

# DATA SHEET

GAS DISCHARGE TUBES  
TELEPHONE INTERFACE

4532 series

RoHS compliant & free



Product specification— July 12, 2023 V.1



## Gas Discharge Tube (GDT) Data Sheet

### Features

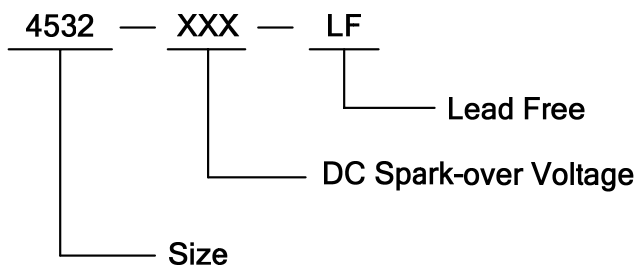
- High insulation resistance
- Low capacitance ( $\leq 0.5\text{pF}$ )
- 2KA 8/20 $\mu\text{s}$  maximum surge current capacity in accordance with IEC 61000-4-5& IEC 61643-311
- 4KV 10/700 $\mu\text{s}$  maximum surge rating in accordance with ITU-TK.21
- Surface mounted gas arrester
- Micro-Gap Design
- Size 4532(1812)
- Storage and operating temperature:  $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$
- Meets MSL level 1, per J-STD-020
- Safety certification: UL & TUV



### Applications

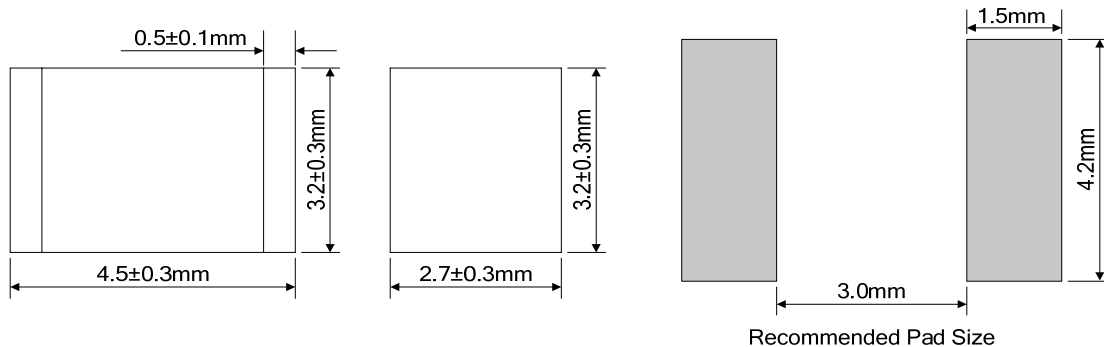
- Repeaters, Modems
- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment

### Part Number Code and Marking



**090: Device Marking Code**

### Dimensions



**Electrical Characteristics**

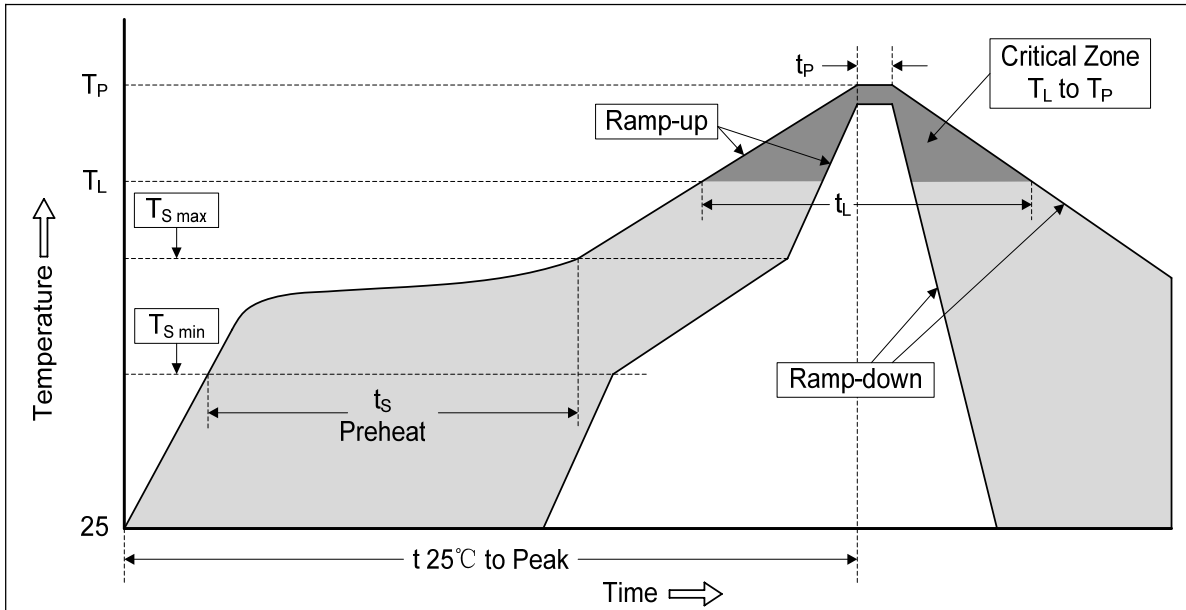
| Part Number  | DC Spark-over Voltage | Maximum Impulse Spark-over Voltage | Nominal Impulse Discharge Current | Impulse Withstanding Voltage Capacity | Minimum Insulation Resistance |               | Maximum Capacitance | Device Marking Code |
|--------------|-----------------------|------------------------------------|-----------------------------------|---------------------------------------|-------------------------------|---------------|---------------------|---------------------|
|              | 100V/s                | 1000V/ $\mu$ s                     | 8/20 $\mu$ s<br>10times           | 10/700 $\mu$ s<br>10times             | Test Voltage                  | (G $\Omega$ ) | (1MHz 1V)           |                     |
|              | (V)                   | (V)                                | (KA)                              | (KV)                                  | DC(V)                         |               | (pF)                |                     |
| 4532-075-LF  | 75 $\pm$ 30%          | 600                                | 2                                 | 4                                     | 50                            | 1             | 0.5                 | 075                 |
| 4532-091-LF  | 90 $\pm$ 30%          | 700                                | 2                                 | 4                                     | 50                            | 1             | 0.5                 | 090                 |
| 4532-121-LF  | 120 $\pm$ 30%         | 700                                | 2                                 | 4                                     | 50                            | 1             | 0.5                 | 120                 |
| 4532-151-LF  | 150 $\pm$ 30%         | 700                                | 2                                 | 4                                     | 50                            | 1             | 0.5                 | 150                 |
| 4532-201-LF  | 200 $\pm$ 30%         | 750                                | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 200                 |
| 4532-231-LF  | 230 $\pm$ 30%         | 750                                | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 230                 |
| 4532-301-LF  | 300 $\pm$ 30%         | 900                                | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 300                 |
| 4532-351-LF  | 350 $\pm$ 30%         | 900                                | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 350                 |
| 4532-401-LF  | 400 $\pm$ 30%         | 1000                               | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 400                 |
| 4532-421-LF  | 420 $\pm$ 30%         | 1000                               | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 420                 |
| 4532-471-LF  | 470 $\pm$ 30%         | 1000                               | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 470                 |
| 4532-501-LF  | 500 $\pm$ 30%         | 1100                               | 2                                 | 4                                     | 100                           | 1             | 0.5                 | 500                 |
| 4532-601-LF  | 600 $\pm$ 30%         | 1200                               | 1                                 | 4                                     | 100                           | 1             | 0.5                 | 600                 |
| 4532-801-LF  | 800 $\pm$ 30%         | 1600                               | 1                                 | 4                                     | 100                           | 1             | 0.5                 | 800                 |
| 4532-1000-LF | 1000 $\pm$ 20%        | 2400                               | 1                                 | 4                                     | 100                           | 1             | 0.5                 | 102                 |
| 4532-1200-LF | 1200 $\pm$ 20%        | 2600                               | 1                                 | 4                                     | 100                           | 1             | 0.5                 | 122                 |
| 4532-1500-LF | 1500 $\pm$ 20%        | 2800                               | 1                                 | 4                                     | 100                           | 1             | 0.5                 | 152                 |

**Electrical Ratings**

| Items                              | Test Condition/Description   | Requirement                 |
|------------------------------------|--|-----------------------------|
| DC Spark-over Voltage              | The voltage is measured with voltage ramp dv/dt=100V/s.  | To meet the specified value |
| Maximum Impulse Spark-over Voltage | The maximum impulse spark-over voltage is measured with voltage ramp dv/dt=1000V/ $\mu$ s.   |                             |
| Insulation Resistance              | The resistance of gas tube shall be measured between two electrodes.   |                             |
| Capacitance                        | The capacitance of gas tube shall be measured between two electrodes. Test frequency: 1MHz   |                             |
| Impulse Discharge Current          | Maximum 8/20 $\mu$ s surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time. |                             |
| Impulse Withstanding Voltage       | The maximum 10/700 $\mu$ s surge that can be applied to the Gas Tube, 5 positive and 5 negative surges, with 1 minute interval time.           |                             |

**Recommended Soldering Conditions**

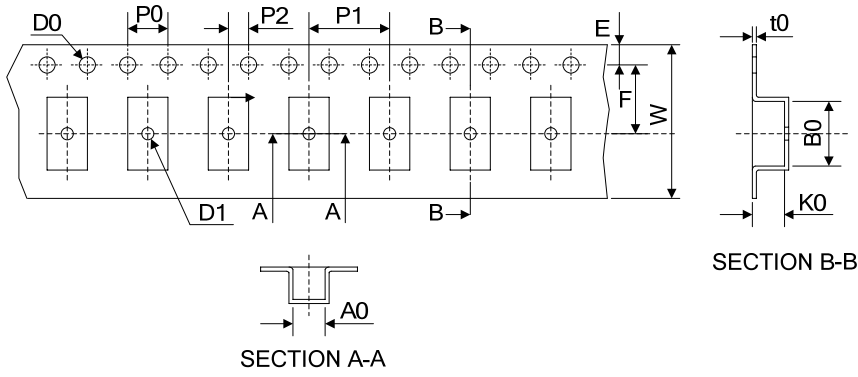
**Reflow Soldering**



| Profile Feature   | Pb-Free Assembly                 |
|---|----------------------------------|
| Average ramp-up rate ( $T_L$ to $T_P$ )   | 3°C/second max.                  |
| Preheat<br>-Temperature Min ( $T_{S\ min}$ )<br>-Temperature Max ( $T_{S\ max}$ )<br>-Time (min to max) ( $t_s$ ) | 150°C<br>200°C<br>60-180 seconds |
| $T_{S\ max}$ to $T_L$<br>-Ramp-up Rate  | 3°C/second max.                  |
| Time maintained above:<br>-Temperature ( $T_L$ )<br>-Time ( $t_L$ )   | 217°C<br>60-150 seconds          |
| Peak Temperature ( $T_P$ )  | 260°C                            |
| Time within 5°C of actual Peak Temperature ( $t_P$ )  | 20-40 seconds                    |
| Ramp-down Rate  | 6°C/second max.                  |
| Time 25°C to Peak Temperature   | 8 minutes max.                   |

**Packaging**

**Tape**



| Items             | Dimension (mm) |           |
|-------------------|----------------|-----------|
|                   | Spec.          | Tolerance |
| W                 | 12.00          | ±0.20     |
| P0                | 4.00           | ±0.10     |
| P1                | 8.00           | ±0.20     |
| P2                | 2.00           | ±0.10     |
| D0                | 1.55           | ±0.10     |
| D1                | 1.00           | ±0.10     |
| E                 | 1.75           | ±0.10     |
| F                 | 5.50           | ±0.10     |
| A0                | 3.80           | ±0.10     |
| K0                | 3.20           | ±0.10     |
| B0                | 4.90           | ±0.10     |
| t0                | 0.40           | ±0.10     |
| D                 | 330.00         | ±2.00     |
| d                 | 13.00          | ±0.50     |
| L                 | 16.00          | ±2.00     |
| t                 | 2.00           | ±0.20     |
| Quantity: 2500pcs |                |           |

**Reel**

