

Gas Discharge Tube (GDT) Data Sheet

Features

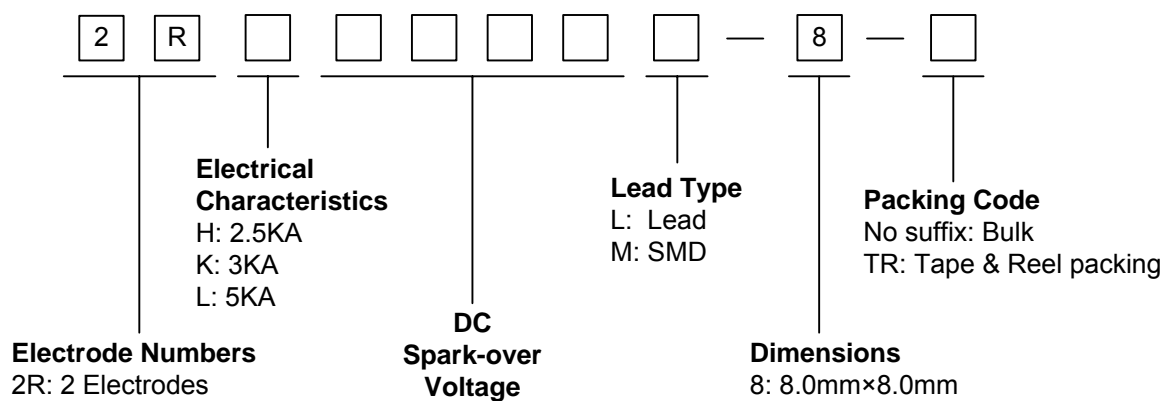
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ μ s.
- Stable breakdown voltage.
- High insulation resistance.
- Low capacitance (≤ 1.5 pF)
- High holdover voltage
- Large absorbing transient current capability.
- Micro-Gap Design
- Size: 8.0mm*8.0mm
- Storage and operating temperature: -40°C ~ +85°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



Marking

B : BrightKing Logo
 2RL1000-8 : Device Marking Code
 YXXX : Date Code

Dimensions

L Type	Symbol	Dimension (mm)	
		Spec.	Tolerance
	D	8.0	+0.3, -0.5
	T	8.0	+0.6, -0.1
	d	0.8	±0.1
		1.0	±0.1
	L	30.0	Max.
M Type	D	8.0	+0.3, -0.5
	T	8.0	+0.6, -0.1
	B	1.1	±0.4

Electrical Characteristics

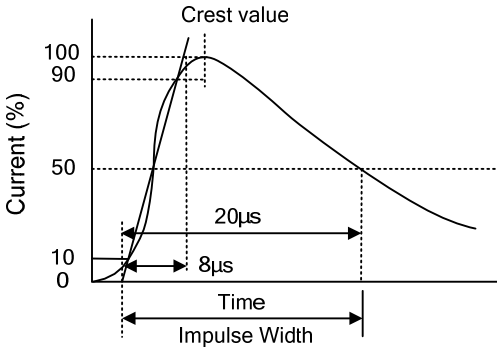
Part Number		DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
		100V/s	1000V/μs	8/20μs 10times	50Hz, 1sec	10/1000μs 100A	Test Voltage	(GΩ)	1MHz	
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	
2RH1400L-8	2RH1400M-8	1400±20%	2200	2.5	2.5	100	500	1.0	1.5	2RH1400-8
2RH1600L-8	2RH1600M-8	1600±20%	2400	2.5	2.5	100	500	1.0	1.5	2RH1600-8
2RH2000L-8	2RH2000M-8	2000±20%	2800	2.5	2.5	100	500	1.0	1.5	2RH2000-8
2RH2500L-8	2RH2500M-8	2500±20%	3600	2.5	2.5	100	500	1.0	1.5	2RH2500-8
2RH2700L-8	2RH2700M-8	2700±20%	3800	2.5	2.5	300*	1000	1.0	1.5	2RH2700-8
2RH3000L-8	2RH3000M-8	3000±20%	4200	2.5	2.5	100	1000	1.0	1.5	2RH3000-8
2RH3500L-8	2RH3500M-8	3500±20%	5000	2.5	2.5	100	1000	1.0	1.5	2RH3500-8
2RK2700L-8	2RK2700M-8	2700±20%	3800	3.0	3.0	300*	1000	1.0	1.5	2RK2700-8
2RK3000L-8	2RK3000M-8	3000±20%	4200	3.0	3.0	300*	1000	1.0	1.5	2RK3000-8
2RK3500L-8	2RK3500M-8	3500±20%	5000	3.0	3.0	100	1000	1.0	1.5	2RK3500-8
2RK4000L-8	2RK4000M-8	4000±20%	5500	3.0	3.0	100	1000	1.0	1.5	2RK4000-8
2RK5000L-8	2RK5000M-8	5000±20%	6400	3.0	3.0	100	1000	1.0	1.5	2RK5000-8
2RK6000L-8	2RK6000M-8	6000±20%	7800	3.0	3.0	100	1000	1.0	1.5	2RK6000-8

* Measured with an 8/20μs waveform, 100A

Electrical Characteristics

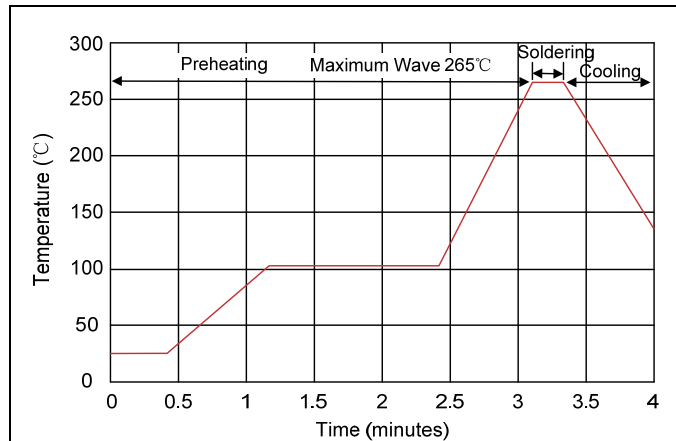
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		100V/s	1000V/ μ s	8/20 μ s 10times	50Hz, 1sec	10/1000 μ s 100A	Test Voltage	(G Ω)	1MHz	
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	
2RL1000L-8	2RL1000M-8	1000 \pm 20%	1400	5.0	5.0	100	500	1.0	1.5	2RL1000-8
2RL1400L-8	2RL1400M-8	1400 \pm 20%	2200	5.0	5.0	100	500	1.0	1.5	2RL1400-8
2RL1600L-8	2RL1600M-8	1600 \pm 20%	2400	5.0	5.0	100	500	1.0	1.5	2RL1600-8
2RL2000L-8	2RL2000M-8	2000 \pm 20%	2800	5.0	5.0	100	500	1.0	1.5	2RL2000-8
2RL2500L-8	2RL2500M-8	2500 \pm 20%	3600	5.0	5.0	100	1000	1.0	1.5	2RL2500-8

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 $dv/dt=1000V/\mu s$.	
Impulse Discharge Current	Maximum 8/20 μs 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 $\pm 25\%$ 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	

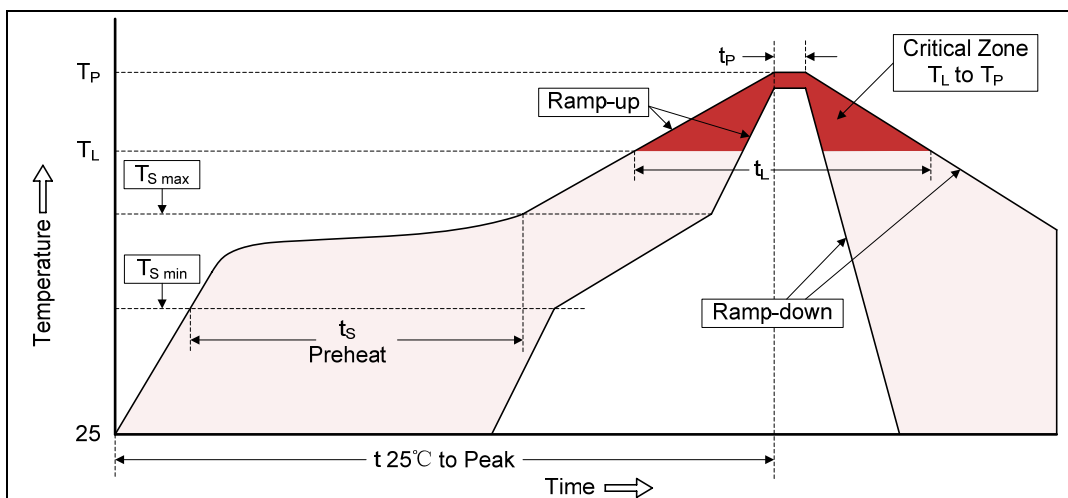
Recommended Soldering Conditions

Wave Soldering



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

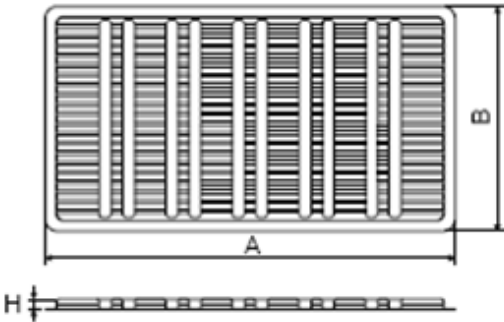
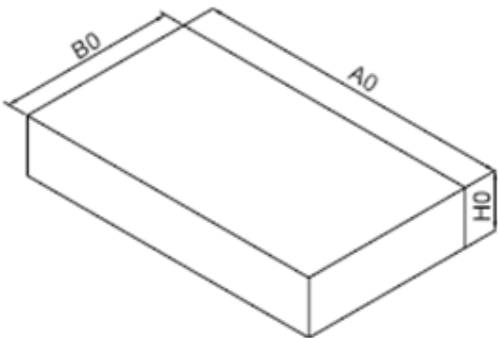
Reflow Soldering



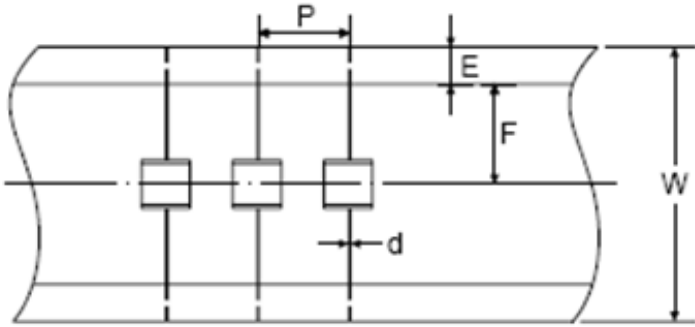
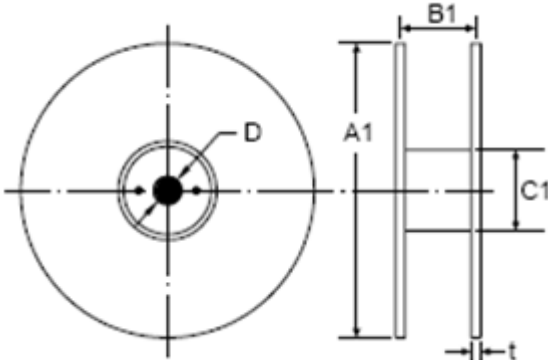
Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	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 	Dimension (mm)	
	Symbol	Spec. / Tolerance
	A	264.0 ±1.0
	B	145.0 ±1.0
	H	6.5 ±0.5
Quantity: 100pcs		
Inner box 	A0	270.0 ±2.0
	B0	150.0 ±1.0
	H0	50.0 ±1.0
	Quantity: 500pcs	

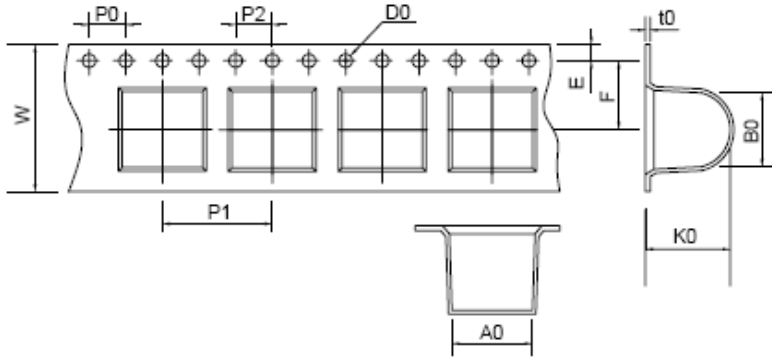
Axial Packing (Tape & Reel)

Tape 	Dimension (mm)	
	Symbol	Spec. / Tolerance
	P	10.0 ±0.3
	W	65.0 ±0.3
	E	6.0 ±0.3
	F	26.5 ±0.3
d	0.8/1.0 ±0.1	
Reel 	A1	330.0 ±1.0
	B1	70.0 ±1.0
	C1	82.0 ±1.0
	D	25.0 ±0.2
	t	2.0 ±0.2
	Quantity: 500pcs	

Packaging

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	4.00	±0.10
D0	1.45	±0.1
E	1.75	±0.10
F	7.50	±0.10
A0	8.80	±0.10
K0	8.30	±0.10
B0	8.30	±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: 500pcs		

Reel

