Innovative Service Around the Globe YAGEO

DATA SHEET

GAS DISCHARGE TUBES
TELEPHONE INTERFACE

2R-8x6(S) series

RoHS compliant & free

Product specification– July 12, 2023 V.1

Gas Discharge Tube (GDT) Data Sheet

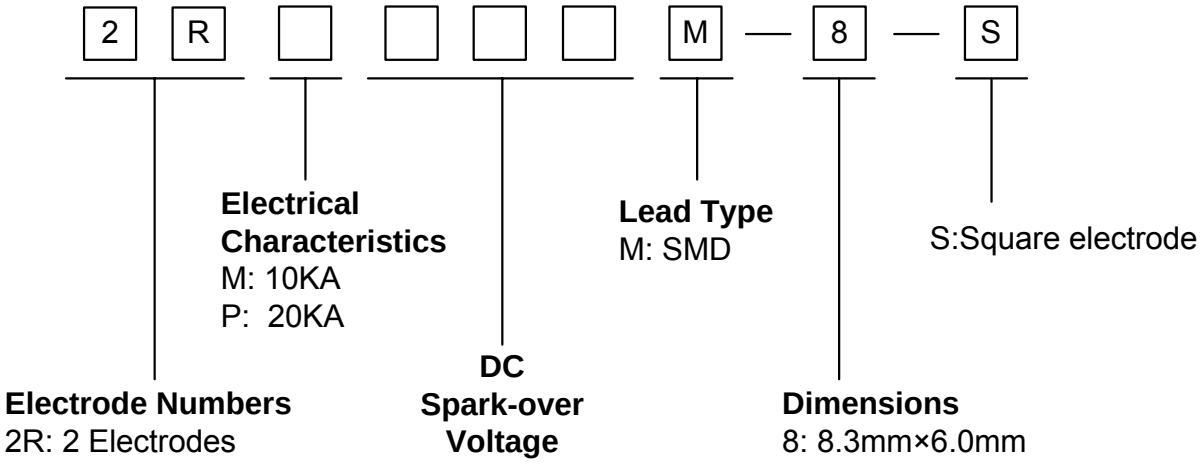
Features

- 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 (≤1.5pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 8.3mm*6.0mm
- Storage and operating temperature: -40℃ ~ +85℃
- 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

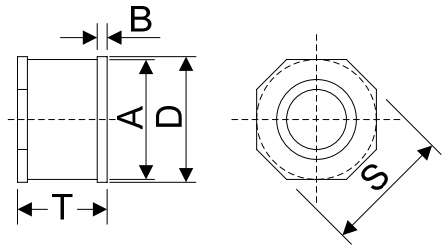


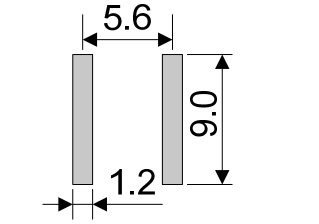
Marking

B : BrightKing Logo
2RP090-8 : Device Marking Code
XXXX : Internal Control Code

Dimensions

M Type





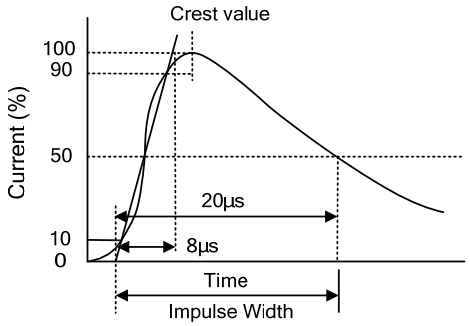
Recommended Pad Size

Symbol	Dimension (mm)	
	Spec.	Tolerance
A	8.0	±0.20
B	0.5	±0.10
D	8.3	±0.20
T	6.0	±0.25
S	9.0	±0.40

Electrical Characteristics

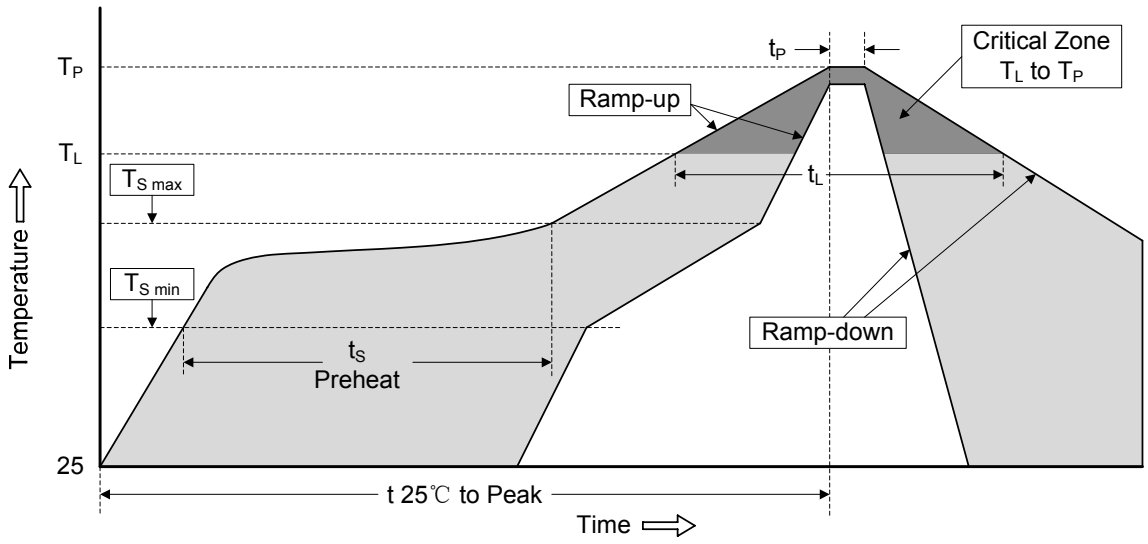
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Single Impulse Discharge Current	Alternating Discharge Current	Impulse Life	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
	100V/s	1000V/μs	8/20μs 10times	10/350μs	50Hz,1sec	10/1000 μs	Test Voltag	(GΩ)	1MHz	
	(V)	(V)	(KA)	(KA)	(A)	(times)	DC(V)		(pF)	
2RM075M-8-S	75±20%	600	10	2.5	10	500	25	1.0	1.5	2RM075-8
2RM090M-8-S	90±20%	600	10	2.5	10	500	50	1.0	1.5	2RM090-8
2RM150M-8-S	150±20%	600	10	2.5	10	500	100	1.0	1.5	2RM150-8
2RM230M-8-S	230±20%	700	10	2.5	10	500	100	1.0	1.5	2RM230-8
2RM250M-8-S	250±20%	700	10	2.5	10	500	100	1.0	1.5	2RM250-8
2RM300M-8-S	300±20%	900	10	2.5	10	500	100	1.0	1.5	2RM300-8
2RM350M-8-S	350±20%	900	10	2.5	10	500	100	1.0	1.5	2RM350-8
2RM420M-8-S	420±20%	1000	10	2.5	10	500	100	1.0	1.5	2RM420-8
2RM470M-8-S	470±20%	1000	10	2.5	10	500	250	1.0	1.5	2RM470-8
2RM600M-8-S	600±20%	1200	10	2.5	10	500	250	1.0	1.5	2RM600-8
2RM800M-8-S	800±20%	1500	10	2.5	10	500	250	1.0	1.5	2RM800-8
2RM1000M-8-S	1000±20%	1700	10	2.5	10	500	250	1.0	1.5	2RM1000-8
2RM1500M-8-S	1500±20%	2300	10	2.5	5	500	500	1.0	1.5	2RM1500-8
2RP075M-8-S	75±20%	600	20	5.0	20	500	25	1.0	1.5	2RP075-8
2RP090M-8-S	90±20%	600	20	5.0	20	500	50	1.0	1.5	2RP090-8
2RP150M-8-S	150±20%	600	20	5.0	20	500	100	1.0	1.5	2RP150-8
2RP230M-8-S	230±20%	700	20	5.0	20	500	100	1.0	1.5	2RP230-8
2RP250M-8-S	250±20%	700	20	5.0	20	500	100	1.0	1.5	2RP250-8
2RP300M-8-S	300±20%	900	20	5.0	20	500	100	1.0	1.5	2RP300-8
2RP350M-8-S	350±20%	900	20	5.0	20	500	100	1.0	1.5	2RP350-8
2RP420M-8-S	420±20%	1000	20	5.0	20	500	100	1.0	1.5	2RP420-8
2RP470M-8-S	470±20%	1000	20	5.0	20	500	250	1.0	1.5	2RP470-8
2RP600M-8-S	600±20%	1200	20	5.0	20	500	250	1.0	1.5	2RP600-8
2RP800M-8-S	800±20%	1500	20	5.0	20	500	250	1.0	1.5	2RP800-8
2RP1000M-8-S	1000±20%	1700	20	5.0	20	500	250	1.0	1.5	2RP1000-8

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/μs.	
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. 	
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

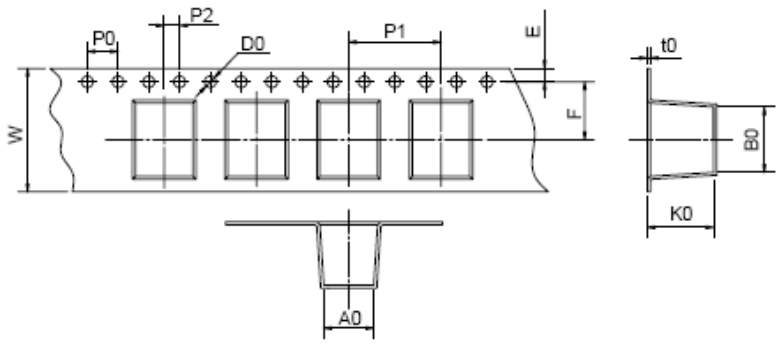


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (ts)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

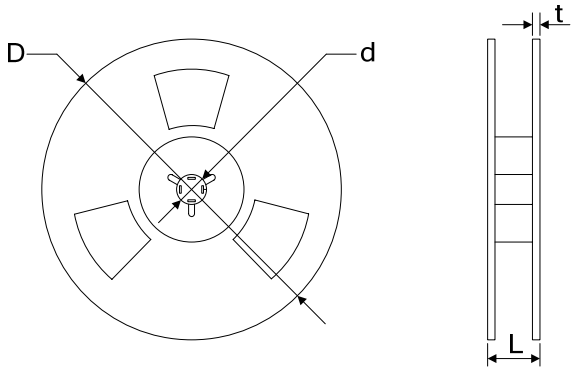
Packaging

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

Reel



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

Quantity: 600pcs

LEGAL DISCLAIMER

YAGEO, its distributors and agents (collectively, "YAGEO"), hereby disclaims any and all liabilities for any errors, inaccuracies or incompleteness contained in any product related information, including but not limited to product specifications, datasheets, pictures and/or graphics. YAGEO may make changes, modifications and/or improvements to product related information at any time and without notice.

YAGEO makes no representation, warranty, and/or guarantee about the fitness of its products for any particular purpose or the continuing production of any of its products. To the maximum extent permitted by law, YAGEO disclaims (i) any and all liability arising out of the application or use of any YAGEO product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for a particular purpose, non -infringement and merchantability.

YAGEO products are designed for general purpose applications under normal operation and usage conditions. Please contact YAGEO for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property: Aerospace equipment (artificial satellite, rocket, etc.), Atomic energy-related equipment, Aviation equipment, Disaster prevention equipment, crime prevention equipment, Electric heating apparatus, burning equipment, Highly public information network equipment, data-processing equipment , Medical devices, Military equipment, Power generation control equipment, Safety equipment, Traffic signal equipment, Transportation equipment and Undersea equipment, or for any other application or use in which the failure of YAGEO products could result in personal injury or death, or serious property damage. Particularly **YAGEO Corporation and its affiliates do not recommend the use of commercial or automotive grade products for high reliability applications or manned space flight.**

Information provided here is intended to indicate product specifications only. YAGEO reserves all the rights for revising this content without further notification, as long as products are unchanged. Any product change will be announced by PCN.