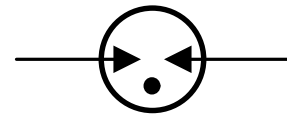


## Features

- Stable breakdown voltage
- High insulation resistance
- High current rating
- Low capacitance ( $\leq 1.5\text{pF}$ )
- Stable performance over life
- Large absorbing transient current capability
- Fast response time
- RoHS compliant
- Standard Size: 8.0mm\*8.0mm
- Meets MSL level 1, per J-STD-020
- Storage and operating temperature:  $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$

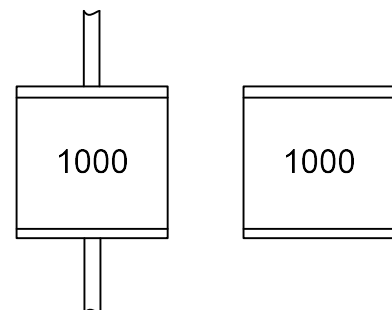
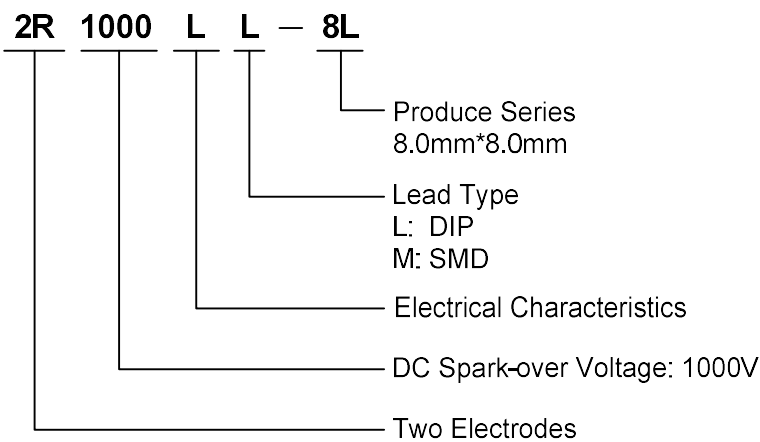
GDT Graphical Symbol



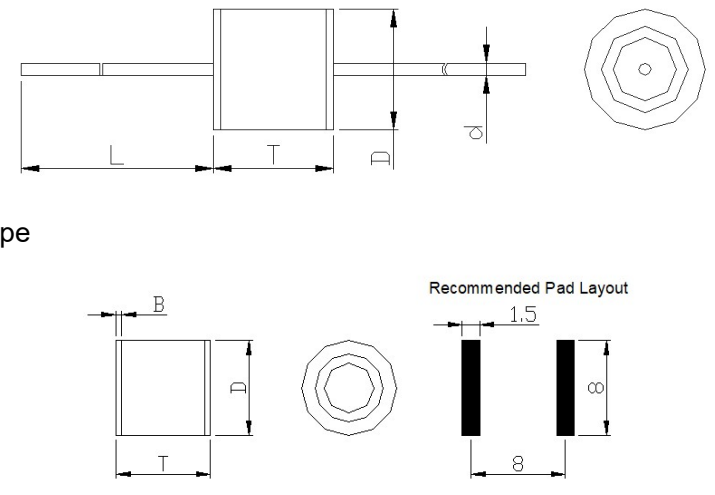
## Applications

- Repeaters, Modems
- Subscriber protection
- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment
- Branch exchange
- Subscriber protection
- Alarm system
- Tuner
- Antenna protection

## Part Number Code and Marking



## Dimensions

L Type		Item	Dimensions(mm)
		D	8.0±0.3
		T	8.0+0.6/-0.1
		d	0.8±0.1
		L	30.0 Max.
		B	0.5±0.1
		M Type	

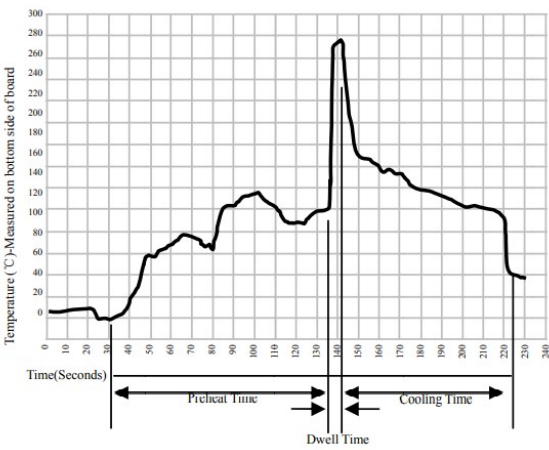
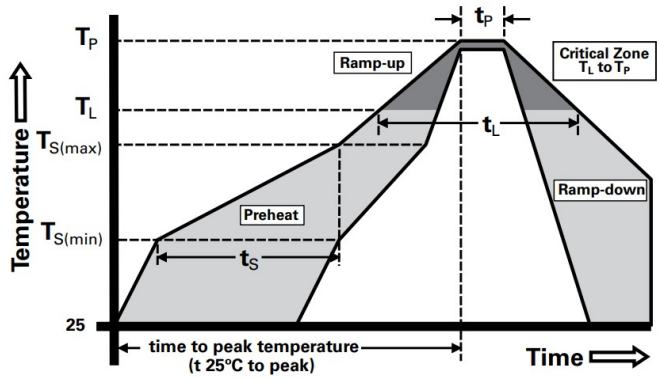
## Electrical Characteristics (T<sub>A</sub>=25°C)

Part Number	Marking	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	AC Withstanding Voltage	
							Test Voltage	GΩ			
2R1000LL-8L	2R1000LM-8L	1000	1000V±20%	2200V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R1200LL-8L	2R1000LM-8L	1200	1200V±20%	2200V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R1400LL-8L	2R1400LM-8L	1400	1400V±20%	2200V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R1500LL-8L	2R1500LM-8L	1500	1500V±20%	2300V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R1600LL-8L	2R1600LM-8L	1600	1600V±20%	2300V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R2000LL-8L	2R2000LM-8L	2000	2000V±20%	3000V	5KA	5A	100 times	500VDC	1	1.5pF	-
2R2500LL-8L	2R2500LM-8L	2500	2500V±20%	3600V	5KA	5A	100 times	500VDC	1	1.5pF	1250V,1min
2R2700KL-8L	2R2700KM-8L	2700	2700V±20%	4000V	3KA	3A	100 times	1000VDC	1	1.5pF	1250V,1min
2R3000KL-8L	2R3000KM-8L	3000	3000V±20%	4200V	3KA	3A	100 times	1000VDC	1	1.5pF	1500V,1min
2R3500KL-8L	2R3500KM-8L	3500	3500V±20%	5000V	3KA	3A	100 times	1000VDC	1	1.5pF	1800V,1min
2R3600KL-8L	2R3600KM-8L	3600	3600V±20%	5200V	3KA	3A	100 times	1000VDC	1	1.5pF	1800V,1min

### Test Methods and Results

Items	Test Method	Standard
DC Spark-over Voltage	measured with voltage ramp $dv/dt=100V/s$ .	To meet the specified value
Maximum Impulse Spark-over Voltage	measured with voltage ramp $dv/dt=1000V/\mu s$ .	
Impulse Discharge Current	applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time,	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min.	
Insulation Resistance	measured between two electrodes.	
Capacitance	measured between two electrodes. Test frequency: 1MHz	

### Soldering Parameters

Wave Soldering		Reflow Soldering	
 <p>Temperature (°C)-Measured on bottom side of board</p> <p>Time(Seconds)</p> <p>Preheat Time</p> <p>Dwell Time</p> <p>Cooling Time</p>		 <p>Temperature</p> <p>Time</p> <p><math>T_P</math></p> <p><math>T_L</math></p> <p><math>T_{S(max)}</math></p> <p><math>T_{S(min)}</math></p> <p>25</p> <p>Preheat</p> <p>Ramp-up</p> <p>Ramp-down</p> <p>Critical Zone <math>T_L</math> to <math>T_P</math></p> <p><math>t_p</math></p> <p><math>t_L</math></p> <p><math>t_s</math></p> <p>time to peak temperature (t 25°C to peak)</p>	
		Profile Feature	Pb-Free Assembly
		Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
		Preheat	
		-Temperature Min ( $T_{S min}$ )	150°C
		-Temperature Max ( $T_{S max}$ )	200°C
		-Time (min to max) ( $t_s$ )	60-180 seconds
		$T_{S max}$ to $T_L$	
		-Ramp-up Rate	3°C/second max.
		Time maintained above:	
		-Temperature ( $T_L$ )	217°C
		-Time ( $t_L$ )	60-150 seconds
Item	Conditions	Peak Temperature ( $T_P$ )	260°C
Peak Temperature	265°C	Time within 5°C of actual Peak Temperature ( $t_p$ )	20-40 seconds
Dipping Time	10 seconds	Ramp-down Rate	6°C/second max.
Soldering	1 time	Time 25°C to Peak Temperature	8 minutes max.

### Packaging Specification

#### Axial Packing (Bulk)

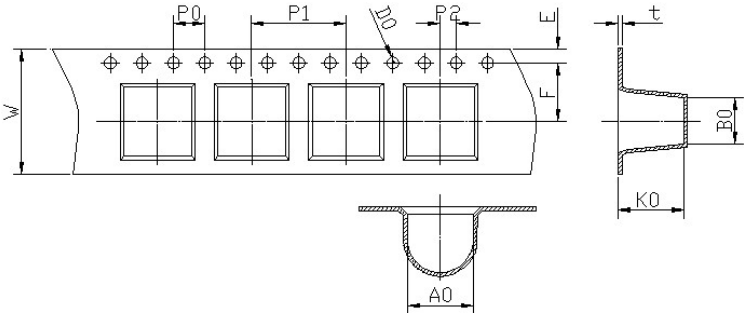
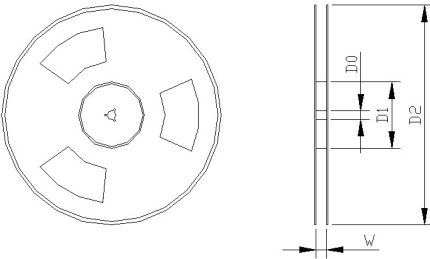
Symbol	Dimension (mm)
Skin packing	
A	265.0±5.0
B	146.0±5.0
H	9.5±1.0
Quantity: 100pcs	
Inner box	
A0	270.0±2.0
B0	150.0±2.0
H0	50.0±2.0
Quantity: 500pcs	

#### Axial Packing (Tape & Reel)

Symbol	Dimension (mm)
Tape	
P	10.0±0.5
A	65.0±3.0
B	53.0±2.0
C	1.2 Max.
d	0.8±0.1
F	8.4 Max.
Reel	
D0	16.0±1.0
D1	82.0±2.0
D2	330.0±2.0
W	70.0±0.5
T	3.0±0.2
Quantity: 800pcs	

**Packaging Specification**

SMD Packing (Tape & Reel)

Tape		Symbol	Dimension (mm)		
		W	16.0±0.2		
		P0	4.0±0.1		
		P1	12.0±0.2		
		P2	2.0±0.1		
		D0	1.55±0.1		
		E	1.75±0.1		
		F	7.5±0.1		
		A0	8.3±0.1		
		K0	8.3±0.1		
		B0	8.8±0.1		
		t0	0.5±0.1		
				D0	13.3±1.0
				D1	100.0±2.0
D2	330.0±2.0				
W	16.5±0.5				
Quantity: 500pcs					

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