

# KAL Series

Aluminum Housed Surface Mount Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

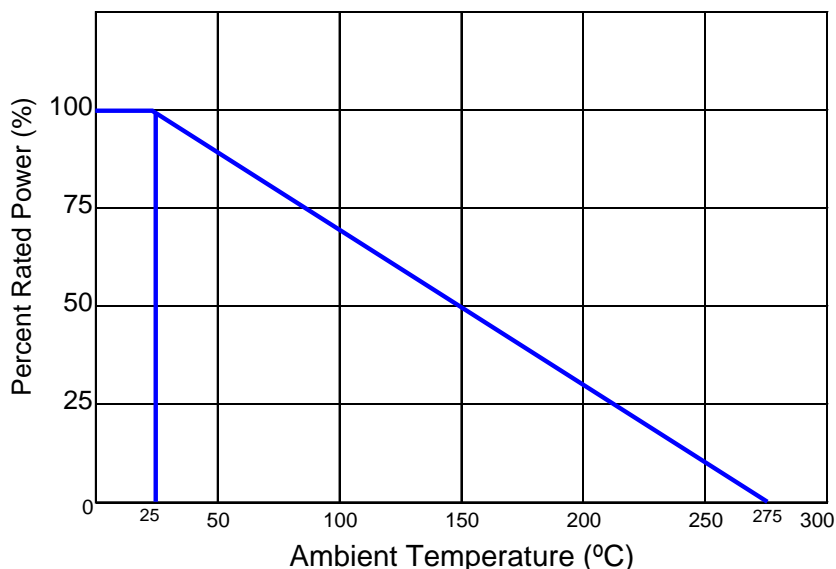
- Features:
- Aluminum housing for maximum heat dissipation
  - Complete welded construction
  - 10-50W tinned copper terminals
  - Centerless ground steatite or alumina cores
  - Molded epoxy body for heat transfer
  - Non-inductive winding available (NKAL)
  - 100–250W threaded terminals
  - RoHS compliant / lead-free

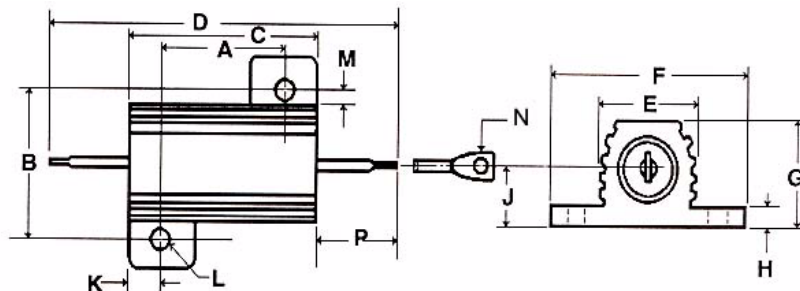


| Electrical Specifications |               |                             |      |                                 |  |                               |           |              |
|---------------------------|---------------|-----------------------------|------|---------------------------------|--|-------------------------------|-----------|--------------|
| Type / Code               | MIL-R-26 Ref. | Power Rating (Watts @ 25°C) |      | Dielectric Withstanding Voltage | TCR (ppm/°C)   | Ohmic Range (Ω) and Tolerance |           |              |
|                           |               | Commercial                  | MIL  |                                 |  | 0.1%                          | 0.5%      | 1%, 3%, 5%   |
| KAL10                     | RE-65         | 12.5W                       | 10W  | 1,000 VAC                       | $<0.1\Omega = \pm 100\text{ppm}$<br>$0.1\Omega - 9.9\Omega = \pm 50\text{ppm}$<br>$10\Omega - 49\Omega = \pm 30\text{ppm}$<br>$>50\Omega = \pm 20\text{ppm}$ | 1 - 1K                        | 1 - 1K    | 0.05 - 30K   |
| KAL25                     | RE-70         | 25W                         | 20W  | 3,000 VAC                       |  |                               |           | 0.05 - 51.1K |
| KAL50                     | RE-75         | 50W                         | 30W  | 2,500 VAC                       |  | -                             | 0.4 - 50K | 0.05 - 150K  |
| KAL100                    | RE-77         | 100W                        | 75W  |                                 |  |                               |           | 0.1 - 3K     |
| KAL250                    | RE-80         | 250W                        | 120W |                                 |  |                               |           | 0.1 - 3K     |

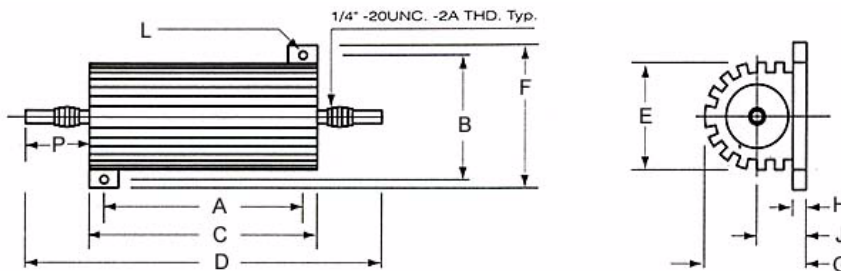
| Performance Characteristics |  |   |
|-----------------------------|--|---|
| Test                        | Test Conditions  | Results                                 |
| Short time Overload         | 5x wattage rating - 5 seconds  | $\Delta R \pm (0.5\% + 0.05\Omega)$ MAX |
| Moisture resistance         | Temp 40°C moisture 95% CDC 100V for 500 hours  | $\Delta R \pm (0.5\% + 0.05\Omega)$ MAX |
| Load life                   | Load rating (chassis is mounted)<br>1.5 hours ON, 0.5 hours OFF. Repeated for 1000 hours | $\Delta R \pm (1.5\% + 0.05\Omega)$ MAX |

Power Derating Curve:

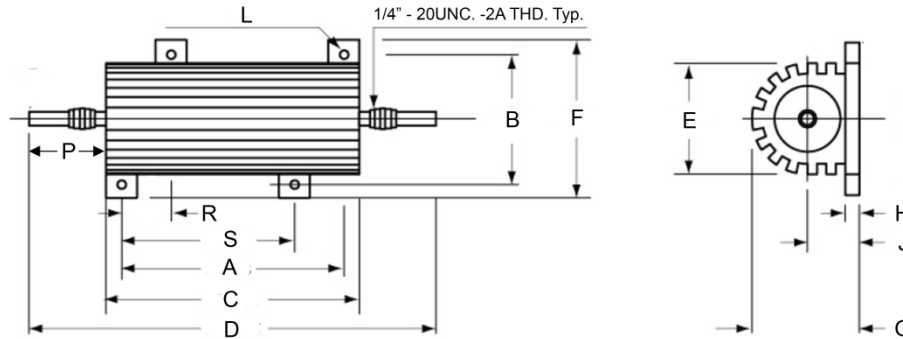




| Mechanical Specifications - KAL10/KAL25/KAL50 |               |               |               |               |               |               |               |        |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Type  | A             | B             | C             | D             | E             | F             | G             | Unit   |
| KAL10   | 0.562 ± 0.005 | 0.625 ± 0.005 | 0.750 ± 0.031 | 1.375 ± 0.062 | 0.420 ± 0.015 | 0.800 ± 0.015 | 0.390 ± 0.031 | inches |
|   | 14.27 ± 0.13  | 15.88 ± 0.13  | 19.05 ± 0.79  | 34.93 ± 1.57  | 10.67 ± 0.38  | 20.32 ± 0.38  | 9.91 ± 0.79   | mm     |
| KAL25   | 0.719 ± 0.005 | 0.781 ± 0.005 | 1.062 ± 0.031 | 1.938 ± 0.062 | 0.550 ± 0.015 | 1.080 ± 0.015 | 0.546 ± 0.031 | inches |
|   | 18.26 ± 0.13  | 19.84 ± 0.13  | 26.97 ± 0.79  | 49.23 ± 1.57  | 13.97 ± 0.38  | 27.43 ± 0.38  | 13.87 ± 0.79  | mm     |
| KAL50   | 1.563 ± 0.005 | 0.844 ± 0.005 | 1.968 ± 0.031 | 2.781 ± 0.062 | 0.630 ± 0.015 | 1.140 ± 0.015 | 0.610 ± 0.031 | inches |
|   | 39.70 ± 0.13  | 21.44 ± 0.13  | 49.99 ± 0.79  | 70.64 ± 1.57  | 16.00 ± 0.38  | 28.96 ± 0.38  | 15.49 ± 0.79  | mm     |
| Type  | H             | J             | K             | L             | M             | N             | P             | Unit   |
| KAL10   | 0.075 ± 0.010 | 0.190 ± 0.015 | 0.093 ± 0.010 | 0.093 ± 0.005 | 0.102 ± 0.015 | 0.086 ± 0.005 | 0.312 ± 0.062 | inches |
|   | 1.91 ± 0.25   | 4.83 ± 0.38   | 2.36 ± 0.25   | 2.36 ± 0.13   | 2.59 ± 0.38   | 2.18 ± 0.13   | 7.92 ± 1.57   | mm     |
| KAL25   | 0.088 ± 0.010 | 0.260 ± 0.015 | 0.172 ± 0.010 | 0.125 ± 0.005 | 0.115 ± 0.015 | 0.086 ± 0.005 | 0.438 ± 0.062 | inches |
|   | 2.24 ± 0.25   | 6.60 ± 0.38   | 4.37 ± 0.25   | 3.18 ± 0.13   | 2.92 ± 0.38   | 2.18 ± 0.13   | 11.13 ± 1.57  | mm     |
| KAL50   | 0.088 ± 0.010 | 0.300 ± 0.015 | 0.196 ± 0.010 | 0.125 ± 0.005 | 0.107 ± 0.015 | 0.086 ± 0.005 | 0.410 ± 0.062 | inches |
|   | 2.24 ± 0.25   | 7.62 ± 0.38   | 4.98 ± 0.25   | 3.18 ± 0.13   | 2.72 ± 0.38   | 2.18 ± 0.13   | 10.41 ± 1.57  | mm     |



| Mechanical Specifications - KAL100 |               |               |               |               |               |               |        |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|--------|
| Type                               | A             | B             | C             | D             | E             | F             | Unit   |
| KAL100                             | 2.717 ± 0.079 | 1.890 ± 0.039 | 3.504 ± 0.039 | 5.315 ± 0.039 | 1.811 ± 0.039 | 2.756 ± 0.039 | inches |
|                                    | 69.00 ± 2.00  | 48.00 ± 1.00  | 89.00 ± 1.00  | 135.00 ± 1.00 | 46.00 ± 1.00  | 70.00 ± 1.00  | mm     |
|                                    | G             | H             | J             | L             | P             | Unit          |        |
|                                    | 1.752 ± 0.039 | 0.187 ± 0.031 | 0.748 ± 0.020 | 0.197 ± 0.012 | 0.906 ± 0.079 | inches        |        |
|                                    | 44.50 ± 1.00  | 4.75 ± 0.79   | 19.00 ± 0.50  | 5.00 ± 0.30   | 23.00 ± 2.00  | mm            |        |



| Mechanical Specifications – KAL250 |                               |                               |                                |                                |                               |                               |                               |              |
|------------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------|
| Type                               | A                             | B                             | C                              | D                              | E                             | F                             | G                             | Unit         |
| KAL250                             | 3.858 ± 0.079<br>98.00 ± 2.00 | 2.520 ± 0.039<br>64.00 ± 1.00 | 4.488 ± 0.039<br>114.00 ± 1.00 | 6.102 ± 0.039<br>155.00 ± 1.00 | 2.087 ± 0.039<br>53.00 ± 1.00 | 3.031 ± 0.039<br>77.00 ± 1.00 | 2.185 ± 0.039<br>55.50 ± 1.00 | inches<br>mm |
|                                    | H                             | J                             | L                              | P                              | R                             | S                             | Unit                          |              |
|                                    | 0.250 ± 0.031<br>6.35 ± 0.79  | 0.984 ± 0.020<br>25.00 ± 0.50 | 0.197 ± 0.012<br>5.00 ± 0.30   | 0.827 ± 0.079<br>21.00 ± 2.00  | 0.866<br>22.00                | 3.071<br>78.00                | inches<br>mm                  |              |

**How to Order**

1 2 3 4 5 6 7 8 9 10 11

**K A L 1 0 F B 1 0 K 0**

| Product Series |               | Size | Power | Tolerance |      | Packaging |             |      |     | Resistance Value  |
|----------------|---------------|------|-------|-----------|------|-----------|-------------|------|-----|---|
| Code           | Description   |      |       | Code      | Tol  | Code      | Description | Size | MOQ |   |
| KAL            | Standard      | 10   | 10W   | B         | 0.1% | B         | Bulk        | 10   | 250 | Four characters with "L" used as multiplier of 10 <sup>-3</sup> for any value under 0.1 ohm.<br><br>0.05 ohm = 50L0<br>0.4 ohm = R400<br>1 ohm = 1R00<br>30 Kohm = 30K0 |
| NKAL           | Non-inductive | 25   | 25W   | D         | 0.5% |           |             | 25   | 250 |   |
|                |               | 50   | 50W   | F         | 1%   |           |             | 50   | 250 |   |
|                |               | 100  | 100W  | H         | 3%   |           |             | 100  | 60  |   |
|                |               | 250  | 250W  | J         | 5%   |           |             | 250  | 30  |   |

Legacy Part Number (before January 3, 2011):

| SEI Type   | Code      | Nominal Resistance | Tolerance | Packaging |
|------------|-----------|--------------------|-----------|-----------|
| <b>KAL</b> | <b>10</b> | <b>10K</b>         | <b>1%</b> | <b>B</b>  |

| Type | Description   | Code | Wattage | Tolerance | Types  | MOQ | Description | Code |
|------|---------------|------|---------|-----------|--------|-----|-------------|------|
| KAL  | Standard      | 10   | 10W     | 0.1%      | KAL10  | 250 | Bulk        | B    |
| NKAL | Non-Inductive | 25   | 25W     | 0.5%      | KAL25  | 250 |             |      |
|      |               | 50   | 50W     | 1%        | KAL50  | 250 |             |      |
|      |               | 100  | 100W    | 3%        | KAL100 | 60  |             |      |
|      |               | 250  | 250W    | 5%        | KAL250 | 30  |             |      |