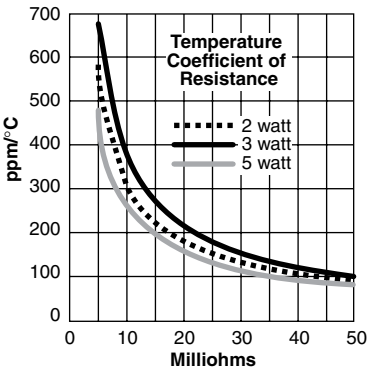
# 10 Series
## Axial Wire Element Current Sense

RoHS Compliant

## FEATURES

- Ideal for current sensing applications
- 1% Tolerance standard, others available
- Fixed resistance measuring point "M"
- Low inductance (non-inductive below 0.25Ω)
- RoHS compliant product available; add "E" suffix to part number to specify




## SPECIFICATIONS

**Material**

**Terminals:** Solder-plated copper terminals or copper clad steel depending on ohmic value. RoHS solder composition is 96% Sn, 3.5% Ag, 0.5% Cu

**Encapsulation:** Silicone molding compound.

**Derating**

Linearly from 100% @ +25°C to 0% @ +275°C.

**Electrical**

**Tolerance:** ±1% standard. Others available.

**Power rating:** Based on 25°C free air rating.

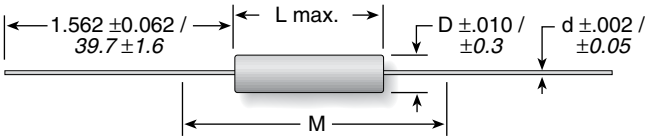
**Overload:** 5 times rated wattage for 5 seconds.

**Dielectric withstanding voltage:** 1000 VRMS for 3 and 5 watt; 500 VRMS for 2 watt.

**Insulation resistance:** Not less than 1000MΩ.

**Thermal EMF:** Less than ±2μV/°C.

**Temperature range:** -55°C to 275°C.




## Two Terminal Axial

| Series | Wattage | Ohms | Dimensions (in. / *mm*) Length | Diam. | "M" | Lead ga. |
|---|---|---|---|---|---|---|
| 12 | 2 | 0.005-0.10 | 0.416 / *10.6* | 0.094 / *2.4* | 1.156 / *29.4* | 20 |
| 13 | 3 | 0.005-0.20 | 0.570 / *14.5* | 0.205 / *5.2* | 1.310 / *33.3* | 20 |
| 15 | 5 | 0.005-0.25 | 0.935 / *23.8* | 0.330 / *8.4* | 1.675 / *42.5* | 18 |

## FEATURES

- Ideal for current sensing applications
- 1% Tolerance standard, others available
- Low Inductance (non-inductive below 0.25Ω)
- Tinned Copper Leads
- RoHS Compliant

## SPECIFICATIONS

**Material**

**Terminals:** Tinned Copper Leads

**Encapsulation:** Silicone Molding Compound

**Derating**

Linearly from 100% at +25˚C to 0% at +200˚C

**Electrical**

**Resistance Range:** 0.005Ω to 0.100Ω standard

**Standard Tolerance:** ±1%; others available

**Operating Temperature Range:** -55˚C to +200˚C

**Temperature Coefficient of Resistance,** 0˚C to 85˚C:
≥0.015Ω: ±50 PPM/˚C
<0.015Ω: ±100 PPM/˚C

**Environmental Performance:** Exceeds the requirements of MIL-PRF-49465

**Power rating:** Based on 25˚C free air rating.

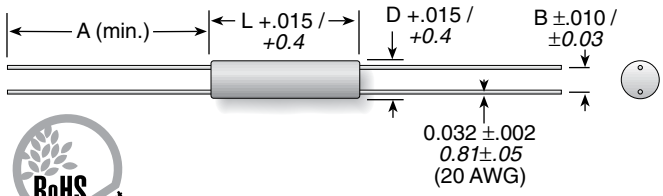
**Overload:** 5 times rated wattage for 5 seconds

**Max. Current:** 22 amps

**Dielectric withstanding voltage:** 1500 VAC for 4.5 and 7 watt
1000 VAC for 3 watt

**Insulation resistance:** Not less than 1000 MΩ

**Thermal EMF:** Less than ±2μV/˚C




RoHS Compliant

## Four Terminal Axial

| Series | Wattage | Ohms | Dimensions (in. / *mm*) Length | Diam. | A | B |
|---|---|---|---|---|---|---|
| 13 | 3 | 0.005-0.1 | 0.625/*15.9* | 0.200/*5.08* | 1.25/*31.8* | 0.125/*3.18* |
| 14 | 4.5 | 0.005-0.1 | 1.060/*26.9* | 0.335/*8.51* | 1.50/*38.1* | 0.200/*5.08* |
| 17 | 7 | 0.005-0.1 | 1.500/*38.1* | 0.375/*9.53* | 1.50/*38.1* | 0.200/*5.08* |

Ohmite's Four-terminal Current-sense Resistors are specifically designed for low-resistance applications requiring the highest accuracy and temperature stability. This four-terminal version of Ohmite's 10 Series resistor is specially designed for use in a Kelvin configuration, in which a current is applied through two opposite terminals and sensing voltage is measured across the other two terminals .

The Kelvin configuration enables the resistance and temperature coefficient of the terminals to be effectively eliminated. The four terminal design also results in a lower temperature coefficient of resistance and lower self-heating drift which may be experienced on two-terminal resistors. The requirement to connect to the terminals at precise test points is eliminated, allowing for tighter tolerancing on the end application.

## STANDARD PART NUMBERS FOR 10 SERIES

| Ohmic value | 2 Terminal 2 watt | 3 watt | 5 watt | 4 Terminal 3 watt | 4.5 watt | 7 watt |
|---|---|---|---|---|---|---|
| **0.005** | 12FR005 | 13FR005 | 15FR005 | 13FPR005E | 14FPR005E | 17FPR005E |
| **0.010** | 12FR010 | 13FR010 | 15FR010 | 13FPR010E | 14FPR010E | 17FPR010E |
| **0.015** | 12FR015 | 13FR015 | 15FR015 | 13FPR015E | 14FPR015E | 17FPR015E |
| **0.020** | 12FR020 | 13FR020 | 15FR020 | 13FPR020E | 14FPR020E | 17FPR020E |
| **0.025** | 12FR025 | 13FR025 | 15FR025 | 13FPR025E | 14FPR025E | 17FPR025E |
| **0.030** | 12FR030 | 13FR030 | 15FR030 | 13FPR030E | 14FPR030E | 17FPR030E |
| **0.040** | 12FR040 | 13FR040 | 15FR040 | 13FPR040E | 14FPR040E | 17FPR040E |
| **0.050** | 12FR050 | 13FR050 | 15FR050 | 13FPR050E | 14FPR050E | 17FPR050E |
| **0.060** | 12FR060 | 13FR060 | 15FR060 | 13FPR060E | 14FPR060E | 17FPR060E |
| **0.070** | 12FR070 | 13FR070 | 15FR070 | 13FPR070E | 14FPR070E | 17FPR070E |
| **0.075** | | | | 13FPR075E | 14FPR075E | 17FPR075E |
| **0.080** | 12FR080 | 13FR080 | 15FR080 | 13FPR080E | 14FPR080E | 17FPR080E |
| **0.090** | 12FR090 | 13FR090 | 15FR090 | 13FPR090E | 14FPR090E | 17FPR090E |
| **0.100** | 12FR100 | 13FR100 | 15FR100 | 13FPR100E | 14FPR100E | 17FPR100E |
| **0.150** | | 13FR150 | 15FR150 | | | |
| **0.200** | | 13FR200 | 15FR200 | | | |
| **0.250** | | | 15FR250 | | | |

## ORDERING INFORMATION

Wattage — Terminals: Blank = 2 terminals, P = 4 terminals — RoHS Compliant

**1 3 F P R 0 5 0 E**

- **10 Series**
- **Tolerance:** F = 1%, D = 0.5%
- **Ohm Value:** Example: R050 = 0.05Ω

Check product availability at **www.ohmite.com**

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001
Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

**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:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:
moschip.ru
moschip.ru_4
moschip.ru_6
moschip.ru_9