

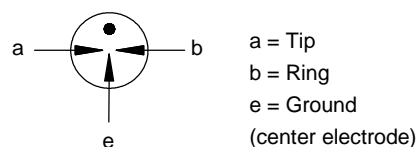
## Description

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



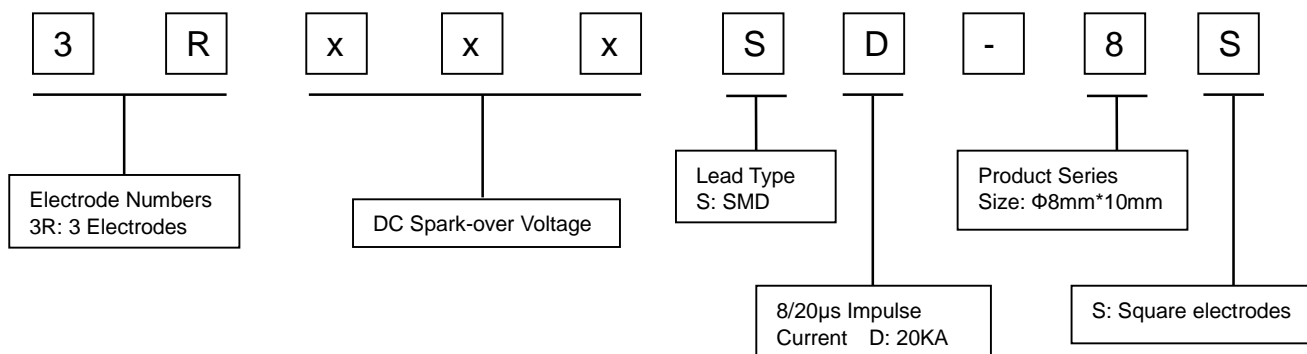
## Features

- | Excellent response to fast rising transients
- | Stable breakdown voltage
- | GHz working frequency
- | 8/20 $\mu$ s Impulse current capability: 20KA
- | Non-Radioactive
- | Ultra Low capacitance (<1.5pF)
- | High insulation resistance
- | Lead-free compliant
- | RoHS and REACH compliant
- | Size:  $\Phi$ 8mm\*10mm
- | Storage and operational temperature: -40~+90°C

## Applications

- | Communication equipment
- | CATV equipment
- | Data lines
- | Power supplies
- | Telecom SLIC protection
- | Broadband equipment
- | ADSL equipment, including ADSL2+
- | XDSL equipment
- | Satellite and CATV equipment
- | Test equipment
- | Consumer electronics

## Part Number Code



Electrical Characteristics

Part Number	DC Spark-over Voltage <sup>1) 2) 3)</sup> @100V/S	Impulse Spark-over Voltage <sup>3)</sup>		Insulation Resistance <sup>4)</sup>	Capacitance @1MHz	Life Ratings					
		100V/μS	1KV/μS			Impulse Discharge Current <sup>5)</sup> @8/20μs		AC Discharge Current <sup>5)</sup> @50Hz 1S	Impulse Life @10/1000μS 200A <sup>5)</sup>		
		Max	Max			Min	Max	Nominal ±5 times	Max 1 time	Nominal 5 times	Min
		V	V			V	GΩ	pF	KA	KA	A
3R075SD-8S	75±20%	500	600	1	1.5	20	25	20	300		
3R090SD-8S	90±20%	500	600	1	1.5	20	25	20	300		
3R150SD-8S	150±20%	500	600	1	1.5	20	25	20	300		
3R230SD-8S	230±20%	600	700	1	1.5	20	25	20	300		
3R250SD-8S	250±20%	600	700	1	1.5	20	25	20	300		
3R350SD-8S	350±20%	800	900	1	1.5	20	25	20	300		
3R420SD-8S	420±20%	850	950	1	1.5	20	25	20	300		
3R470SD-8S	470±20%	900	1000	1	1.5	20	25	20	300		
3R600SD-8S	600±20%	1100	1200	1	1.5	20	25	20	300		
Glow Voltage at 10mA.....					~60V						
Arc Voltage at 1A.....					~10V						
Glow to Arc transition Current.....					~1A						
Operation and storage temperature.....					-40~+90°C						
Climatic category (IEC60068-1).....					40/90/21						
Marking, red negative.....					<b>xxx Y</b> xxx -Nominal voltage Y -Year of production						
Weight.....					~2.0g						
Surface treatment.....					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> Tip or ring electrode to center electrode

<sup>4)</sup> Insulation Resistance Measuring Voltage:

75V at DC 25V

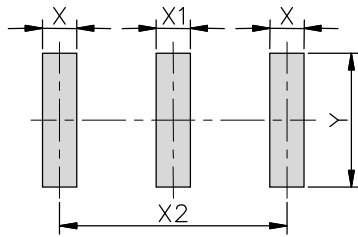
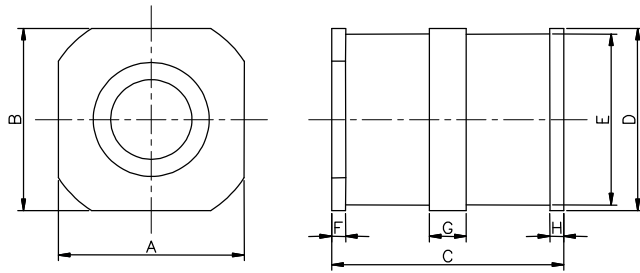
90V~150V at DC 50V

Other at DC 100V

<sup>5)</sup> Total current through center electrode, half value through tip respectively ring electrode.

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

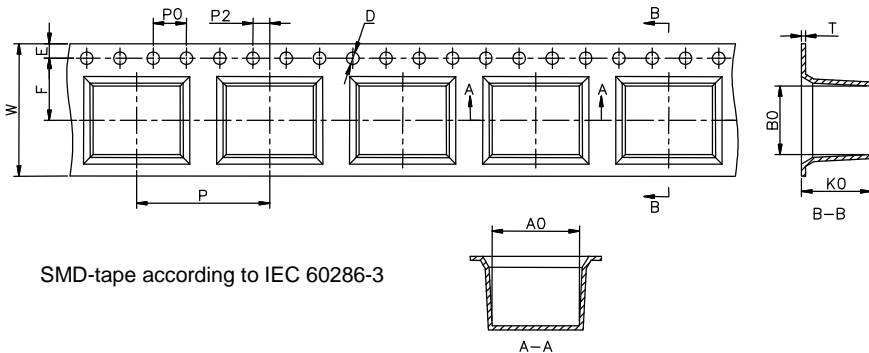
Dimensions



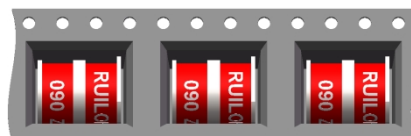
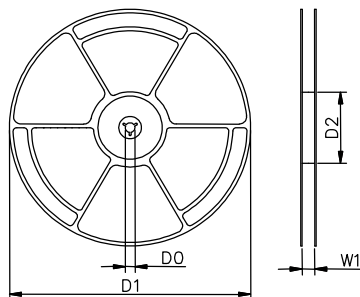
Recommended Soldering Pad Layout

Symbol	Millimeters	Inches
A	8±0.2	0.315±0.008
B	8±0.2	0.315±0.008
C	10±0.3	0.394±0.012
D	Φ8±0.2	Φ0.315±0.008
E	Φ7.2±0.1	Φ0.283±0.004
F	0.5±0.1	0.020±0.004
G	1.5±0.1	0.059±0.004
H	0.5±0.1	0.020±0.004
X	1.5	0.059
X1	1.5	0.059
X2	10.0	0.394
Y	6.0	0.236

Taping and Reel Specifications



SMD-tape according to IEC 60286-3



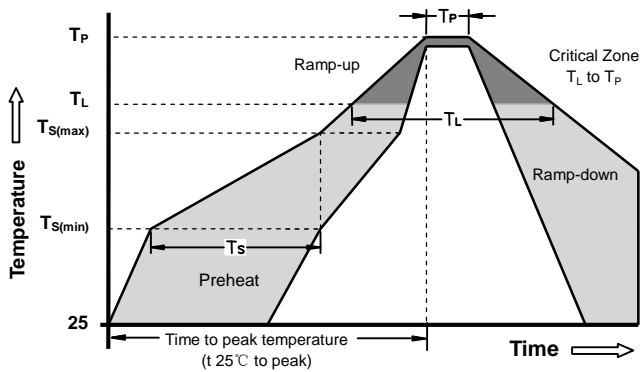
Direction of Unreeling

Symbol	Millimeters	Inches
W	16±0.3	0.630±0.012
A0	10.5±0.1	0.413±0.004
B0	8.3±0.1	0.327±0.004
K0	8.4±0.1	0.331±0.004
P	16±0.1	0.630±0.004
F	7.5±0.1	0.295±0.004
E	1.75±0.1	0.069±0.004
D	1.5+0.1/-0.0	0.059+0.004/-0.0
P0	4±0.1	0.157±0.004
P2	2±0.1	0.079±0.004
T	0.4±0.1	0.016±0.004
D0	13.3±0.15	0.524±0.006
D1	330±2	12.992±0.079
D2	100+1/-2	3.937+0.039/-0.079
W1	16.5±0.4	0.65±0.016

Packaging Quantity:

- 300 PCS per reel (13")
- 3 reels per inner box
- 900 PCS per inner box

**Soldering Parameters - Reflow Soldering (Surface Mount Devices)**



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