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# 16, 22 TURNS WIREWOUND TRIMMERS

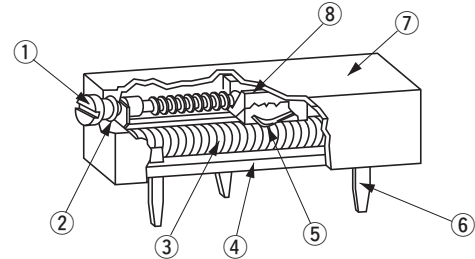
# μ-8/μ-11

RoHS compliant



## 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	—

## FEATURES

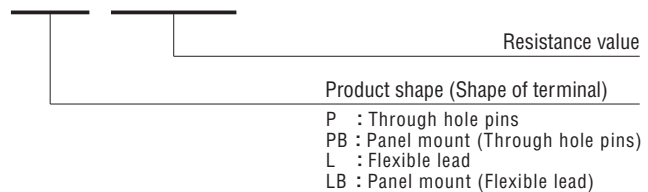
- Low temperature coefficient of resistance
- Low contact resistance

## PART NUMBER DESIGNATION

μ - 1 1      P B 2 0 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)

※ “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 kΩ	●	●	☞	●	☞	
2 kΩ	●	●	☞	●	☞	
5 kΩ	●	●	☞	●	☞	
10 kΩ	●	●	☞	●	☞	
20 kΩ	●	●	☞	●	☞	
25 kΩ	☞	☞	☞	☞	☞	
50 kΩ	●	●	☞	●	☞	
100 kΩ	☐	●	☞	●	☞	

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

# $\mu$ -8/ $\mu$ -11 WIREWOUND TRIMMERS

## ELECTRICAL CHARACTERISTICS

	$\mu$ -8 (1208)	$\mu$ -11 (1211)
Nominal resistance range	10 $\Omega$ ~ 50 k $\Omega$	10 $\Omega$ ~ 100 k $\Omega$
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 $\Omega$ , whichever is greater	
Absolute minimum resistance	0.5 %	0.25 %
	Or 1 $\Omega$ , whichever is greater	
Resolution	1.66 ~ 0.19 %	1.43 ~ 0.12 %
Peak noise	100 $\Omega$ (ENR) maximum	
Operating temp. range	-55 ~ 120 °C	
Temp. coefficient	$\pm 50 \times 10^{-6}/^{\circ}\text{C}$ maximum	
Insulation resistance	1000 M $\Omega$ minimum (DC500 V)	
Dielectric strength	900 Vrms, 1 min (Room conditions)	
Net weight	Approx. 1.08 g	Approx. 3.19 g ( $\mu$ -11P) Approx. 3.49 g ( $\mu$ -11L) Approx. 9.13 g ( $\mu$ -11PB) Approx. 9.31 g ( $\mu$ -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 ( $\Omega$ )	Resolution (%)	
	$\mu$ -8 (1208)	$\mu$ -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

	$\mu$ -8 (1208)	$\mu$ -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
Mechanical 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 <sup>2</sup>	[ $\Delta R/R \leq 1\% + 0.05 \Omega$ ] [S.S. $\leq 1\% + \text{Resolution}$ ]
Vibration	Acceleration 196 m/s <sup>2</sup> , 10 ~ 2000 Hz	[ $\Delta R/R \leq 1\% + 0.05 \Omega$ ] [S.S. $\leq 1\% + \text{Resolution}$ ]
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	[ $\Delta R/R \leq 1\% + 0.05 \Omega$ ] [S.S. $\leq 1\% + \text{Resolution}$ ]
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



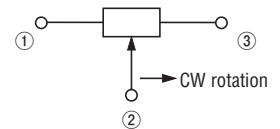
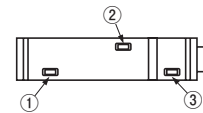
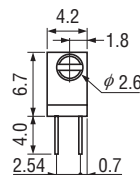
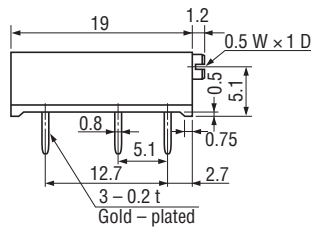
# μ-8/μ-11 WIREWOUND TRIMMERS

## OUTLINE DIMENSIONS

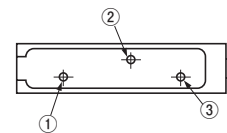
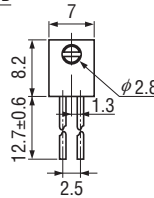
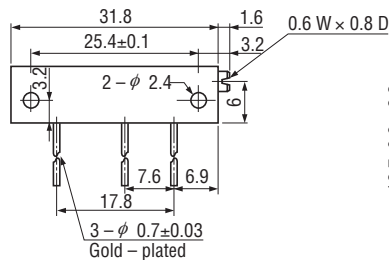
Unless otherwise specified, tolerance : ± 0.2 (Unit : mm)

(Except for adhesive thickness)

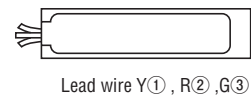
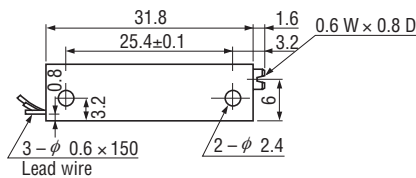
### ● μ-8P (1208P) Through hole pins



### ● μ-11P (1211P) Through hole pins

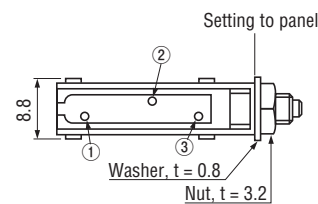
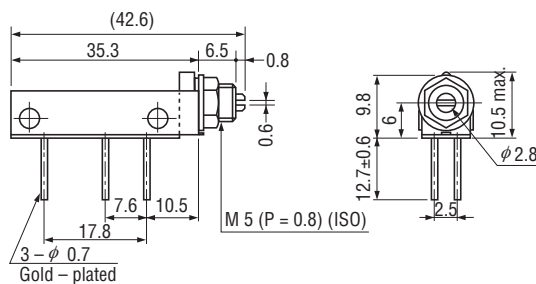


### ● μ-11L (1211L) Flexible lead



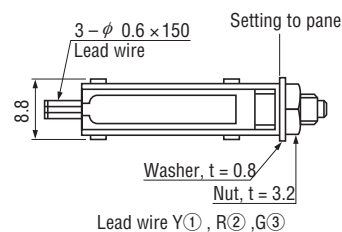
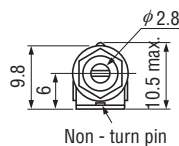
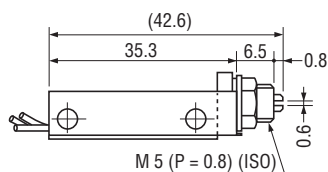
Lead wire Y①, R②, G③

### ● 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

