

DATA SHEET

GAS DISCHARGE TUBES TELEPHONE INTERFACE

2R-6 series

RoHS compliant & Halogen free



Product specification— April 25, 2019 V.0



Gas Discharge Tube (GDT) Data Sheet

Features

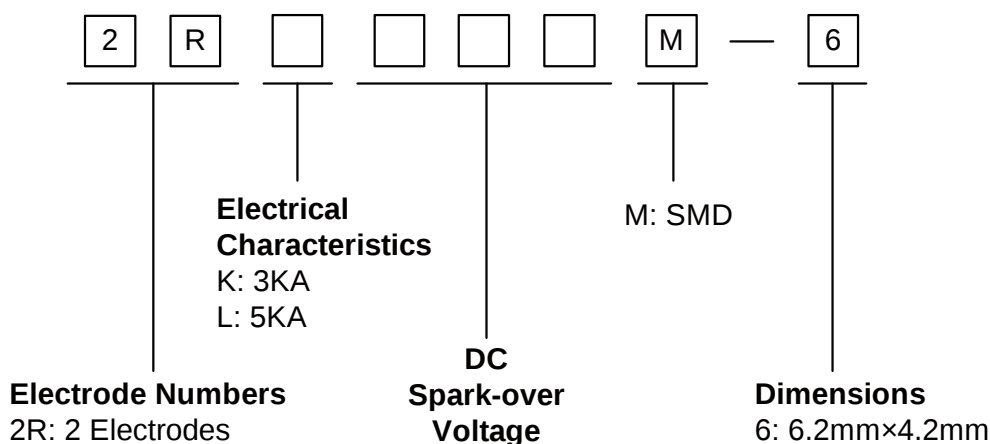
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ μ s.
- Stable breakdown voltage.
- High insulation resistance.
- Low capacitance (≤ 1 pF)
- High holdover voltage
- Large absorbing transient current capability.
- Micro-Gap Design
- Size: 6.2mm*4.2mm
- Storage and operating temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020
- Safety certification: E244458 & E327997



Applications

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

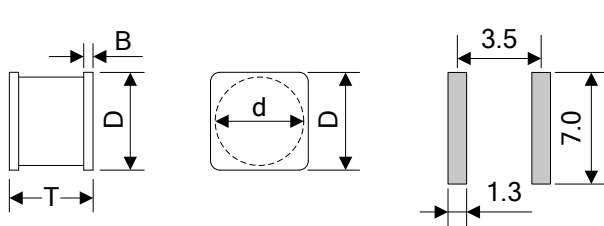
Part Number Code



Marking

B : BrightKing Logo
2RL090-6 : Device Marking Code
YXXX : Date Code

Dimensions

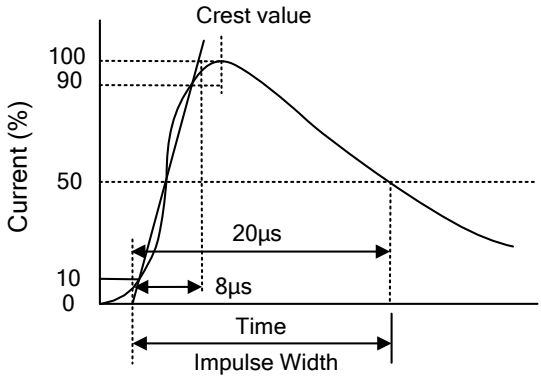
	Dimension (mm)	
	Symbol	
	Spec.	Tolerance
D	6.2	±0.2
T	4.2	±0.2
B	0.6	±0.1
d	6.0	±0.2

Recommended Pad Size

Electrical Characteristics

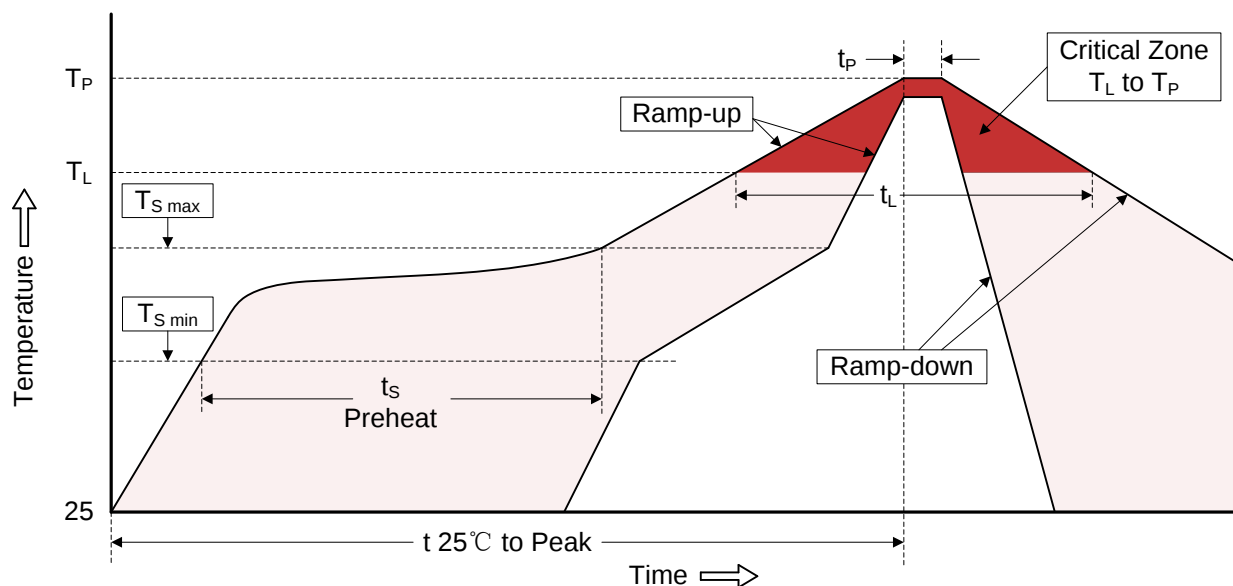
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
	100V/s	1000V/μs	8/20μs 10times	50Hz, 1sec	10/1000μs 100A	Test Voltage	(GΩ)	1MHz	
	(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	
2RL075M-6	75±20%	700	5	5	500	25	1	1.0	2RL075-6
2RL090M-6	90±20%	700	5	5	500	50	1	1.0	2RL090-6
2RL145M-6	145±20%	700	5	5	500	100	1	1.0	2RL145-6
2RL150M-6	150±20%	700	5	5	500	100	1	1.0	2RL150-6
2RL230M-6	230±20%	650	5	5	500	100	1	1.0	2RL230-6
2RL250M-6	250±20%	650	5	5	500	100	1	1.0	2RL250-6
2RL300M-6	300±20%	700	5	5	500	100	1	1.0	2RL300-6
2RL350M-6	350±20%	750	5	5	500	100	1	1.0	2RL350-6
2RL400M-6	400±20%	800	5	5	500	100	1	1.0	2RL400-6
2RL470M-6	470±20%	900	5	5	500	250	1	1.0	2RL470-6
2RL600M-6	600±20%	1000	5	5	500	250	1	1.0	2RL600-6
2RL800M-6	800±20%	1200	5	5	500	250	1	1.0	2RL800-6
2RK1000M-6	1000±20%	1600	3	3	300	500	1	1.0	2RK1000-6
2RK1200M-6	1200±20%	1800	3	3	300	500	1	1.0	2RK1200-6
2RK1800M-6	1800±20%	2600	3	3	300	500	1	1.0	2RK1800-6
2RK2000M-6	2000±20%	2800	3	3	300	500	1	1.0	2RK2000-6
2RK2500M-6	2500±20%	3200	3	3	300	1000	1	1.0	2RK2500-6
2RK2700M-6	2700±20%	3400	3	3	300	1000	1	1.0	2RK2700-6
2RK3000M-6	3000±20%	3700	3	3	300	1000	1	1.0	2RK3000-6

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, 5 positive and 5 negative surges, with 3 minutes interval time.  The graph shows a typical 8/20 microsecond surge current waveform. The y-axis represents Current (%) from 0 to 100. The x-axis represents Time. The curve starts at 0, rises to a peak (Crest value) of 100% at 8 microseconds, and then decays. A horizontal dashed line at 50% current intersects the decay curve at 20 microseconds. The time interval from the start of the surge to the 20 microsecond point is labeled as the Impulse Width.	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min.	
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

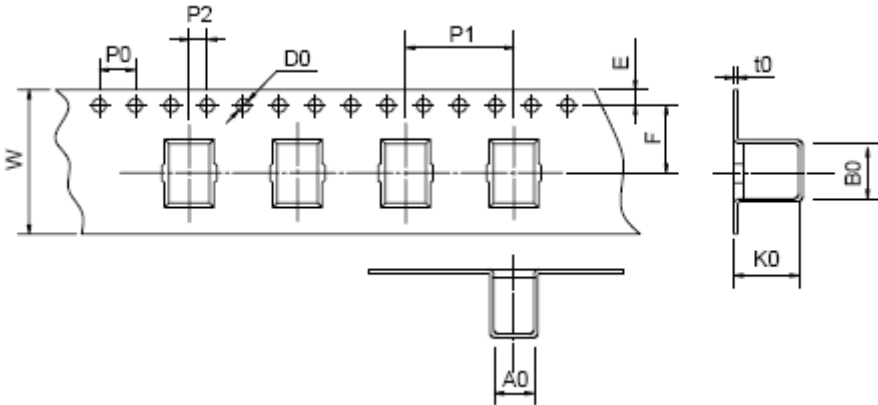
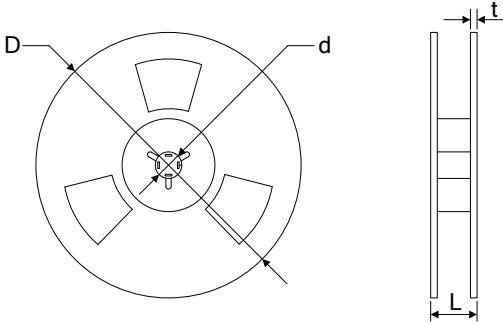
Reflow Soldering



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
	W	16.00	±0.20
	P0	4.00	±0.10
	P1	12.00	±0.20
	P2	2.00	±0.10
	D0	1.55	±0.05
	E	1.75	±0.10
	F	7.50	±0.10
	A0	4.44	±0.10
	K0	6.37	±0.10
	B0	6.48	±0.10
	t0	0.50	±0.10
	D	330.00	±1.00
	d	13.00	±0.50
	L	20.00	±0.50
	t	2.00	±0.20
	Quantity: 800pcs		

Mouser Electronics

Authorized Distributor

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[2RL090M-6](#)