

## Metal Film Resistors, Fusible Type



### FEATURES

- Fusible resistor for constant current designed for overload protection
- High positive temperature coefficient
- Flame retardent coating
- Defined switch-off behaviour

### STANDARD ELECTRICAL SPECIFICATIONS

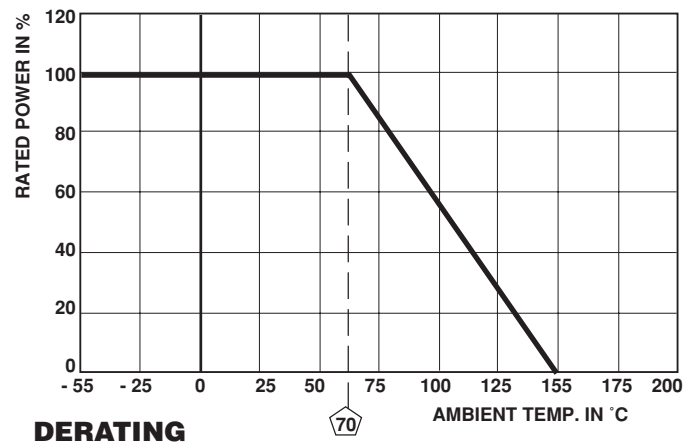
| MODEL     | POWER RATING<br>$P_{70^{\circ}\text{C}}$<br>W | TEMPERATURE<br>COEFFICIENT<br>ppm/K | TOLERANCE<br>%      | RESISTANCE<br>RANGE<br>$\Omega$ | E-SERIES      |
|-----------|-----------------------------------------------|-------------------------------------|---------------------|---------------------------------|---------------|
| NMA0207SI | 0.35                                          | + 4500/ $\pm$ 500                   | 5, 10, 20<br>10, 20 | 1R0 - 47R<br>R10 - R91          | 12 - 24<br>12 |
| NMA0309SI | 0.45                                          | + 4500/ $\pm$ 500                   | 5, 10, 20<br>10, 20 | 1R0 - 47R<br>R10 - R91          | 12 - 24<br>12 |
| NMA0411SI | 0.5                                           | + 4500/ $\pm$ 500                   | 5, 10, 20<br>10, 20 | 1R0 - 47R<br>R10 - R91          | 12 - 24<br>12 |

- Further values on request
- Marking: additional 5<sup>th</sup> band, black

- Coating: beige

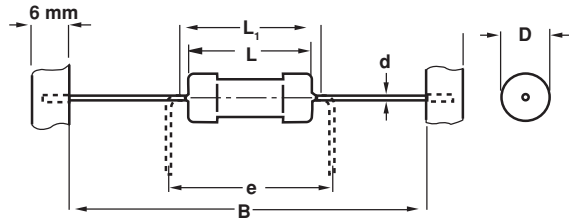
### TECHNICAL SPECIFICATIONS

| PARAMETER                            | UNIT                | NMA0207SI    | NMA0309SI | NMA0411SI |
|--------------------------------------|---------------------|--------------|-----------|-----------|
| Rated Dissipation at 70°C            | W                   | 0.35         | 0.45      | 0.5       |
| Minimum Overload to Fuse             | W                   | 1.5          | 2.0       | 3.0       |
| Time to Fuse (max)                   | s                   | 30           | 40        | 50        |
| Thermal Resistance (max)             | K/W                 | $\leq$ 220   | 190       | 150       |
| Max. Applicable Voltage after Fusing | V                   | 85           |           |           |
| Category Temperature Range           | °C                  | - 55 / + 155 |           |           |
| Failure Rate                         | 10 <sup>-9</sup> /h | < 30         |           |           |
| Weight                               | g                   | 0.22         | 0.31      | 0.52      |



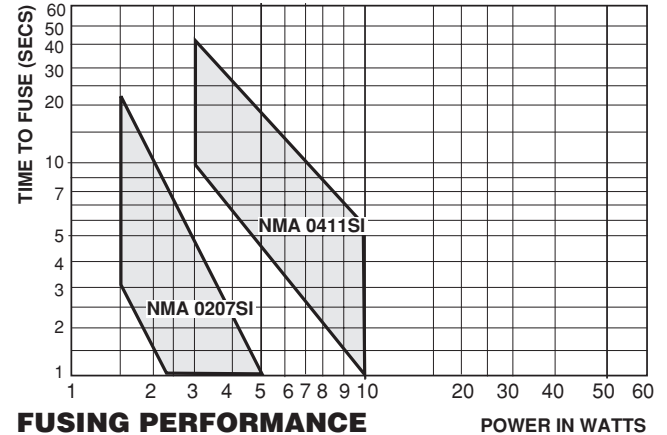
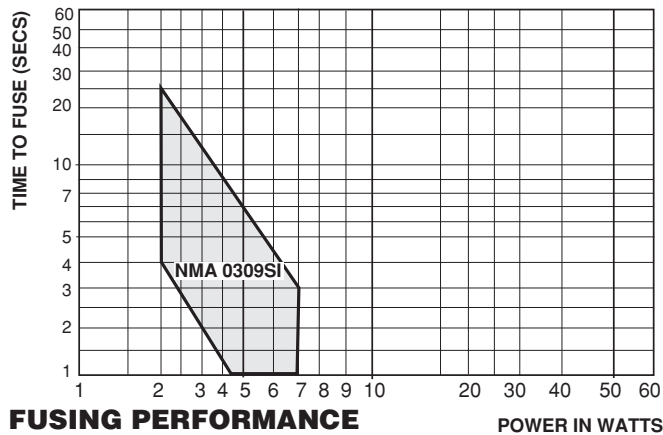
### ORDERING INFORMATION

|                  |                                    |                              |                      |                                    |
|------------------|------------------------------------|------------------------------|----------------------|------------------------------------|
| <b>NMA0207SI</b> | <b>+ 4500 <math>\pm</math> 500</b> | <b>36R</b>                   | <b>5%</b>            | <b>A5</b>                          |
| MODEL            | TC<br>ppm/K                        | RESISTANCE<br>RANGE $\Omega$ | TOLERANCE<br>$\pm$ % | PACKAGING<br>A5 Ammopack -5000 pcs |

**DIMENSIONS**


- Taping in acc. with IEC60286-1
- D and L measured in acc. with IEC60294
- d according to IEC60301

| MODEL            | DIMENSIONS [in millimeters] |                      |                   |                      |     |      |
|------------------|-----------------------------|----------------------|-------------------|----------------------|-----|------|
|                  | D                           | L                    | L <sub>1max</sub> | B                    | d   | e    |
| <b>NMA0207SI</b> | 2.3 <sub>-0.3</sub>         | 6.1 <sub>-0.5</sub>  | 8.1               | 53 ± 1 <sup>1)</sup> | 0.6 | 7.5  |
| <b>NMA0309SI</b> | 2.9 <sub>-0.3</sub>         | 8.1 <sub>-0.6</sub>  | 10.1              | 53 ± 1               | 0.7 | 10.0 |
| <b>NMA0411SI</b> | 3.5 <sub>-0.3</sub>         | 10.5 <sub>-0.6</sub> | 12.5              | 53 ± 1               | 0.7 | 12.5 |

<sup>1)</sup> Also available in 26mm tape

**PERFORMANCE**

| TEST                                                             | CONDITIONS OF TEST                                        | REQUIREMENTS |
|------------------------------------------------------------------|-----------------------------------------------------------|--------------|
| Endurance at 70°C<br>IEC 60115-1 4.25.1                          | 1000 hours at 70°C 1.5 hours "ON", 0.5 hours "OFF"        | ≤ ± 1%       |
| Endurance at UCT<br>IEC 60115-1 4.25.3                           | 1000 hours at 155°C without load                          | ≤ ± 1%       |
| Thermal Shock<br>IEC 60115-1 4.19, IEC 60068-2-14                | Rapid change between upper and lower category temperature | ≤ ± 0.25%    |
| Damp Heat Steady State<br>IEC 60115-1 4.24, IEC 60068-2-3        | 56 days at 40°C and 93% relative humidity                 | ≤ ± 1.5%     |
| Resistance to Soldering Heat<br>IEC 60115-1 4.18, IEC 60068-2-20 | 10 seconds at 260°C solder bath temperature               | ≤ ± 0.25%    |

**PACKAGING**

| MODEL     | REEL          |      |                                   | BOX          |          |                                   |
|-----------|---------------|------|-----------------------------------|--------------|----------|-----------------------------------|
|           | PIECES / REEL | CODE | MIN. ORDER QTY<br>PACKAGING UNITS | PIECES / BOX | CODE     | MIN. ORDER QTY<br>PACKAGING UNITS |
| NMA0207SI | 5000          | R5   | 1                                 | 5000<br>2000 | A5<br>A2 | 1<br>2                            |
| NMA0309SI | 5000          | R5   | 1                                 | 5000<br>2000 | A5<br>A2 | 1<br>2                            |
| NMA0411SI | 2500          | RE   | 1                                 | 1000         | A1       | 2                                 |