

## Gas Discharge Tube (GDT) Data Sheet

### Features

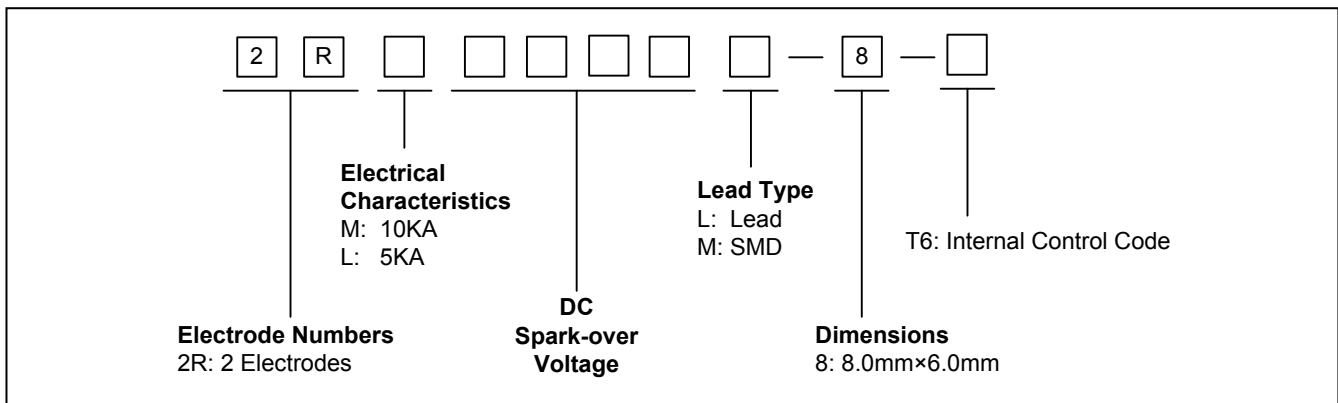
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Stable breakdown voltage
- High insulation resistance
- Low capacitance ( $\leq 1.5\text{pF}$ )
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 8.0mm\*6.0mm
- Storage and operating temperature:  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Meets MSL level 1, per J-STD-020
- Safety certification: E327997



### Applications

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

### Part Number Code

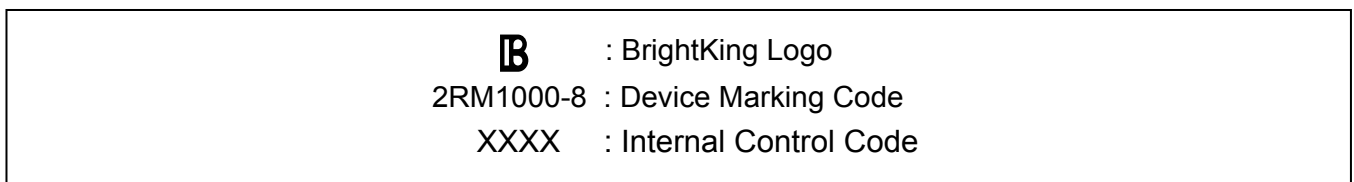


### Ordering Code for different package in 2RMxxxxL-8-T6 and 2RLxxxxL-8-T6 series

Box package: Add suffix “/B” at the end of the part number, such as 2RM1500L-8-T6/B or 2RL2000L-8-T6/B

Reel package: Add suffix “/TR” at the end of the part number, such as 2RM1500L-8-T6/TR or 2RL2000L-8-T6/TR

### Marking



**Dimensions**

L Type	Symbol	Dimension (mm)		
		Spec.	Tolerance	
	D	8.0	+0.3, -0.5	
	T	6.0	+0.3, -0.5	
	d	0.8	±0.1	
	L	30.0	Max.	
M Type		D	8.0	+0.3, -0.5
		T	6.0	+0.3, -0.5
		B	0.5	±0.1
Recommended Pad Size				

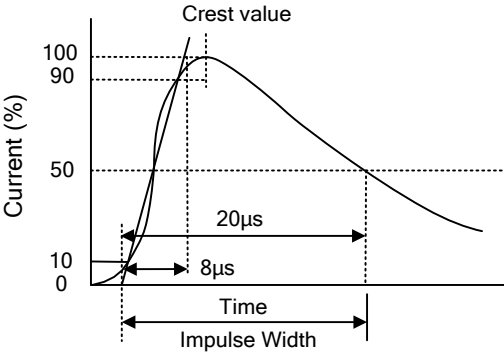
**Electrical Characteristics**

Part Number ☆	Type ①	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	Device Marking Code
		100V/s	1000V/μs	8/20μs 10times	50Hz, 1sec	8/20μs 100A	Test Voltage	(GΩ)	1MHz		
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)		
2RM1000X-8	T6	1000±20%	1900	10.0	5.0	300	500	1.0	1.5	-	2RM1000-8
2RM1200X-8	T6	1200±20%	2000	10.0	5.0	300	500	1.0	1.5	-	2RM1200-8
2RM1400X-8	T6	1400±20%	2200	10.0	5.0	300	500	1.0	1.5	-	2RM1400-8
2RM1500X-8	T6	1500±20%	2300	10.0	5.0	300	500	1.0	1.5	-	2RM1500-8
2RM1600X-8	T6	1600±20%	2400	10.0	5.0	300	500	1.0	1.5	-	2RM1600-8
2RL2000X-8	T6	2000±20%	3200	5.0	5.0	300	500	1.0	1.5	-	2RL2000-8
2RL2500X-8	T6	2500±20%	3800	5.0	5.0	300	500	1.0	1.5	AC1250V,1min	2RL2500-8
2RL2700X-8	T6	2700±20%	4000	5.0	5.0	300	1000	1.0	1.5	AC1250V,1min	2RL2700-8
2RL3000X-8	T6	3000±20%	4200	5.0	5.0	300	1000	1.0	1.5	AC1500V,1min	2RL3000-8

Note: ① Specific code by request.

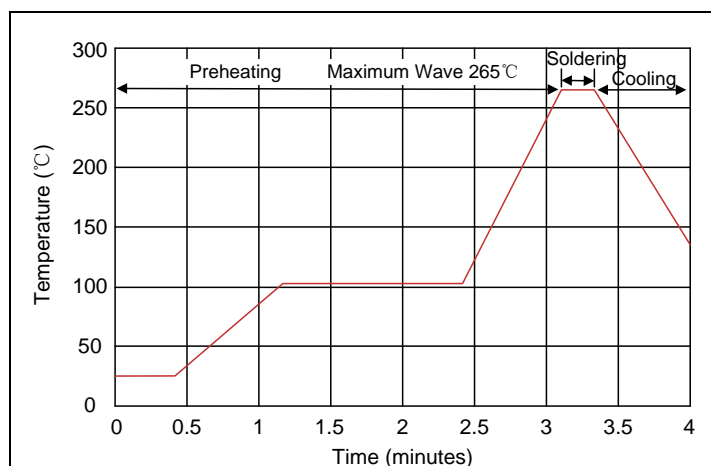
☆X may be L or M

**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	<p>Maximum 8/20<math>\mu s</math> 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.</p> 	
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. $IR > 10^8$ ohms .	
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	

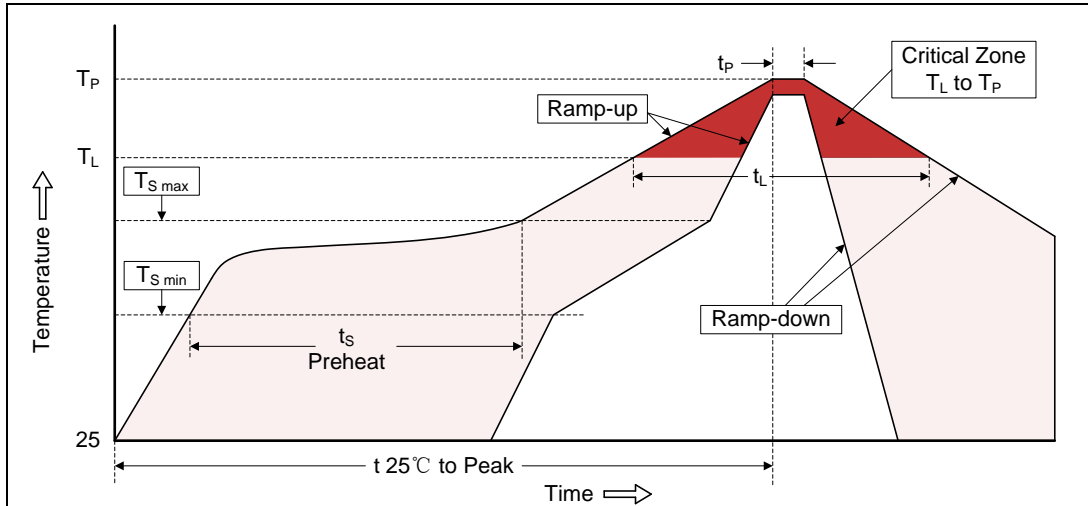
**Recommended Soldering Conditions**

Wave Soldering



Item	Conditions
Peak Temperature	265°C
Dipping Time	10 seconds
Soldering	1 time

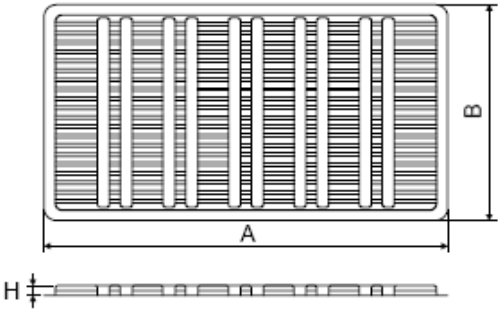
Reflow Soldering



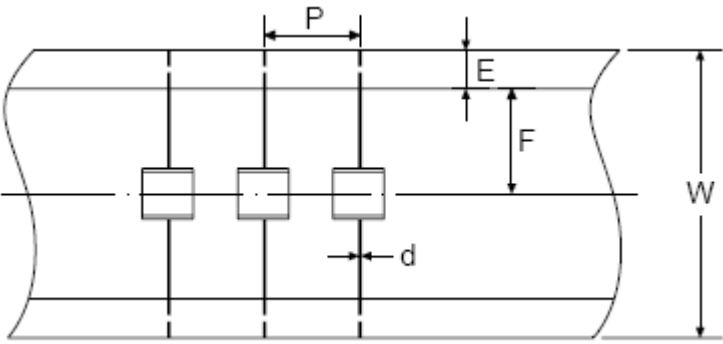
Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat	
-Temperature Min ( $T_{S\ min}$ )	150°C
-Temperature Max ( $T_{S\ max}$ )	200°C
-Time (min to max) ( $t_s$ )	60-180 seconds
$T_{S\ max}$ to $T_L$	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature ( $T_L$ )	217°C
-Time ( $t_L$ )	60-150 seconds
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**

**Axial Packing (Bulk)**

Skin packing	Symbol	Dimension (mm)		
		Spec.	Tolerance	
	A	265.0	±5.0	
	B	146.0	±5.0	
	H	8.5	±0.5	
Quantity: 100pcs				
Inner box	Symbol	Dimension (mm)		
		Spec.	Tolerance	
		A0	270.0	±2.0
		B0	150.0	±2.0
H0	50.0	±2.0		
Quantity: 500pcs				

**Axial Packing (Tape & Reel)**

Tape	Symbol	Dimension (mm)		
		Spec.	Tolerance	
	P	10.0	±0.5	
	W	65.0	±1.0	
	E	6.0	±0.5	
	F	26.5	±0.5	
	d	0.8	±0.1	
	Reel	Symbol	Dimension (mm)	
Spec.			Tolerance	
A1			330.0	±2.0
B1			70.0	±2.0
C1			82.0	±2.0
D			25.0	±0.5
t			2.0	±0.2
Quantity: 500pcs				

SMD Packing (Tape & Reel)

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	8.20	±0.10
	K0	8.50	±0.10
	B0	7.50	±0.10
	t0	0.50	±0.10
	D	330.00	±2.00
	d	13.00	±0.50
	L	20.00	±2.00
t	2.00	±0.20	
Quantity: 500pcs			