



**THE DATASHEET OF  
2RM075M-8-S**



# DATA SHEET

GAS DISCHARGE TUBES  
TELEPHONE INTERFACE

2R-8x6(S) series

RoHS compliant & free



Product specification— July 12, 2023 V.1



## Gas Discharge Tube (GDT) Data Sheet

### Features

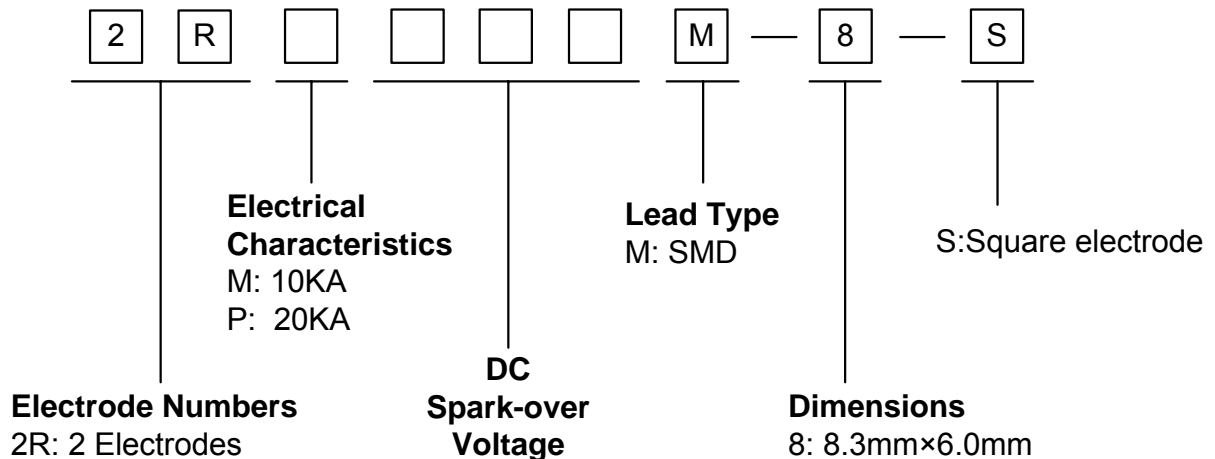
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Stable breakdown voltage
- High insulation resistance
- Low capacitance (≤1.5pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 8.3mm\*6.0mm
- 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



### Marking

- B** : BrightKing Logo
- 2RP090-8 : Device Marking Code
- XXXX : Internal Control Code

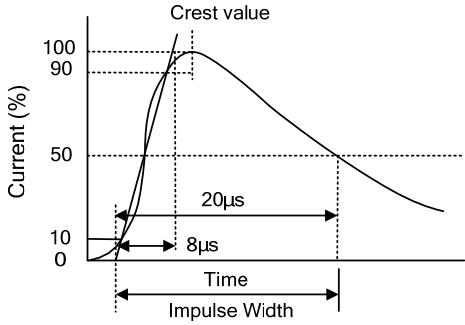
**Dimensions**

| M Type | Symbol | Dimension (mm) |           |
|--------|--------|----------------|-----------|
|        |        | Spec.          | Tolerance |
|        | A      | 8.0            | ±0.20     |
|        | B      | 0.5            | ±0.10     |
|        | D      | 8.3            | ±0.20     |
|        | T      | 6.0            | ±0.25     |
|        | S      | 9.0            | ±0.40     |

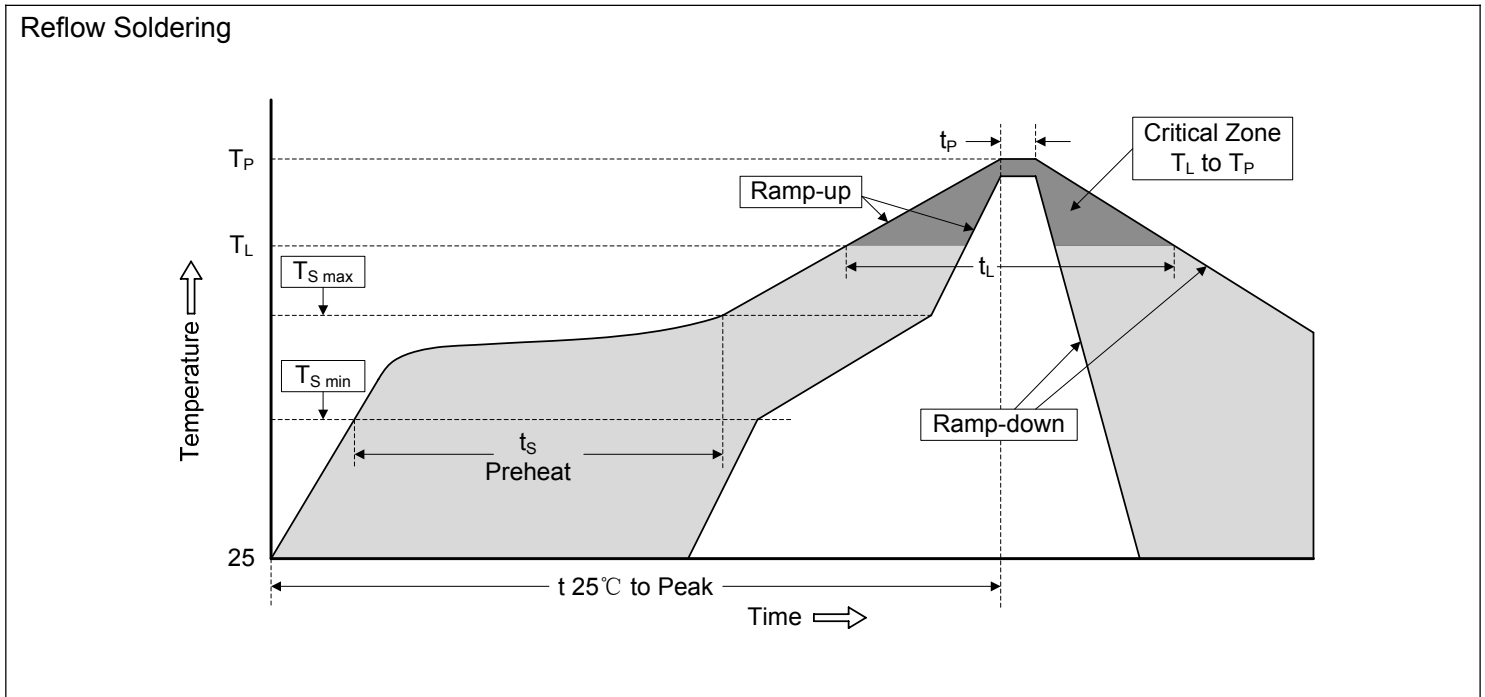
**Electrical Characteristics**

| Part Number  | DC Spark-over Voltage | Maximum Impulse Spark-over Voltage | Nominal Impulse Discharge Current | Single Impulse Discharge Current | Alternating Discharge Current | Impulse Life | Minimum Insulation Resistance |      | Maximum Capacitance | Device Marking Code |
|--------------|-----------------------|------------------------------------|-----------------------------------|----------------------------------|-------------------------------|--------------|-------------------------------|------|---------------------|---------------------|
|              | 100V/s                | 1000V/μs                           | 8/20μs<br>10times                 | 10/350μs                         | 50Hz, 1sec                    | 10/1000 μs   | Test Voltag                   | (GΩ) | 1MHz                |                     |
|              | (V)                   | (V)                                | (KA)                              | (KA)                             | (A)                           | (times)      | DC(V)                         |      | (pF)                |                     |
| 2RM075M-8-S  | 75±20%                | 600                                | 10                                | 2.5                              | 10                            | 500          | 25                            | 1.0  | 1.5                 | 2RM075-8            |
| 2RM090M-8-S  | 90±20%                | 600                                | 10                                | 2.5                              | 10                            | 500          | 50                            | 1.0  | 1.5                 | 2RM090-8            |
| 2RM150M-8-S  | 150±20%               | 600                                | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM150-8            |
| 2RM230M-8-S  | 230±20%               | 700                                | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM230-8            |
| 2RM250M-8-S  | 250±20%               | 700                                | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM250-8            |
| 2RM300M-8-S  | 300±20%               | 900                                | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM300-8            |
| 2RM350M-8-S  | 350±20%               | 900                                | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM350-8            |
| 2RM420M-8-S  | 420±20%               | 1000                               | 10                                | 2.5                              | 10                            | 500          | 100                           | 1.0  | 1.5                 | 2RM420-8            |
| 2RM470M-8-S  | 470±20%               | 1000                               | 10                                | 2.5                              | 10                            | 500          | 250                           | 1.0  | 1.5                 | 2RM470-8            |
| 2RM600M-8-S  | 600±20%               | 1200                               | 10                                | 2.5                              | 10                            | 500          | 250                           | 1.0  | 1.5                 | 2RM600-8            |
| 2RM800M-8-S  | 800±20%               | 1500                               | 10                                | 2.5                              | 10                            | 500          | 250                           | 1.0  | 1.5                 | 2RM800-8            |
| 2RM1000M-8-S | 1000±20%              | 1700                               | 10                                | 2.5                              | 10                            | 500          | 250                           | 1.0  | 1.5                 | 2RM1000-8           |
| 2RM1500M-8-S | 1500±20%              | 2300                               | 10                                | 2.5                              | 5                             | 500          | 500                           | 1.0  | 1.5                 | 2RM1500-8           |
| 2RP075M-8-S  | 75±20%                | 600                                | 20                                | 5.0                              | 20                            | 500          | 25                            | 1.0  | 1.5                 | 2RP075-8            |
| 2RP090M-8-S  | 90±20%                | 600                                | 20                                | 5.0                              | 20                            | 500          | 50                            | 1.0  | 1.5                 | 2RP090-8            |
| 2RP150M-8-S  | 150±20%               | 600                                | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP150-8            |
| 2RP230M-8-S  | 230±20%               | 700                                | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP230-8            |
| 2RP250M-8-S  | 250±20%               | 700                                | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP250-8            |
| 2RP300M-8-S  | 300±20%               | 900                                | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP300-8            |
| 2RP350M-8-S  | 350±20%               | 900                                | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP350-8            |
| 2RP420M-8-S  | 420±20%               | 1000                               | 20                                | 5.0                              | 20                            | 500          | 100                           | 1.0  | 1.5                 | 2RP420-8            |
| 2RP470M-8-S  | 470±20%               | 1000                               | 20                                | 5.0                              | 20                            | 500          | 250                           | 1.0  | 1.5                 | 2RP470-8            |
| 2RP600M-8-S  | 600±20%               | 1200                               | 20                                | 5.0                              | 20                            | 500          | 250                           | 1.0  | 1.5                 | 2RP600-8            |
| 2RP800M-8-S  | 800±20%               | 1500                               | 20                                | 5.0                              | 20                            | 500          | 250                           | 1.0  | 1.5                 | 2RP800-8            |
| 2RP1000M-8-S | 1000±20%              | 1700                               | 20                                | 5.0                              | 20                            | 500          | 250                           | 1.0  | 1.5                 | 2RP1000-8           |

**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 8/20<math>\mu s</math> surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time.</p>  |                             |
| Alternating Discharge Current      | Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min.   |                             |
| 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**

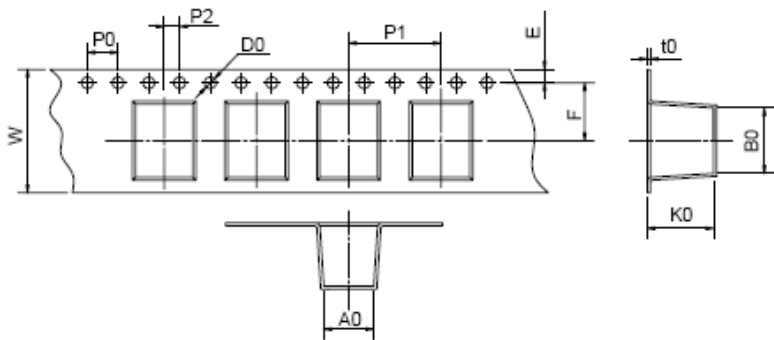


Recommended Conditions

| 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) (ts) | 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.                   |

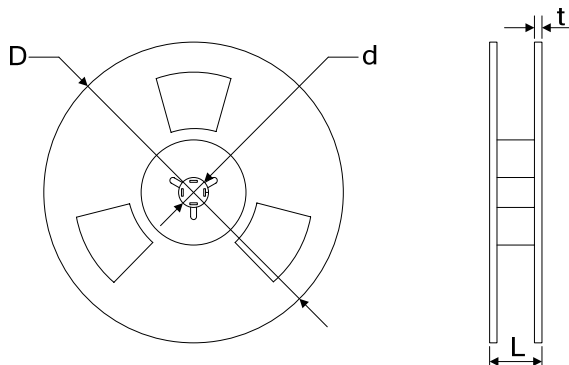
**Packaging**

Tape



| Symbol | Dimension (mm) |           |
|--------|----------------|-----------|
|        | Spec.          | Tolerance |
| W      | 16.00          | ±0.20     |
| P0     | 4.00           | ±0.10     |
| P1     | 12.00          | ±0.20     |
| P2     | 2.00           | ±0.10     |
| D0     | 1.55           | ±0.05     |
| E      | 1.75           | ±0.10     |
| F      | 7.50           | ±0.10     |
| A0     | 6.35           | ±0.10     |
| K0     | 6.55           | ±0.10     |
| B0     | 8.65           | ±0.10     |
| t0     | 0.50           | ±0.10     |

Reel



|   |        |       |
|---|--------|-------|
| D | 330.00 | ±2.00 |
| d | 13.00  | ±0.50 |
| L | 20.00  | ±2.00 |
| t | 2.00   | ±0.20 |

Quantity: 600pcs

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