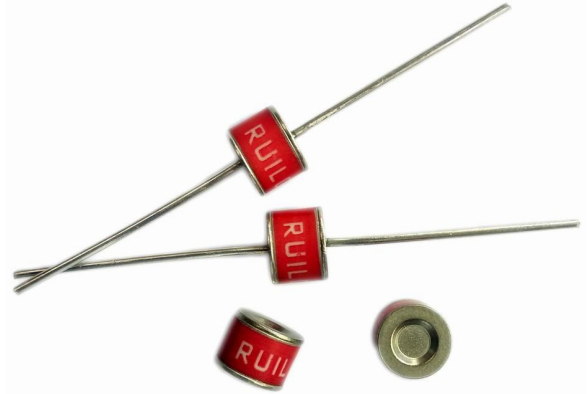


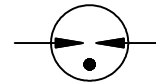
**Description**

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.



**Electrical symbol**



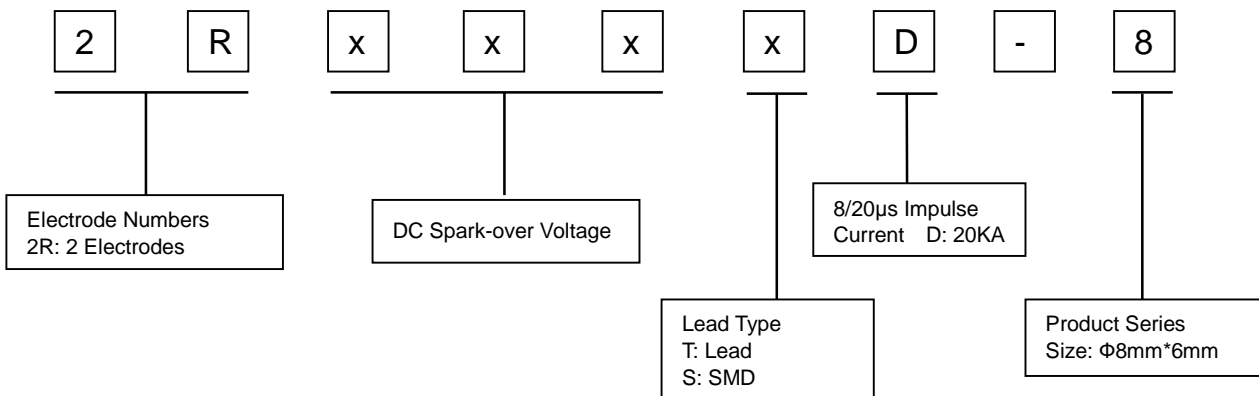
**Features**

- I Excellent response to fast rising transients
- I Stable breakdown voltage
- I GHz working frequency
- I 8/20µs Impulse current capability: 20KA
- I Non-Radioactive
- I Ultra Low capacitance (<1.5pF)
- I Lead-free compliant
- I RoHS and REACH compliant
- I UL 497B Recognized: E465335
- I Size: Φ8mm\*6mm
- I Storage and operational temperature: -40~+90°C

**Applications**

- I MDF modules
- I xDSL equipment
- I RF systems
- I Antenna
- I Base stations
- I Repeaters, Modems
- I Telephone Interface, Line cards
- I Data communication equipment
- I Line test equipment
- I Power supplies
- I Surge protectors, Alarm systems

**Part Number Code**



Electrical Characteristics

Part Number		DC Spark-over Voltage <sup>1) 2)</sup> @100V/S	Impulse Spark-over Voltage		Insulation Resistance <sup>3)</sup>	Capacitance @1MHz	Life Ratings			
			100V/μS	1KV/μS			Impulse Discharge Current @8/20μS		AC Discharge Current @50Hz 1S	Impulse Life @10/1000μS 100A
			Max	Max			Min	Max	Nominal ±5 times	Max 1 time
DIP	SMD	V	V	V	GΩ	pF	KA	KA	A	Times
2R075TD-8	2R075SD-8	75±20%	500	600	1	1.5	20	25	20	300
2R090TD-8	2R090SD-8	90±20%	500	600	1	1.5	20	25	20	300
2R150TD-8	2R150SD-8	150±20%	500	600	1	1.5	20	25	20	300
2R230TD-8	2R230SD-8	230±20%	600	700	1	1.5	20	25	20	300
2R250TD-8	2R250SD-8	250±20%	600	700	1	1.5	20	25	20	300
2R300TD-8	2R300SD-8	300±20%	750	850	1	1.5	20	25	20	300
2R350TD-8	2R350SD-8	350±20%	800	900	1	1.5	20	25	20	300
2R420TD-8	2R420SD-8	420±20%	900	1000	1	1.5	20	25	20	300
2R470TD-8	2R470SD-8	470±20%	900	1100	1	1.5	20	25	20	300
2R600TD-8	2R600SD-8	600±20%	1000	1200	1	1.5	20	25	20	300
2R800TD-8	2R800SD-8	800±20%	1400	1600	1	1.5	20	25	20	300
Glow Voltage at 10mA.....					~60V					
Arc Voltage at 1A.....					~10V					
Glow to Arc transition Current.....					~1.0A					
Weight.....					DIP ~1.7g SMD ~1.25g					
Operation and storage temperature.....					-40~+90°C					
Climatic category (IEC 60068-1).....					40/90/21					
Marking, red negative.....					<b>RUILON XXX Y</b> XXX -Nominal voltage Y -Year of production					
Surface treatment.....					DIP -Nickel Plated SMD -Matte-tin plated					

<sup>1)</sup> At delivery AQL 0.65 level II, DIN ISO 2859

<sup>2)</sup> In ionized mode

<sup>3)</sup> Insulation Resistance Measuring Voltage:

75V at DC 25V

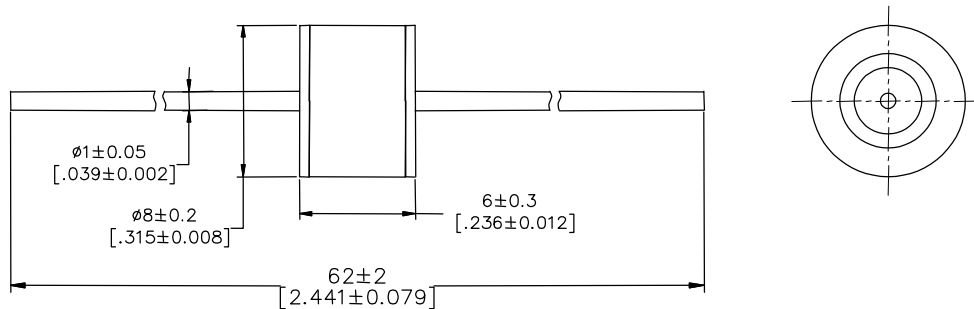
90V~150V at DC 50V

Other at DC 100V

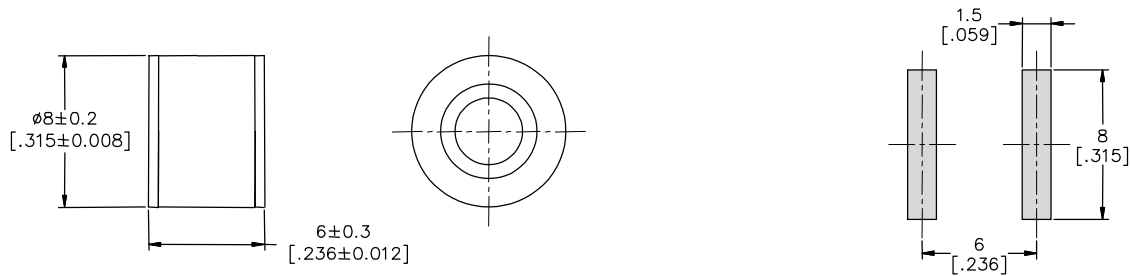
Terms in accordance with ITU-T Rec. K.12, IEC 61643-311, GB/T 9043.

**Dimensions (Unit: mm/inch)**

**DIP Series (2RxxxTD-8)**



**SMD Series (2RxxxSD-8)**

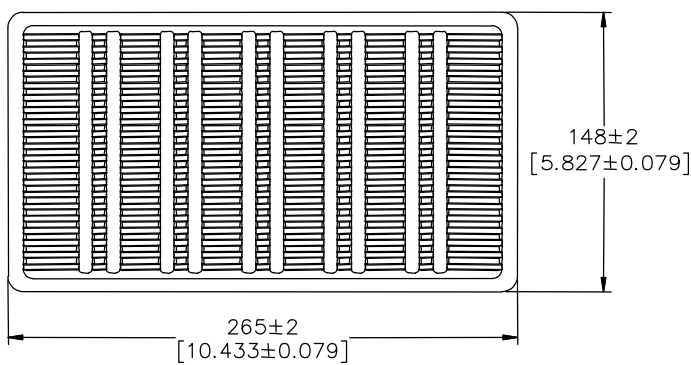


Recommended Soldering Pad Layout

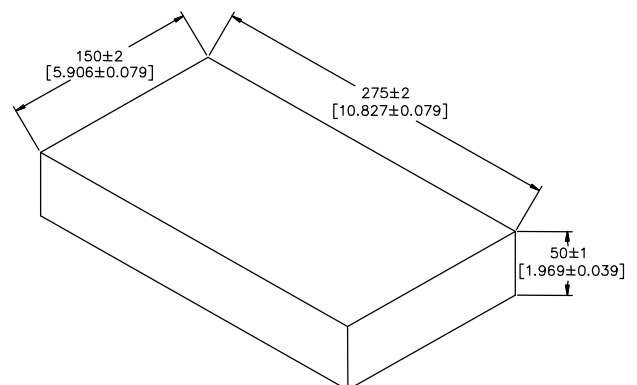
**Packaging Information (Unit: mm/inch)**

**Axial Packaging (Bulk)**

**Plastic Tray**



**Inner box**

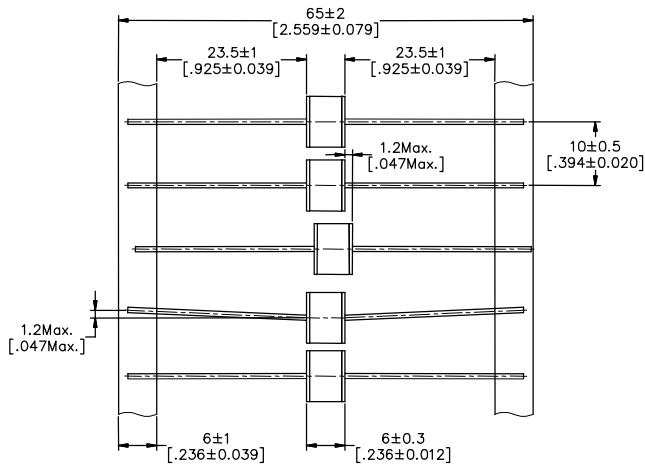


**Packaging Quantity:**

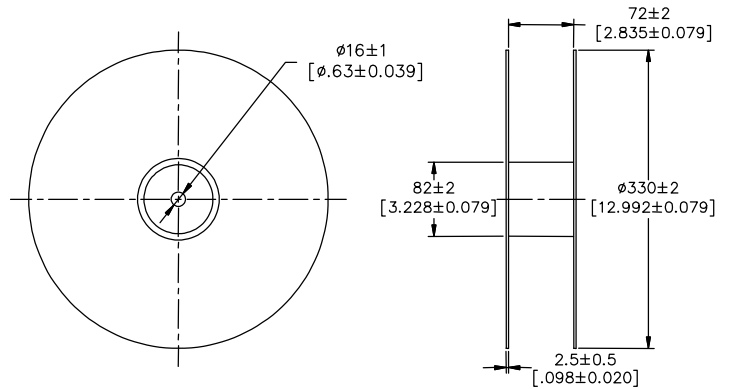
- 1,00 PCS per Plastic Tray
- 5 Plastic Trays per inner box
- 500 PCS per inner box

Axial Packaging (Tape & Reel)

Tape



Reel

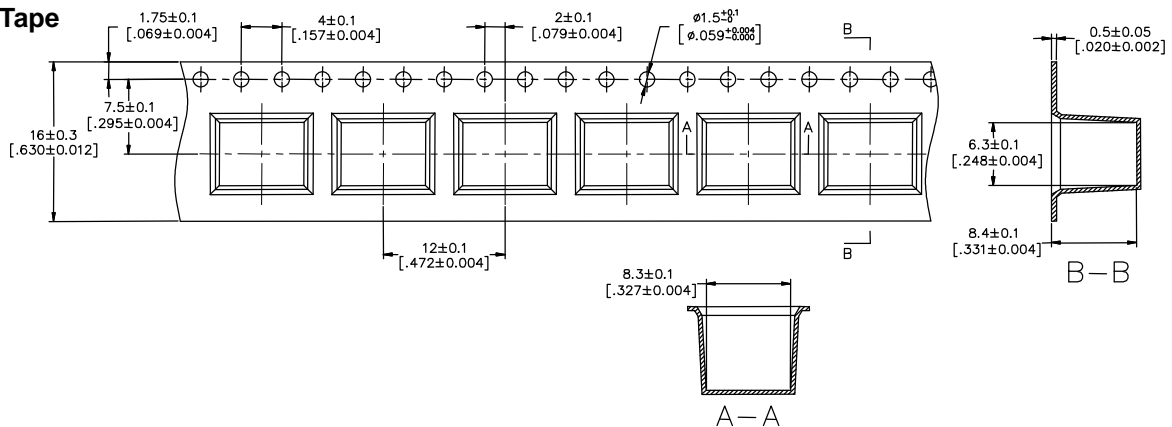


Packaging Quantity:

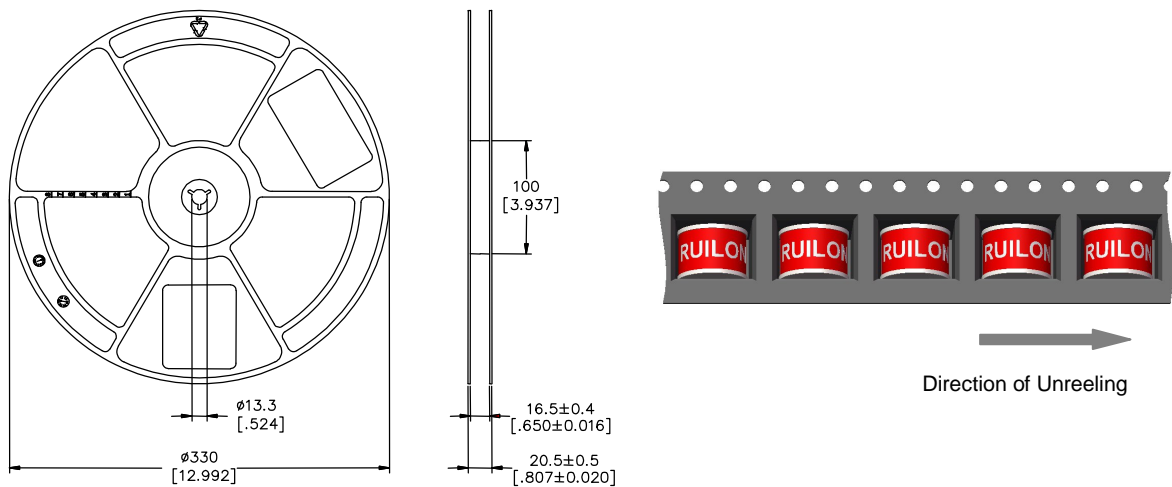
800 PCS per reel

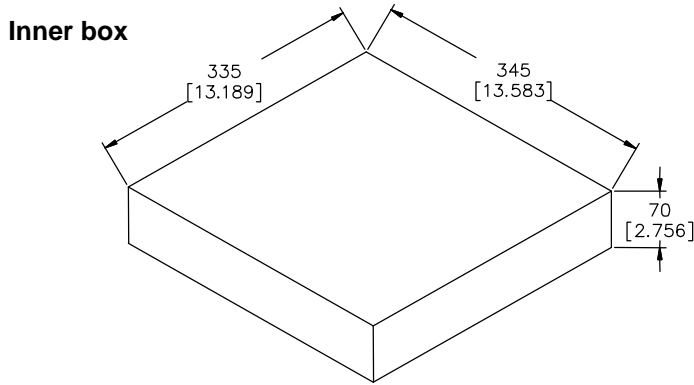
SMD Packaging (Tape & Reel)

Tape



Reel





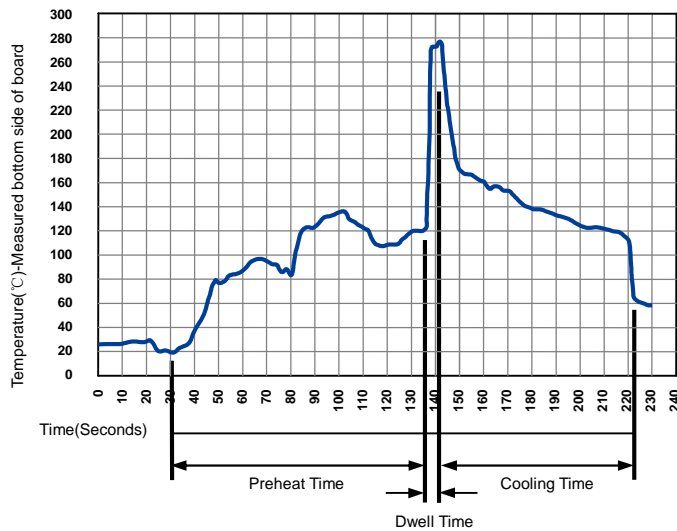
**Packaging Quantity:**

500 PCS per reel (13")

3 reels per inner box

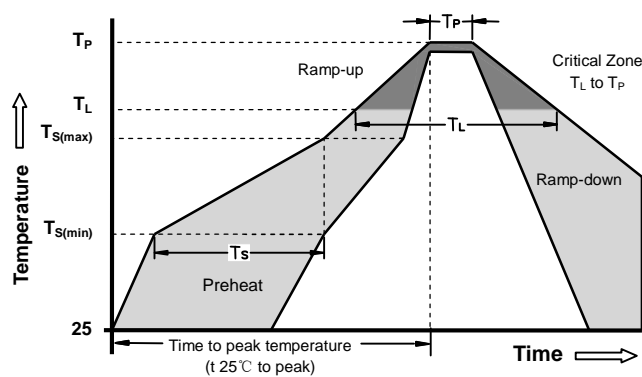
1,500 PCS per inner box

**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