

## Micro Surface Mount, 2-Electrode Gas Discharge Tube B2G3SS Series

### Descriptions

The Gas Discharge Tube (GDT) operates as a symmetrical voltage-dependent switch. Features as very high surge current handling capability, very high insulation resistance and ultra-low capacitance meet almost perfectly all requirements made on a protective element.

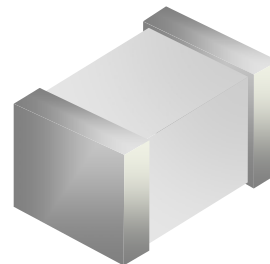
The B2G3SS Series are designed for surface mounting on PCB with small size 4.5x3.2x2.7mm. Low insertion loss and small factors are perfectly suited to broadband equipment applications.

### Features

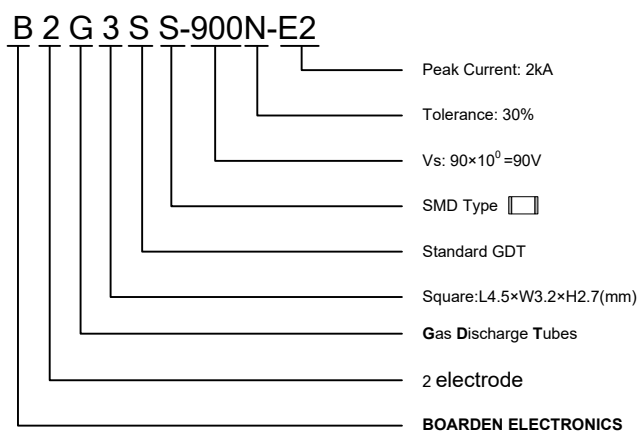
- 2-electrode arrester
- Very small size
- Rugged Ceramic-Metal construction
- Stable performance over life
- Extremely low capacitance ( $\leq 0.5\text{pF}$ )
- High insulation resistance

### Applications

- PCI cards
- Modem
- Splitter
- Line cards
- Applications with limited space



### Part Numbering System

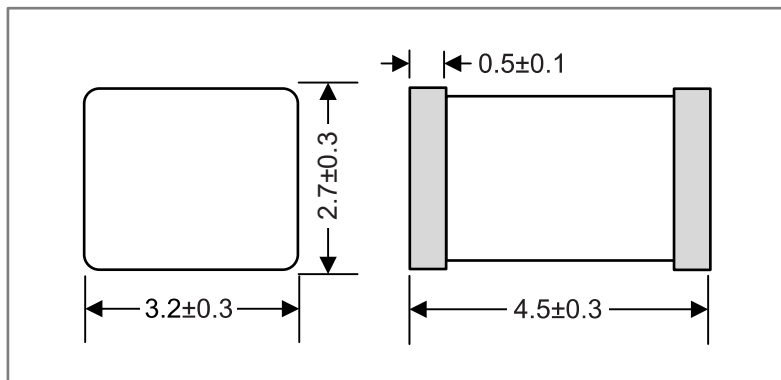


### Order information

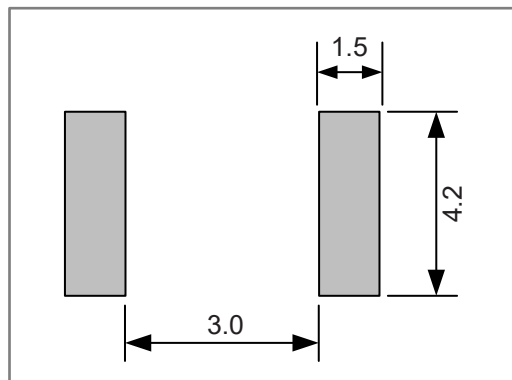
| Device        | Qualities | Reel Size |
|---------------|-----------|-----------|
| B2G3SS Series | 2500      | 13 Inch   |

### Product Dimensions (mm)

#### Dimension



#### Recommended Pad Size



**Electrical Characteristics (TA=25°C unless otherwise noted)**

| Part Number                            | $V_s^{1),2)}$<br>@100V/s | $V_{ss}$      |              | IMDC                          |                        |                              |                                                | ACDC                | IR <sup>3)</sup> | C    |
|----------------------------------------|--------------------------|---------------|--------------|-------------------------------|------------------------|------------------------------|------------------------------------------------|---------------------|------------------|------|
|                                        |                          | 100V/ $\mu$ s | 1kV/ $\mu$ s | 8/20 $\mu$ s<br>$\pm 5$ times | 8/20 $\mu$ s<br>1 time | 10/1000 $\mu$ s<br>100 times | 10/700 $\mu$ s<br>40 $\Omega$<br>$\pm 5$ times | @50Hz 1s<br>5 times |                  | 1MHz |
|                                        |                          | Max.          | Max.         | Nom.                          | Max.                   | Min.                         | Nom.                                           | Nom.                |                  | Max  |
|                                        | V                        | V             | V            | A                             | A                      | A                            | V                                              | A                   | G $\Omega$       | pF   |
| B2G3SS-700N-E2                         | 70 $\pm$ 30%             | 500           | 600          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-750N-E2                         | 75 $\pm$ 30%             | 500           | 600          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-900N-E2                         | 90 $\pm$ 30%             | 500           | 600          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-121N-E2                         | 120 $\pm$ 30%            | 500           | 600          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-151N-E2                         | 150 $\pm$ 30%            | 500           | 600          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-201N-E2                         | 200 $\pm$ 30%            | 600           | 700          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-231N-E2                         | 230 $\pm$ 30%            | 600           | 700          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-301N-E2                         | 300 $\pm$ 30%            | 700           | 800          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-351N-E2                         | 350 $\pm$ 30%            | 800           | 900          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-401N-E2                         | 400 $\pm$ 30%            | 850           | 950          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-421N-E2                         | 420 $\pm$ 30%            | 850           | 950          | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-471N-E2                         | 470 $\pm$ 30%            | 900           | 1000         | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-501N-E2                         | 500 $\pm$ 30%            | 1000          | 1100         | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-601N-E2                         | 600 $\pm$ 30%            | 1100          | 1200         | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| B2G3SS-801N-E2                         | 800 $\pm$ 30%            | 1400          | 1600         | 2000                          | 3000                   | 10                           | 6000                                           | 2                   | 1                | 0.5  |
| Glow voltage at 10mA.....              |                          |               |              |                               | ~60V                   |                              |                                                |                     |                  |      |
| Arc voltage at 1A.....                 |                          |               |              |                               | ~10V                   |                              |                                                |                     |                  |      |
| Glow to Arc transition current.....    |                          |               |              |                               | ~0.3A                  |                              |                                                |                     |                  |      |
| Weight.....                            |                          |               |              |                               | ~0.20g                 |                              |                                                |                     |                  |      |
| Operation and storage temperature..... |                          |               |              |                               | -40 ~ +90°C            |                              |                                                |                     |                  |      |
| Climatic category (IEC 60068-1).....   |                          |               |              |                               | 40/90/21               |                              |                                                |                     |                  |      |
| Marking.....                           |                          |               |              |                               | Blank                  |                              |                                                |                     |                  |      |

1) At delivery AQL 0.65 level II, DIN ISO 2859

2) In ionized mode

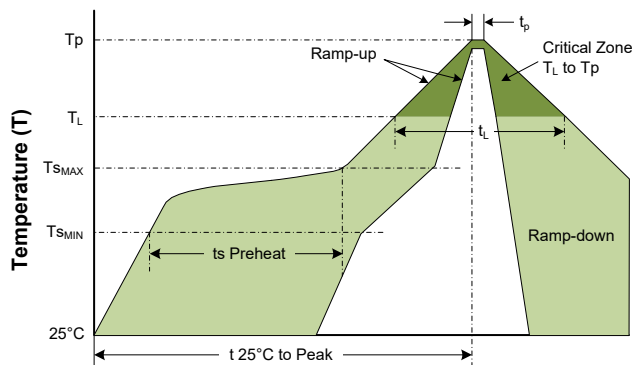
3) Insulation resistance measuring voltage: 75V at 25Vdc; 90~150V at 50Vdc; other at 100Vdc

Terms in accordance with ITU-T Rec.K.12, IEC 61643-311, GB/T 9043

- $V_s$  - DC Spark Over Voltage
- $V_{ss}$  - Impluse Spark Over Voltage
- IMDC - Impulse Discharge Current
- ACDC - AC Discharge Current
- IR - Insulation Resistance
- C - Capacitance

## Soldering Parameters

| Profile Feature                                                                                                         | Lead-Free Assembly                 |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Average Ramp-up Rate ( $T_{S_{MAX}}$ to $T_p$ )<br>Average Ramp-down Rate ( $T_p$ to $T_L$ )                            | 3°C/second max.<br>6°C/second max. |
| <b>Preheat</b><br>• Temperature Min ( $T_{S_{MIN}}$ )<br>• Temperature Max ( $T_{S_{MAX}}$ )<br>• Time ( $t_s$ Preheat) | 150°C<br>200°C<br>60-180 seconds   |
| <b>Time maintained above:</b><br>• Temperature ( $T_L$ )<br>• Time ( $t_L$ )                                            | 217°C<br>60-150 seconds            |
| <b>Peak/Classification Temperature</b><br>• Temperature ( $T_p$ )                                                       | 260 <sup>+0/-5</sup> °C            |
| <b>Time within 5°C of actual Peak</b><br>Time ( $t_p$ )                                                                 | 20-40 seconds                      |
| <b>Time 25°C to peak Temperature</b>                                                                                    | 8 minutes max                      |
| <b>Do not exceed</b>                                                                                                    | 280 °C                             |



### Flow/Wave Soldering (Solder Dipping)

|                           |            |
|---------------------------|------------|
| <b>Peak Temperature :</b> | 265 °C     |
| <b>Dipping Time :</b>     | 10 seconds |
| <b>Soldering :</b>        | 1 time     |

## Cautions and warnings

- Gas Discharge Tubes must not be operated directly in power supply networks.
- Gas Discharge Tubes may become hot in case of longer periods of current stress (danger of burning).
- Gas Discharge Tubes may be used only within their specified values. In case of overload, the head contacts may fail or the component may be destroyed.
- Damaged Gas Discharge Tubes must not be re-used.

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Specifications are subject to change without notice.

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