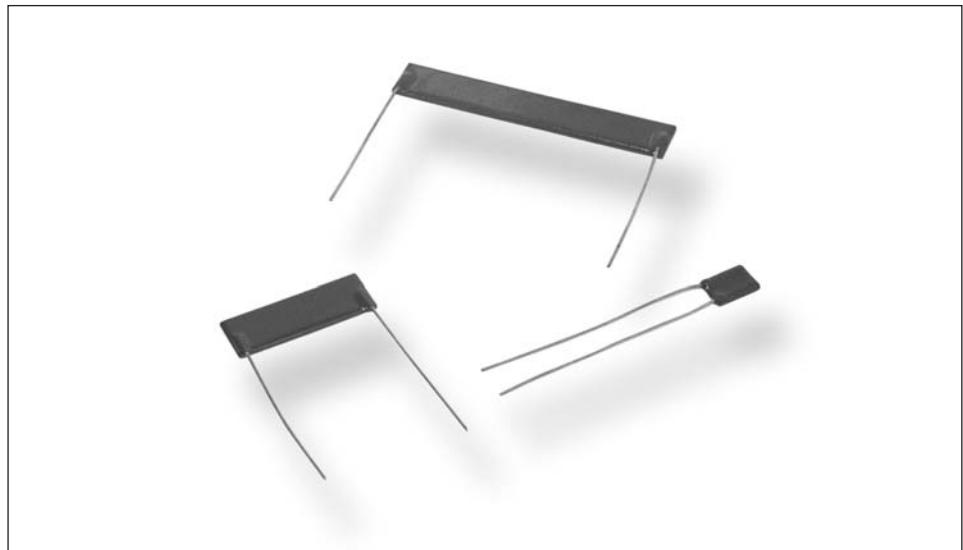


## Type HB Series

### Key Features

- Up to 15kV Element Voltage
  - Unique specification for the most demanding applications
- High Ratio of Size to Power
  - The solution to your PCB population problems
- 1kW to 1GW
  - Coupled with 1% tolerance gives ultimate design flexibility
- Established Product with Proven Reliability
- Low Inductance
  - For the fastest switching speeds



TE Connectivity (TE) is a leading supplier of standard and custom designed high value/high voltage resistors for high voltage, industrial, control, medical and general-purpose use. The HB is a tough epoxy coated high voltage resistor, with axial or radial leads, values up to 1G Ohm and an operational voltage to 20kV as standard and 30kV to order. The resistors are made from quality materials for optimum reliability and stability. TE can test resistors to conform to relevant international, MIL or customer specifications. TE is happy to advise on the use of resistors for high frequency applications and to supply information for high voltage use.

### Applications

- High Voltage
- Voltage Divider
- Surge
- Filter
- Balancing
- Inrush Limiting

### Characteristics - Electrical

|  | HBA   | HB1                 | HB3                                |
|--|---|---------------------|------------------------------------|
| <b>Power Dissipation - Power @ 20°C (W):</b>                     | 0.8   | 2.0                 | 4.0                                |
| <b>@ 70°C:</b>   | 0.4   | 1.0                 | 2.0                                |
| <b>Ohmic Value - Min (Ohms):</b>                                 | 1K  | 10K                 | 10K                                |
| <b>Max:</b>  | 120M  | 1G                  | 1G                                 |
| <b>Resistance Tolerance (%) (Tighter By Request):</b>            | 1%, 2%, 5%  | 1%, 2%, 5%          | 1%, 2%, 5%                         |
| <b>Maximum Working Voltage - DC or ACrms (Volts):</b>            | 1kV   | 7.5kV               | 15kV                               |
| <b>Insulation Resistance - Epoxy Coated, @500V dc (Ohms):</b>    | >10 <sup>9</sup> MΩ   | >10 <sup>9</sup> MΩ | >10 <sup>9</sup> MΩ                |
| <b>Load Stability - 1000hr's @ 70°C (%):</b>                     | ±0.5%   | ±0.5%               | ±0.5%                              |
| <b>Temp. Rapid Change - -55°C to 125°C for 5 cycles (ΔR):</b>    | ±0.1%   | ±0.1%               | ±0.1%                              |
| <b>Endurance - 1000 Hours @ 200°C (ΔR):</b>                      | ≤2%   | ≤2%                 | ≤2%                                |
| <b>Resistance to Soldering Heat - 350°C for 3.5seconds (ΔR):</b> | 0.05%   | 0.05%               | 0.05%                              |
| <b>Temperature Coefficient (ppm/°C):</b>                         | ±100ppm/°C  | ±100ppm/°C          | ±100ppm/°C                         |
| <b>(±20ppm/°C available to special order)</b>                    |   |                     |                                    |
| <b>Voltage Coefficient:</b>                                      | Negligible up to 100K   |                     | Negligible up to 200K              |
|  | Increasing to 0.02ppm/Volt at 800K  |                     | Increasing to 0.01ppm/Volt at 1M0  |
|  | Increasing to 1.0ppm/Volt at 5M0  |                     | Increasing to 1.0ppm/Volt at 10M   |
|  | Increasing to 2.0ppm/Volt at 50M  |                     | Increasing to 2.0ppm/Volt at 100M  |
|  | Increasing to 8.0ppm/Volt at 1000M  |                     | Increasing to 8.0ppm/Volt at 1000M |
| <b>Ambient Temperature Range (°C):</b>                           | -55 to 125  | -55 to 125          | -55 to 125                         |
| <b>Long Term Damp Heat (%):</b>                                  | 0.25%   | 0.25%               | 0.25%                              |
| <b>(Steady state 56 Days 95% RH at 40°C)</b>                     |   |                     |                                    |
| <b>Noise (Quantech) Dependent on Resistor Type and Value:</b>    | -20dB (0.1μ V/V) at lower values<br>+10dB (3.3μ V/V) at higher values     |                     |                                    |
| <b>Encapsulation:</b>  | Epoxy coating (Optional)  |                     |                                    |
| <b>Solvent Resistance:</b>                                       | Print will withstand the action of all commonly used industrial solvents. |                     |                                    |
| <b>Lead Material:</b>  | Tinned copper wire  |                     |                                    |
| <b>Lead Length:</b>  | Minimum 20mm  |                     |                                    |
| <b>Lead Diameter:</b>  | Nominal 0.6 ± 0.05mm  |                     |                                    |

## Type HB Series

### Dimensions - Type HBA, HB1 & HB3 (Radial)



### Type HB1 & HB3 (Axial)

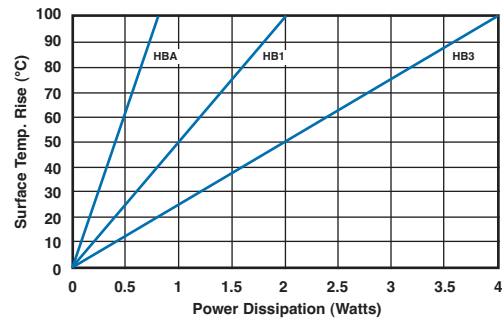


| Type |              | A    | B    | C    | D    | E    | F    | G    | H   | I   |
|------|--------------|------|------|------|------|------|------|------|-----|-----|
| HBA  | Uncoated     | 10.2 | 7    | 1.75 | 60.2 | 5.0  | -    | -    | -   | -   |
|      | Epoxy Coated | 12.5 | 8    | 2.6  | 60.5 | 5.0  | -    | -    | -   | -   |
| HB1  | Uncoated     | 8.4  | 26   | 1.5  | 33.8 | 22.9 | 26   | 66   | 1.5 | 8.4 |
|      | Epoxy Coated | 10.4 | 26.5 | 3.0  | 35.8 | 22.9 | 26.3 | 66   | 3   | 9.2 |
| HB3  | Uncoated     | 8.4  | 51.1 | 1.5  | 33.8 | 48.3 | 51.1 | 91.1 | 1.5 | 8.4 |
|      | Epoxy Coated | 10.4 | 52   | 3.0  | 35.8 | 48.3 | 53.5 | 91.1 | 3   | 9.6 |

### Derating Curve



### Surface Temperature Rise



### How to Order

| HB                                     | 3                                | 1K0   | J                          | Z                                      | R   | E                      |
|--|----------------------------------|---|----------------------------|--|---|------------------------|
| <b>Common Part</b>                     | <b>Power Rating @ 70°C</b>       | <b>Resistance Value</b>                         | <b>Tolerance</b>           | <b>Temp. Coefficient of Resistance</b> | <b>Lead Style</b>   | <b>Coating Styles</b>  |
| HB- High Value / High Voltage Resistor | A - 0.4W<br>1 - 1.0W<br>3 - 2.0W | 1Kohm (1000Ω)<br>1K0<br>1Mohm (1000000Ω)<br>1M0 | F - 1%<br>G - 2%<br>J - 5% | Z - 100ppm                             | R - Radial Leads<br>A - Axial Leads (HB1, HB3 only for Axial Leads) | E - Epoxy Blue Coating |

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- 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.
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- Входной контроль качества.
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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.



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