

DATA SHEET

GAS DISCHARGE TUBES
TELEPHONE INTERFACE
2R-4-H3.5 series

RoHS compliant & free



Product specification— July 12, 2023 V.1



Gas Discharge Tube (GDT) Data Sheet

Features

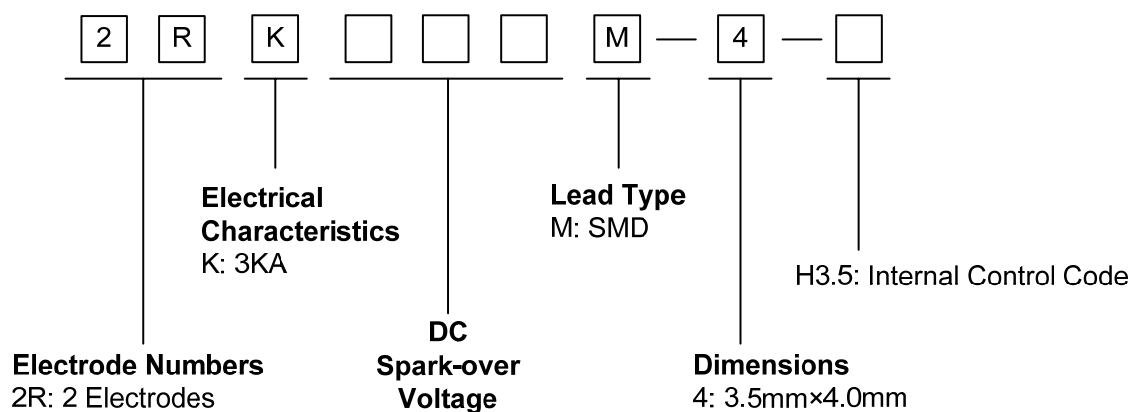
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ μ s
- Stable breakdown voltage
- High insulation resistance
- Low capacitance (≤ 0.5 pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 3.5mm*4.0mm
- Storage and operational temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020
- Safety certification: UL



Applications

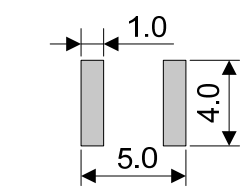
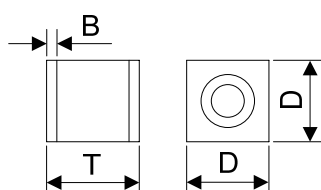
- Repeaters, Modems.
- Telephone Interface, Line cards.
- Data communication equipment.
- Line test equipment

Part Number Code



Dimensions

M Type



Recommended Pad Size

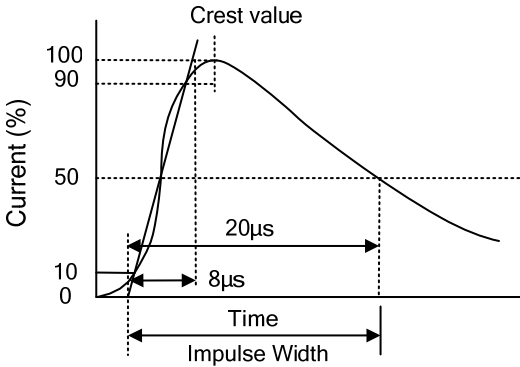
Symbol	Dimension (mm)	
	Spec.	Tolerance
D	3.5	±0.2
T	4.0	±0.3
B	0.4	±0.2

Electrical Characteristics

Part Number	Type ①	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Impulse Discharge Voltage	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
		100V/s	1000V/ μ s	8/20 μ s 10times	10/700 μ s 10times	Test Voltage	(G Ω)	1MHz	
		(V)	(V)	(KA)	(KV)	DC(V)		(pF)	
2RK090M-4	H3.5	90 $\pm$ 30%	650	3	6	50	1	0.5	None
2RK150M-4	H3.5	150 $\pm$ 30%	650	3	6	100	1	0.5	None
2RK200M-4	H3.5	200 $\pm$ 30%	750	3	6	100	1	0.5	None
2RK250M-4	H3.5	250 $\pm$ 30%	750	3	6	100	1	0.5	None
2RK300M-4	H3.5	300 $\pm$ 30%	850	3	6	100	1	0.5	None
2RK350M-4	H3.5	350 $\pm$ 30%	850	3	6	100	1	0.5	None
2RK400M-4	H3.5	400 $\pm$ 30%	900	3	6	100	1	0.5	None
2RK470M-4	H3.5	470 $\pm$ 30%	1000	3	6	250	1	0.5	None

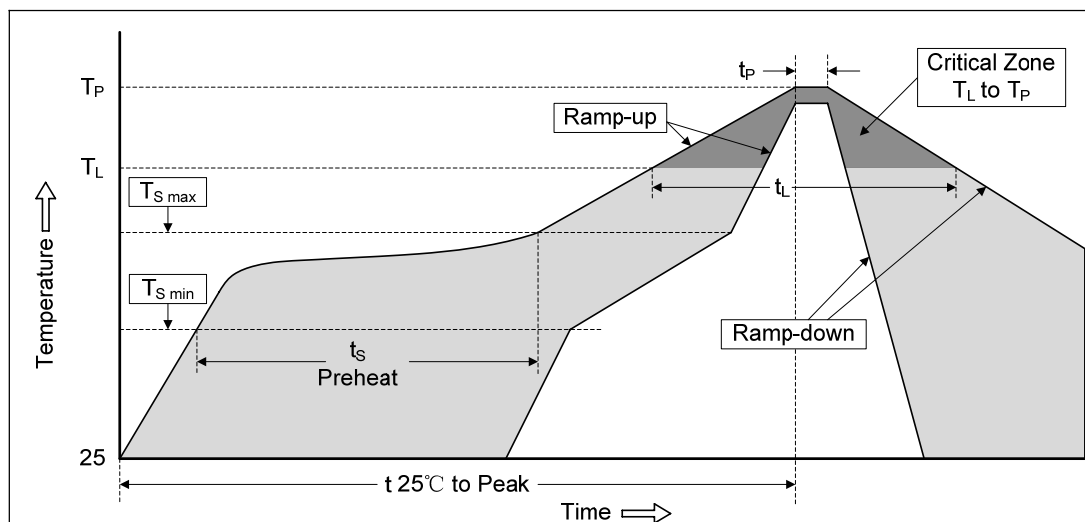
Notes: ① Specific code by request.

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 8/20μs surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time.  The graph shows a typical 8/20 microsecond surge current waveform. The y-axis represents Current in percent, ranging from 0 to 100. The x-axis represents Time in microseconds. The curve starts at 0, rises to a peak (crest value) of 100% at 8 microseconds, and then decays to 50% at 20 microseconds. The time interval from the start to the 50% decay point is labeled as the Impulse Width.	
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



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) (t_s)	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
		P	8.00	±0.10
		P0	4.00	±0.10
		P1	2.00	±0.10
		D	1.50	+0.10/-0
		E	1.75	±0.10
		F	7.50	±0.10
		A0	3.80	±0.10
		B0	4.30	±0.10
		K0	3.80	±0.10
		t	0.30	±0.10
Reel		D	330.00	±2.00
		d	13.00	±0.50
		L	16.00	±2.00
		t	2.00	±0.20
		Quantity: 2000pcs		

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