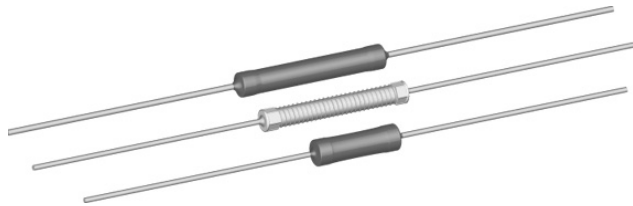


## Wirewound Resistors, Commercial Power, Axial Lead



### FEATURES

- High performance for low cost
- Auto insertable
- CA0001, CA0002 and CA5000 models are supplied with a high temperature silicone coating for additional environmental protection
- Lead forming available



### APPLICATIONS

Kitchen appliances: Percolators, blenders, mixers, ranges, toasters, deep fryers. Automotive devices: Horns, ignitions, windshield wipers, voltage regulators, instrument gauges. Entertainment devices: Radios, televisions, computers and power supplies.

RoHS\* COMPLIANT

| STANDARD ELECTRICAL SPECIFICATIONS |                                 |   |  |                       |
|------------------------------------|---------------------------------|---|--|-----------------------|
| GLOBAL <sup>(1)</sup> MODEL        | HISTORICAL <sup>(1)</sup> MODEL | POWER RATING<br><i>P</i> <sub>25 °C</sub> W | RESISTANCE RANGE Ω<br>± 10 % Standard, ± 5 % Available | WEIGHT<br>(Typical) g |
| CA0001                             | CA-1                            | 1.0   | 0.1 - 1K   | 0.65                  |
| CA0002                             | CA-2                            | 2.0   | 0.1 - 2.4K   | 0.80                  |
| CA4050/CA5050                      | CA-4050/CA-5050                 | 2.0/2.5                                     | 0.1 - 170/0.1 - 2.7K                                   | 0.64/0.78             |
| CA4055/CA5055                      | CA-4055/CA-5055                 | 2.2/2.75                                    | 0.1 - 195/0.1 - 3.1K                                   | 0.65/0.80             |
| CA4060/CA5060                      | CA-4060/CA-5060                 | 2.4/3.0                                     | 0.1 - 220/0.1 - 3.5K                                   | 0.66/0.82             |
| CA4070/CA5070                      | CA-4070/CA-5070                 | 2.8/3.5                                     | 0.1 - 270/0.1 - 4.3K                                   | 0.68/0.86             |
| CA4080/CA5080                      | CA-4080/CA-5080                 | 3.2/4.0                                     | 0.1 - 320/0.1 - 5.1K                                   | 0.70/0.90             |
| CA4090/CA5090                      | CA-4090/CA-5090                 | 3.6/4.5                                     | 0.1 - 370/0.1 - 5.9K                                   | 0.72/0.94             |
| CA4100/CA5100                      | CA-4100/CA-5100                 | 4.0/5.0                                     | 0.15 - 420/0.15 - 6.7K                                 | 0.74/0.98             |
| CA4150/CA5150                      | CA-4150/CA-5150                 | 6.0/7.5                                     | 0.2 - 630/0.2 - 7K                                     | 0.84/1.19             |
| CA4200/CA5200                      | CA-4200/CA-5200                 | 8.0/10.0                                    | 0.2 - 920/0.2 - 7K                                     | 0.94/1.40             |
| CA4220/CA5220                      | CA-4220/CA-5220                 | 8.8/11.0                                    | 0.2 - 1.02K/0.2 - 7K                                   | 0.98/1.48             |

**Note**

<sup>(1)</sup> CA4000 and CA5000 model numbers are calculated from the CA4000 power rating of 4 W per inch and CA5000 power rating of 5 W per inch. The last three digits of the model number are the body length of the resistor in inches (decimal is between the first and second digit). Example: CA5150 = 1.50 inches x 5 W per inch = 7.5 W.

| TECHNICAL SPECIFICATIONS        |                 |                                      |            |            |            |
|---------------------------------|-----------------|--------------------------------------|------------|------------|------------|
| PARAMETER                       | UNIT            | CA0001                               | CA0002     | CA4000     | CA5000     |
| Temperature Coefficient         | ppm/°C          | ± 600 below 1 Ω, ± 300 1 Ω and above |            |            |            |
| Power Rating                    | W               | 1                                    | 2          | 4 per inch | 5 per inch |
| Short Time Overload             | -               | 5 x rated power for 5 s              |            |            |            |
| Maximum Working Voltage         | V               | $(P \times R)^{1/2}$                 |            |            |            |
| Dielectric Withstanding Voltage | V <sub>AC</sub> | 1000                                 | 1000       | 1000       | 1000       |
| Operating Temperature Range     | °C              | - 65/+ 275                           | - 65/+ 275 | - 65/+ 275 | - 65/+ 275 |
| Terminal Strength (minimum)     | lb              | 10                                   | 10         | 10         | 10         |

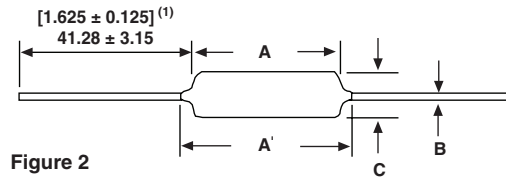
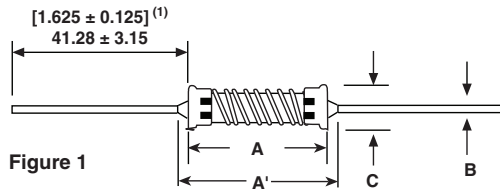
**Note**

- Wirewound CA resistors can reliably function as a fuse and as a resistor. Such components involve compromise between fusing and resistive functions; therefore, each design should be tailored to the application to ensure optimum performance. Contact factory by using the e-mail address at the bottom of this page for design assistance.

| GLOBAL PART NUMBER INFORMATION   |  |   |   |   |   |
|--|--|---|---|---|---|
| New Global Part Numbering: CA000150R00JR05 (preferred part number format)                                  |  |   |   |   |   |
| C  | A  | 0   | 0   | 0   | 1 |
| 5  | 0  | R   | 0   | 0   | J |
|  |  |   |   |   | R |
|  |  |   |   |   | 0 |
|  |  |   |   |   | 5 |
|  |  |   |   |   |   |
|  |  |   |   |   |   |
| GLOBAL MODEL<br>(See Standard Electrical Specifications Global Model column for options)                   | VALUE<br>R = Decimal<br>K = Thousand<br>R1500 = 0.15 Ω<br>1K500 = 1500 Ω | TOLERANCE<br>H = ± 3.0 %<br>J = ± 5.0 %<br>K = ± 10.0 % | PACKAGING<br>E14 = Lead (Pb)-free bulk<br>E05 = Lead (Pb)-free tape and reel<br>B14 = Tin/lead bulk<br>R05 = Tin/lead tape and reel | SPECIAL<br>(Dash Number) (up to 3 digits)<br>From 1 - 999 as applicable |   |
| Historical Part Number example: CA-1 50 Ω 5 % R05 (will continue to be accepted for tin/lead product only) |  |   |   |   |   |
| CA-1   | 50 Ω   | 5 %   | R05   |   |   |
| HISTORICAL MODEL   | RESISTANCE VALUE   | TOLERANCE CODE  | PACKAGING   |   |   |

\* Pb containing terminations are not RoHS compliant, exemptions may apply

**DIMENSIONS** in inches [millimeters]



**Note**

(1) On some standard reel pack methods, the leads may be trimmed to a shorter length than shown.

| GLOBAL MODEL | DIMENSIONS in inches [millimeters] |               |                   |                              | FIGURE |
|--------------|------------------------------------|---------------|-------------------|------------------------------|--------|
|              | A ± 0.031 [0.794]                  | A' (Maximum)  | B ± 0.001 [0.025] | C                            |        |
| CA0001       | 0.400 [10.16]                      | 0.460 [11.68] | 0.032 [0.813]     | 0.170 maximum [4.32 maximum] | 2      |
| CA0002       | 0.570 [14.48]                      | 0.630 [16.00] | 0.032 [0.813]     | 0.170 maximum [4.32 maximum] | 2      |
| CA4050       | 0.500 [12.70]                      | 0.594 [15.09] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4055       | 0.550 [13.97]                      | 0.644 [16.36] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4060       | 0.600 [15.24]                      | 0.694 [17.63] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4070       | 0.700 [17.78]                      | 0.794 [20.17] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4080       | 0.800 [20.32]                      | 0.894 [22.71] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4090       | 0.900 [22.86]                      | 0.994 [25.25] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4100       | 1.00 [25.40]                       | 1.094 [27.79] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4150       | 1.50 [38.10]                       | 1.594 [40.49] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4200       | 2.00 [50.80]                       | 2.094 [53.19] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA4220       | 2.20 [55.88]                       | 2.294 [58.27] | 0.032 [0.813]     | 0.140 ± 0.031 [3.56 ± 0.794] | 1      |
| CA5050       | 0.500 [12.70]                      | 0.625 [15.88] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5055       | 0.550 [13.97]                      | 0.675 [17.15] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5060       | 0.600 [15.24]                      | 0.725 [18.42] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5070       | 0.700 [17.78]                      | 0.825 [20.96] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5080       | 0.800 [20.32]                      | 0.925 [23.50] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5090       | 0.900 [22.86]                      | 1.025 [26.04] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5100       | 1.00 [25.40]                       | 1.125 [28.58] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5150       | 1.50 [38.10]                       | 1.625 [41.28] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5200       | 2.00 [50.80]                       | 2.125 [53.98] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |
| CA5220       | 2.20 [55.88]                       | 2.325 [59.06] | 0.036 [0.914]     | 0.170 ± 0.031 [4.32 ± 0.794] | 2      |

**MATERIAL SPECIFICATIONS**

**Element:** Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

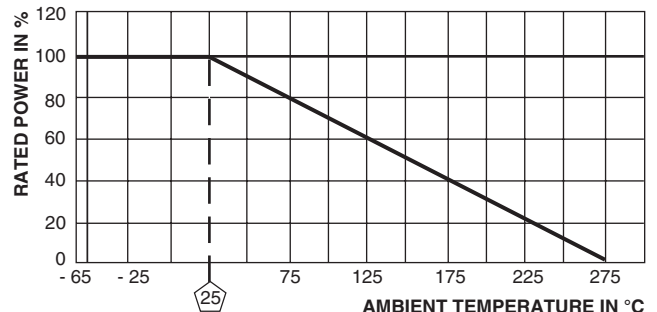
**Core:** Woven fiberglass

**Coating:** Special high temperature silicone (CA4000 series is not coated)

**Terminals:** Tin/lead electroplated copper (Lead (Pb)-free will be 100 % tin)

**End Caps:** Tin plated steel

**Part Marking:** DALE, model, wattage, value, tolerance, date code



**Derating**

| PERFORMANCE                     |   |                          |
|---------------------------------|---|--------------------------|
| TEST                            | CONDITIONS OF TEST  | TEST LIMITS (EIA RS-344) |
| Thermal Shock                   | - 55 °C to + 275 °C, 5 cycles, 30 min dwell time                    | ± (5.0 % + 0.05 Ω) ΔR    |
| Short Time Overload             | 5 x rated power for 5 s   | ± (4.0 % + 0.05 Ω) ΔR    |
| Dielectric Withstanding Voltage | 600 V <sub>AC</sub> , (CA0001, CA0002) for 1 min                    | ± (2.0 % + 0.05 Ω) ΔR    |
| Low Temperature Storage         | - 65 °C, full rated working voltage for 45 min                      | ± (3.0 % + 0.05 Ω) ΔR    |
| Humidity                        | 75 °C, 90 % - 100 % RH, 240 h                                       | ± (5.0 % + 0.05 Ω) ΔR    |
| Load Life                       | 1000 h at rated power, + 25 °C, 1.5 h "ON", 0.5 h "OFF"             | ± (10.0 % + 0.05 Ω) ΔR   |
| Terminal Strength               | 10 pounds for 30 s; body twisted about axis, 3 360° rotations       | ± (2.0 % + 0.05 Ω) ΔR    |
| Resistance to Solder Heat       | Terminal immersed 3.5 s in molten solder at 1/8" to 3/16" from body | ± (4.0 % + 0.05 Ω) ΔR    |



## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.