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# 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.                                                          |

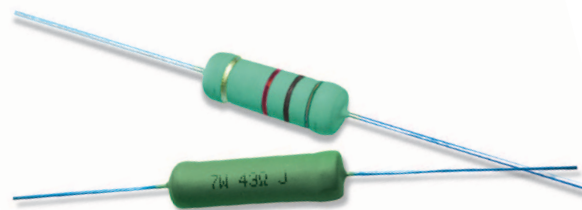
## Ordering Procedure: Ex.: KNP 1W, +/-5% 100Ω, T/B-1000, AntiSurge

| K                                 | N | P | A                                                                                                                                               | 1 | W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | J | 0 | 1                                                                     | 0 | 1                                                                                                | A | 1                                                                                                                        | 0 |
|-----------------------------------|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------|---|
| <b>Type:</b><br>KNP = KNP         |   |   | <b>Wattage:</b><br>Normal<br>W2 = 1/2W<br>1W = 1W<br>.. ..<br>9W = 9W<br>AW = 10W<br><br>Small<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:<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/>?? ∴ 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/>?? ∴ 1.33K = 1331</li> </ul> |   |   | <b>Packing Type:</b><br>A = Tape/Box<br>T = Tape/Reel<br>B = Bulk/Box |   | <b>Packing Qty:</b><br>1 = 1,000 pcs.<br>A = 500 pcs.<br>B = 2,500 pcs.(for T/R)<br>0 = Bulk/Box |   | <b>Additional Information:</b><br>0 = PT-52mm, PT-26mm,<br>Standard lead wire for Bulk/Box<br>8 = PT-58mm<br>9 = PT-64mm |   |
| <b>Feature:</b><br>A = Anti-Surge |   |   | <b>Tolerance:</b><br>F = ±1%<br>G = ±2%<br>J = ±5%<br>K = ±10%                                                                                  |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |   |                                                                       |   |                                                                                                  |   |                                                                                                                          |   |

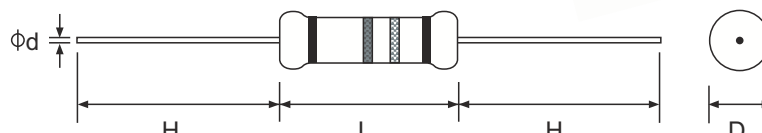
## Anti-Surge Wire-Wound Fixed Resistors

### 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



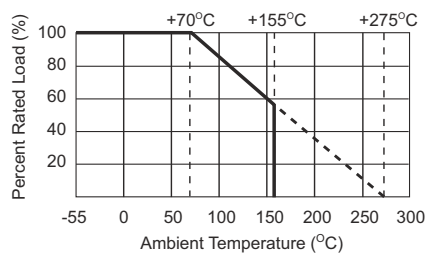
| Part No.    | Style   | Power rating at 70℃ | Dimension (mm) |        |     |        |     | Std Resistance Range | High Resistance Range | Max Surge Voltage |
|-------------|---------|---------------------|----------------|--------|-----|--------|-----|----------------------|-----------------------|-------------------|
|             |         |                     | D(max)         | L(max) | H±3 | d±0.05 | PT  |                      |                       |                   |
| Normal Size |         |                     |                |        |     |        |     |                      |                       |                   |
| KNPAW2      | KNP 50  | 1/2W (0.50W)        | 3.5            | 10.0   | 28  | 0.54   | 52  | 10Ω~39Ω              | 40Ω~560Ω              | 4KV               |
| KNPA1W      | KNP 100 | 1W                  | 5.0            | 12.0   | 25  | 0.70   | 52  | 10Ω~50Ω              | 51Ω~1KΩ               | 5KV               |
| KNPA2W      | KNP 200 | 2W                  | 5.5            | 16.0   | 28  | 0.70   | 64  | 10Ω~120Ω             | 121Ω~2KΩ              | 6KV               |
| KNPA3W      | KNP 300 | 3W                  | 6.5            | 17.5   | 28  | 0.75   | 64  | 10Ω~200Ω             | 201Ω~3KΩ              | 7KV               |
| KNPA5W      | KNP 500 | 5W                  | 8.5            | 25     | 38  | 0.75   | B/B | 10Ω~470Ω             | 471Ω~5KΩ              | 9KV               |
| KNPA7W      | KNP 700 | 7W                  | 8.5            | 30     | 38  | 0.75   | B/B | 10Ω~470Ω             | 471Ω~6KΩ              | 10KV              |
| KNPA8W      | KNP 800 | 8W                  | 8.5            | 40     | 38  | 0.75   | B/B | 10Ω~1.5KΩ            | 1.6KΩ~10KΩ            | 10KV              |
| KNPA9W      | KNP 900 | 9W                  | 8.5            | 53     | 38  | 0.75   | B/B | 10Ω~1.5KΩ            | 1.6KΩ~15KΩ            | 10KV              |

Note: For KNPA Series Max. Working Voltage: 500V  
Max. Overload Voltage: 1,000V  
Dielectric Withstanding Voltage: 1/2W : 350V, >1/2W : 500V

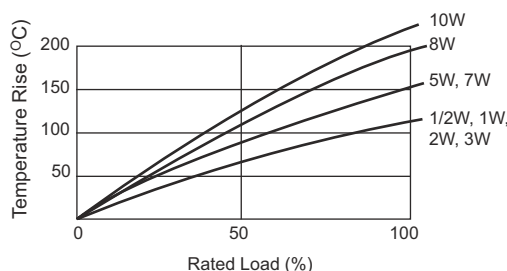
The following are available on case to case basis:

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

Derating Curve



Heat Rise Chart



Surge Waveform (1.2/50μs)

