

# WIRE-WOUND FIXED RESISTORS

## Features

- Color coating is "Green"
- Non-inductive type available
- Excellent flame resistance
- Too low or too high ohmic value can be supplied on a case to case basis
- Available Fusing Wire Wound Resistors can be supplied on a case to case basis



**Ordering Procedure: (Ex.: KNP 1W, +/-5%, 100Ω, T/B-1000)**

| K                                                                                                                     | N | P | 0                                                                                                                                                                               | 1 | W | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0 | 1 | 0 | 1 | A | 1 | 8 |
|-----------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| <b>Resistor Type:</b><br>KNP = KNP Type<br>KNS = KNS Type<br>KNH = KNH Type                                           |   |   | <b>Wattage:</b><br>Normal size:<br>W2 = 1/2W<br>1W = 1W<br>:: ::<br>9W = 9W<br>AW = 10W<br>:: ::<br>A0 = 100W<br><br>Small size:<br>1S = 1W-S<br>:: ::<br>9S = 9W-S<br>AS=10W-S |   |   | <b>Resistance Value:</b> <ul style="list-style-type: none"><li>E-24 series: the 1<sup>st</sup> digit is "0", the 2<sup>nd</sup> &amp; 3<sup>rd</sup> digits are for the significant figures of the resistance and the 4<sup>th</sup> indicate the number of zeros: "J" ~ 0.1, "K" ~ 0.01<br/>Ex. 4.7Ω ~ 47J, 4.7KΩ ~ 472</li><li>E-96 series: The 1<sup>st</sup> to 3<sup>rd</sup> digits are significant figures of resistance and the 4<sup>th</sup> one denotes number of zeros.<br/>Ex. 1.33 KΩ = 1331</li></ul> |   |   |   |   |   |   |   |
| <b>Special Feature:</b><br>0 = Standard Product<br>I = Non-Inductive Product                                          |   |   | <b>Tolerance:</b><br>F = ±1%<br>G = ±2%<br>J = ±5%<br>K = ±10%                                                                                                                  |   |   | <b>Packing Type:</b><br>A = Tape/Box<br>T = Tape/Reel<br>B = Bulk/Box                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |
| *** For KNS & KNH Type- available is B/B packing Only.                                                                |   |   |                                                                                                                                                                                 |   |   | <b>Packing Qty:</b><br>1 = 1,000 pcs, 2 = 2,000 pcs, A = 500 pcs,<br>B = 2,500 pcs (for T/R), 0 = for Bulk/Box packing                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |   |   |   |
| *** 00 = for power rating over 100W. Please indicate the power rating at the last 3 digits of the part no. (B/B Only) |   |   |                                                                                                                                                                                 |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |   |
| * More explanation on part no, please see details on pages 79-80.                                                     |   |   |                                                                                                                                                                                 |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |   |

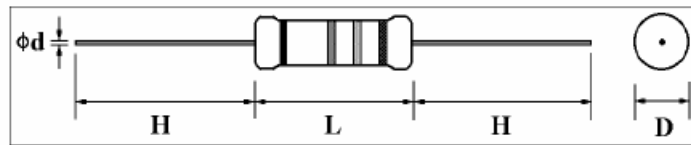
## Performance Specifications

|                                 |                                                                              |
|---------------------------------|------------------------------------------------------------------------------|
| Temperature coefficient         | <20Ω: ±400PPM/°C; ≥20Ω: ±300PPM/°C                                           |
| Short-time overload             | ΔR/R ≤ ±(2.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Terminal strength               | No evidence of mechanical damage.                                            |
| Resistance to soldering heat    | ΔR/R ≤ ±(1.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Solderability                   | Min. 95% coverage                                                            |
| Load life in humidity           | ΔR/R ≤ ±(5.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Load life                       | ΔR/R ≤ ±(5.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Dielectric withstanding voltage | No evidence of flashover, mechanical damage, arcing or insulation breakdown. |
| Pulse overload                  | ΔR/R ≤ ±(5.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Temperature cycling             | ΔR/R ≤ ±(2.0% + 0.05Ω), with no evidence of mechanical damage.               |
| Non-Flame                       | No evidence of flaming or arcing.                                            |

\*More details, please see pages 77-78.

# WIRE-WOUND FIXED RESISTORS

(1) KNP Type



## Normal Size

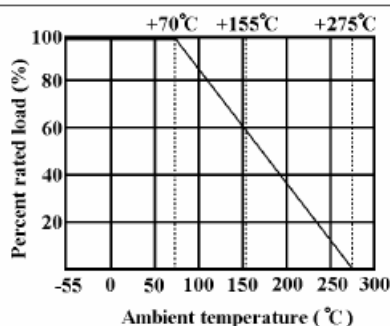
| Part no. | Style   | Power Rating at 70°C | Dimension (mm) |       |       |          | Resistance Range |
|----------|---------|----------------------|----------------|-------|-------|----------|------------------|
|          |         |                      | D ± 1          | L ± 1 | H ± 3 | d ± 0.05 |                  |
| KNP0W2   | KNP-50  | 1/2W (0.5W)          | 3.5            | 10    | 28    | 0.54     | 0.1Ω ~ 39Ω       |
| KNP01W   | KNP-100 | 1W                   | 5              | 12    | 28    | 0.70     | 0.1Ω ~ 50Ω       |
| KNP02W   | KNP-200 | 2W                   | 5.5            | 16    | 28    | 0.70     | 0.1Ω ~ 120Ω      |
| KNP03W   | KNP-300 | 3W                   | 6.5            | 17.5  | 28    | 0.75     | 0.1Ω ~ 200Ω      |
| KNP05W   | KNP-500 | 5W                   | 8.5            | 25    | 38    | 0.75     | 0.5Ω ~ 470Ω      |
| KNP07W   | KNP-700 | 7W                   | 8.5            | 30    | 38    | 0.75     | 0.5Ω ~ 470Ω      |
| KNP08W   | KNP-800 | 8W                   | 8.5            | 40    | 38    | 0.75     | 1Ω ~ 1.5KΩ       |
| KNP09W   | KNP-900 | 9W                   | 8.5            | 53    | 38    | 0.75     | 1Ω ~ 1.5KΩ       |

## Small Size

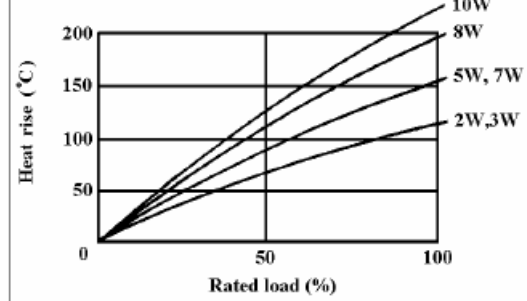
| Part no. | Style      | Power Rating at 70°C | Dimension (mm) |       |       |          | Resistance Range |
|----------|------------|----------------------|----------------|-------|-------|----------|------------------|
|          |            |                      | D ± 1          | L ± 1 | H ± 3 | d ± 0.05 |                  |
| KNP01S   | KNP-100-S  | 1W                   | 3.5            | 10    | 28    | 0.54     | 0.1Ω ~ 39Ω       |
| KNP02S   | KNP-200-S  | 2W                   | 5              | 12    | 28    | 0.70     | 0.1Ω ~ 50Ω       |
| KNP03S   | KNP-300-S  | 3W                   | 5.5            | 16    | 28    | 0.70     | 0.1Ω ~ 120Ω      |
| KNP05S   | KNP-500-S  | 5W                   | 6.5            | 17.5  | 28    | 0.75     | 0.1Ω ~ 200Ω      |
| KNP07S   | KNP-700-S  | 7W                   | 8.5            | 25    | 38    | 0.75     | 0.5Ω ~ 470Ω      |
| KNP08S   | KNP-800-S  | 8W                   | 8.5            | 30    | 38    | 0.75     | 0.5Ω ~ 470Ω      |
| KNP09S   | KNP-900-S  | 9W                   | 8.5            | 40    | 38    | 0.75     | 1Ω ~ 1.5KΩ       |
| KNP0AS   | KNP-1000-S | 10W                  | 8.5            | 53    | 38    | 0.75     | 1Ω ~ 1.5KΩ       |

Remark : For KNP Series Max Working Voltage : 500V.  
Max Overload Voltage : 1,000V.

Derating Curve

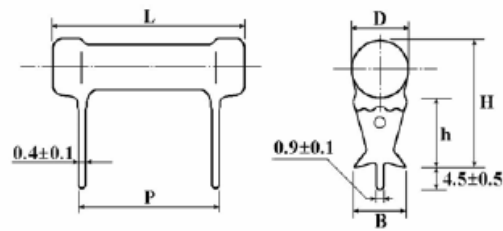


Heat Rise Chart

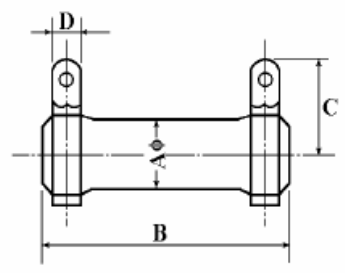


# WIRE-WOUND FIXED RESISTORS

## (2) KNS Type



| Part No. | Style    | Power Rating<br>at 70°C | Dimension (mm) |         |         |       |       |         | Resistance<br>Range |
|----------|----------|-------------------------|----------------|---------|---------|-------|-------|---------|---------------------|
|          |          |                         | D Max.         | L ± 1.5 | P ± 0.5 | H ± 1 | h ± 1 | B ± 0.5 |                     |
| KNS02W   | KNS-200  | 2W                      | 8              | 19      | 8       | 19.0  | 12    | 4.5     | 0.1Ω ~ 50Ω          |
| KNS03W   | KNS-300  | 3W                      | 8              | 21      | 10      | 19.0  | 13    | 4.5     | 0.5Ω ~ 50Ω          |
| KNS05W   | KNS-500  | 5W                      | 10             | 26      | 15      | 21.5  | 13    | 6.5     | 0.5Ω ~ 100Ω         |
| KNS07W   | KNS-700  | 7W                      | 10             | 31      | 20      | 21.5  | 13    | 6.5     | 1Ω ~ 1KΩ            |
| KNS08W   | KNS-800  | 8W                      | 10             | 41      | 30      | 21.5  | 13    | 6.5     | 1Ω ~ 1.5KΩ          |
| KNS0AW   | KNS-1000 | 10W                     | 10             | 54      | 43      | 21.5  | 13    | 6.5     | 1Ω ~ 2KΩ            |



## (3) KNH Type

| Part No.  | Style    | Power Rating<br>at 70°C | Dimension (mm) |         |       |         | Resistance<br>Range |
|-----------|----------|-------------------------|----------------|---------|-------|---------|---------------------|
|           |          |                         | A ± 1.5        | B ± 1.5 | C ± 3 | D ± 0.5 |                     |
| KNH020    | KNH-20W  | 20W                     | 19             | 50      | 19    | 4.5     | 0.4Ω~10KΩ           |
| KNH030    | KNH-30W  | 30W                     | 19             | 75      | 19    | 4.5     | 0.5Ω~15KΩ           |
| KNH040    | KNH-40W  | 40W                     | 19             | 90      | 19    | 4.5     | 0.6Ω~20KΩ           |
| KNH050    | KNH-50W  | 50W                     | 28             | 75      | 31    | 8       | 3Ω~25KΩ             |
| KNH060    | KNH-60W  | 60W                     | 28             | 90      | 31    | 8       | 3Ω~30KΩ             |
| KNH080    | KNH-80W  | 80W                     | 28             | 115     | 31    | 8       | 3Ω~40KΩ             |
| KNH...100 | KNH-100W | 100W                    | 28             | 140     | 31    | 8       | 3Ω~50KΩ             |
| KNHA25    | KNHA-25W | 25W                     | 21             | 41      | 24    | 5       | 0.4Ω~10KΩ           |