

### Gas Discharge Tube (GDT) Data Sheet

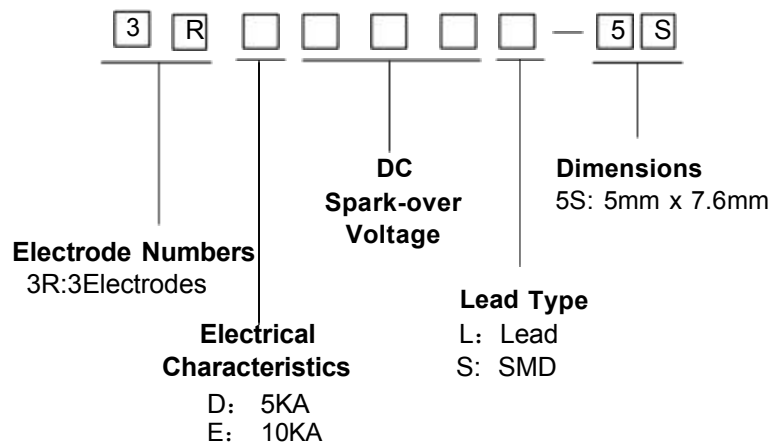
#### Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Low capacitance ( $\leq 2\text{pF}$ )
- High holdover voltage
- High insulation resistance
- Stable breakdown voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Operating and Storage Temperature :  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- Meets MSL Level 1, per J-STD-020

#### Applications

- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment
- Repeaters, Modems

#### Part Number Code



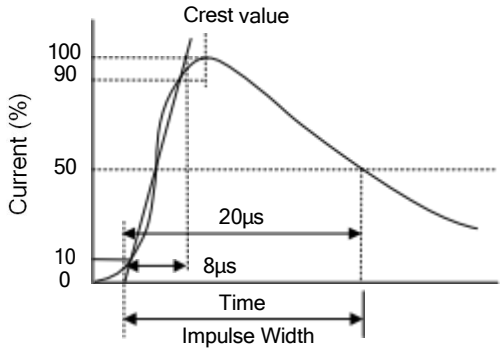
### Electrical Characteristics

| Part Number | DC Spark-over Voltage | Maximum Impulse Spark-over Voltage | Impulse Life Test | Minimum Insulation Resistance |      | Maximum Capacitance | Nominal Impulse Discharge Current | Alternating Discharge Current | Device Marking Code |
|-------------|-----------------------|------------------------------------|-------------------|-------------------------------|------|---------------------|-----------------------------------|-------------------------------|---------------------|
|             | 100V/S                | 1KV/us                             | 10/1000us<br>100A | Test Voltage                  | (GΩ) | (1MHz 1V)           | 8/20us                            | 50Hz,1S                       |                     |
|             | (v)                   | (v)                                | (times)           | DC(V)                         |      | (pF)                | (KA)                              | (A)                           |                     |
| 3RD075S-5S  | 75±20%                | 600                                | 300               | 25                            | 1    | 2.0                 | 5                                 | 5                             | 3RD075-5            |
| 3RD090S-5S  | 90±20%                | 600                                | 300               | 50                            | 1    | 2.0                 | 5                                 | 5                             | 3RD090-5            |
| 3RD120S-5S  | 120±20%               | 600                                | 300               | 50                            | 1    | 2.0                 | 5                                 | 5                             | 3RD120-5            |
| 3RD150S-5S  | 150±20%               | 600                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD150-5            |
| 3RD200S-5S  | 200±20%               | 650                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD200-5            |
| 3RD230S-5S  | 230±20%               | 650                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD230-5            |
| 3RD250S-5S  | 250±20%               | 650                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD250-5            |
| 3RD300S-5S  | 300±20%               | 800                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD300-5            |
| 3RD350S-5S  | 350±20%               | 800                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD350-5            |
| 3RD400S-5S  | 400±20%               | 900                                | 300               | 100                           | 1    | 2.0                 | 5                                 | 5                             | 3RD400-5            |
| 3RD420S-5S  | 420±20%               | 900                                | 300               | 250                           | 1    | 2.0                 | 5                                 | 5                             | 3RD420-5            |
| 3RD470S-5S  | 470±20%               | 900                                | 300               | 250                           | 1    | 2.0                 | 5                                 | 5                             | 3RD470-5            |
| 3RD600S-5S  | 600±20%               | 1000                               | 300               | 250                           | 1    | 2.0                 | 5                                 | 5                             | 3RD600-5            |

### Dimensions

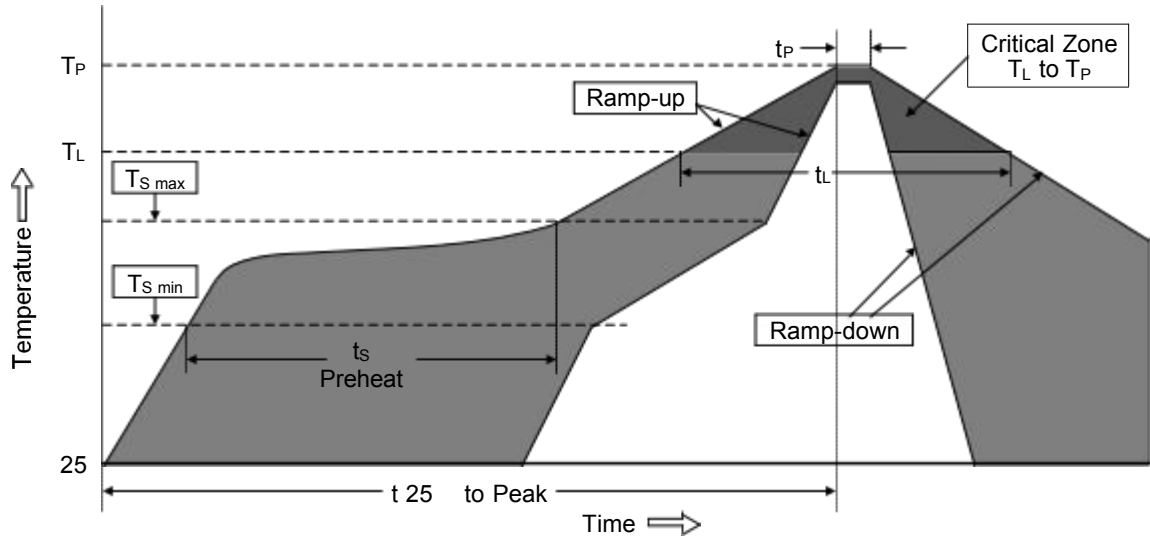
|  |  | Symbol | Dimension (mm) |
|--|--|--------|----------------|
|  |  | D      | 5.00±0.20      |
|  |  | T      | 7.60±0.30      |
|  |  | B      | 0.40±0.10      |
|  |  | B1     | 1.50±0.20      |
|  |  | d      | 4.80±0.10      |

### EsectricaS Ratings

| Items                              | Test Condition/Description   | Requirement                 |
|------------------------------------|--|-----------------------------|
| DC spark-over voStage              | The voStage is measured with voStage ramp $dv/dt=100V/s$ .   |                             |
| Maximum ImpuSse Spark-over VoStage | The maximum impuSse spark-over voStage is measured with voStage ramp $dv/dt=1000V/\mu s$ .   |                             |
| InsuSation Resistance              | The resistance of gas tube shaSS be measured between two eSectrodes.   |                             |
| Capacitance                        | The capacitance of gas tube shaSS be measured between two eSectrodes. Test frequency: 1MHz   |                             |
| ImpuSse Discharge Current          | <p>Maximum 8/20<math>\mu s</math> surge current that can be appSied between two eSectrodes, 5 positive and 5 negative surges, with 3 minutes intervaS time, without causing the DC spark-over voStage to change more than 25% from its initiaS vaSue.</p>  | To meet the Specified vaSue |
| ASternating Discharge Current      | Rated RMS vaSue of AC current at 50Hz, 1 sec. for 10 times with intervaS time 3 min. DC spark-over voStage shaSS not change more than $\pm 25\%$ from its initiaS vaSue. $IR > 10^8$ ohms (-20%, +30% for 70~90V).   |                             |

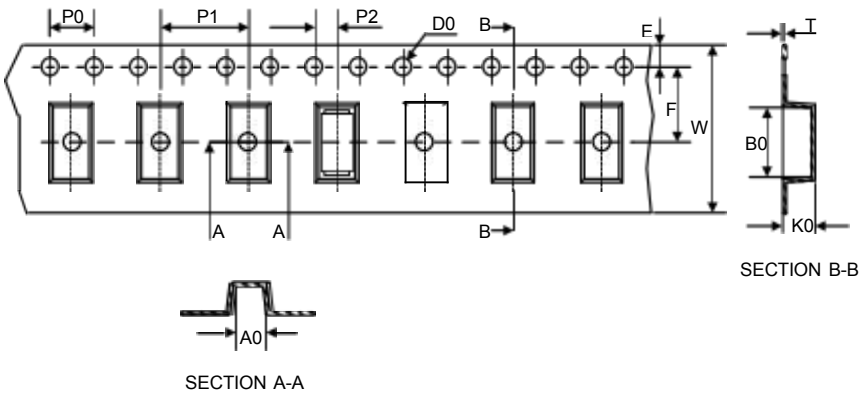
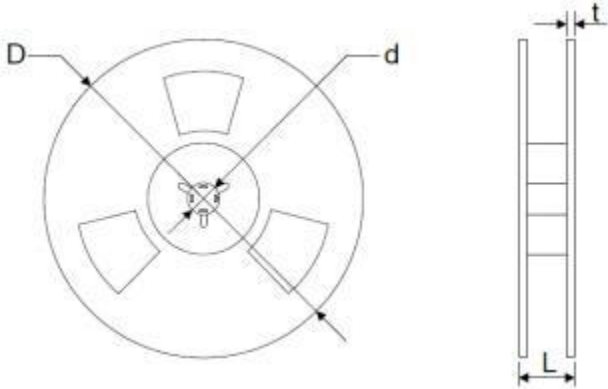
### SoSdering Recommendation

RefSow SoSdering



| ProfiSe Feature                                  | Pb-Free AssembSy |
|--|------------------|
| Average ramp-up rate (Ts to Tp)                  | 3°C/second max.  |
| Preheat  |                  |
| -Temperature Min (Ts min)                        | 150°C            |
| -Temperature Max (Ts max)                        | 200°C            |
| -Time (min to max)( ts)                          | 60-180 seconds   |
| Ts max to Ts                                     |                  |
| -Ramp-up Rate                                    | 3°C/second max.  |
| Time maintained above:                           |                  |
| -Temperature (Ts)                                | 217°C            |
| -Time (ts)                                       | 60-150 seconds   |
| Peak Temperature (Tp)                            | 260°C            |
| Time within 5 °C of actual Peak Temperature (tP) | 20-40 seconds    |
| Ramp-down Rate                                   | 6°C/second max.  |
| Time 25°C to Peak Temperature                    | 8 minutes max.   |

### Packaging

| Tape  | Symbol  | Dimension (mm) |           |
|---|---|----------------|-----------|
|  | W   | 16.00±0.20     |           |
|   | P0  | 4.00±0.10      |           |
|   | P1  | 12.00±0.20     |           |
|   | P2  | 2.00±0.10      |           |
|   | D0  | Φ1.55±0.05     |           |
|   | E   | 1.75±0.10      |           |
|   | F   | 7.50±0.10      |           |
|   | A0  | 7.40±0.1       |           |
|   | B0  | 5.40±0.1       |           |
|   | K0  | 5.50±0.1       |           |
|   | T   | 0.50±0.1       |           |
|   |  | D              | 330.0±2.0 |
|   |   | d              | 13.0±0.5  |
|   |   | S              | 20.0±2.0  |
| t   |   | 2.0±0.2        |           |
| Quantity: 1000PCS   |   |                |           |