

# Anti-Surge Wire-Wound Fixed Resistors

## Performance Specification

|                                 |                                                                              |
|---------------------------------|------------------------------------------------------------------------------|
| Temperature Coefficient         | <20Ω: ±400PPM/°C; ≥20Ω: ±300PPM/°C                                           |
| Short Time Overload             | ±(2.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Dielectric Withstanding Voltage | No evidence of flashover, mechanical damage, arcing or insulation breakdown. |
| Pulse Overload                  | ±(5.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Terminal Strength               | No evidence of mechanical damage.                                            |
| Resistance to Soldering Heat    | ±(1.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Solderability                   | Min. 95% coverage.                                                           |
| Temperature Cycling             | ±(2.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Load Life In Humidity           | ±(5.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Load Life                       | ±(5.0% + 0.05Ω)Max, with no evidence of mechanical damage.                   |
| Non-Flame                       | No evidence of flaming or arcing                                             |
| Surge Immunity (IEC 61000-4-5)  | ±(5.0% + 0.05Ω)Max.                                                          |

## Ordering Procedure: Ex.: KNPA 1W, +/-5% 100Ω, T/B-1000, AntiSurge

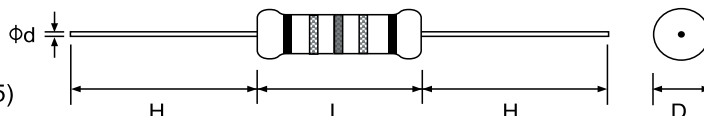
| K                                                                                                                 | N | P | A                          | 1                                                                                                                                                              | W | J | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1 | 0 | 1                                                              | A | 1 | 0 |
|-------------------------------------------------------------------------------------------------------------------|---|---|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|----------------------------------------------------------------|---|---|---|
| Type:<br>KNP = KNP                                                                                                |   |   | Feature:<br>A = Anti-Surge | Wattage:<br>Normal<br>W2 = 1/2W<br>1W = 1W<br>.. ..<br>9W = 9W<br>AW = 10W<br>.. ..<br>A0 = 100W<br><br>Small<br>1S = 1W-S<br>.. ..<br>9S = 9W-S<br>AS = 10W-S |   |   | Resistance Value: <ul style="list-style-type: none"><li>E-24 series:<br/>1<sup>st</sup> digit is "0"<br/>2<sup>nd</sup> &amp; 3<sup>rd</sup> digits are the significant figures of the resistance<br/>4<sup>th</sup> indicates the number of zeros:<br/>"J" ~ 0.1, "K" ~ 0.01<br/><b>Ex.:</b> 4.7Ω ~ 47J, 4.7KΩ ~ 472</li><li>E-96 series:<br/>1<sup>st</sup> to 3<sup>rd</sup> digits are the significant figures of the resistance and the 4<sup>th</sup> digit indicates the number of zeros:<br/><b>Ex.</b> 1.33K = 1331</li></ul> |   |   | Packing Type:<br>A = Tape/Box<br>T = Tape/Reel<br>B = Bulk/Box |   |   |   |
|                                                                                                                   |   |   |                            | Tolerance:<br>F = ±1%<br>G = ±2%<br>J = ±5%<br>K = ±10%                                                                                                        |   |   | Packing Qty:<br>1 = 1,000 pcs.<br>A = 500 pcs.<br>B = 2,500 pcs.(for T/R)<br>0 = Bulk/Box                                                                                                                                                                                                                                                                                                                                                                                                                                              |   |   |                                                                |   |   |   |
| Additional Information:<br>0 = PT-52mm, PT-26mm,<br>Standard lead wire for Bulk/Box<br>8 = PT-58mm<br>9 = PT-64mm |   |   |                            |                                                                                                                                                                |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |   |                                                                |   |   |   |

# Anti-Surge Wire-Wound Fixed Resistors

## Features

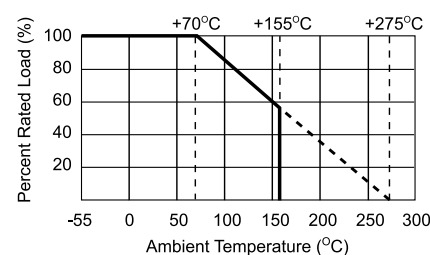
- Color coating is "Green"
- Excellent flame resistance
- Too low or too high ohmic value can be supplied on a case to case basis
- Special Fusing Wire-Wound Resistors can be supplied on a case to case basis
- Special Anti-Surge function items available (per IEC 61000-4-5)

Standard : 2% ,5% ,10% -- E - 24 series  
1% -- E - 96 series

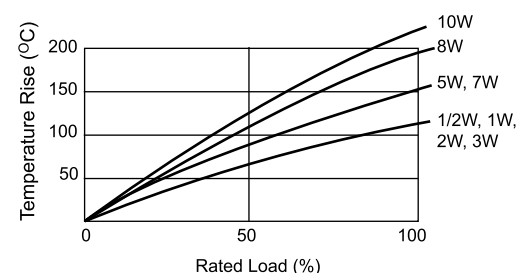


| Type        | Style       | Power Rating<br>at 70°C | Dimension (mm) |      |        |     |     |
|-------------|-------------|-------------------------|----------------|------|--------|-----|-----|
|             |             |                         | D±1            | L±1  | d±0.05 | H±3 | PT  |
| Normal Size |             |                         |                |      |        |     |     |
| KNPAW2      | KNPA50      | 1/2W(0.5W)              | 3.5            | 10.0 | 0.54   | 28  | 52  |
| KNPA1W      | KNPA100     | 1W                      | 5.0            | 12.0 | 0.70   | 28  | 52  |
| KNPA2W      | KNPA200     | 2W                      | 5.5            | 16.0 | 0.70   | 28  | 64  |
| KNPA3W      | KNPA300     | 3W                      | 6.5            | 17.5 | 0.75   | 28  | 64  |
| KNPA5W      | KNPA500     | 5W                      | 8.5            | 25.0 | 0.75   | 38  | B/B |
| KNPA7W      | KNPA700     | 7W                      | 8.5            | 30.0 | 0.75   | 38  | B/B |
| KNPA8W      | KNPA800     | 8W                      | 8.5            | 40.0 | 0.75   | 38  | B/B |
| KNPA9W      | KNPA900     | 9W                      | 8.5            | 53.0 | 0.75   | 38  | B/B |
| Small Size  |             |                         |                |      |        |     |     |
| KNPA1S      | KNPA-100-S  | 1W                      | 3.5            | 10.0 | 0.54   | 28  | 52  |
| KNPA2S      | KNPA-200-S  | 2W                      | 5.0            | 12.0 | 0.70   | 28  | 52  |
| KNPA3S      | KNPA-300-S  | 3W                      | 5.5            | 16.0 | 0.70   | 28  | 52  |
| KNPA5S      | KNPA-500-S  | 5W                      | 6.5            | 17.5 | 0.75   | 28  | 64  |
| KNPA7S      | KNPA-700-S  | 7W                      | 8.5            | 25.0 | 0.75   | 38  | B/B |
| KNPA8S      | KNPA-800-S  | 8W                      | 8.5            | 30.0 | 0.75   | 38  | B/B |
| KNPA9S      | KNPA-900-S  | 9W                      | 8.5            | 40.0 | 0.75   | 38  | B/B |
| KNPAAS      | KNPA-1000-S | 10W                     | 8.5            | 53.0 | 0.75   | 38  | B/B |

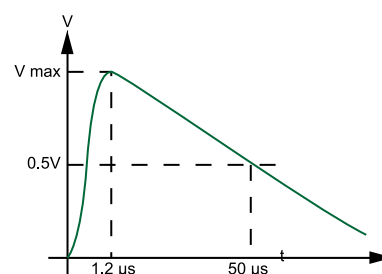
## Derating Curve



## Heat Rise Chart



## Surge Waveform (1.2/50μs)



Note: For KNPA Series Max. Working Voltage: 500V  
Max. Overload Voltage: 1,000V  
Dielectric Withstanding Voltage : Dimension ≤ 3.5 x 10 : 350V  
> 3.5 x 10 : 500V

Above surge range per power depend on the specific ohmic value required

The following are available on case to case basis:

- Low and high resistance
- Small size
- Higher surge voltage