Gas Discharge Tube (GDT) Data Sheet

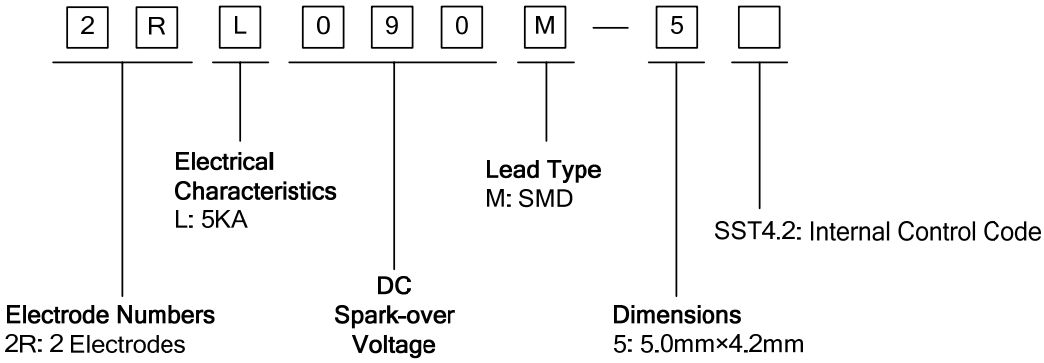
Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs.
- Stable breakdown voltage.
- High insulation resistance.
- Low capacitance (≤1pF)
- High holdover voltage
- Large absorbing transient current capability.
- Micro-Gap Design
- Size: 5.0mm*4.2mm
- Square ceramic tube for SMD
- Storage and operating temperature: -40℃ ~ +85℃
- Meets MSL level 1, per J-STD-020

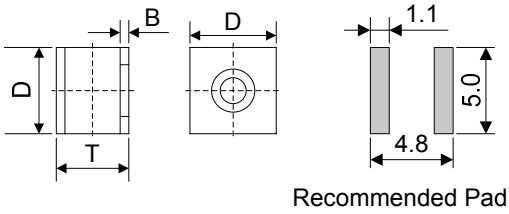
Applications

- Repeaters, Modems.
- Telephone Interface, Line cards.
- Data communication equipment.
- Line test equipment

Part Number Code



Dimensions



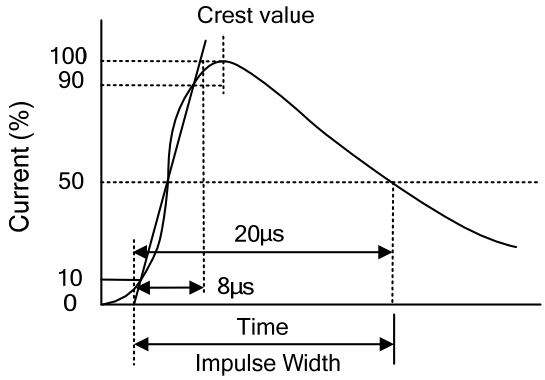
Recommended Pad Size

Symbol	Dimension (mm)	
	Spec.	Tolerance
D	5.0	±0.2
T	4.2	±0.3
B	0.5	±0.1

Electrical Characteristics

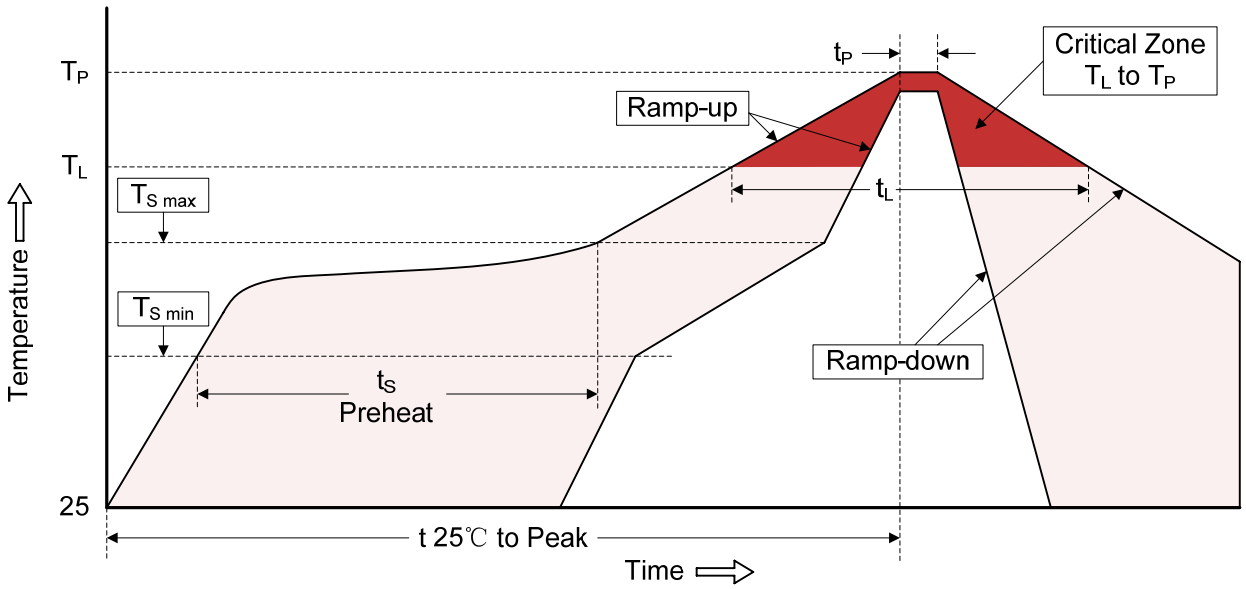
Model Number：2RL090M-5				Part Number：2RL090M-5 SST4.2				
DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	Arc Voltage
100V/s	1000V/μs	8/20μs ±5times	50Hz,1sec	10/1000μs 100A	Test Voltage	(GΩ)	1MHz	@1A
(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	(V)
90±20%	650	5.0	5.0	500	50	1.0	1.0	~8

Electrical Ratings

Items	Test Condition/Description	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp dv/dt=100V/s.	To meet the specified value
Maximum Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with voltage ramp dv/dt=1000V/μs.	
Impulse Discharge Current	Maximum 8/20μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time, without causing the DC spark-over voltage to change more than 25% from its initial 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 ±25% from its initial value. IR＞10^8 ohms (-20%, +30% for 70~90V).	
Insulation Resistance	The resistance of gas tube shall be measured between two electrodes.	
Capacitance	The capacitance of gas tube shall be measured between two electrodes. Test frequency: 1MHz	

Recommended Soldering Conditions

Reflow Soldering

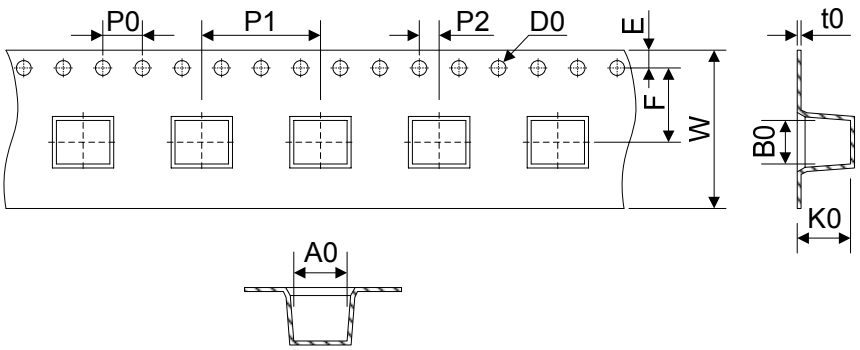


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

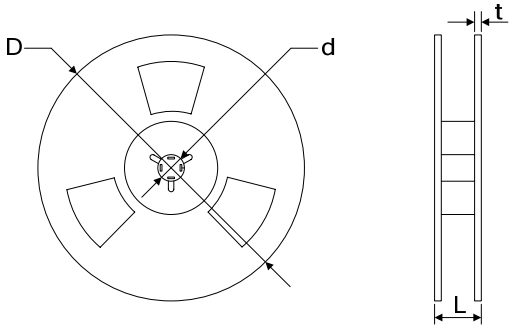
Packaging

Tape



Symbol	Dimension (mm)	
	Spec.	Tolerance
W	16.00	±0.20
P0	4.00	±0.10
P1	12.00	±0.10
P2	2.00	±0.10
D0	1.50	±0.10
E	1.75	±0.10
F	7.50	±0.10
A0	5.30	±0.10
B0	4.50	±0.10
K0	5.40	±0.10
t0	0.40	±0.10

Reel



D	330.00	±1.00
d	13.00	±0.50
L	20.00	±0.50
t	2.00	±0.20
Quantity: 800pcs		