

DATA SHEET

GAS DISCHARGE TUBES
TELEPHONE INTERFACE

2R-8-U series

RoHS compliant & free



Product specification— July 12, 2023 V.1



Gas Discharge Tube (GDT) Data Sheet

Features

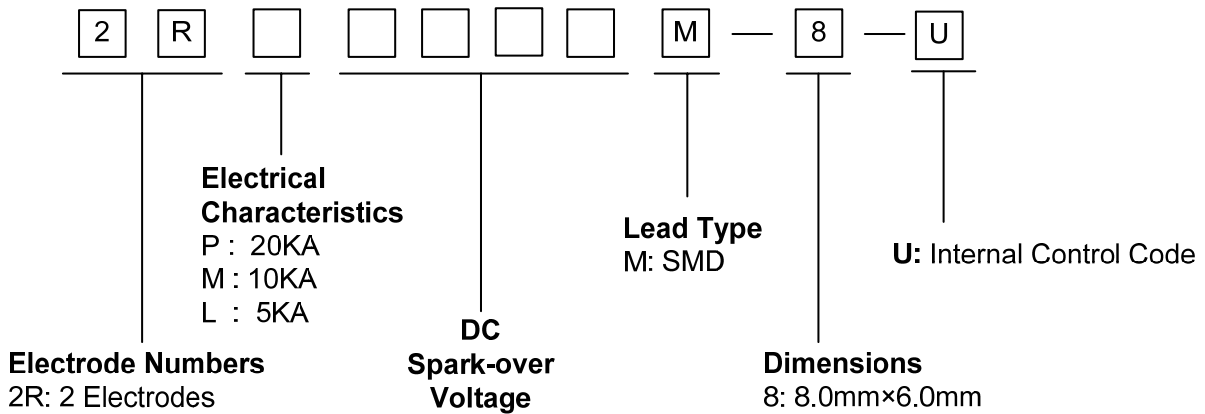
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Stable breakdown voltage
- High insulation resistance
- Low capacitance (≤1.5pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 8.0mm*6.0mm
- 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



Dimensions

<p>M Type</p> <p style="text-align: center;">Recommended Pad Size</p>	Dimension (mm)		
	Symbol	Spec.	Tolerance
	D	8.0	±0.2
	D1	8.0	±0.2
	T	6.0	±0.2
B	0.5	±0.2	

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/ 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)	
2RP075M-8-U	75 \pm 20%	600	20	20	500	25	1.0	1.5	None
2RP090M-8-U	90 \pm 20%	600	20	20	500	50	1.0	1.5	None
2RP120M-8-U	120 \pm 20%	600	20	20	500	50	1.0	1.5	None
2RP150M-8-U	150 \pm 20%	700	20	20	500	100	1.0	1.5	None
2RP230M-8-U	230 \pm 20%	700	20	20	500	100	1.0	1.5	None
2RP250M-8-U	250 \pm 20%	800	20	20	500	100	1.0	1.5	None
2RP300M-8-U	300 \pm 20%	900	20	20	500	100	1.0	1.5	None
2RP350M-8-U	350 \pm 20%	900	20	20	500	100	1.0	1.5	None
2RP400M-8-U	400 \pm 20%	1000	20	20	500	100	1.0	1.5	None
2RP470M-8-U	470 \pm 20%	1100	20	20	500	250	1.0	1.5	None
2RP600M-8-U	600 \pm 20%	1300	20	20	500	250	1.0	1.5	None
2RP800M-8-U	800 \pm 20%	1500	20	20	500	250	1.0	1.5	None
2RM1000M-8-U	1000 \pm 20%	2200	10	10	300	500	1.0	1.5	None
2RM1200M-8-U	1200 \pm 20%	2300	10	10	300	500	1.0	1.5	None
2RM1400M-8-U	1400 \pm 20%	2400	10	10	300	500	1.0	1.5	None
2RM1500M-8-U	1500 \pm 20%	2400	10	10	300	500	1.0	1.5	None
2RM1600M-8-U	1600 \pm 20%	2600	10	10	300	500	1.0	1.5	None
2RL2000M-8-U	2000 \pm 20%	3200	5	5	300	500	1.0	1.5	None
2RL2500M-8-U	2500 \pm 20%	3600	5	5	300	500	1.0	1.5	None

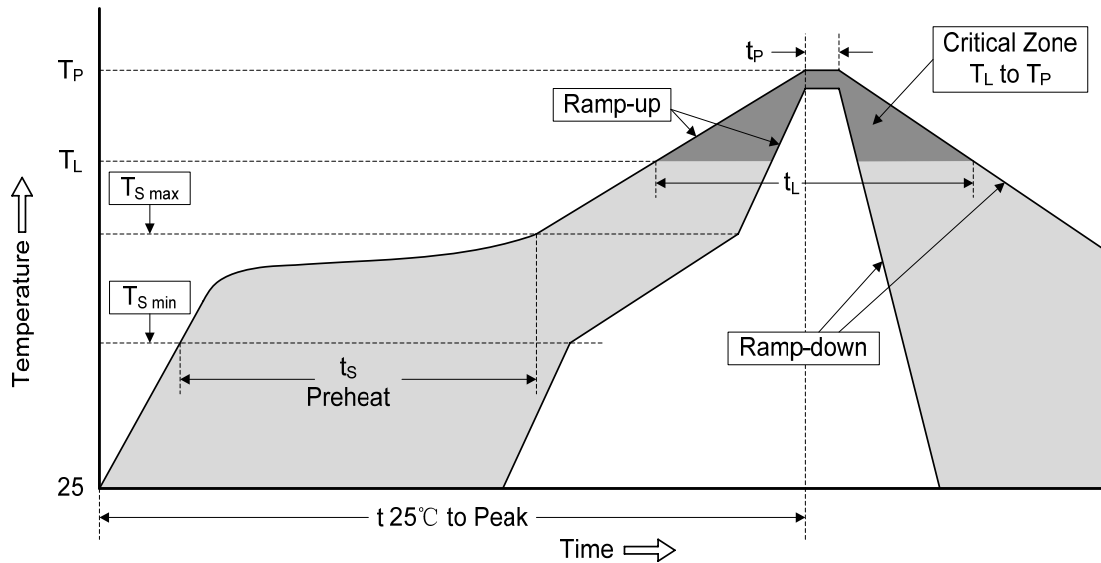
Electrical Ratings

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 8/20μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time.</p> <p>The graph plots Current (%) on the y-axis (0 to 100) against Time on the x-axis. The curve starts at 0, rises to a peak labeled 'Crest value' at approximately 100%. A horizontal dashed line at 10% current intersects the rising part of the curve, with a vertical dashed line down to the x-axis marking a time of 8μs. Another horizontal dashed line at 50% current intersects the falling part of the curve, with a vertical dashed line down to the x-axis marking a time of 20μs. The total time interval from the start to the 50% decay point is labeled 'Impulse Width'.</p>	

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

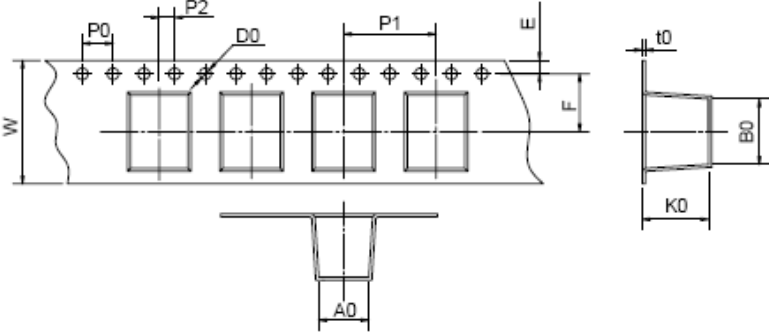
Reflow Soldering

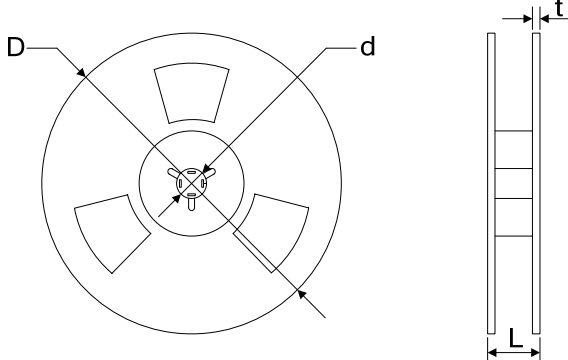


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	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

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	6.35	±0.10
	K0	6.55	±0.10
	B0	8.65	±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: 600pcs			

Reel	Symbol	Dimension (mm)	Tolerance
	D	330.00	±2.00
	d	13.00	±0.50
	L	20.00	±2.00
	t	2.00	±0.20
	Quantity: 600pcs		