

# 14A Series

## Alumina Body Current Sense



### FEATURES

- Ideal for current sensing applications
- 1 % Tolerance standard
- Fixed resistace measuring point
- Low inductance
- RoHS compliant

14AFR Current Sense resistors feature a high temperature ceramic body which affords the user higher power densities than similar products which utilize silicone based epoxy molding compounds. The internal construction involves a straight, low inductance, 3-piece welded metal element at 1% tolerance. This series is stocked in 9 popular resistance values for easy accessibility.

### SERIES SPECIFICATIONS

| Series | Wattage | Ohms        |
|--------|---------|-------------|
| 14A    | 4       | 0.004-0.051 |

### CHARACTERISTICS

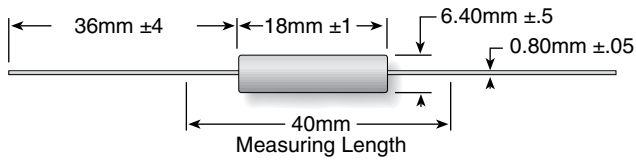
|                                        |                                                                                                                                                                                         |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Terminals</b>                       | Solder-plated copper terminals or copper clad steel depending on ohmic value.                                                                                                           |
| <b>Encapsulation</b>                   | Ceramic cased body                                                                                                                                                                      |
| <b>Derating</b>                        | Linearly from 4W@70°C to 0W@250°C                                                                                                                                                       |
| <b>Max.Voltage</b>                     | $\sqrt{(P \times R)}$ RMS                                                                                                                                                               |
| <b>Climatic Category</b>               | 55/200/56                                                                                                                                                                               |
| <b>TCR</b>                             | Varies from +150 to +1100ppm/°C based on resistance value. TCR increases as resistance value reduces from 51 to 4milliohms. TCR is tested as per IEC Specification 115-1 Clause 4.8.4.2 |
| <b>Tolerance</b>                       | ±1 % standard. Others available.                                                                                                                                                        |
| <b>Power rating</b>                    | 4W@70°C                                                                                                                                                                                 |
| <b>Dielectric withstanding voltage</b> | 1000 VRMS for 3 and 5 watt; 500 VRMS for 2 watt.                                                                                                                                        |
| <b>Insulation resistance</b>           | Not less than 1000M $\Omega$                                                                                                                                                            |
| <b>Thermal EMF</b>                     | Less than $\pm 2\mu V/^{\circ}C$ .                                                                                                                                                      |
| <b>Temperature range</b>               | -55°C to 275°C.                                                                                                                                                                         |

(continued)

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### DIMENSIONS



(mm/in.)

| Series | Wattage | Length   | Diam.      | "M"      | Lead       |
|--------|---------|----------|------------|----------|------------|
| 14A    | 4       | 18/0.709 | 6.40/0.252 | 40/1.575 | 0.80/0.031 |

### PERFORMANCE CHARACTERISTICS

| Test                      | Condition                                                      | Maximum $\Delta R$ |
|---------------------------|----------------------------------------------------------------|--------------------|
| Endurance at Rated Power  | 1000hrs Test                                                   | $\Delta R < 5\%$   |
| Terminal Strength         | Pull Strength of 50N for 10sec, IEC115-1, Clause 4.16 Test Ua1 |                    |
| Solderability             | 95% Coverage as per MIL STD 202F, Test 208                     |                    |
| Resistance to Solder Heat | 260°C for 10sec as per IEC115-1, Clause 4.18                   | $\Delta R < 0.5\%$ |
| Long Term Damp Heat       | 90-95% RH @40°C for 56 Days, IEC115-1, Clause 4.24             | $\Delta R < 5\%$   |
| Climatic Sequence         | As per IEC 115-1, Clause 4.23                                  | $\Delta R < 5\%$   |
| Overload                  | 5 times rated wattage for 5 seconds                            |                    |

### ORDERING INFORMATION

Wattage | A = Alumina Molded Body | RoHS Compliant  
**1 4 A F R 0 5 1 E**  
 10 Series | Tolerance F = 1% | Ohm Value Example: R050 = 0.05 $\Omega$

#### Standard part numbers

| Ohmic value | Part Number |
|-------------|-------------|
| 0.004       | 14AFR004E   |
| 0.005       | 14AFR005E   |
| 0.008       | 14AFR008E   |
| 0.010       | 14AFR010E   |
| 0.015       | 14AFR015E   |
| 0.022       | 14AFR022E   |
| 0.033       | 14AFR033E   |
| 0.047       | 14AFR047E   |
| 0.051       | 14AFR051E   |