

Gas Discharge Tube (GDT) Data Sheet

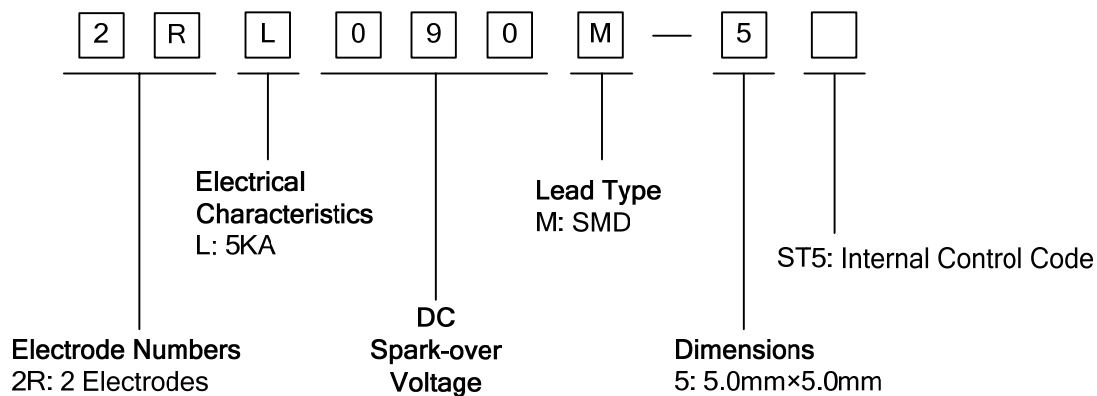
Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ μ s.
- Stable breakdown voltage.
- High insulation resistance.
- Low capacitance (≤ 1.0 pF)
- High holdover voltage
- Large absorbing transient current capability.
- Micro-Gap Design
- Size: 5.0mm*5.0mm
- Storage and operational temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020

Applications

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

Part Number Code



Marking

B : BrightKing Logo
2RL090-5 : Device Marking Code
YXXX : Date Code

Dimensions

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

Electrical Characteristics

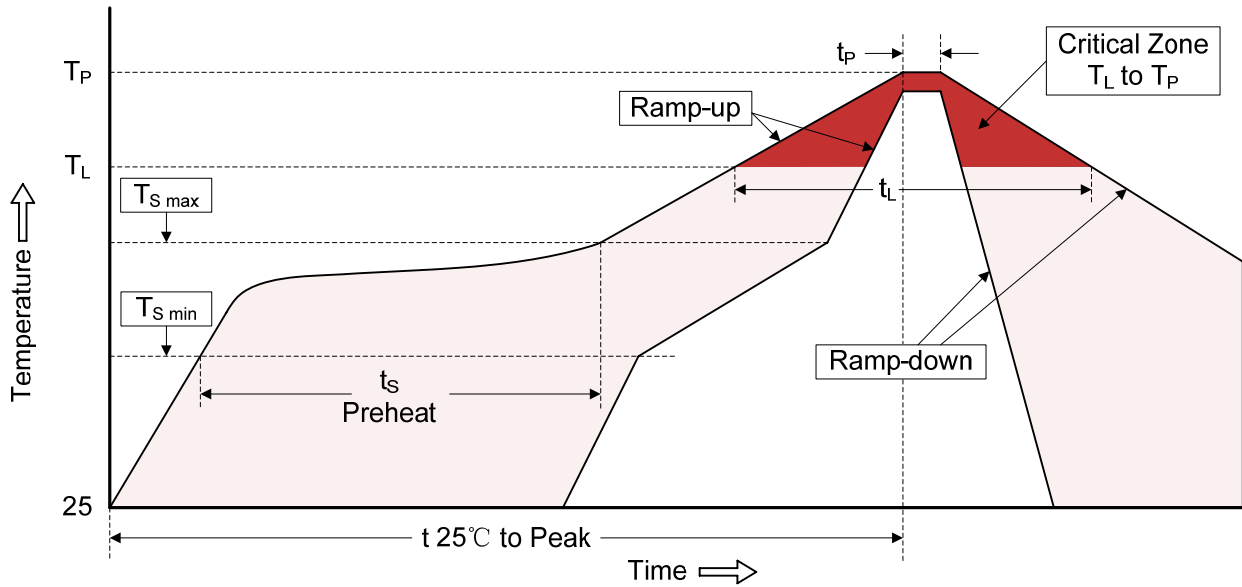
Model Number: 2RL090M-5				Part Number: 2RL090M-5 ST5				
DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
100V/s	1000V/μs	8/20μs 10times	50Hz, 1sec	10/1000μs 100A	Test Voltage	(GΩ)	1MHz	
(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	
90±20%	650	5.0	5.0	300	50	1.0	1.0	

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 $dv/dt=1000V/\mu s$.	
Impulse Discharge Current	Maximum 8/20μs surge current that can be applied between two electrodes, 10 times, with 3 minutes interval time, without causing the DC spark-over voltage to change more than 25% from its initial value. Crest value 100 90 50 10 0 Current (%) 8μs 20μs Time Impulse Width	
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°C/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_s)	150°C 200°C 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	217°C 60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Packaging

Tape	Symbol	Dimension (mm)		
		Spec.	Tolerance	
<p>Technical drawing of a carrier tape showing dimensions: P0, P1, P2, D0, E, F, W, A0, B0, K0, t0. The drawing includes a top view of the tape with five components, a side view of the tape, and a detail view of the component cavity.</p>	W	16.00	±0.20	
	P0	4.00	±0.10	
	P1	12.00	±0.20	
	P2	2.00	±0.10	
	D0	1.55	±0.10	
	E	1.75	±0.10	
	F	7.50	±0.10	
	A0	5.40	±0.10	
	K0	5.40	±0.10	
	B0	5.40	±0.10	
	t0	0.40	±0.10	
	Reel	D	330.00	±1.00
	<p>Technical drawing of a reel showing dimensions: D, d, L, t. The drawing includes a top view of the reel with four segments and a side view of the reel.</p>	d	13.00	±0.50
		L	20.00	±0.50
t		2.00	±0.20	
Quantity: 800pcs				