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# **(TAP120) Thick Film Non-Inductive Power Resistors**

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## ▶ Product Introduction

**New high-power non-inductive resistor (TAP120) enforces mechanical stability available.**

### Features :

- Thick film, Non-inductive.
- Small size and high power.
- High stability, Wide range of resistance.
- High insulation & partial discharge performance.

### Applications :

- Variable Speed Drives.
- Power Supplies, Control Devices.
- Telecommunications, Robotics.
- Motor Controls and other Switching Devices.

Token is devoting in the development of thick film non-inductive power resistors in particularly and powerful compact.

Non-inductive Thick Film (TAP120) Ultra-High-Power Resistors packaged in SOT227 with alumina ceramic metalized on the bottom for optimum discharge and improved heat transfer. Case encapsulates with resin-filled epoxy and enables large air distance between the terminals to achieve high insulation resistance.

Power Resistor (TAP120) handles power peaks, including those that happen whenever high-end electronic products are switched on and off, and it redirect power surges. Also Non-inductive (TAP120) help handle the rotational speed of electric motors such as those used in vehicles like locomotives and trams and in industrial equipment.

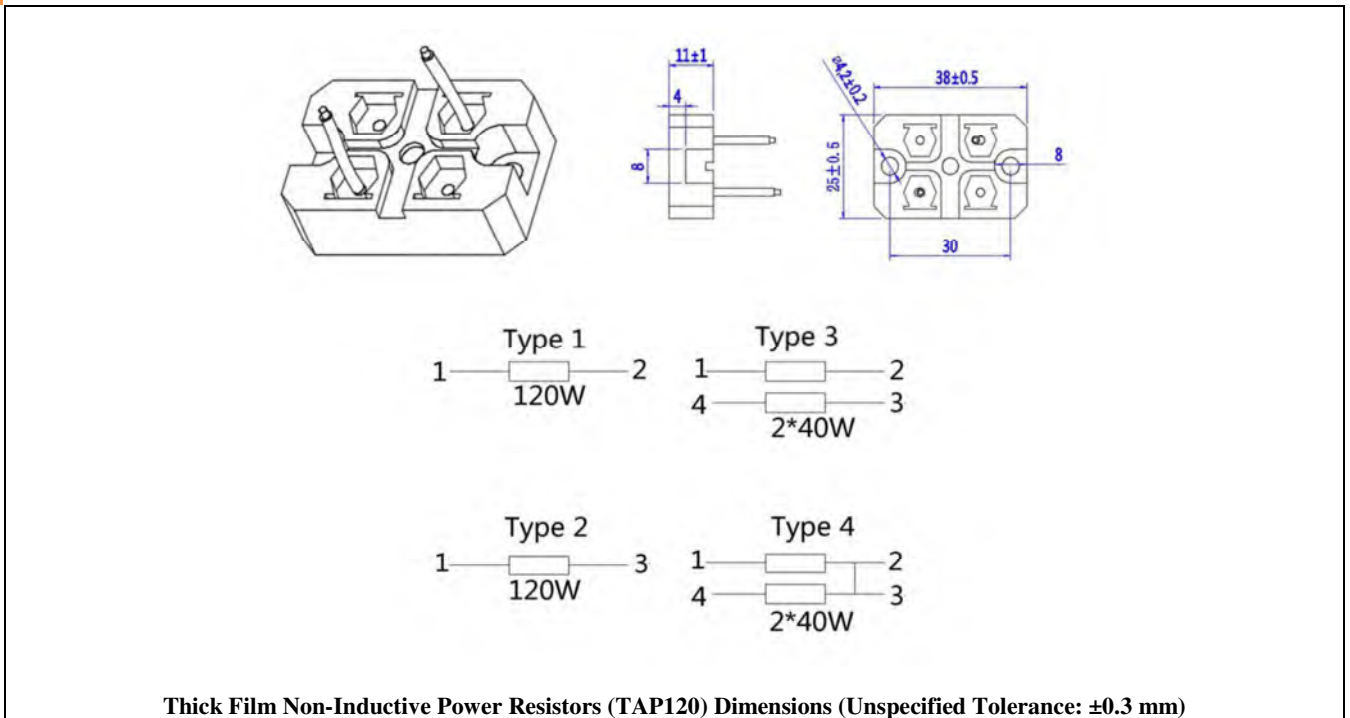
The thick flim resistor (TAP120) series consists of 4 connection options. Operating voltage can reach 1500V. Precision tolerance has 0.5%、1%、2%、5%、10% alternative. While the center temperature of the bottom plate lower than 85°C, the type 1 and type 2 can remain full power of 120W.

For customed designs, tighter tolerances, non-standard technical requirements, or custom special applications, please contact our sales for more information. Or link to Token official website "[Power Resistors](#)" for more information.



## ► Dimensions & Electrical Characteristics

### TAP120 Construction & Dimensions (Unit: mm)



### TAP120 Technical Specifications

| Technical Specifications                        | Values                               |
|---|--------------------------------------|
| Rated Power (W) (Base Plate Center Temp ≤ 85°C) | 120W                                 |
| Resistance range (Ω)                            | 0.1Ω ~ 1MΩ                           |
| Tolerance (%)                                   | ±0.5% ~ ±10%                         |
| TCR (ppm/°C) (25°C ~ 105°C)                     | ±50 ppm/°C, ±100 ppm/°C, ±300 ppm/°C |
| Max.working voltage (VDC)                       | 1500 V                               |
| Lead Material                                   | Silica Wire / Electronic Wire        |
| Insulation Resistance                           | 500V, ≥10GΩ                          |
| Mounting-torque for contacts                    | M4 screw 1.2 Nm Max                  |
| Temperature range (°C)                          | -55°C ~ +155°C                       |

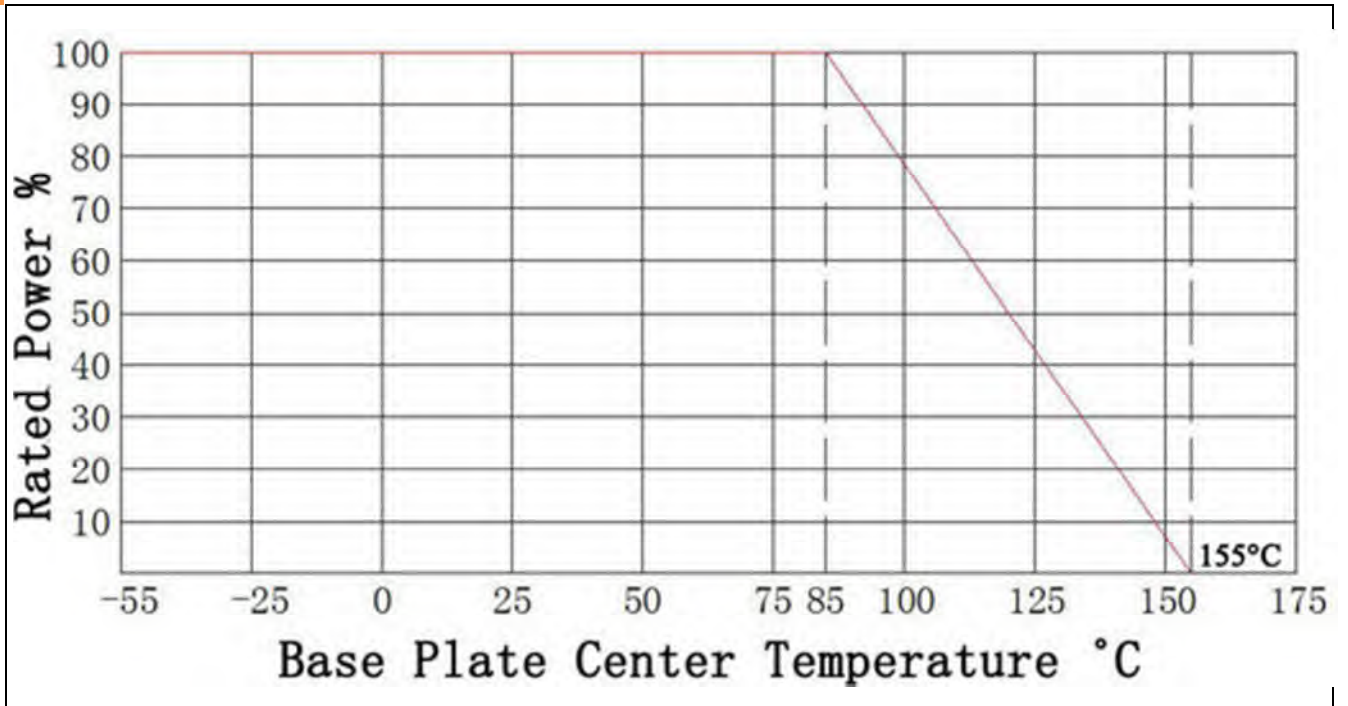
## ▶ Test Condition

### Test Condition (TAP120)

| Test Item                       | Test Methods  | Characteristics                                |
|---------------------------------|---|--|
| Short Time Overload             | JIS-C-5201-1 4.13<br>1.5P amount does not exceed<br>1.5UMax/5s                  | $\Delta R/R \leq \pm(0.3\%+0.1\Omega)$         |
| Insulation resistance           | JIS-C-5261 6-1 500VDC   | 10G $\Omega$ Min.                              |
| Dielectric withstanding voltage | JIS-C-5261 7-1 3000VAC or 5000VDC<br>1 minute between terminal and axis.        | Free of appearance or structural irregularity. |
| Vibration                       | JIS-C-5261 6-6<br>50HZ, amplitude 2mm, lasting 4Hrs.                            | $\Delta R/R \leq \pm(0.1\%+0.1\Omega)$         |
| Load life                       | JIS-C-5261 7-7<br>Rated power 2000Hrs,<br>Base Plate Center Temperature < 85°C. | $\Delta R/R \leq \pm(1\%+0.1\Omega)$           |
| Temperature Cycling             | JIS-C5201-1 4.19<br>-55°C ~ 125°C, 5 cycles                                     | $\Delta R/R \leq \pm(0.3\%+0.1\Omega)$         |
| Humidity                        | JIS-C5201-1 4.24<br>+40°C, RH $\geq$ 95% for 96Hrs.                             | $\Delta R/R \leq \pm(0.25\%+0.1\Omega)$        |

## ▶ Derating Curve

### Derating Curve (TAP120)



## Order Codes

### Order Codes (TAP120)

| TAP120      | 1              | E               | 10R          | K              |                          |
|-------------|----------------|-----------------|--------------|----------------|--------------------------|
| Part Number | Configurations |                 | TCR (ppm/°C) | Resistance (Ω) | Resistance Tolerance (%) |
| TAP120      | 1              | Type 1, 120W    | D ±50ppm     | 10R 10Ω        | K ±10%                   |
|             | 2              | Type 2, 120W    | E ±100ppm    | 100R 100Ω      | J ±5%                    |
|             | 3              | Type 3, 40W x 2 | G ±300ppm    | 1K 1000Ω       | G ±2%                    |
|             | 4              | Type 4, 40W x 2 |              | 1M 100000Ω     | F ±1%                    |
|             |                |                 |              |                | D ±0.5%                  |

## General Information

### Compact TO-Style Resistors are Low Cost

Token Electronics TO-Style power film heat sink mountable resistors, TO-220 and TO-247 Style Packages, are designed for intermediate power applications and combines performance with an economical price.

TO-220 Power Resistors, TO-247 Power Resistors RMG series are ultra-precision and high power resistors encapsulated in the TO-220, TO-247 style power package. Power resistors are manufactured in 20W, 30W, 35W, 50W and 100W. Resistance element is electrically insulated from metal heat sink mounting tab. When properly mounted Token's RMG\*\* TO220/TO247 packaged power resistors provide up to 50/100 watts of steady state power. These very low inductance resistors are ideal for many industrial applications: power supplies, power controls and inrush/bleeder resistors.

### Non-Inductive Design for High Frequency Applications

Token's TO-Style Series satisfy demanding applications for accurate and stable power resistors housed in the convenient TO-Style case. The resistance element is isolated from the mounting tab by an alumina ceramic layer, providing very low thermal resistance and ensuring high insulation resistance between terminals and tab.

These isolated resistor element are constructed and packaged in a high temperature plastic case with a single screw metal tab for easy mounting to the heat sink. The non-inductive design makes these products especially useful in high frequency and high speed pulse applications.

### Pulse-Loading Applications as Snubber or Bleeder Resistors

Token's TO-Style resistors are designed for use in pulse-loading applications, as bleeder or snubber resistors in switching power supplies, industrial power drives, medical, test equipment, high power equipment such as uninterruptible power supplies (UPS), and other power distribution and power conversion applications.

The Power Film Resistors use an optimized process of Token's thick film technology on an alumina substrate to achieve tolerances as low as  $\pm 0.5\%$ , and up to  $\pm 10\%$ . The Non-Inductive design and resistance values as low as 0.05 ohms are also ideal for current sensing applications.

