

## SINGLE TURN WIREWOUND TRIMMERS

 $\lambda$ -6/ $\lambda$ -13

## RoHS compliant



## FEATURES

- Low temperature coefficient of resistance
- Low contact resistance

INTERNAL STRUCTURE  
 $\lambda$ -13T

|   | Part name         | Material                       | Flammability |
|---|-------------------|--------------------------------|--------------|
| ① | Resistive element | —                              | —            |
| ② | “O” ring          | Silicone rubber                | UL-94HB      |
| ③ | Terminal pin      | Nickel, Gold-plated            | —            |
| ④ | Base              | DAP                            | UL-94HB      |
| ⑤ | Wiper             | Copper alloy, Palladium-plated | —            |
| ⑥ | Wheel             | Polyoxymethylene               | UL-94HB      |
| ⑦ | Cover             | Stainless steel                | —            |

## PART NUMBER DESIGNATION

 $\lambda$  - 6      T 1 0  $\Omega$   
 ( 1 1 0 6 )

## Series name

 $\lambda$ -6 :  $\phi$  6.6 mm       $\lambda$ -13 :  $\phi$  13.5 mm  
 (1106)      (1113)

※ “ $\lambda$ ” may be replaced by 11 for type writing conveniences.

## Product shape

|                     |                                |
|---------------------|--------------------------------|
| T : Top adjustment  | TR : Top adjustment with knob  |
| S : Side adjustment | SR : Side adjustment with knob |
| F : Rear adjustment | FR : Rear adjustment with knob |
| B : Panel mount     |                                |

Resistance value

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

# λ-6/λ-13 WIREWOUND TRIMMERS

## LIST OF PART NUMBERS

| Adjustment position       | Dimension     |                  |
|---------------------------|---------------|------------------|
|                           | φ 6.6 mm      | φ 13.5 mm        |
| Top adjustment            | λ -6T (1106T) | λ -13T (1113T)   |
| Top adjustment with knob  |               | λ -13TR (1113TR) |
| Side adjustment           | λ -6S (1106S) | λ -13S (1113S)   |
| Side adjustment with knob |               | λ -13SR (1113SR) |
| Panel mount               | λ -6B (1106B) | λ -13B (1113B)   |
| Rear adjustment           | λ -6F (1106F) | λ -13F (1113F)   |
| Rear adjustment with knob |               | λ -13FR (1113FR) |

☐ : Not manufactured

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

## <Nominal resistance values>

|        | λ -6 (1106) |    |    |    | λ -13 (1113) |    |    |    |    |    |    |  |
|--------|-------------|----|----|----|--------------|----|----|----|----|----|----|--|
|        | T           | S  | B  | F  | T            | TR | S  | SR | B  | F  | FR |  |
| 10 Ω   | ●           | ●  | ↗● | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 20 Ω   | ●           | ●  | ↗● | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 50 Ω   | ●           | ●  | ↗● | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 100 Ω  | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 200 Ω  | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 500 Ω  | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 1 kΩ   | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 2 kΩ   | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 5 kΩ   | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 10 kΩ  | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 20 kΩ  | ●           | ●  | ●  | ↗● | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 25 kΩ  |             |    |    |    | ↗●           | ↗● | ↗● | ↗● | ↗● | ↗● | ↗● |  |
| 30 kΩ  | ↗●          | ↗● | ↗● | ↗● |              |    |    |    |    |    |    |  |
| 50 kΩ  |             |    |    |    | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |
| 100 kΩ |             |    |    |    | ●            | ↗● | ●  | ↗● | ●  | ↗● | ↗● |  |

Fig. 1

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

## ELECTRICAL CHARACTERISTICS

|                          | λ -6 (1106)                                                                                          | λ -13 (1113)                                                                                                                                                                                 |
|--------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal resistance range | 10 Ω ~ 30 kΩ                                                                                         | 10 Ω ~ 100 kΩ                                                                                                                                                                                |
| Resistance tolerance     | ± 10 %                                                                                               |                                                                                                                                                                                              |
| Power rating ※1          | 0.37 W (70 °C)<br>0 W (120 °C)                                                                       | 0.75 W (70 °C)<br>0 W (120 °C)                                                                                                                                                               |
| Electrical continuity    | Continuous for full mechanical range                                                                 |                                                                                                                                                                                              |
| End resistance           | 2 % or 1 Ω, whichever is greater                                                                     |                                                                                                                                                                                              |
| Resolution               | 1.42 ~ 0.14 %                                                                                        | 1.07 ~ 0.08 %                                                                                                                                                                                |
| Peak noise               | 100 Ω (ENR) maximum                                                                                  |                                                                                                                                                                                              |
| Operating temp. range    | -55 ~ 120 °C                                                                                         |                                                                                                                                                                                              |
| Temp. coefficient        | ± 50 10 <sup>-6</sup> /°C maximum                                                                    |                                                                                                                                                                                              |
| Insulation resistance    | 1000 MΩ minimum (DC500 V)                                                                            |                                                                                                                                                                                              |
| Dielectric strength      | 900 Vrms, 1 min (Room conditions)                                                                    |                                                                                                                                                                                              |
| Net weight               | Approx. 0.34 g (λ -6T)<br>Approx. 0.47 g (λ -6S)<br>Approx. 1.41 g (λ -6B)<br>Approx. 0.39 g (λ -6F) | Approx. 1.60 g (λ -13T)<br>Approx. 2.59 g (λ -13S)<br>Approx. 5.16 g (λ -13B)<br>Approx. 1.73 g (λ -13TR)<br>Approx. 2.72 g (λ -13SR)<br>Approx. 1.86 g (λ -13F)<br>Approx. 1.93 g (λ -13FR) |

## MECHANICAL CHARACTERISTICS

|                   | λ -6 (1106)                                               | λ -13 (1113)                      |
|-------------------|-----------------------------------------------------------|-----------------------------------|
| Mechanical angle  | 310 ° (1 turn)                                            |                                   |
| Operating torque  | 7.85 mN·m<br>{80 gf·cm} maximum                           | 19.61 mN·m<br>{200 gf·cm} maximum |
| Stop strength     | 49.04 mN·m<br>{500 gf·cm} minimum                         | 98.07 mN·m<br>{1 kgf·cm} minimum  |
| Rotational life   | 200 cycles [Δ R/R ≤ 2 %]                                  |                                   |
| Terminal strength | 8.89 N {907 gf} minimum<br>(Tensile strength MIL-R-27208) |                                   |

{ } : Reference only

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

# λ-6/λ-13

## WIREWOUND TRIMMERS

### ENVIRONMENTAL CHARACTERISTICS

(In accordance with MIL-R-27208)

| Test item           | Test conditions                                     | Specifications                                                                   |
|---------------------|-----------------------------------------------------|----------------------------------------------------------------------------------|
| Thermal shock       | −65 ~ 125 °C,<br>5 cycles                           | [ $\Delta R/R \leq 1\% + 0.05\Omega$ ]<br>[S.S. $\leq 1\% + \text{Resolution}$ ] |
| Humidity            | 80 ~ 98 %,<br>240 h                                 | [ $\Delta R/R \leq 1\% + 0.05\Omega$ ]                                           |
| Shock               | 981 m/s <sup>2</sup>                                | [ $\Delta R/R \leq 1\% + 0.05\Omega$ ]<br>[S.S. $\leq 1\% + \text{Resolution}$ ] |
| Vibration           | Acceleration<br>196 m/s <sup>2</sup> , 10 ~ 2000 Hz |                                                                                  |
| Load life           | 70 °C<br>(Full load), 1000 h                        | [ $\Delta R/R \leq 2\%$ ]<br>[S.S. $\leq 2\% + \text{Resolution}$ ]              |
| Low temp. operation | −55 °C, 2 h                                         | [ $\Delta R/R \leq 1\% + 0.05\Omega$ ]<br>[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

### RESOLUTION CHARACTERISTICS

| Nominal resistance values (Ω) | Resolution (%) |              |
|-------------------------------|----------------|--------------|
|                               | λ -6 (1106)    | λ -13 (1113) |
| 10                            | 1.42           | 1.07         |
| 20                            | 1.14           | 0.83         |
| 50                            | 0.91           | 0.71         |
| 100                           | 0.74           | 0.57         |
| 200                           | 0.56           | 0.42         |
| 500                           | 0.54           | 0.35         |
| 1 k                           | 0.48           | 0.40         |
| 2 k                           | 0.34           | 0.27         |
| 5 k                           | 0.28           | 0.20         |
| 10 k                          | 0.22           | 0.19         |
| 20 k                          | 0.17           | 0.12         |
| 25 k                          | —              | 0.11         |
| 30 k                          | 0.14           | —            |
| 50 k                          | —              | 0.10         |
| 100 k                         | —              | 0.08         |

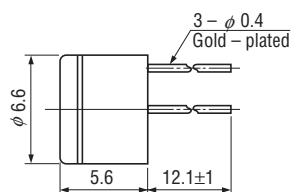
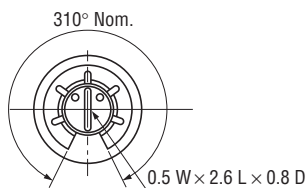
# λ-6/λ-13

## WIREWOUND TRIMMERS

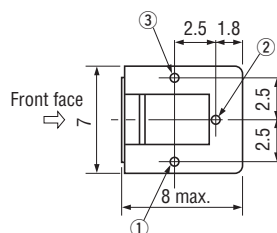
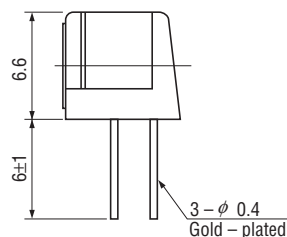
### OUTLINE DIMENSIONS

Unless otherwise specified, tolerance :  $\pm 0.2$  (Unit : mm)

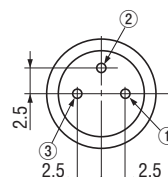
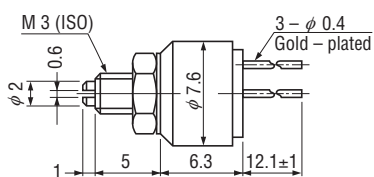
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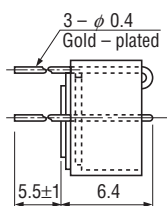
#### ● λ-6S (1106S) Side adjustment



#### ● λ-6B (1106B) Panel mount



#### ● λ-6F (1106F) Rear adjustment



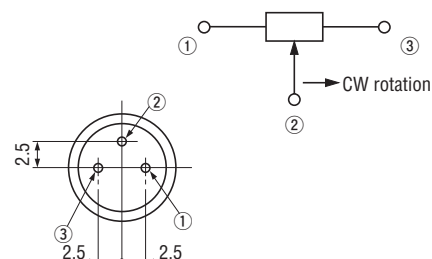
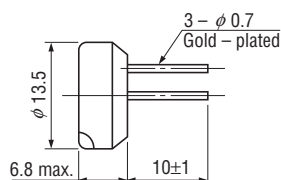
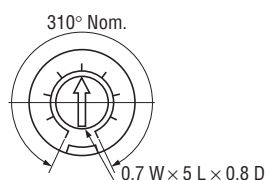
# λ-6/λ-13

## WIREWOUND TRIMMERS

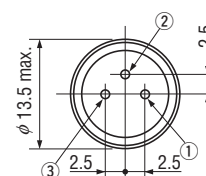
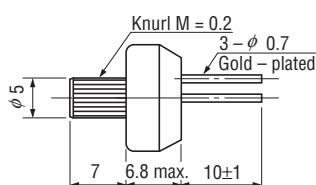
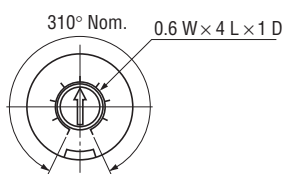
### OUTLINE DIMENSIONS

Unless otherwise specified, tolerance :  $\pm 0.2$  (Unit : mm)

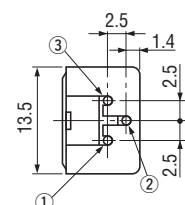
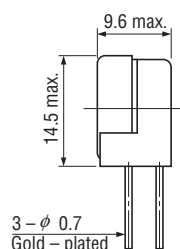
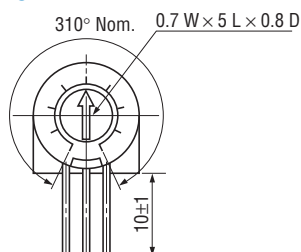
#### ● λ-13T (1113T) Top adjustment



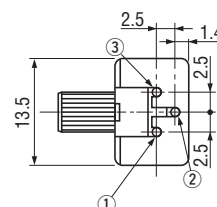
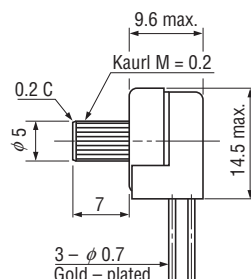
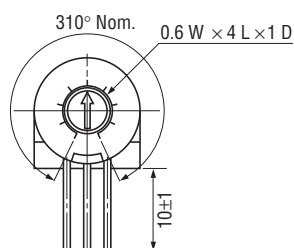
#### ● λ-13TR (1113TR) Top adjustment with knob



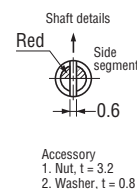
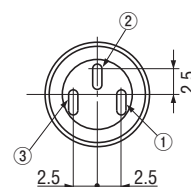
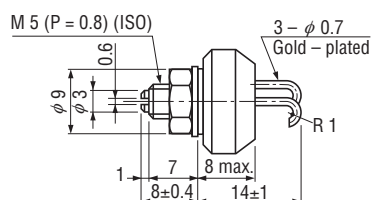
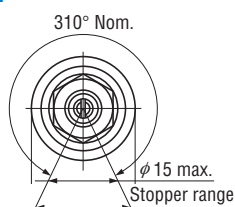
#### ● λ-13S (1113S) Side adjustment



#### ● λ-13SR (1113SR) Side adjustment with knob



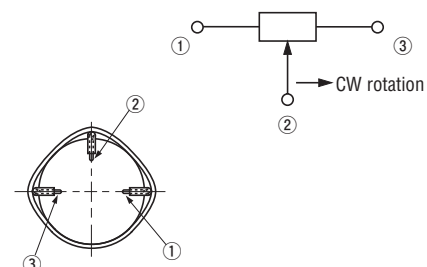
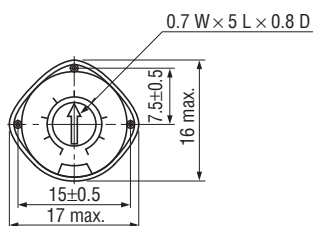
#### ● λ-13B (1113B) Panel mount



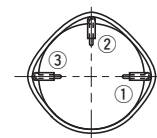
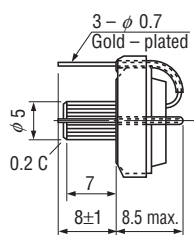
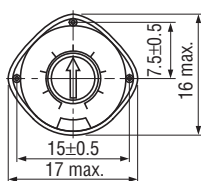
# $\lambda$ -6/ $\lambda$ -13 WIREWOUND TRIMMERS

## ■ OUTLINE DIMENSIONS

### ● $\lambda$ -13F (1113F) Rear adjustment



### ● $\lambda$ -13FR (1113FR) Rear adjustment with knob



Unless otherwise specified, tolerance :  $\pm 0.2$  (Unit : mm)

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

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