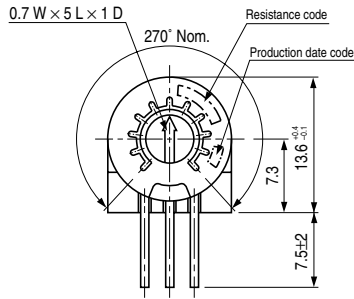
RJ-13PR Top adjustment with knob



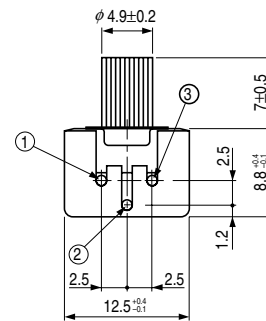
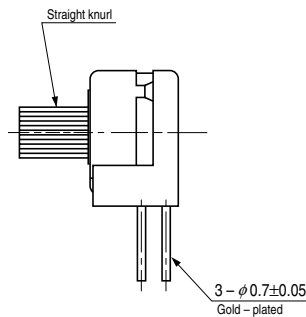
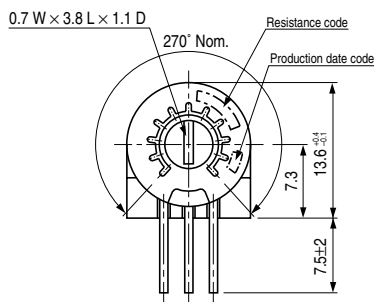
OUTLINE DIMENSIONS

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

● **RJ-13S**
Side adjustment



● **RJ-13SR**
Side adjustment with knob



PACKAGING SPECIFICATIONS

<Bulk packaging specifications>

- Unit of bulk in vinyl bag packaging is 25 pcs. per pack.
Only that of RJ-13P is 50 pcs. per pack.
- Boxing of bulk in vinyl bags is performed with 50 pcs. per box.
Only that of RJ-13P is 100 pcs. per box.