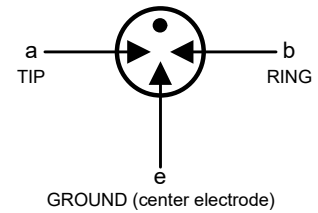


## Features

- 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: 6.0mm\*8.5mm
- Meets MSL level 1, per J-STD-020
- Storage and operating temperature:  $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$

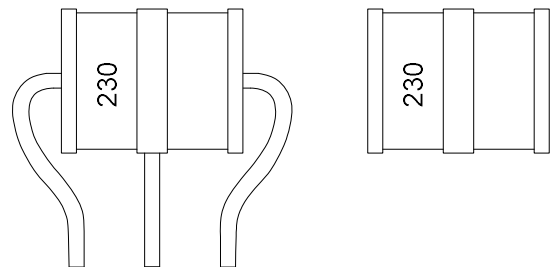
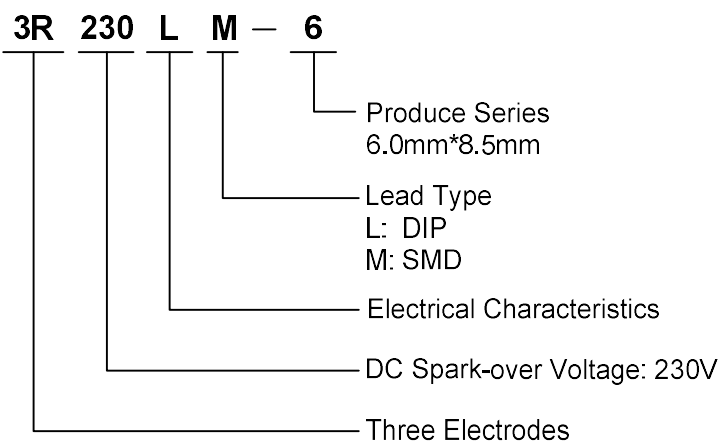
**GDT Graphical Symbol**



## 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	6.0±0.3
		T	8.5±0.3
		T1	11.5+0.5/-1.0
		L	12.0±0.5
		H	4.3+1.5/-0
		S	3.8±0.4
		d	0.8±0.1
		L1	6.5±0.4
		T2	1.0±0.1
		T3	1.5±0.2

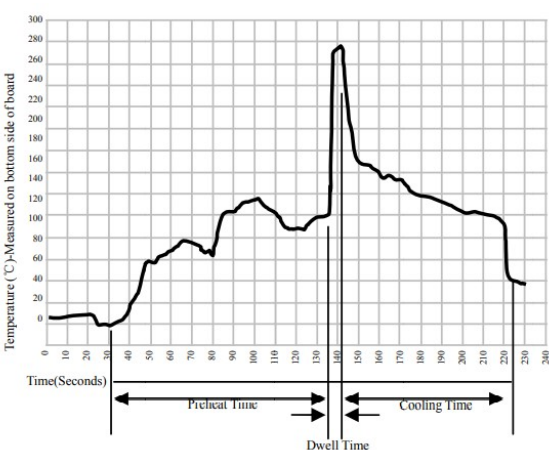
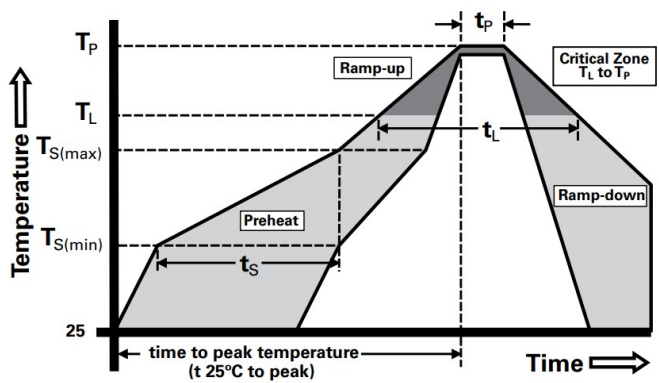
## Electrical Characteristics (T<sub>A</sub>=25°C)

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
			100V/s	1000V/μs	8/20μs, 10 times	50Hz, 1sec	10/1000μs, 100A	Test Voltage	GΩ	1MHz
3R075LL-6	3R075LM-6	075	75V±20%	700V	5KA	5A	300 times	25VDC	1	1.5pF
3R090LL-6	3R090LM-6	090	90V±20%	700V	5KA	5A	300 times	50VDC	1	1.5pF
3R150LL-6	3R150LM-6	150	150V±20%	700V	5KA	5A	300 times	100VDC	1	1.5pF
3R230LL-6	3R230LM-6	230	230V±20%	700V	5KA	5A	300 times	100VDC	1	1.5pF
3R250LL-6	3R250LM-6	250	250V±20%	700V	5KA	5A	300 times	100VDC	1	1.5pF
3R300LL-6	3R300LM-6	300	300V±20%	800V	5KA	5A	300 times	100VDC	1	1.5pF
3R350LL-6	3R350LM-6	350	350V±20%	900V	5KA	5A	300 times	100VDC	1	1.5pF
3R400LL-6	3R400LM-6	400	400V±20%	1000V	5KA	5A	300 times	250VDC	1	1.5pF
3R470LL-6	3R470LM-6	470	470V±20%	1100V	5KA	5A	300 times	250VDC	1	1.5pF
3R600LL-6	3R600LM-6	600	600V±20%	1300V	5KA	5A	300 times	250VDC	1	1.5pF
3R075ML-6	3R075MM-6	075M	75V±20%	700V	10KA	10A	300 times	25VDC	1	1.5pF
3R090ML-6	3R090MM-6	090M	90V±20%	700V	10KA	10A	300 times	50VDC	1	1.5pF
3R150ML-6	3R150MM-6	150M	150V±20%	700V	10KA	10A	300 times	100VDC	1	1.5pF
3R230ML-6	3R230MM-6	230M	230V±20%	700V	10KA	10A	300 times	100VDC	1	1.5pF
3R250ML-6	3R250MM-6	250M	250V±20%	700V	10KA	10A	300 times	100VDC	1	1.5pF
3R300ML-6	3R300MM-6	300M	300V±20%	800V	10KA	10A	300 times	100VDC	1	1.5pF
3R350ML-6	3R350MM-6	350M	350V±20%	900V	10KA	10A	300 times	100VDC	1	1.5pF
3R400ML-6	3R400MM-6	400M	400V±20%	1000V	10KA	10A	300 times	250VDC	1	1.5pF
3R470ML-6	3R470MM-6	470M	470V±20%	1100V	10KA	10A	300 times	250VDC	1	1.5pF
3R600ML-6	3R600MM-6	600M	600V±20%	1300V	10KA	10A	300 times	250VDC	1	1.5pF

### Test Methods and Results

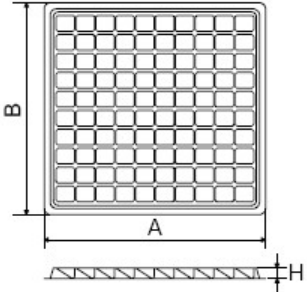
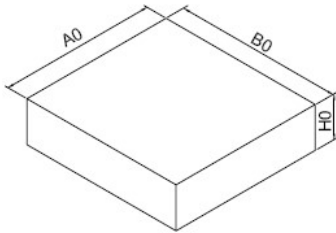
Items	Test Method	Standard
DC Spark-over Voltage	measured with voltage ramp $dv/dt=100V/s$ .	To meet the specified value
Maximum Impulse Spark-over Voltage	measured with voltage ramp $dv/dt=1000V/\mu s$ .	
Impulse Discharge Current	applied through center electrode with $8/20\mu s$ waveform, for 10 times with 3min interval time, which will be equally divided between each side electrode to center electrode, without causing the DC breakdown voltage to change more than 25% from its initial measured value.	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min. DC spark-over voltage shall not change more than $\pm 25\%$ from its initial value. Test is between each side electrode and center electrode.	
Insulation Resistance	measured between each side electrodes and center electrode.	
Capacitance	measured between each side electrodes and center electrode. Test frequency: 1MHz	

### Soldering Parameters

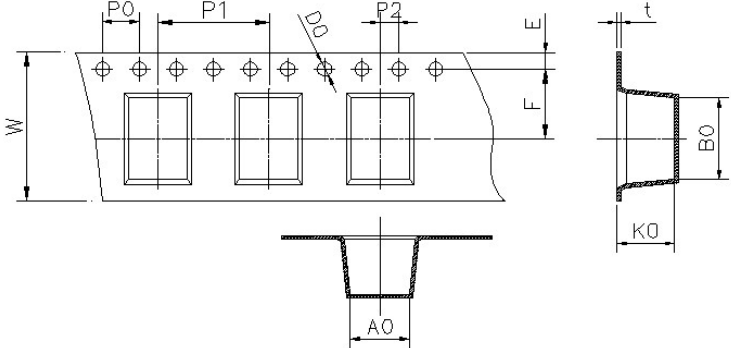
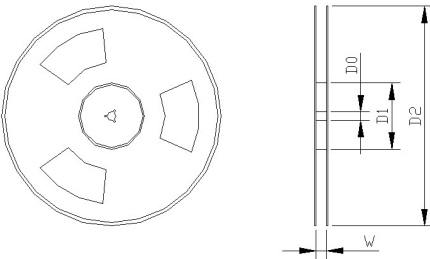
Wave Soldering		Reflow Soldering	
			
		Profile Feature	Pb-Free Assembly
		Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
		Preheat	
		-Temperature Min ( $T_{S\ min}$ )	150°C
		-Temperature Max ( $T_{S\ max}$ )	200°C
		-Time (min to max) ( $t_s$ )	60-180 seconds
		$T_{S\ max}$ to $T_L$	
		-Ramp-up 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)

Skin packing		Symbol	Dimension (mm)
		A	217.0±2.0
		B	207.0±2.0
		H	10.3±0.5
		Quantity: 100pcs	
Inner box		A0	225.0±2.0
		B0	210.0±2.0
		H0	60.0±2.0
		Quantity: 500pcs	

### SMD Packing (Tape & Reel)

Tape		Symbol	Dimension (mm)		
		W	16.0±0.2		
		P0	4.0±0.1		
		P1	12.0±0.2		
		P2	4.0±0.1		
		D0	1.55±0.1		
		E	1.75±0.1		
		F	7.5±0.1		
		A0	6.35±0.1		
		K0	6.3±0.1		
		B0	8.8±0.1		
		t0	0.5±0.1		
		Reel		D0	13.3±1.0
				D1	100.0±2.0
				D2	330.0±2.0
W	16.5±0.5				
Quantity: 800pcs					