

DATA SHEET

GAS DISCHARGE TUBES
TELEPHONE INTERFACE

3R-5-S series

RoHS compliant & free



Product specification— July 12, 2023 V.1



Gas Discharge Tube (GDT) Data Sheet

Features

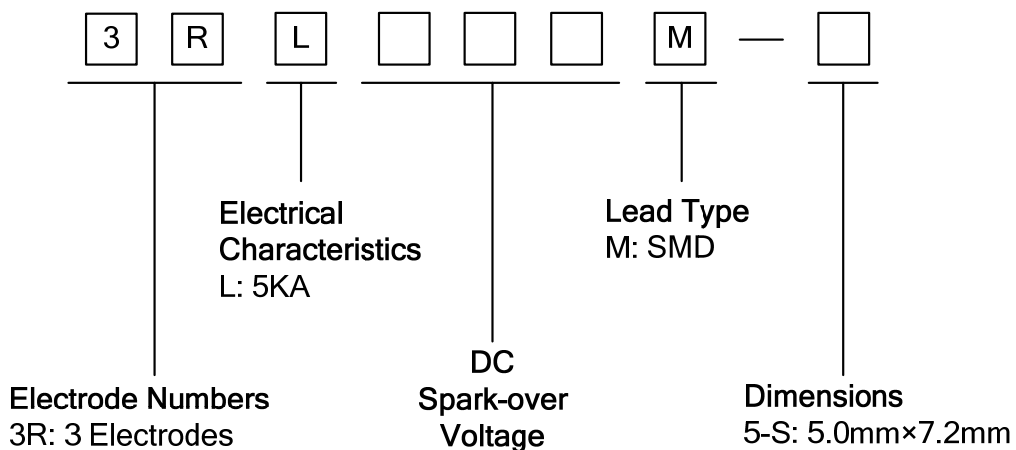
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Stable breakdown voltage
- High insulation resistance
- Low capacitance (≤2pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 5.0mm*7.2mm
- Storage and operating temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020
- Safety certification: UL



Applications

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

Part Number Code



Marking

- B** : BrightKing Logo
- 3SL090M : Device Marking Code
- XXXX : Internal Control Code

Dimensions

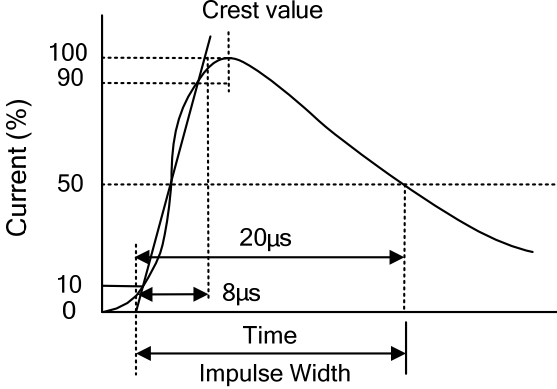
<p>M Type</p>	Symbol	Dimension (mm)	
		Spec.	Tolerance
	D	5.0	±0.2
	T	7.2	±0.3
	B	0.4	±0.1
	B1	1.5	±0.2
d	4.8	±0.1	

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)	
3RL075M-5-S	75±20%	700	5	5	300	25	1.0	2.0	3SL075M
3RL090M-5-S	90±20%	600	5	5	300	50	1.0	2.0	3SL090M
3RL120M-5-S	120±20%	600	5	5	300	50	1.0	2.0	3SL120M
3RL150M-5-S	150±20%	600	5	5	300	100	1.0	2.0	3SL150M
3RL200M-5-S	200±20%	650	5	5	300	100	1.0	2.0	3SL200M
3RL230M-5-S	230±20%	650	5	5	300	100	1.0	2.0	3SL230M
3RL250M-5-S	250±20%	650	5	5	300	100	1.0	2.0	3SL250M
3RL300M-5-S	300±20%	800	5	5	300	100	1.0	2.0	3SL300M
3RL350M-5-S	350±20%	800	5	5	300	100	1.0	2.0	3SL350M
3RL400M-5-S	400±20%	900	5	5	300	100	1.0	2.0	3SL400M
3RL420M-5-S	420±20%	900	5	5	300	250	1.0	2.0	3SL420M
3RL470M-5-S	470±20%	900	5	5	300	250	1.0	2.0	3SL470M
3RL600M-5-S	600±20%	1000	5	5	300	250	1.0	2.0	3SL600M

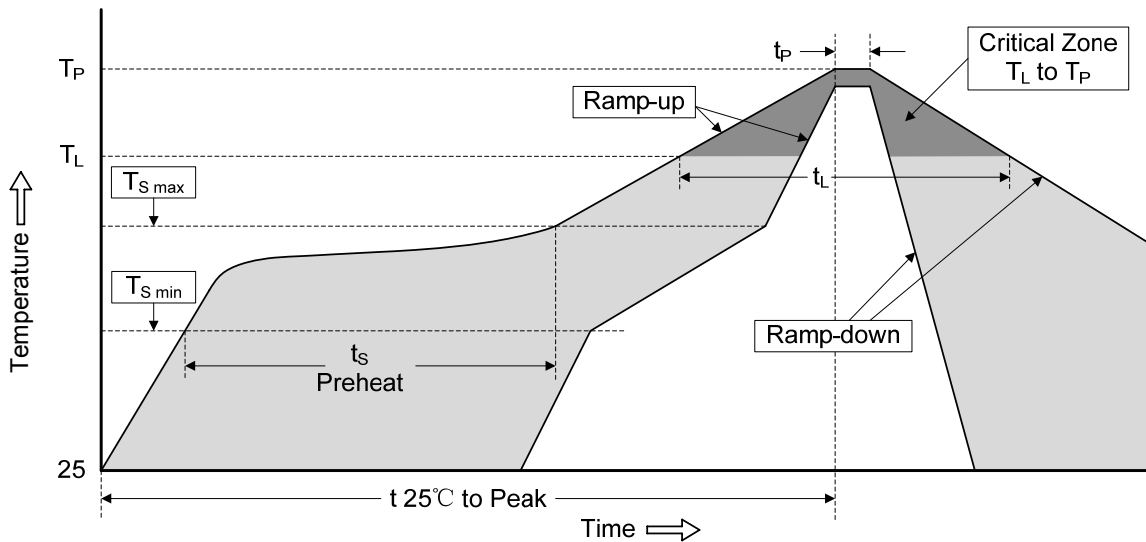
Electrical Ratings

Items	Test Condition/Description	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt=100V/s$. Test is between each side electrode and center electrode.	To meet the specified value
Maximum Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with voltage ramp $dv/dt=1000V/\mu s$. Test is between each side electrode and center electrode.	

<p>Impulse Discharge Current</p>	<p>Maximum surge current that can be applied through center electrode with 8/20μs waveform, for 10 times with 3min interval time, which will be equally divided between each side electrode to center electrode.</p> 	
<p>Alternating Discharge Current</p>	<p>Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min. Test is between each side electrode and center electrode.</p>	
<p>Insulation Resistance</p>	<p>The resistance of gas tube shall be measured between each side electrodes and center electrode.</p>	
<p>Capacitance</p>	<p>The capacitance of gas tube shall be measured between each side electrodes and center electrode. Test frequency: 1MHz</p>	

Recommended Soldering Conditions

Reflow Soldering

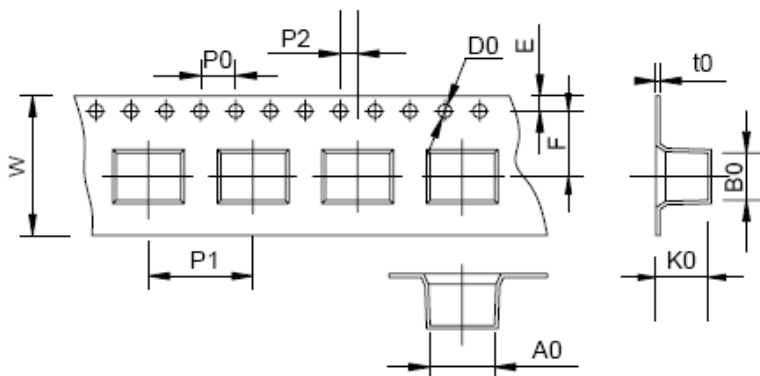


Recommended Conditions

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) (ts)	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.

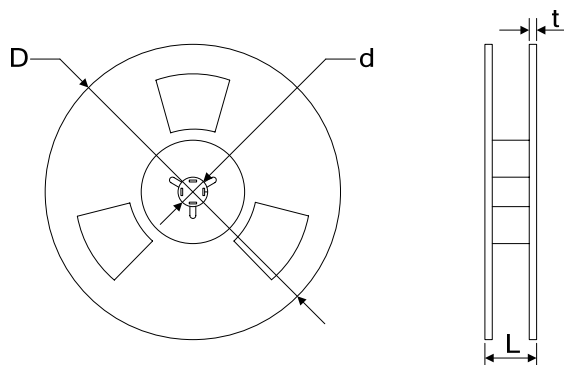
Packaging

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	7.40	±0.10
K0	5.50	±0.10
B0	5.40	±0.10
t0	0.50	±0.10

Reel



D	330.00	±2.00
d	13.00	±0.50
L	20.00	±2.00
t	2.00	±0.20

Quantity: 900pcs

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