



# Current Sense Resistors Selection Guide

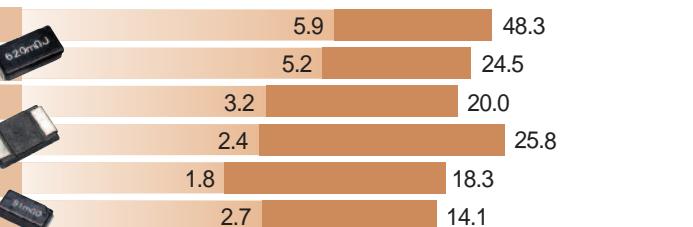
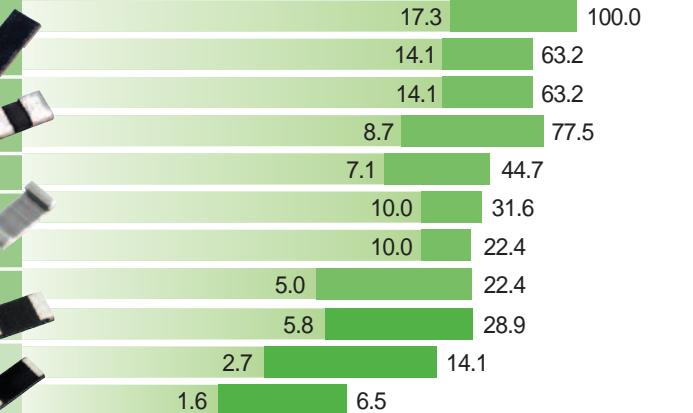
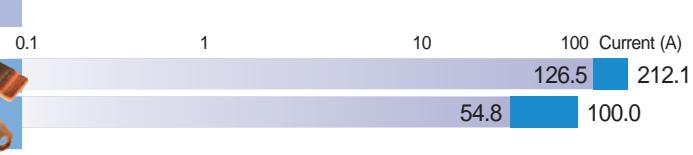
KOA SPEER ELECTRONICS, INC.

KOA offers complete family of Current Sense Resistors capable of sensing large to small currents with ultra-low resistance

**Applications:** Current management sensor including charge/discharge of secondary batteries • Current control sensor of motors and DC/DC converters • Circuit protecting sensor by overcurrent detection

## Current Sense Resistors

### Current Ratings (A)



### Specifications

| Resistance       | Rated Power | Size        | Tolerance   |
|------------------|-------------|-------------|-------------|
| 50µΩ             | 50W         | 80x22mm     | ±5%         |
| 100/200µΩ        | 36W/18W     | 40x22mm     | ±5%         |
| 80x18mm          |             | 80x18mm     | ±5%         |
| 40x15mm          |             | 40x15mm     | ±5%         |
| Resistance Range | Rated Power | Size (Inch) | Tolerance   |
| 0.2m/0.3m/0.5m   | 8W/9W       | 2512        | ±1%         |
| 0.5m/1mΩ         | 5W/3W       | 1216        | ±1%         |
| 0.5m~10mΩ        | 3W~5W       | 2512        | ±1%         |
| 0.5m~10mΩ        | 2W          | 2512        | ±1%         |
| 0.5m~10mΩ        | 2W          | 2010        | ±1%         |
| 0.5m~20mΩ        | 3W/1.5W     | 1206        | ±1%         |
| 0.5m~20mΩ        | 1W          | 1206        | ±1%         |
| 1m~10mΩ          | 1W          | 2010        | ±1%         |
| 2m~10mΩ          | 1W          | 0805        | ±1%         |
| 1m~20mΩ          | 0.5W        | 1206        | ±1%         |
| 6m~120mΩ         | 4~5W        | 2512        | ±1%         |
| 10m~270mΩ        | 2W          | 2512        | ±1%         |
| 12m~100mΩ        | 0.25~0.5W   | 0805        | ±1%         |
| 3m~200mΩ         | 7W          | 4527        | ±0.5,1,5%   |
| 5m~110mΩ         | 3W          | 4527        | ±0.5,1,5%   |
| 5m~200mΩ         | 2W          | 4527        | ±0.5,1,5%   |
| 3m~360mΩ         | 2W          | 4527        | ±0.5,1,2,5% |
| 3m~300mΩ         | 1.5W/1W/1W  | 2512        | ±0.5,1,2,5% |
| 5m~100mΩ         | 1W/0.75W    | 2010        | ±1,5%       |



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|   |               | Current Ratings (A) |     |    |      |             |
|---|---------------|---------------------|-----|----|------|-------------|
|   |               | 0.1                 | 1   | 10 | 100  | Current (A) |
| <b>Wide Terminal Flat Chip Resistors</b><br>• Thick Film Resistive Element<br>• High Power                  | WK73S 3A/3A3  | 0.41                |     |    | 17.3 |             |
|   | WK73S 2H/2H2  | 0.33                |     |    | 14.1 |             |
|   | WK73S 2B/2B15 | 0.29                |     |    | 12.2 |             |
|   | WK73S 2J      | 0.33                |     |    | 10.0 |             |
|   | WK73S 2A      | 0.33                |     |    | 7.1  |             |
|   | WU73 2B/2B15  |                     | 3.2 |    | 12.2 |             |
| <b>Low Resistance Flat Chip Resistors<sup>*</sup></b><br>• Thick Film Resistive Element<br>• High Precision | UR73V/VD 2B   |                     | 2.2 |    | 10.0 |             |
|   | UR73V/VD 2A   |                     | 2.2 |    | 7.1  |             |
|   | UR73D 3A      |                     | 3.2 |    | 10.0 |             |
|   | UR73D 2H      |                     | 2.7 |    | 8.7  |             |
|   | UR73/D 2B     |                     | 2.2 |    | 7.1  |             |
|   | UR73/D 2A     |                     | 1.8 |    | 5.7  |             |
|   | UR73D 1J      |                     | 1.6 |    | 5.0  |             |
|   | UR73D 1E      |                     | 1.1 |    | 2.3  |             |
|   | SR73 W3A/W3A2 | 0.32                |     |    | 7.2  |             |
| <b>Low Resistance Flat Chip Resistors</b><br>• Thick Film Resistive Element<br>• General-Purpose Type       | SR73 W2H      | 0.27                |     |    | 4.8  |             |
|   | SR73 2E       | 0.22                |     |    | 5.2  |             |
|   | SR73 2B       | 0.18                |     |    | 4.1  |             |
|   | SR73 2A       | 0.18                |     |    | 4.1  |             |
|   | SR73 1J       | 0.14                |     |    | 1.6  |             |
|   | SR73 1E       | 0.13                |     |    | 1.3  |             |
|   | SR73 1H       | 0.10                |     |    | 0.75 |             |
|   |               | 0.1                 | 1   | 10 | 100  | Current (A) |
| <b>Large Current Chip Type Jumper</b><br>• Metal Plate<br>• Anti-Pulse                                      | SLZ1          |                     |     |    | 44.0 |             |
|   | TLRZ2B        |                     |     |    | 50.0 |             |
|   | TLRZ2A        |                     |     |    | 31.6 |             |
|   | TLRZ1J        |                     |     |    | 26.0 |             |
|   | TLRZ1E        |                     |     |    | 10.0 |             |

## Specifications

| Resistance Range | Rated Power   | Size (Inch) | Tolerance   |
|------------------|---------------|-------------|-------------|
| 10m~9.1Ω         | 1.5~2W/3W     | 0612        | ±0.5,1.5%   |
| 10m~9.1Ω         | 1W/2W         | 1020        | ±0.5,1.5%   |
| 10m~9.1Ω         | 0.75~1W/1.5W  | 0612        | ±0.5,1.5%   |
| 10m~9.1Ω         | 1W            | 1218        | ±0.5,1.5%   |
| 20m~9.1Ω         | 1W            | 0508        | ±0.5,1.5%   |
| 10m~100mΩ        | 1W/1.5W       | 0612        | ±1%         |
| 10m~100mΩ        | 0.5~0.75W     | 1206        | ±1%         |
| 10m~100mΩ        | 0.5W          | 0805        | ±1%         |
| 10m~100mΩ        | 1W            | 2512        | ±1%         |
| 10m~100mΩ        | 0.75W         | 2010        | ±1%         |
| 10m~100mΩ        | 0.5W          | 1206        | ±1%         |
| 10m~100mΩ        | 0.33W         | 0805        | ±1%         |
| 10m~100mΩ        | 0.25W         | 0603        | ±1%         |
| 24m~100mΩ        | 0.125W        | 0402        | ±1%         |
| 39m~10Ω          | 1W/2W         | 2512        | ±0.5,1.2,5% |
| 33m~10Ω          | 0.75W         | 2010        | ±0.5,1.2,5% |
| 24m~10Ω          | 0.5~0.66W     | 1210        | ±0.5,1.2,5% |
| 30m~10Ω          | 0.33~0.5W     | 1206        | ±0.5,1.2,5% |
| 30m~10Ω          | 0.33~0.5W     | 0805        | ±0.5,1.2,5% |
| 100m~10Ω         | 0.2~0.25W     | 0603        | ±0.5,1.2,5% |
| 100m~10Ω         | 0.166W        | 0402        | ±0.5,1.2,5% |
| 180m~10Ω         | 0.1W          | 0201        | ±0.5,1.2,5% |
| Resistance Range | Rated Current | Size (Inch) |             |
| Max. 0.5mΩ       | 44A           | 2512        |             |
| Max. 0.2mΩ       | 50A           | 1206        |             |
| Max. 0.2mΩ       | 31.6A         | 0805        |             |
| Max. 0.2mΩ       | 26A           | 0603        |             |
| Max. 0.5mΩ       | 10A           | 0402        |             |

• This selection guide plots the current value calculated from (Power rating ÷ upper or lower limit of resistance). Please build the design considering heat dissipation.

• This is the guideline to select products by current value. Please confirm product specification for actual design and selecting products and use the products based on the precautions to use.

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• Please confirm our catalog or delivery specification for the details of each product.

\* UR73/UR73D is only applied for car accessories as automotive use. Please ask us for details.