

DATA SHEET

GAS DISCHARGE TUBES
TELEPHONE INTERFACE

2R-5-SST4.2 series

RoHS compliant & free



Product specification— July 12, 2023 V.1



Gas Discharge Tube (GDT) Data Sheet

Features

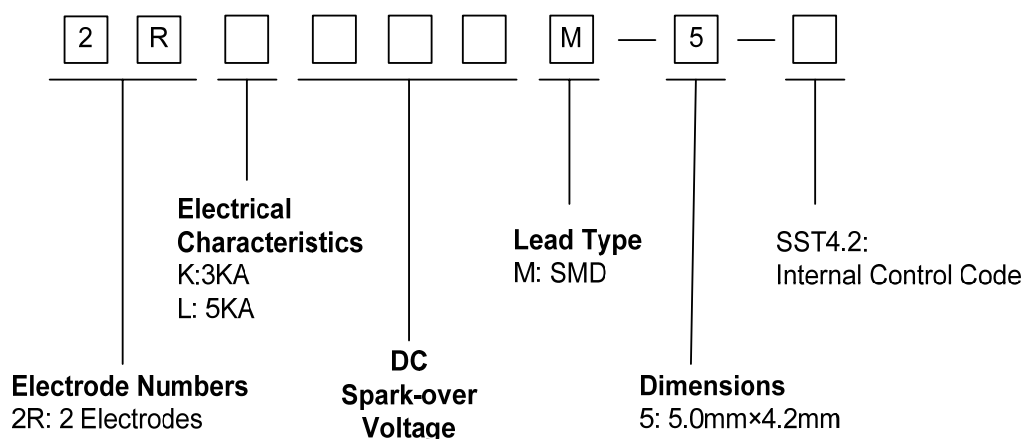
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ μ s
- Stable breakdown voltage
- High insulation resistance
- Low capacitance (≤ 1 pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 5.0mm*4.2mm
- Square ceramic tube for SMD
- Storage and operating temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020
- Safety certification: UL



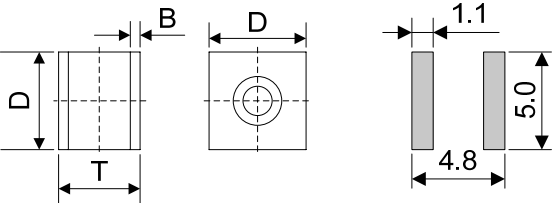
Applications

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

Part Number Code



Dimensions

| M Type | Symbol | Dimension (mm) | |
|---|--------|----------------|-----------|
| | | Spec. | Tolerance |
|  | D | 5.0 | ±0.2 |
| | T | 4.2 | ±0.3 |
| | B | 0.5 | ±0.1 |

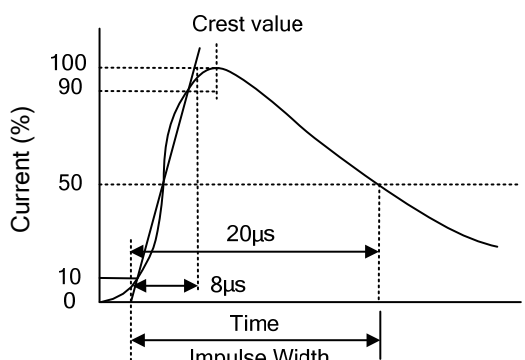
Recommended Pad Size

Electrical Characteristics

| Part Number | Type ① | DC Spark-over Voltage | Maximum Impulse Spark-over Voltage | Nominal Impulse Discharge Current | Minimum Insulation Resistance | | Maximum Capacitance | Device Marking Code |
|-------------|-----------|-----------------------|------------------------------------|-----------------------------------|-------------------------------|---------------|---------------------|---------------------|
| | | 100V/s | 1000V/ μ s | 8/20 μ s \pm 5times | Test Voltage | (G Ω) | 1MHz | |
| | | (V) | (V) | (KA) | DC(V) | | (pF) | |
| 2RL075M-5 | SST4.2 | 75 \pm 20% | 700 | 5.0 | 25 | 1.0 | 1.0 | None |
| 2RL090M-5 | SST4.2 | 90 \pm 20% | 650 | 5.0 | 50 | 1.0 | 1.0 | None |
| 2RL120M-5 | SST4.2 | 120 \pm 20% | 700 | 5.0 | 50 | 1.0 | 1.0 | None |
| 2RL150M-5 | SST4.2 | 150 \pm 20% | 700 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL230M-5 | SST4.2 | 230 \pm 20% | 700 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL250M-5 | SST4.2 | 250 \pm 20% | 700 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL300M-5 | SST4.2 | 300 \pm 20% | 800 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL350M-5 | SST4.2 | 350 \pm 20% | 850 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL400M-5 | SST4.2 | 400 \pm 20% | 900 | 5.0 | 100 | 1.0 | 1.0 | None |
| 2RL470M-5 | SST4.2 | 470 \pm 20% | 1000 | 5.0 | 250 | 1.0 | 1.0 | None |
| 2RL600M-5 | SST4.2 | 600 \pm 20% | 1200 | 5.0 | 250 | 1.0 | 1.0 | None |
| 2RK800M-5 | SST4.2 | 800 \pm 20% | 1600 | 3.0 | 250 | 1.0 | 1.0 | None |
| 2RK1000M-5 | SST4.2 | 1000 \pm 20% | 1800 | 3.0 | 500 | 1.0 | 1.0 | None |

Notes: ① Specific code by request.

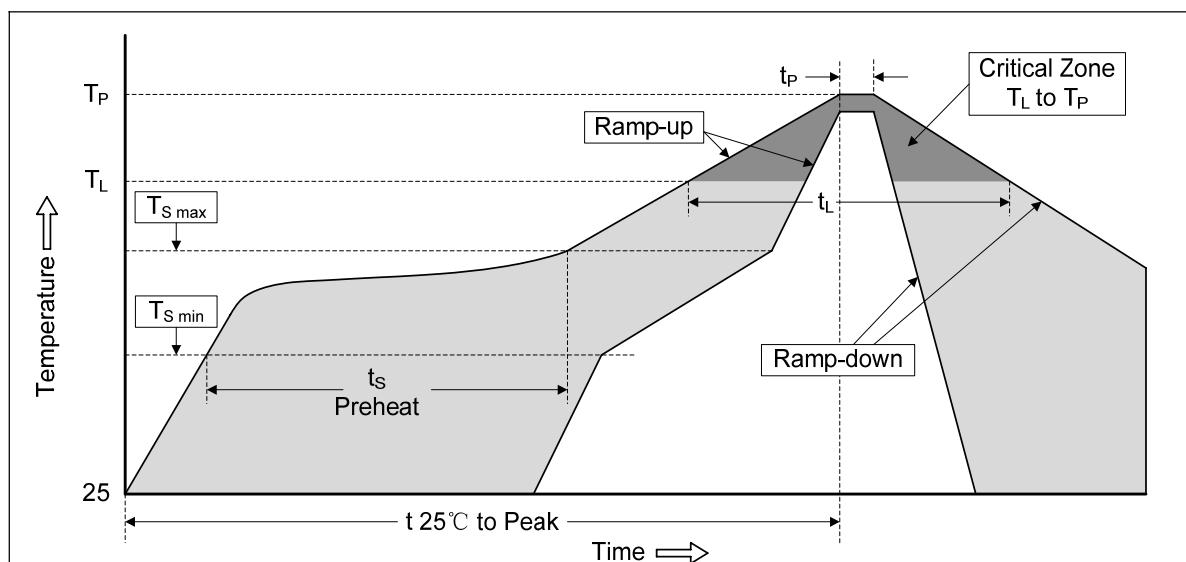
Electrical Ratings

| 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 $dv/dt=1000V/\mu s$. | |
| Impulse Discharge Current | <p>Maximum 8/20μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time.</p>  | |

| | | |
|-----------------------|---|--|
| 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 | |

Recommended Soldering Conditions

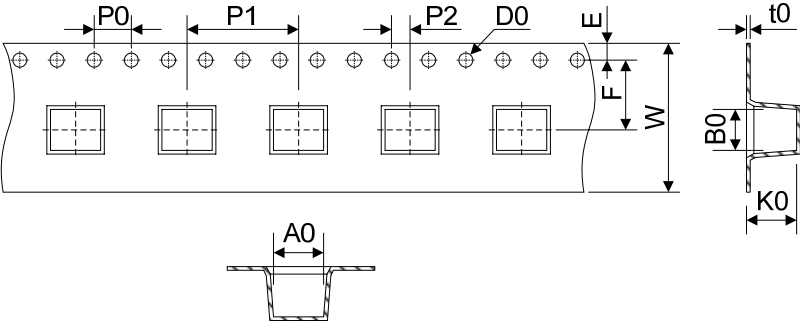
Reflow Soldering



| Profile Feature | Pb-Free Assembly |
|---|----------------------------------|
| Average ramp-up rate (T_L to T_P) | 3°C/second max. |
| Preheat <ul style="list-style-type: none"> -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s) | 150°C 200°C 60-180 seconds |
| $T_{S\ max}$ to T_L <ul style="list-style-type: none"> -Ramp-up Rate | 3°C/second max. |
| Time maintained above: <ul style="list-style-type: none"> -Temperature (T_L) -Time (t_L) | 217°C 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. |

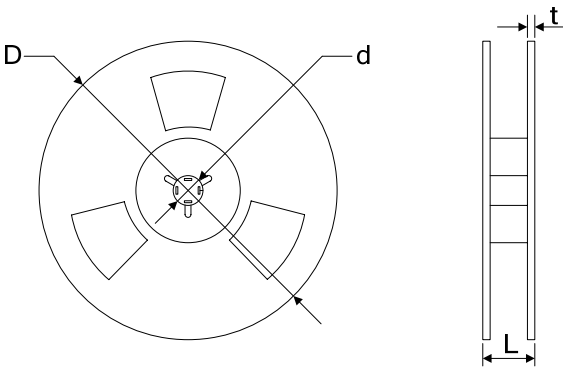
Packaging

Tape



| Symbol | Dimension (mm) | |
|------------------|----------------|-----------|
| | Spec. | Tolerance |
| W | 16.00 | ±0.20 |
| P0 | 4.00 | ±0.10 |
| P1 | 12.00 | ±0.10 |
| P2 | 2.00 | ±0.10 |
| D0 | 1.55 | ±0.10 |
| E | 1.75 | ±0.10 |
| F | 7.50 | ±0.10 |
| A0 | 5.30 | ±0.10 |
| B0 | 4.50 | ±0.10 |
| K0 | 5.40 | ±0.10 |
| t0 | 0.40 | ±0.10 |
| D | 330.00 | ±2.00 |
| d | 13.00 | ±0.50 |
| L | 20.00 | ±2.00 |
| t | 2.00 | ±0.20 |
| Quantity: 800pcs | | |

Reel



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