



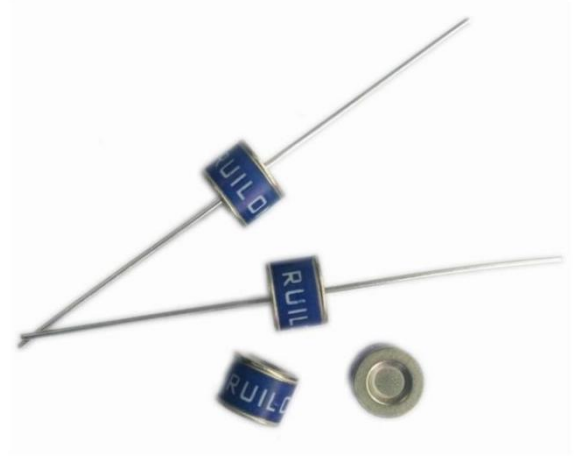
REVISED RECORD LIST

| Rev. | Date | Revised Content |
|------|------------|-----------------|
| 1.0 | 2023-06-13 | Initial version |
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Gas Discharge Tube

GDT is placed in front of, and in parallel with, sensitive telecom equipment such as power lines, communication lines, signal lines and data transmission lines to help protect them from damage caused by transient surge voltages that may result from lightning strikes and equipment switching operations. These devices do not influence the signal in normal operation. However, in the event of an overvoltage surge, such as a lightning strike, the GDT switches to a low impedance state and diverts the energy away from the sensitive equipment..

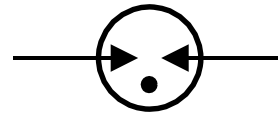
Our GDT offer a high level of surge protection, a broad voltage range, low capacitance, and many form factors including new surface mount devices, which makes them suitable for applications such as Main Distribution Frame (MDF) modules, high data-rate telecom applications (e.g. ADSL, VDSL), and surge protection on power lines. Their low capacitance also results in less signal distortion. When used in a coordinated circuit protection solution with PolySwitch devices, they can help equipment manufacturers meet stringent safety regulatory standards.



Features

- Excellent response to fast rising transients
- Stable breakdown voltage
- GHz working frequency
- 8/20 μ s Impulse current capability: 10KA
- Non-Radioactive
- Ultra Low capacitance (<1.5pF)
- Lead-free compliant
- RoHS and REACH complian
- Size: Φ 8mm*6mm
- Storage and operational temperature: -40~+90 $^{\circ}$ C

Electrical symbol



Applications

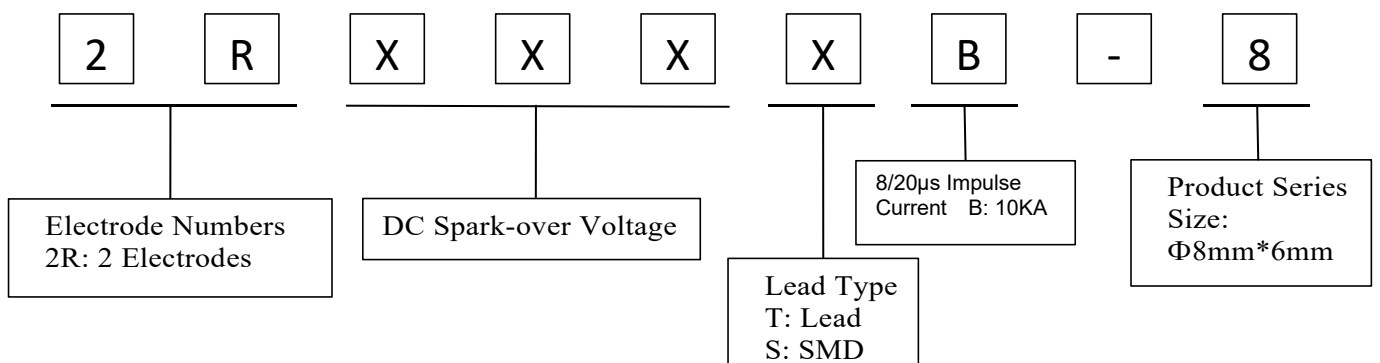
Automotive:

- MDF modules
- xDSL equipment
- RF systems
- Antenna
- Base stations
- Repeaters, Modems
- Telephone Interface, Line cards

Others:

- Data communication equipment
- Line test equipment
- Power supplies
- Surge protectors, Alarm systems

Part Number Code



Electrical Characteristics

| Part Number | | DC Spark-over Voltage ¹⁾²⁾ @100V/S | Impulse Spark over Voltage | | Insulation Resistance ³⁾ | Capacitance @1MHz | Glow Voltage @10mA | Arc Voltage @1A | Arc Voltage @1A | | | |
|-------------------------|-------------------------|--|----------------------------|--------|-------------------------------------|-------------------|--------------------|-----------------|----------------------------------|-----|-------------------------------|-----------------------------|
| | | | 100V/μS | 1KV/μS | | | | | Impulse Discharge Current@8/20μS | | AC Discharge Current @50Hz 1S | Impulse Life @10/100μS 100A |
| | | | Max | Max | | | | | Min | Max | Type | Type |
| DIP | SMD | V | V | V | GΩ | pF | V | V | KA | KA | A | Times |
| 2R075TB-8 ⁴⁾ | 2R075SB-8 ⁴⁾ | 75±20% | 500 | 600 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R090TB-8 | 2R090SB-8 | 90±20% | 500 | 600 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R150TB-8 | 2R150SB-8 | 150±20% | 500 | 600 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R230TB-8 | 2R230SB-8 | 230±20% | 600 | 700 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R250TB-8 ⁴⁾ | 2R250SB-8 ⁴⁾ | 250±20% | 600 | 700 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R300TB-8 | 2R300SB-8 | 300±20% | 700 | 800 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R350TB-8 | 2R350SB-8 | 350±20% | 700 | 800 | 1 | 1.5 | 60 | 10 | 10 | 20 | 10 | 300 |
| 2R400TB-8 | 2R400SB-8 | 400±20% | 750 | 850 | 1 | 1.5 | 135 | 15 | 10 | 20 | 10 | 300 |
| 2R420TB-8 | 2R420SB-8 | 420±20% | 750 | 850 | 1 | 1.5 | 135 | 15 | 10 | 20 | 10 | 300 |
| 2R470TB-8 | 2R470SB-8 | 470±20% | 800 | 900 | 1 | 1.5 | 135 | 15 | 10 | 20 | 10 | 300 |
| 2R600TB-8 | 2R600SB-8 | 600±20% | 900 | 1000 | 1 | 1.5 | 135 | 15 | 10 | 20 | 10 | 300 |
| 2R800TB-8 | 2R800SB-8 | 800±20% | 1200 | 1400 | 1 | 1.5 | 135 | 15 | 10 | 20 | 10 | 300 |

Glow to Arc transition Current ~0.5A

Weight
DIP 1.5g
SMD ~1.25g

Operation and storage temperature -40~+90°C

Marking, red negative
RUILON XXX Y
XXX -Nominal voltage
Y -Year of production

Surface treatment
DIP -Nickel Plated
SMD -Matte-tin plated

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

2) In ionized mode.

3) Insulation Resistance Measuring Voltage:

75V~150V at DC 50V

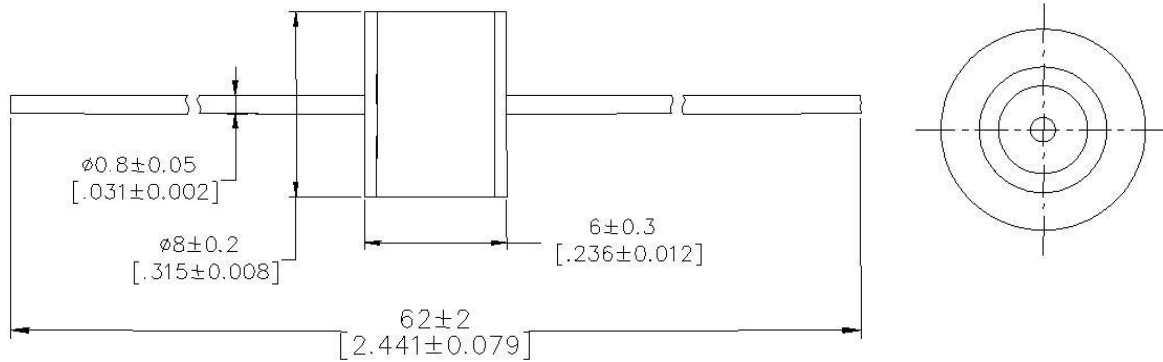
Other at DC 100V

4) No UL recognized.

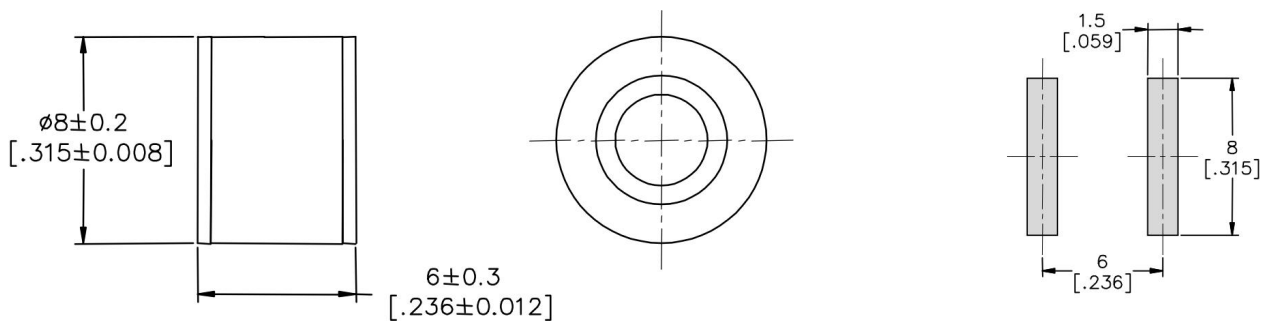
Terms in accordance with ITU-T Rec. K.12, IEC 61643-311, GB/T18802.311, GB/T 9043.

Dimensions (Unit: mm/inch)

DIP Series (2RxxxTB-8)



SMD Series (2RxxxSB-8)

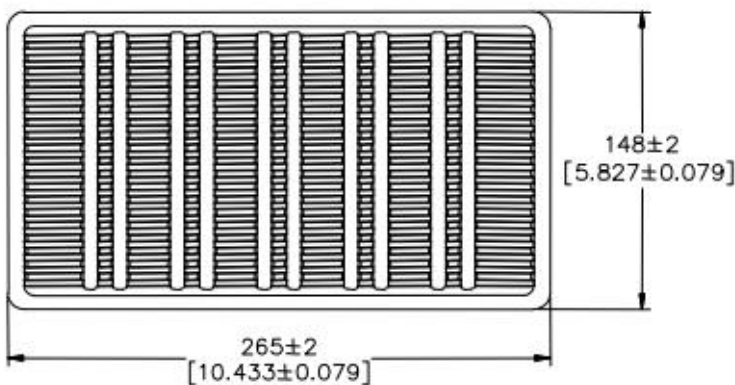


Recommended Soldering Pad Layout

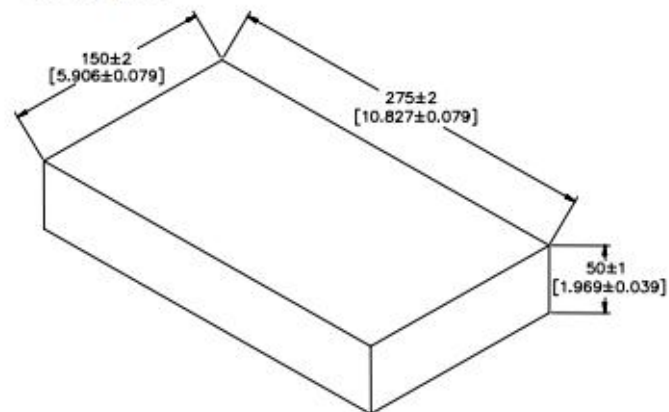
Packaging Information (Unit: mm/inch)

Axial Packaging (Bulk)

Plastic Tray



Inner box

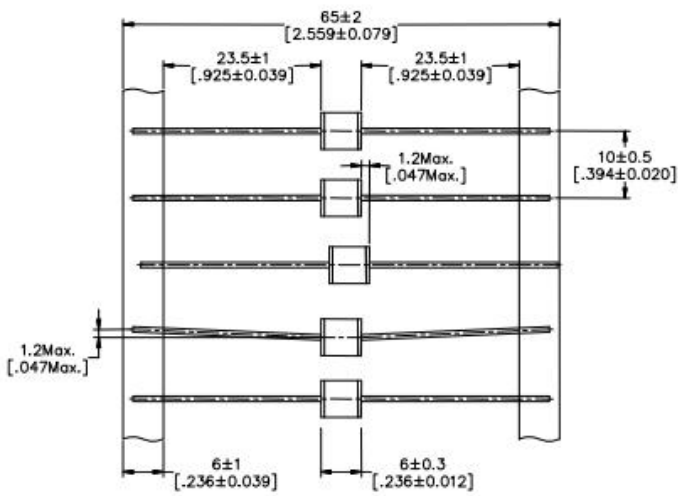


Packaging Quantity:

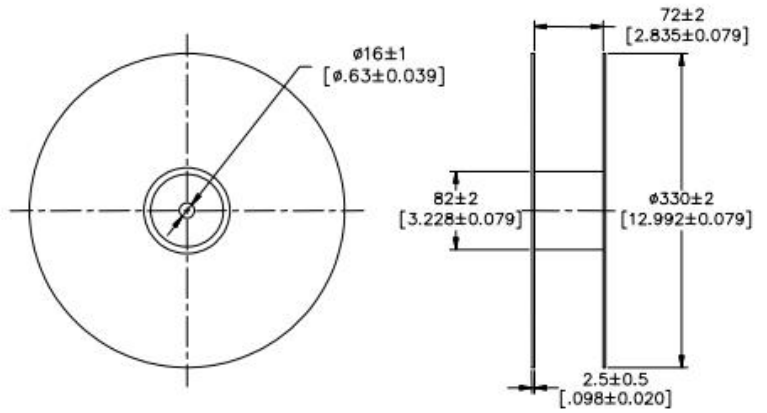
- 100 PCS per Plastic Tray
- 5 Plastic Trays per inner box
- 500 PCS per inner box

Axial Packaging (Tape & Reel)

Tape



Reel

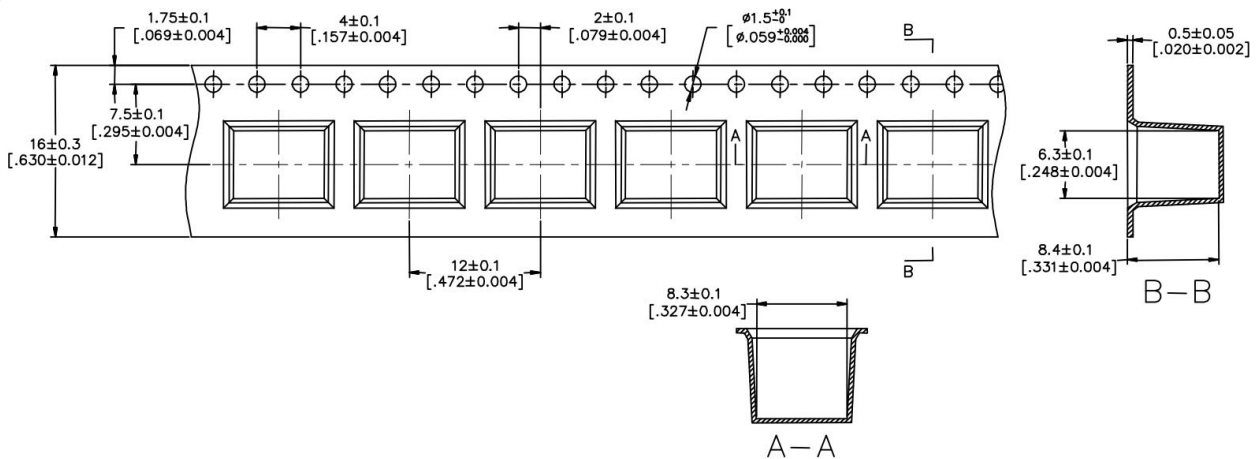


Packaging Quantity:

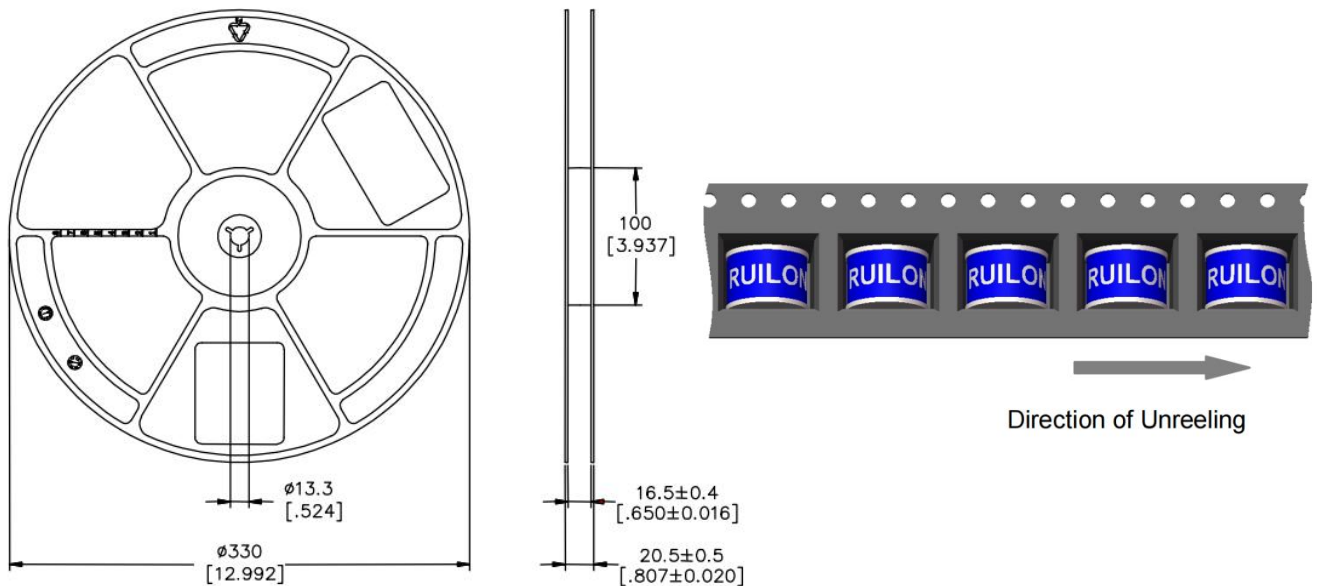
1000 PCS per reel

SMD Packaging (Tape & Reel)

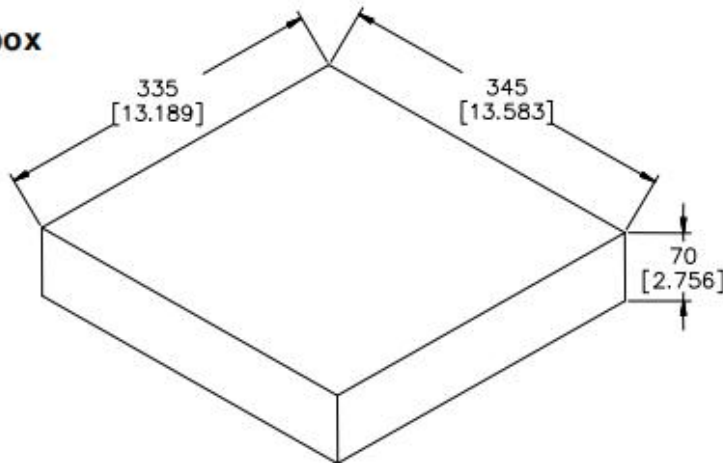
Tape



Reel

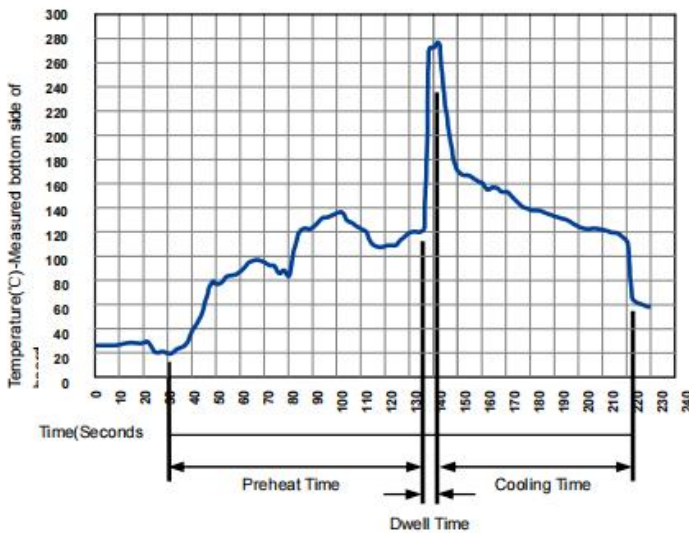


Inner box



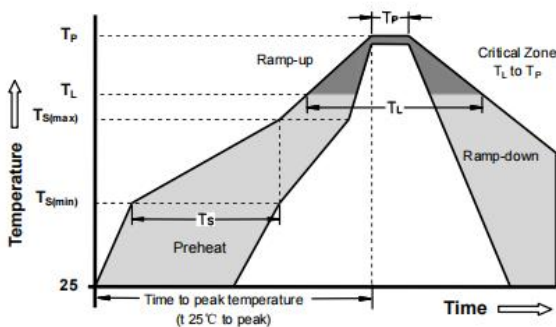
Packaging Quantity:
500 PCS per (13")
3 reels per inner box
1500 PCS per inner box

Soldering Parameters - Wave soldering (Thru-Hole Devices)



| Wave Soldering Condition | | Pb-Free assembly |
|--------------------------|-------------------|------------------|
| Preheat | Temperature Min | 100°C |
| | Temperature Max | 150°C |
| | Time (Min to Max) | 60-180 Seconds |
| Solder Pot Temperature | | 280°C Max |
| Solder Dwell Time | | 2-5 Seconds |

Soldering Parameters - Reflow Soldering (Surface Mount Devices)



| Reflow Condition | | Pb - Free assembly |
|--|-----------------------------------|--------------------|
| Preheat | -Temperature Min ($T_{s(min)}$) | 150°C |
| | -Temperature Max ($T_{s(max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 - 180 Seconds |
| Average ramp up rate (Liquids Temp T_L to peak) | | 3°C/second max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 5°C/second max |
| Reflow | - Temperature (T_L) (Liquids) | 217°C |
| | - Time (min to max) (t_s) | 60 - 150 Seconds |
| Peak Temperature (T_p) | | 260 +0/-5°C |
| Time within 5°C of actual peak Temperature (t_p) | | 10 - 30 Seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_p) | | 8 minutes Max |
| Do not exceed | | 260°C |