

# APC Precision Chip Resistor



- Precision Thin Film Technology
- Wide Resistance Range 1R - 3M
- Precision tolerance down to  $\pm 0.01\%$
- TCR as low as  $\pm 2\text{ppm}/^\circ\text{C}$
- Tape & Reel packaging



- Standard Electrical Specifications
- Tolerance (Code):  $\pm 0.05\%$  (A),  $\pm 0.1\%$  (B),  $\pm 0.25\%$  (C),  $\pm 0.5\%$  (D),  $\pm 1\%$  (F)
- TCR (Code):  $\pm 25\text{ppm}$  (E),  $\pm 50\text{ppm}$  (F)

| Type    | Power Rating at 70°C | Operating Temp Range | Max Operating Voltage | Max Overload Voltage | Tolerance / Resistance Range |                |               |                 |     | TCR (PPM°C) |
|---------|----------------------|----------------------|-----------------------|----------------------|------------------------------|----------------|---------------|-----------------|-----|-------------|
|         |                      |                      |                       |                      | ±0.05%                       | ±0.1%          | ±0.25%        | ±0.5%           | ±1% |             |
| APC0201 | 1/32W                | -55 to +155°C        | 15V                   | 30V                  | N/A                          |                |               | 49.9Ω to 4.99KΩ |     | ±25         |
|         |                      |                      |                       |                      |                              |                |               | 49.9Ω to 33KΩ   |     | ±50         |
| APC0402 | 1/16W                | -55 to +155°C        | 25V                   | 50V                  | 49.9Ω to 12KΩ                | 10Ω to 255KΩ   | 4.7Ω to 511KΩ |                 |     | ±25         |
|         |                      |                      |                       |                      |                              |                |               | ±50             |     |             |
| APC0603 | 1/16W                | -55 to +155°C        | 50V                   | 100V                 | 4.7Ω to 332KΩ                | 4.7Ω to 1MΩ    | 1Ω to 1MΩ     |                 |     | ±25         |
|         |                      |                      |                       |                      |                              |                |               | ±50             |     |             |
| APC0805 | 1/10W                | -55 to +155°C        | 100V                  | 200V                 | 4.7Ω to 1MΩ                  | 4.7Ω to 2MΩ    | 1Ω to 2MΩ     |                 |     | ±25         |
|         |                      |                      |                       |                      |                              |                |               | ±50             |     |             |
| APC1206 | 1/8W                 | -55 to +155°C        | 150V                  | 300V                 | 4.7Ω to 1MΩ                  | 4.7Ω to 2.49MΩ | 1Ω to 2.49MΩ  |                 |     | ±25         |
| APC1210 | 1/4W                 |                      |                       |                      |                              |                |               |                 |     | ±50         |
| APC2010 | 1/4W                 | -55 to +155°C        | 150V                  | 300V                 | 4.7Ω to 1MΩ                  | 4.7Ω to 3MΩ    | 1Ω to 3MΩ     |                 |     | ±25         |
| APC2512 | 1/2W                 |                      |                       |                      |                              |                |               |                 |     | ±50         |

- Special Electrical Specifications
- Tolerance (Code):  $\pm 0.01\%$  (T),  $\pm 0.05\%$  (A),  $\pm 0.1\%$  (B),  $\pm 0.25\%$  (C),  $\pm 0.5\%$  (D),  $\pm 1\%$  (F)
- TCR (Code):  $\pm 2\text{ppm}$  (X),  $\pm 3\text{ppm}$  (Y),  $\pm 5\text{ppm}$  (Z),  $\pm 10\text{ppm}$  (B),  $\pm 15\text{ppm}$  (A)

| Type    | Power Rating at 70°C | Operating Temp Range | Max Operating Voltage | Max Overload Voltage | Resistance Range |               |                 |        |          |          | TCR (PPM°C) |
|---------|----------------------|----------------------|-----------------------|----------------------|------------------|---------------|-----------------|--------|----------|----------|-------------|
|         |                      |                      |                       |                      | ±0.01%           | ±0.05%        | ±0.1%           | ±0.25% | ±0.5%    | ±1%      |             |
| APC0402 | 1/16W                | -55 to +155°C        | 25V                   | 50V                  | 49.9Ω to 4.99KΩ  |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 49.9Ω to 4.99KΩ  |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 49.9Ω to 12KΩ    |               | 49.9Ω to 60KΩ   |        |          | ±10      |             |
|         |                      |                      |                       |                      |                  |               | 49.9Ω to 69.8KΩ |        |          | ±15      |             |
| APC0603 | 1/16W                | -55 to +155°C        | 50V                   | 100V                 | 24.9Ω to 15KΩ    |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 15KΩ    |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 100KΩ   | 4.7Ω to 332KΩ | 4.7Ω to 511KΩ   |        |          | ±10, ±15 |             |
| APC0805 | 1/10W                | -55 to +155°C        | 100V                  | 200V                 | 24.9Ω to 30KΩ    |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 30KΩ    |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 200KΩ   | 4.7Ω to 1MΩ   |                 |        |          | ±10, ±15 |             |
| APC1206 | 1/8W                 | -55 to +155°C        | 150V                  | 300V                 | 24.9Ω to 49.9KΩ  |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 49.9KΩ  |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 499KΩ   | 4.7Ω to 1MΩ   |                 |        | ±10, ±15 |          |             |
| APC1210 | 1/4W                 | -55 to +155°C        | 150V                  | 300V                 | 24.9Ω to 49.9KΩ  |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 49.9KΩ  |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 499KΩ   | 4.7Ω to 1MΩ   |                 |        | ±10, ±15 |          |             |
| APC2010 | 1/4W                 | -55 to +155°C        | 150V                  | 300V                 | 24.9Ω to 100KΩ   |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 100KΩ   |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 499KΩ   | 4.7Ω to 1MΩ   |                 |        | ±10, ±15 |          |             |
| APC2512 | 1/2W                 | -55 to +155°C        | 150V                  | 300V                 | 24.9Ω to 100KΩ   |               |                 | N/A    |          |          | ±2, ±3      |
|         |                      |                      |                       |                      | 24.9Ω to 100KΩ   |               |                 |        |          |          | ±5          |
|         |                      |                      |                       |                      | 24.9Ω to 499KΩ   | 4.7Ω to 1MΩ   |                 |        | ±10, ±15 |          |             |

ARCOL UK Limited,  
Threemilestone Ind. Estate,  
Truro, Cornwall, TR4 9LG, UK.  
T +44 (0) 1872 277431  
F +44 (0) 1872 222002  
E sales@arcolresistors.com

[www.arcolresistors.com](http://www.arcolresistors.com)

The information contained herein does not form part of a contract and is subject to change without notice. ARCOL operate a policy of continual product development, therefore, specifications may change.

It is the responsibility of the customer to ensure that the component selected from our range is suitable for the intended application. If in doubt please ask ARCOL.

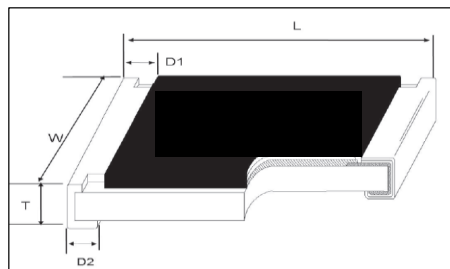
## Characteristics

| Item                  | Tol. ≤ 0.05%          | Tol. > 0.05%           | Method                                                             |
|-----------------------|-----------------------|------------------------|--------------------------------------------------------------------|
| Short Time Overload   | $\Delta R \pm 0.05\%$ | $\Delta R \pm 0.02\%$  | RCWV*2.5 or Max. Overload Voltage - whichever is lower for 5 secs. |
| Insulation Resistance | > 1000 MΩ             |                        | Apply 100V dc for 1 minute                                         |
| Endurance             | $\Delta R \pm 0.05\%$ | $\Delta R \pm 0.02\%$  | 70 ±2°C RCWV for 1000 hours with 1.5 hrs ON and 0.5 hrs OFF        |
| Thermal Shock         | $\Delta R \pm 0.05\%$ | $\Delta R \pm 0.025\%$ | -55 to +155°C, 100 Cycles                                          |
| Low Temp Operation    | $\Delta R \pm 0.05\%$ | $\Delta R \pm 0.2\%$   | 1 hour, -65°C followed by 45 mins of RCWV                          |

\*RCWV (Rated Continuous Working Voltage) =  $\sqrt{P \cdot R}$  or Max. Operating Voltage - whichever is lower

## Dimensions (mm)

| Type    | L          | W          | T          | D1         | D2         |
|---------|------------|------------|------------|------------|------------|
| APC0201 | 0.58 ±0.05 | 0.29 ±0.05 | 0.23 ±0.05 | 0.12 ±0.05 | 0.15 ±0.05 |
| APC0402 | 1.00 ±0.05 | 0.50 ±0.05 | 0.30 ±0.05 | 0.20 ±0.05 | 0.20 ±0.05 |
| APC0603 | 1.55 ±0.10 | 0.80 ±0.10 | 0.45 ±0.10 | 0.30 ±0.20 | 0.30 ±0.20 |
| APC0805 | 2.00 ±0.15 | 1.25 ±0.15 | 0.55 ±0.10 | 0.30 ±0.20 | 0.40 ±0.20 |
| APC1206 | 3.05 ±0.15 | 1.55 ±0.15 | 0.55 ±0.10 | 0.42 ±0.20 | 0.35 ±0.25 |
| APC1210 | 3.10 ±0.15 | 2.40 ±0.15 | 0.55 ±0.10 | 0.40 ±0.20 | 0.55 ±0.25 |
| APC2010 | 4.90 ±0.15 | 2.40 ±0.15 | 0.55 ±0.10 | 0.60 ±0.30 | 0.50 ±0.25 |
| APC2512 | 6.30 ±0.15 | 3.10 ±0.15 | 0.55 ±0.10 | 0.60 ±0.30 | 0.50 ±0.25 |

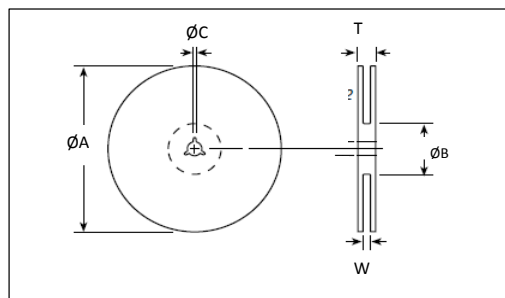


## Reel Dimensions (mm)

| Size   | ØA       | ØB      | ØC        | W         | T         | Qty Per Reel |
|--------|----------|---------|-----------|-----------|-----------|--------------|
| 0201*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 10,000       |
| 0402*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 10,000       |
| 0603*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 5,000        |
| 0805*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 5,000        |
| 1206*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 5,000        |
| 1210*  | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 9.5 ±1.0  | 11.5 ±1.0 | 5,000        |
| 2010** | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 13.5 ±1.0 | 15.5 ±1.0 | 4,000        |
| 2512** | 178 ±1.0 | 60 ±1.0 | 13.5 ±0.7 | 13.5 ±1.0 | 15.5 ±1.0 | 4,000        |

\* Paper Tape

\*\* Plastic Embossed Tape



## Ordering Procedure

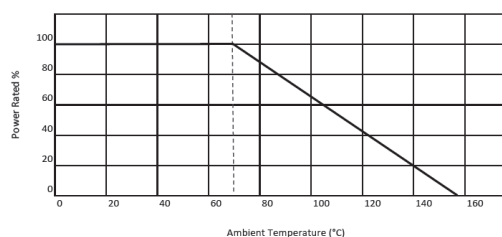
Standard Resistor: Series, Size, Tol Code, Resistance Value, TCR Code

Eg: APC0603A100RB  
 100Ω  
 ±0.05%  
 1/16 watt  
 (0603 size)

Tol: ±0.01% (T), ±0.05% (A), ±0.1% (B), ±0.25% (C), ±0.5% (D), ±1% (F)

TCR: ±2ppm (X), ±3ppm (Y), ±5ppm (Z), ±10ppm (B), ±15ppm (A), ±25ppm (E), ±50ppm (F)

## Derating Curve



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 Truro, Cornwall, TR4 9LG, UK.  
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Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)