

# DATA SHEET

GAS DISCHARGE TUBES  
TELEPHONE INTERFACE

3R-8-SSS series

RoHS compliant & free



Product specification— July 12, 2023 V.1



## Gas Discharge Tube (GDT) Data Sheet

### Features

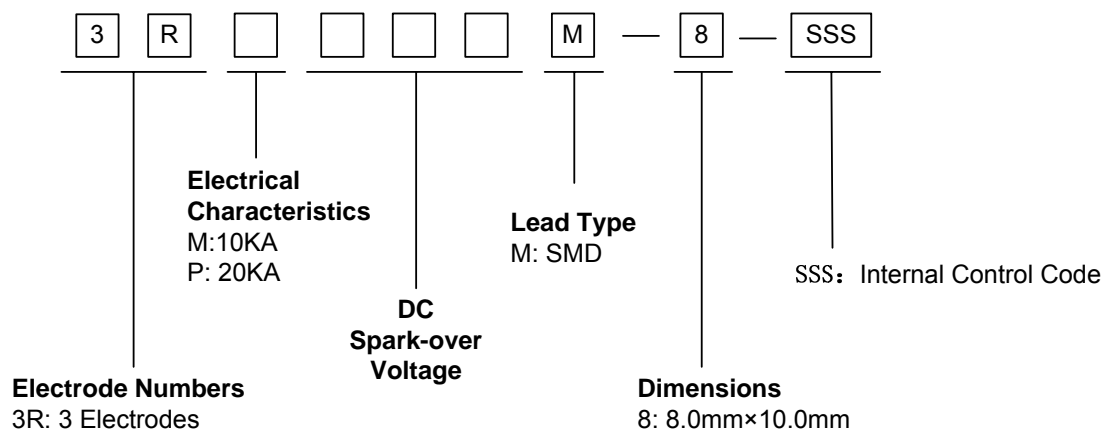
- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/ $\mu$ s
- Stable breakdown voltage
- High insulation resistance
- Low capacitance ( $\leq 2$ pF)
- High holdover voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Size: 8.0mm\*10.0mm
- Storage and operating temperature: -40°C ~ +85°C
- Meets MSL level 1, per J-STD-020
- Safety certification: UL



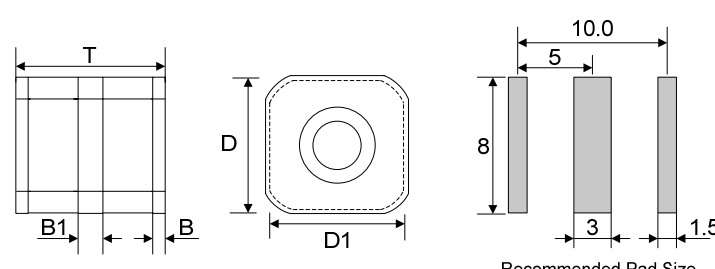
### Applications

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

### Part Number Code



### Dimensions

M Type	Symbol	Dimension (mm)	
		Spec.	Tolerance
	D	8.0	+0.2, -0.8
	D1	7.9	±0.2
	T	10.0	±0.5
	B	0.5	±0.1
	B1	1.5	±0.2

### Electrical Characteristics

## GAS DISCHARGE TUBS

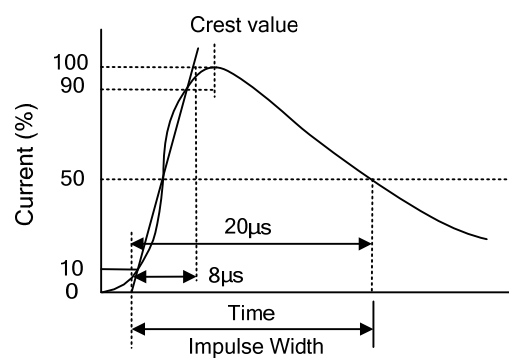
## 3R-8-SSS series

Part Number	Type ①	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/ $\mu$ s	8/20 $\mu$ s 10times	50Hz, 1sec	10/1000 $\mu$ s 100A	Test Voltage	(G $\Omega$ )	1MHz	
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)	
3RM075M-8	SSS	75 $\pm$ 20%	700	10	10	300	25	1.0	2.0	None
3RM090M-8	SSS	90 $\pm$ 20%	700	10	10	300	50	1.0	2.0	None
3RM150M-8	SSS	150 $\pm$ 20%	700	10	10	300	100	1.0	2.0	None
3RM200M-8	SSS	200 $\pm$ 20%	700	10	10	300	100	1.0	2.0	None
3RM230M-8	SSS	230 $\pm$ 20%	800	10	10	300	100	1.0	2.0	None
3RM350M-8	SSS	350 $\pm$ 20%	900	10	10	300	100	1.0	2.0	None
3RM400M-8	SSS	400 $\pm$ 20%	1000	10	10	300	100	1.0	2.0	None
3RM470M-8	SSS	470 $\pm$ 20%	1100	10	10	300	250	1.0	2.0	None
3RM600M-8	SSS	600 $\pm$ 20%	1300	10	10	300	250	1.0	2.0	None
3RP075M-8	SSS	75 $\pm$ 20%	700	20	20	300	25	1.0	2.0	None
3RP090M-8	SSS	90 $\pm$ 20%	700	20	20	300	50	1.0	2.0	None
3RP150M-8	SSS	150 $\pm$ 20%	700	20	20	300	100	1.0	2.0	None
3RP200M-8	SSS	200 $\pm$ 20%	700	20	20	300	100	1.0	2.0	None
3RP230M-8	SSS	230 $\pm$ 20%	800	20	20	300	100	1.0	2.0	None
3RP350M-8	SSS	350 $\pm$ 20%	900	20	20	300	100	1.0	2.0	None
3RP400M-8	SSS	400 $\pm$ 20%	1000	20	20	300	100	1.0	2.0	None
3RP470M-8	SSS	470 $\pm$ 20%	1100	20	20	300	250	1.0	2.0	None
3RP600M-8	SSS	600 $\pm$ 20%	1300	20	20	300	250	1.0	2.0	None

Notes: ① Specific code by request.

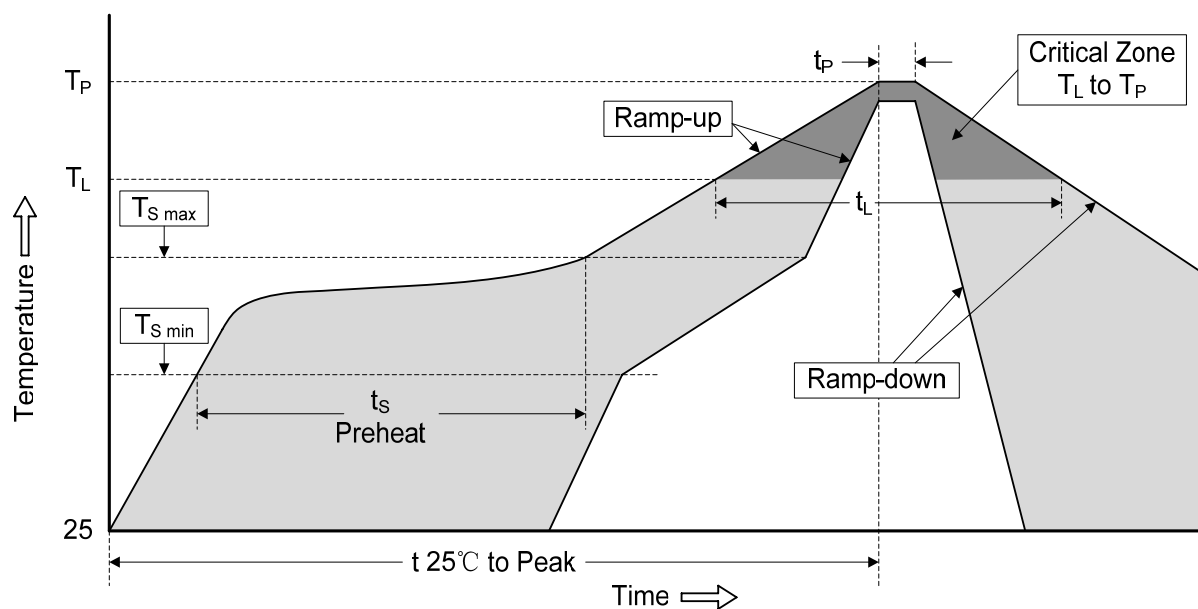
## Electrical Ratings

Items	Test Condition/Description	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt=100V/s$ . 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.	

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

### Recommended Soldering Conditions

#### Reflow Soldering



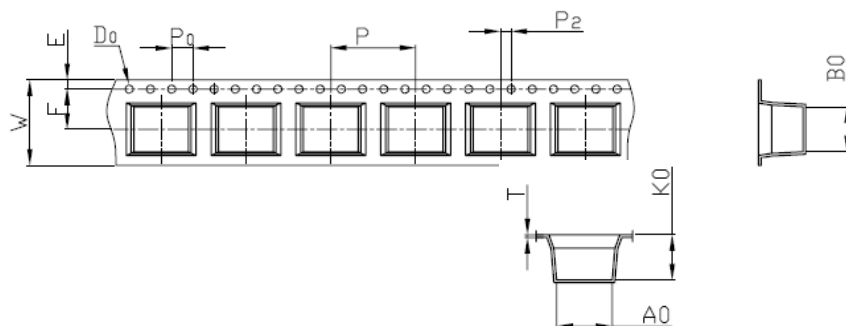
## Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat <ul style="list-style-type: none"> <li>-Temperature Min (<math>T_{S\ min}</math>)</li> <li>-Temperature Max (<math>T_{S\ max}</math>)</li> <li>-Time (min to max) (ts)</li> </ul>	150°C 200°C 60-180 seconds
$T_{S\ max}$ to $T_L$ <ul style="list-style-type: none"> <li>-Ramp-up Rate</li> </ul>	3°C/second max.
Time maintained above: <ul style="list-style-type: none"> <li>-Temperature (<math>T_L</math>)</li> <li>-Time (<math>t_L</math>)</li> </ul>	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

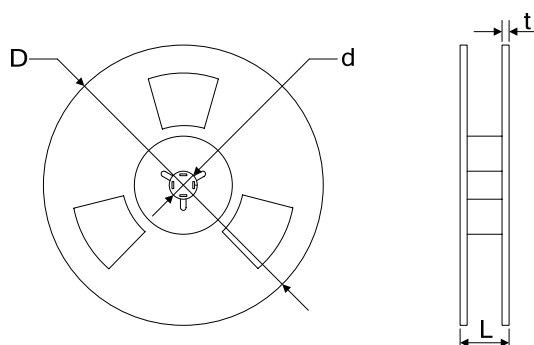
## SMD Packing (Tape &amp; Reel)

## Tape



Symbol	Dimension (mm)	
	Spec.	Tolerance
W	16.00	±0.20
P0	4.00	±0.10
P	16.00	±0.10
P2	2.00	±0.10
D0	1.55	±0.10
E	1.75	±0.10
F	7.50	±0.10
A0	10.30	±0.10
K0	8.40	±0.10
B0	8.40	±0.10
T	0.50	±0.05
D	330.00	±2.00
d	13.00	±0.50
L	20.00	±2.00
t	2.00	±0.20
Quantity: 300pcs		

## Reel



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