

**Features**

- Extremely small size
- Extremely fast response time
- Excellent SMD handling
- Stable performance over life
- Very low capacitance
- High insulation resistance
- Storage and operating temperature -40...+125°C
- RoHS-compatible
- UL-identification,

**Applications**

- Splitter
- PCI Cards
- Morden
- Line cards

**Electrical specifications**

| Part Number | Impulse spark-over Voltage | Max. Impulse Breakdown Voltage | Discharge Current (8/20us) | AC discharge Current | Impulse Life (10/1000us) | Minimum Insulation Resistance |      | Max. Capacitance 1MHz |
|-------------|----------------------------|--------------------------------|----------------------------|----------------------|--------------------------|-------------------------------|------|-----------------------|
|             | 100V/S                     | 1KV/us                         | 10 times                   | 50Hz,1S              | 200A                     | Test Voltage DC(V)            | (GΩ) | (Pf)                  |
|             | %                          | V                              | KA                         | A                    | Times                    |                               |      |                       |

|          |     |      |   |   |     |     |   |   |
|----------|-----|------|---|---|-----|-----|---|---|
| 3R075-5S | ±30 | 600  | 5 | 5 | 100 | 50  | 1 | 1 |
| 3R090-5S | ±30 | 600  | 5 | 5 | 100 | 50  | 1 | 1 |
| 3R150-5S | ±20 | 650  | 5 | 5 | 100 | 100 | 1 | 1 |
| 3R230-5S | ±20 | 700  | 5 | 5 | 100 | 100 | 1 | 1 |
| 3R350-5S | ±20 | 750  | 5 | 5 | 100 | 100 | 1 | 1 |
| 3R420-5S | ±20 | 900  | 5 | 5 | 100 | 100 | 1 | 1 |
| 3R470-5S | ±20 | 1000 | 5 | 5 | 100 | 100 | 1 | 1 |
| 3R600-5S | ±20 | 1100 | 5 | 5 | 100 | 100 | 1 | 1 |

Glow Voltage at 10mA..... ~60V

Arc Voltage at 1A..... ~10V

Glow to Arc transition Current..... ~0.3A

Weight..... ~0.88g

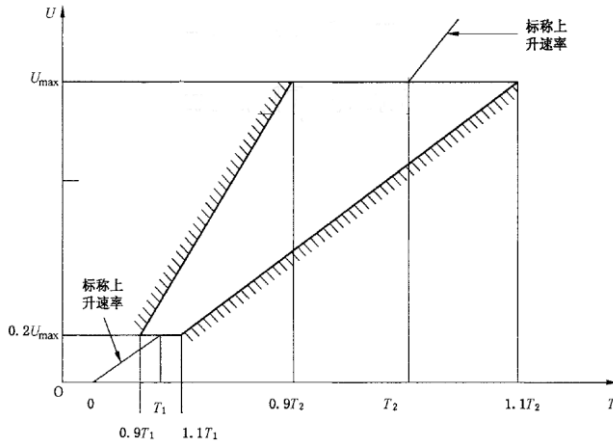
Operation and storage temperature..... -40~90°C

Climatic category (IEC 60068-1)..... 40/090/21

Marking..... Without

Surface treatment..... Matte-tin plated

## DC breakdown voltage



8/20us, Test wave

$$T1=1.25T=8us\pm 20\%$$

$$T2=20us\pm 20\%$$

10/700us, Test Wave

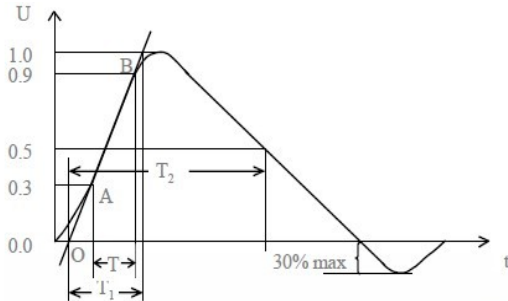
$$T1=1.67T=10us\pm 20\%$$

$$T2=700us\pm 20\%$$

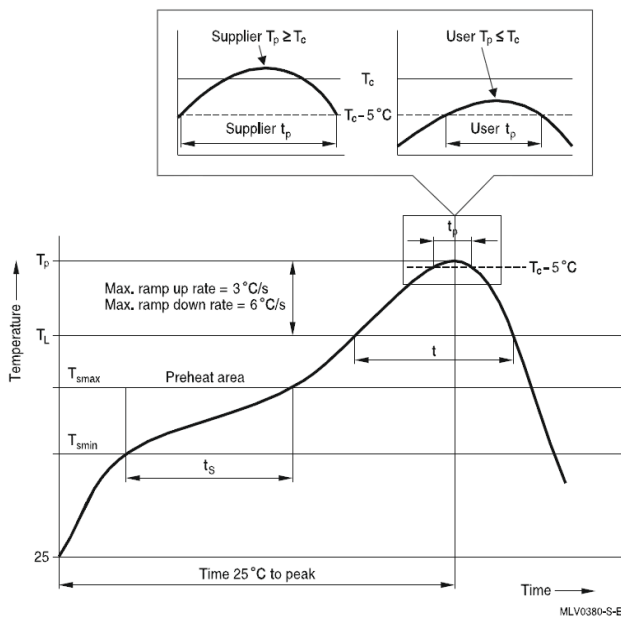
10/1000us, Test Wave

$$T1=1.67T=10us\pm 20\%$$

$$T2=1000us\pm 20\%$$



## Recommended wave soldering profile

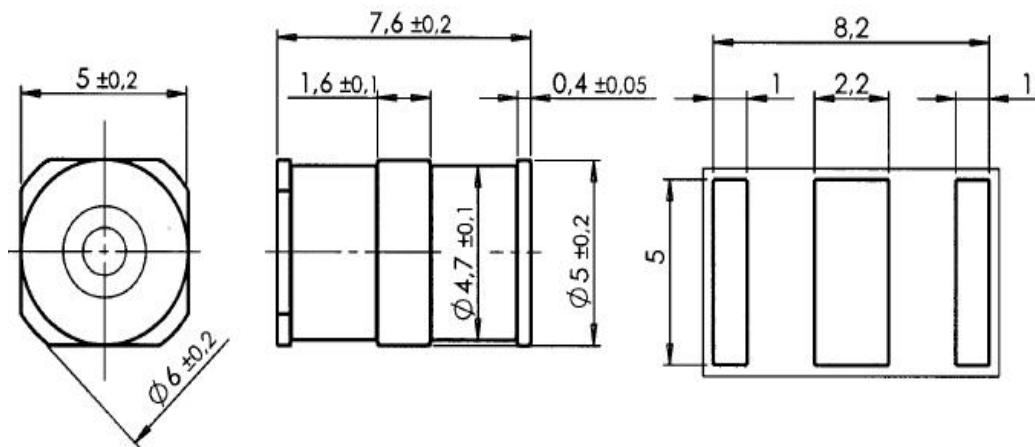


| Reflow profile features   |  | Sn-Pb eutectic assembly          | Pb-free assembly                 |
|---|--|----------------------------------|----------------------------------|
| Preheat and soak<br>- Temperature min<br>- Temperature max<br>- Time                | $T_{smin}$<br>$T_{smax}$<br>$t_{smin}$ to $t_{smax}$ | 100 °C<br>150 °C<br>60 ... 120 s | 150 °C<br>200 °C<br>60 ... 180 s |
| Average ramp-up rate  | $T_{smax}$ to $T_p$                                  | max. 3 °C/ s                     | max. 3 °C/ s                     |
| Liquidous temperature<br>Time at liquidous  | $T_L$<br>$t_L$                                       | 183 °C<br>60 ... 150 s           | 217 °C<br>60 ... 150 s           |
| Peak package body temperature *,<br>Classification temperature **                   | $T_p$ , $T_c$  | 220 ... 235 °C **                | 245 ... 260 °C **                |
| Time ( $t_p$ ) ** within 5 °C of the specified classification temperature ( $T_c$ ) |  | 20 s ***                         | 30 s ***                         |
| Average ramp-down rate  | $T_p$ to $T_{smax}$                                  | max. 6 °C/ s                     | max. 6 °C/ s                     |
| Time 25 °C to peak temperature  |  | max. 6 min                       | max. 8 min                       |

\* = Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.  
 \*\* = For details please refer to JEDEC J-STD-020D.  
 \*\*\* = Tolerance for time at peak profile temperature ( $t_p$ ) is defined as a supplier minimum and a user maximum.

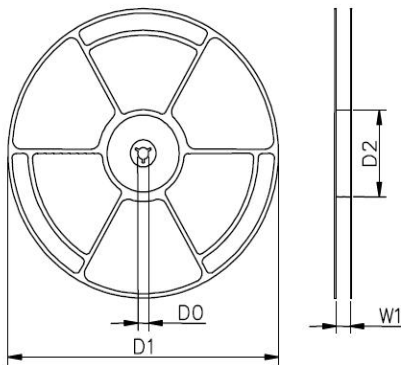
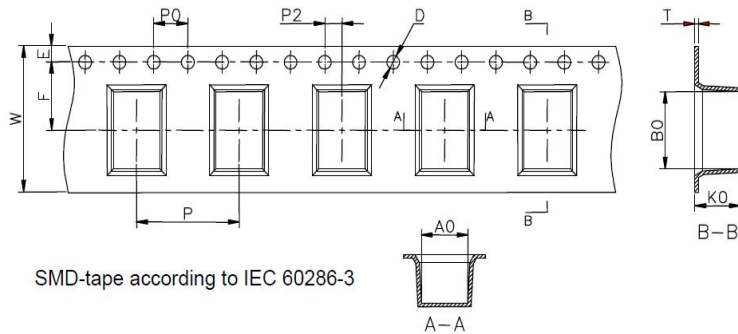
- 1) Sampling size in accordance to AQL(C=0)
- 2) DC spark-over voltage  $\pm 30\%$  after load
- 3) Tests according to ITU-T Rec. K. 12 and IEC61643-1

## Dimensions



Tin-plated

## Packaging



| Symbol | Millimeters  | Inches             |
|--------|--------------|--------------------|
| W      | 16±0.3       | 0.630±0.012        |
| A0     | 5.4±0.1      | 0.213±0.004        |
| B0     | 8.4±0.1      | 0.331±0.004        |
| K0     | 5.3±0.1      | 0.209±0.004        |
| P      | 12±0.1       | 0.472±0.004        |
| F      | 7.5±0.1      | 0.295±0.004        |
| E      | 1.75±0.1     | 0.069±0.004        |
| D      | 1.5+0.1/-0.0 | 0.059+0.004/-0.0   |
| P0     | 4±0.1        | 0.157±0.004        |
| P2     | 2±0.1        | 0.079±0.004        |
| T      | 0.4±0.1      | 0.016±0.004        |
| D0     | 13.3±0.15    | 0.524±0.006        |
| D1     | 330±2        | 12.992±0.079       |
| D2     | 100+1/-2     | 3.937+0.039/-0.079 |
| W1     | 16.5±0.4     | 0.65±0.016         |

## Cautions and warnings

- Surge arresters must not be operated directly in power supply networks
- Surge arresters may become hot in case of longer periods of current stress (danger of burning).
- If the contacts of the surge arrester are defective, current stress can lead to the formation of sparks and loud noises.
- Surge arresters may be used only within their specified values. In case of overload, the head contacts may fail or the component may be destroyed.
- Damaged surge arresters must not be re-used.