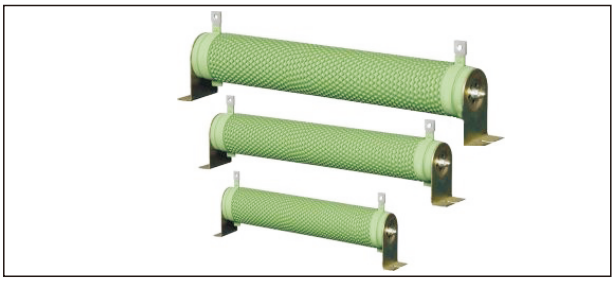
# PHG Painted High Power Ceramic Tube Resistor



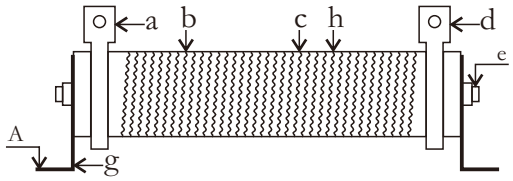
## Features

Ⅰ The product surface with solid wave type, which will help to reduce the stray inductance and withstand high current surge.

Ⅱ Good overload and heat durability capacity , the using life is longer than the others.

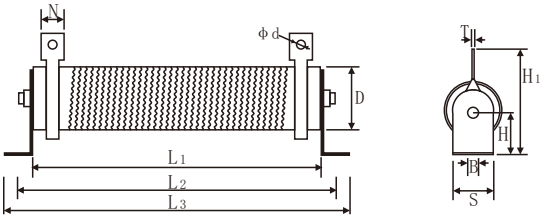
Ⅲ Resistance tolerance: ± 5%、 ±10%

## Construction




| | |
|---|---|
| ad | Terminal block |
| b | Epoxy resin insulating layer |
| c | Alloy wire |
| e | Metal screw |
| g | Zinc plating support |
| h | Alumina porcelain |

## Dimensions




| Type | Power | Dimensions (mm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $L_1 \pm 2$ | $L_2 \pm 5$ | $L_3 \pm 3$ | $D \pm 2$ | $B \pm 1$ | $H \pm 1$ | $H_1 \pm 3$ | $S \pm 2$ | $N \pm 2$ | $\Phi d \pm 1$ | $T \pm 0.5$ |
| PHG | 20W | 62 | 84 | 100 | 20 | 5 | 25 | 34 | 20 | 6 | 3.5 | 1.0 |
| PHG | 30W | 82 | 104 | 120 | 20 | 5 | 25 | 50 | 20 | 6 | 3.5 | 1.0 |
| PHG | 50W | 102 | 124 | 146 | 28 | 6.5 | 28 | 68 | 28 | 8 | 4.5 | 1.5 |
| PHG | 60W | 102 | 124 | 146 | 28 | 6.5 | 28 | 68 | 28 | 8 | 4.5 | 1.5 |
| PHG | 80W | 152 | 174 | 196 | 28 | 6.5 | 28 | 68 | 28 | 8 | 4.5 | 1.5 |
| PHG | 100W | 182 | 204 | 226 | 28 | 6.5 | 28 | 68 | 28 | 8 | 4.5 | 1.5 |
| PHG | 150W | 225 | 247 | 270 | 28 | 6.5 | 28 | 68 | 28 | 8 | 5.5 | 2.0 |
| PHG | 200W | 225 | 247 | 270 | 28 | 6.5 | 28 | 68 | 28 | 8 | 5.5 | 2.0 |
| PHG | 300W | 285 | 304 | 345 | 40 | 6.5 | 40 | 85 | 40 | 10 | 5.5 | 2.0 |
| PHG | 400W | 316 | 338 | 375 | 40 | 6.5 | 40 | 85 | 40 | 10 | 5.5 | 2.0 |
| PHG | 500W | 318 | 338 | 378 | 50 | 6.5 | 45 | 100 | 50 | 10 | 6.0 | 2.0 |
| PHG | 600W | 348 | 368 | 408 | 50 | 6.5 | 45 | 100 | 50 | 10 | 6.0 | 2.0 |
| PHG | 750W | 303 | 330 | 368 | 60 | 8.5 | 58 | 115 | 60 | 12 | 6.0 | 2.0 |
| PHG | 1000W | 433 | 460 | 500 | 60 | 8.5 | 58 | 115 | 60 | 12 | 6.0 | 2.0 |
| PHG | 1200W | 418 | 445 | 485 | 60 | 8.5 | 58 | 115 | 60 | 12 | 6.0 | 2.0 |
| PHG | 1500W | 433 | 460 | 500 | 70 | 8.5 | 65 | 125 | 70 | 15 | 6.0 | 2.0 |
| PHG | 1800W | 513 | 540 | 580 | 60 | 8.5 | 60 | 119 | 60 | 12 | 6.0 | 2.0 |
| PHG | 2000W | 435 | 457 | 500 | 80 | 6.5 | 78 | 157 | 80 | 15 | 6.5 | 2.0 |
| PHG | 2500W | 433 | 475 | 525 | 80 | 8.5 | 82 | 170 | 80 | 15 | 6.5 | 2.0 |
| PHG | 3000W | 433 | 475 | 525 | 100 | 8.5 | 82 | 170 | 100 | 15 | 6.5 | 2.0 |
| PHG | 4000W | 433 | 475 | 525 | 100 | 8.5 | 82 | 170 | 100 | 15 | 6.5 | 2.0 |
| PHG | 5000W | 505 | 560 | 580 | 150 | 10 | 120 | 260 | 150 | 30 | 10.0 | 3.0 |
| PHG | 5400W | 505 | 560 | 580 | 150 | 10 | 120 | 260 | 150 | 30 | 10.0 | 3.0 |
| PHG | 6000W | 505 | 560 | 580 | 150 | 10 | 120 | 260 | 150 | 30 | 10.0 | 3.0 |
| PHG | 10000W | 900 | 925 | 980 | 150 | 10 | 120 | 260 | 150 | 30 | 10.0 | 3.0 |
| PHG | 12000W | 900 | 925 | 980 | 150 | 10 | 120 | 260 | 150 | 30 | 10.0 | 3.0 |

## Reference Standards

JISC 5201-1

## Ordering Information

Example:

| PHG | 300 | J | 10R00 | A |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Series Name | Power Rating | Resistance Tolerance | Resistance | Special code |

(1)Type:PHG SERIES

(2)Power Rating:20=20W、50=50W、100=100W、300=300W

(3)Tolerance: J=±5%、K=±10%

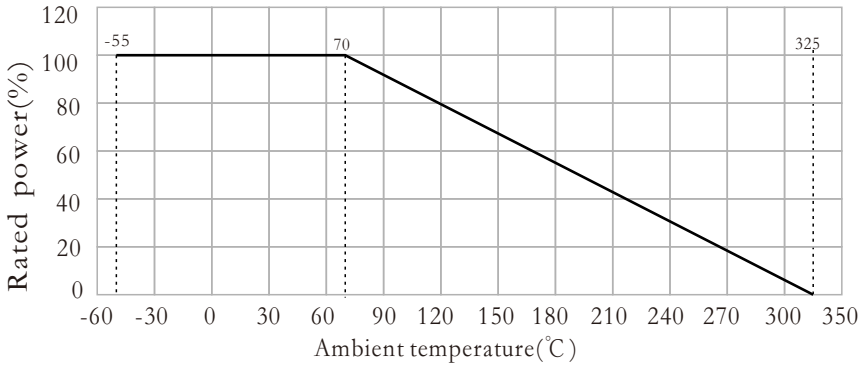
(4)Resistance Value:0R100=0.1Ω、0R200=0.20Ω、10R00=10Ω、10K00=10KΩ

(5)Special code: A1=Without brackets,A2=With brackets

## Applications And Ratings

| Type | Power (W) | Resistance Range(Ω) | Tolerance | T.C.R PPM/℃ | Max Working Voltage (V) | Max Overload Voltage (V) | Operating Temp.Range |
|---|---|---|---|---|---|---|---|
| PHG | 20W | 0.1~100 | J±5%<br>K±10% | ±350 | $\sqrt{P.R}$ | $6.25\sqrt{P.R}$ | -55℃~325℃ |
| PHG | 30W | 0.1~100 | | | | | |
| PHG | 50W | 0.15~100 | | | | | |
| PHG | 60W | 0.15~100 | | | | | |
| PHG | 80W | 0.2~100 | | | | | |
| PHG | 100W | 0.3~100 | | | | | |
| PHG | 150W | 0.36~200 | | | | | |
| PHG | 200W | 0.43~200 | | | | | |
| PHG | 300W | 0.43~200 | | | | | |
| PHG | 400W | 0.43~300 | | | | | |
| PHG | 500W | 0.5~300 | | | | | |
| PHG | 600W | 0.5~300 | | | | | |
| PHG | 750W | 0.5~500 | | | | | |
| PHG | 1000W | 0.5~500 | | | | | |
| PHG | 1200W | 0.5~500 | | | | | |
| PHG | 1500W | 0.5~500 | | | | | |
| PHG | 1800W | 0.5~500 | | | | | |
| PHG | 2000W | 0.5~500 | | | | | |
| PHG | 2500W | 0.5~500 | | | | | |
| PHG | 3000W | 0.5~500 | | | | | |
| PHG | 4000W | 0.5~500 | | | | | |
| PHG | 5000W | 0.5~1000 | | | | | |
| PHG | 5400W | 0.5~1000 | | | | | |
| PHG | 6000W | 0.5~1000 | | | | | |
| PHG | 10000W | 0.5~1000 | | | | | |
| PHG | 12000W | 0.5~1000 | | | | | |

## Derating Curve




## Performance

| Test Items | Performance | Test Methods(JIS C 5201-1) |
|---|---|---|
| Temperature coefficient | ±350PPM/℃ | Test resistance value at normal temperature and normal temperature added 100℃, calculate 70℃ resistance value change rate. |
| Short-time overload | ΔR≤±(2%R0+0.05Ω) | According 10 times rated power to account the power or max. overload voltage(get the lower) for 5seconds. |
| Resistance to soldering heat | ΔR≤±(1%R0+0.05Ω) | Immerge into the 350±10℃ tin stove for 2~3 seconds |
| Solderability | Tth soldering area is over 98% | Immerge into the 245±3℃ tin stove for 2~3 seconds |
| Temperature cycle | ΔR≤±(2%R0+0.05Ω) | At-55℃ for 30min, then at+25℃ for 10~15min,then at +155℃ for 30min, then at +25℃ for 10~5, min,total 5cycles. |
| Load life in humidity | ΔR≤±(5%R0+0.1Ω) | Overload rated voltage or Max.working voltage(get the lower)for 1000hours(1.5hours on and half-hour off) at the 40±2℃ and 90~95% relative humidity. |
| Load life in heat | ΔR≤±(5%R0+0.05Ω) | Overload rated voltage or Max.working voltage(get the lower)for 1000hours(1.5 hours on and half-hour off) at the 70±2℃. |
| Nonflammability | No visible flame | Respectively load AC voltage by 5,10,16 times rated power for 5 minutes. |