

16, 22 TURNS WIREWOUND TRIMMERS

 μ -8/ μ -11

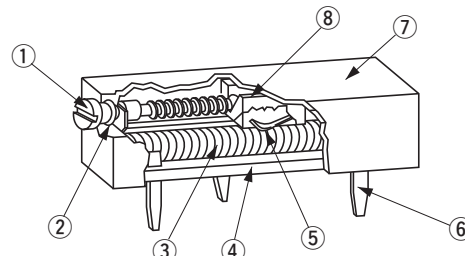
RoHS compliant



FEATURES

- Low temperature coefficient of resistance
- Low contact resistance

INTERNAL STRUCTURE

 μ -8

	Part name	Material	Flammability
①	Screw shaft	Brass, Nickel-plated	—
②	“O” ring	Silicone rubber	UL-94HB
③	Resistive element	—	—
④	Base	DAP	UL-94HB
⑤	Wiper	Copper, Palladium-plated	—
⑥	Terminal pin	Nickel, Gold-plated	
⑦	Housing	DAP	UL-94HB
⑧	Slider block	Polyoxymethylene	

PART NUMBER DESIGNATION

 μ - 11 P B 20 Ω
 (1 2 1 1)

Series name

 μ -8 : 19.0 × 4.2 × 6.7 mm
(1208) μ -11 : 31.8 × 7.0 × 8.2 mm
(1211)

Resistance value

Product shape (Shape of terminal)

P : Through hole pins
 PB : Panel mount (Through hole pins)
 L : Flexible lead
 LB : Panel mount (Flexible lead)

※ “ μ ” may be replaced by 12 for type writing conveniences.

LIST OF PART NUMBERS

Series name	Product shape			
	P	L	PB	LB
μ -8 (1208)	μ -8P (1208P)			
μ -11 (1211)	μ -11P (1211P)	➡ μ -11L (1211L)	μ -11PB (1211PB)	μ -11LB (1211LB)

☐ : Not manufactured

※ Verify the above part numbers <Nominal resistance values> (Fig. 1) when placing orders.

<Nominal resistance values>

Fig.1

	μ -8 (1208)	μ -11 (1211)			
	P	P	L	PB	LB
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		●	↷ ●	●	↷ ●

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

μ -8/ μ -11 WIREWOUND TRIMMERS

ELECTRICAL CHARACTERISTICS

	μ -8 (1208)	μ -11 (1211)
Nominal resistance range	10 Ω ~ 50 k Ω	10 Ω ~ 100 k Ω
Resistance tolerance	$\pm 10\%$	$\pm 5\%$
Power ratings ※1	0.5 W (70 °C) 0 W (120 °C)	0.75 W (70 °C) 0 W (120 °C)
Electrical continuity	Continuous for full mechanical range	
End resistance	2 % or 1 Ω , whichever is greater	
Absolute minimum resistance	0.5 %	0.25 %
	Or 1 Ω , whichever is greater	
Resolution	1.66 ~ 0.19 %	1.43 ~ 0.12 %
Peak noise	100 Ω (ENR) maximum	
Operating temp. range	-55 ~ 120 °C	
Temp. coefficient	$\pm 50 \times 10^{-6}/^{\circ}\text{C}$ maximum	
Insulation resistance	1000 M Ω minimum (DC500 V)	
Dielectric strength	900 Vrms, 1 min (Room conditions)	
Net weight	Approx. 1.08 g	Approx. 3.19 g (μ -11P) Approx. 3.49 g (μ -11L) Approx. 9.13 g (μ -11PB) Approx. 9.31 g (μ -11LB)

※1 Rated power is given for the maximum input voltage (V) and maximum wiper current (mA) for the resistance value.

RESOLUTION CHARACTERISTICS

Nominal resistance values (Ω)	Resolution (%)	
	μ -8 (1208)	μ -11 (1211)
10	1.66	1.43
20	1.35	1.13
50	1.18	0.91
100	0.90	0.76
200	0.73	0.57
500	0.52	0.49
1 k	0.62	0.51
2 k	0.47	0.39
5 k	0.39	0.28
10 k	0.28	0.25
20 k	0.22	0.18
25 k	0.21	0.16
50 k	0.19	0.13
100 k	—	0.12

MECHANICAL CHARACTERISTICS

	μ -8 (1208)	μ -11 (1211)
Mechanical turn	16 turns	22 turns
Operating torque	7.85 mN·m {80 gf·cm} maximum	56.88 mN·m {580 gf·cm} maximum
Mecahanical stop	Clutch action	
Rotational life	200 cycles [$\Delta R/R \leq 2\%$]	
Terminal strength	8.89 N {907 gf} minimum (Tensile strength MIL-R-27208)	

{ } : Reference only

ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions	Specifications
Thermal shock	-65 ~ 125 °C	[$\Delta R/R \leq 1\% + 0.05 \Omega$] [S.S. $\leq 1\% + \text{Resolution}$]
Humidity	80 ~ 98 %, 240 h	[$\Delta R/R \leq 1\% + 0.05 \Omega$]
Shock	981 m/s ²	[$\Delta R/R \leq 1\% + 0.05 \Omega$] [S.S. $\leq 1\% + \text{Resolution}$]
Vibration	Acceleration 196 m/s ² , 10 ~ 2000 Hz	
Load life	70 °C (Full load), 1000 h	[S.S. $\leq 2\% + \text{Resolution}$]
Low temp. operation	-55 °C, 2 h	[$\Delta R/R \leq 1\% + 0.05 \Omega$] [S.S. $\leq 1\% + \text{Resolution}$]
High temp. exposure	120 °C, 250 h	
Immersion seal	85 °C	No leaks
Salt spray	No corrosion	—
Soldering heat	350 °C, 3 s	—

$\Delta R/R$: Change in total resistance
S.S. : Setting stability

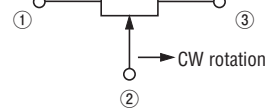
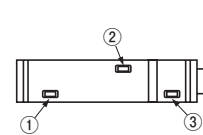
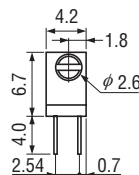
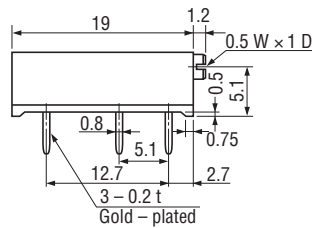
μ -8/ μ -11 WIREWOUND TRIMMERS

■ OUTLINE DIMENSIONS

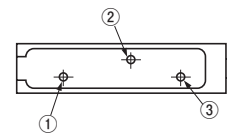
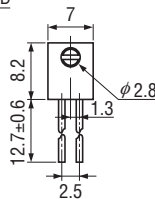
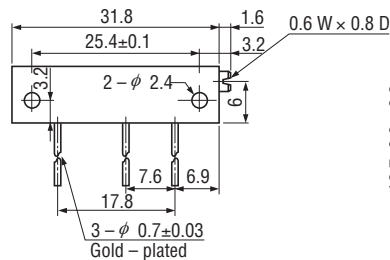
Unless otherwise specified, tolerance : ± 0.2 (Unit : mm)

(Except for adhesive thickness)

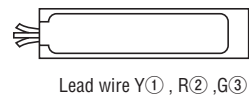
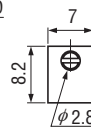
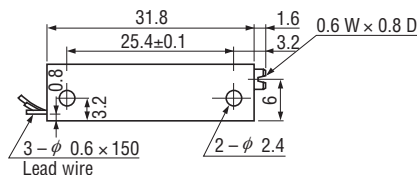
● μ -8P (1208P) Through hole pins



● μ -11P (1211P) Through hole pins

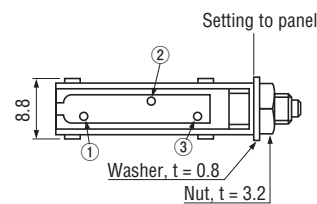
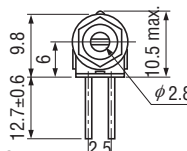
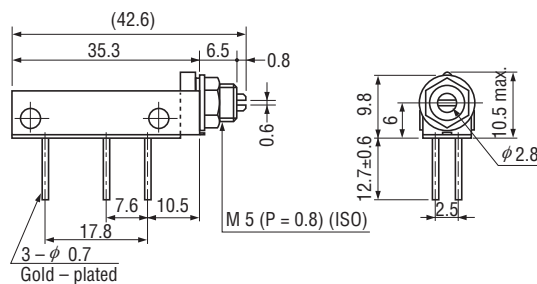


● μ -11L (1211L) Flexible lead



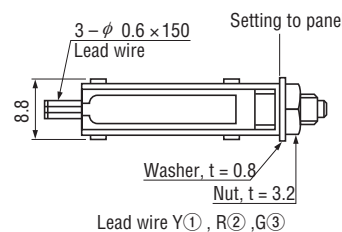
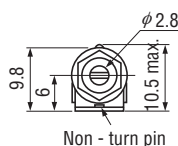
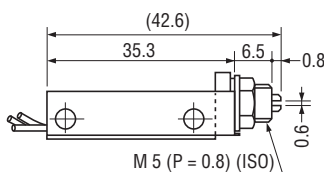
Lead wire Y①, R②, G③

● μ -11PB (1211PB) Panel mount (Through hole pins)



μ -11PB, LB mounting
dimensions (suggested)

● μ -11LB (1211LB) Panel mount (Flexible lead)



Lead wire Y①, R②, G③

