OM SENI

2R-5 SERIES

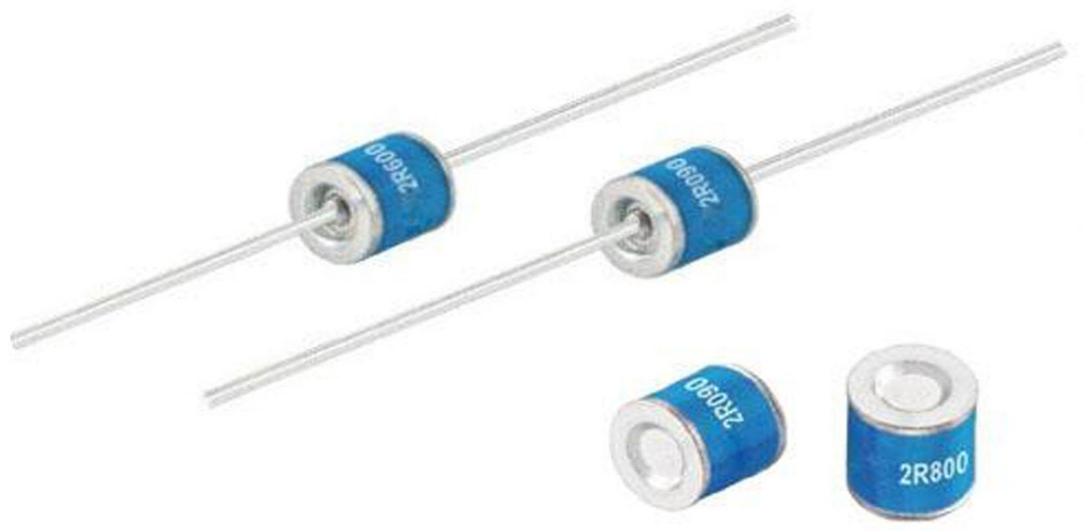
Gas Discharge Tube (GDT) Datasheet

Features

- Excellent response to fast rising transients
- Stable breakdown voltage
- Low capacitance and Insertion Loss
- High insulation resistance
- Dimensions Φ5.5*6mm
- Storage and operating temperature: -40°C ~ +85°C
- Reliable to Protect Electrostatic Surge
- High Current Handling Capability @8/20μs;
- Moisture sensitivity level :Level 1

DC Spark-over Voltage
75V to 800V

2R-5



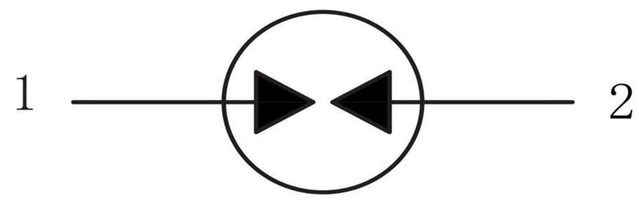
Applications

- Test equipment
- AC Power
- Power supplies
- Telephone Interface, Line cards
- General Telecommunications equipment

Part Number Code

2R 090 S A - 5

- 5 — Dimensions: Φ5.5*6mm
- A — 8/20μs Impulse Current A:5KA
- S — Type: S:SMD Type T:Lead Type
- 090 — DC Spark-over Voltage
- 2R — Electrode Numbers 2R:2 Electrode



Safety Certification

UL：E465335

2-Electrode Gas Discharge Tubes, Model(s):

2RxxxSA-5 where xxx is 090, 150, 230, 300, 350, 400, 420, 470, or 600.

2RxxxSB-5 where xxx is 090, 150, 230, 350, or 470.

2RxxxTA-5 where xxx is 090, 150, 230, 300, 350, 400, 420, 470, or 600.

2RxxxTB-5 where xxx is 090, 150, 230, 350, or 470.

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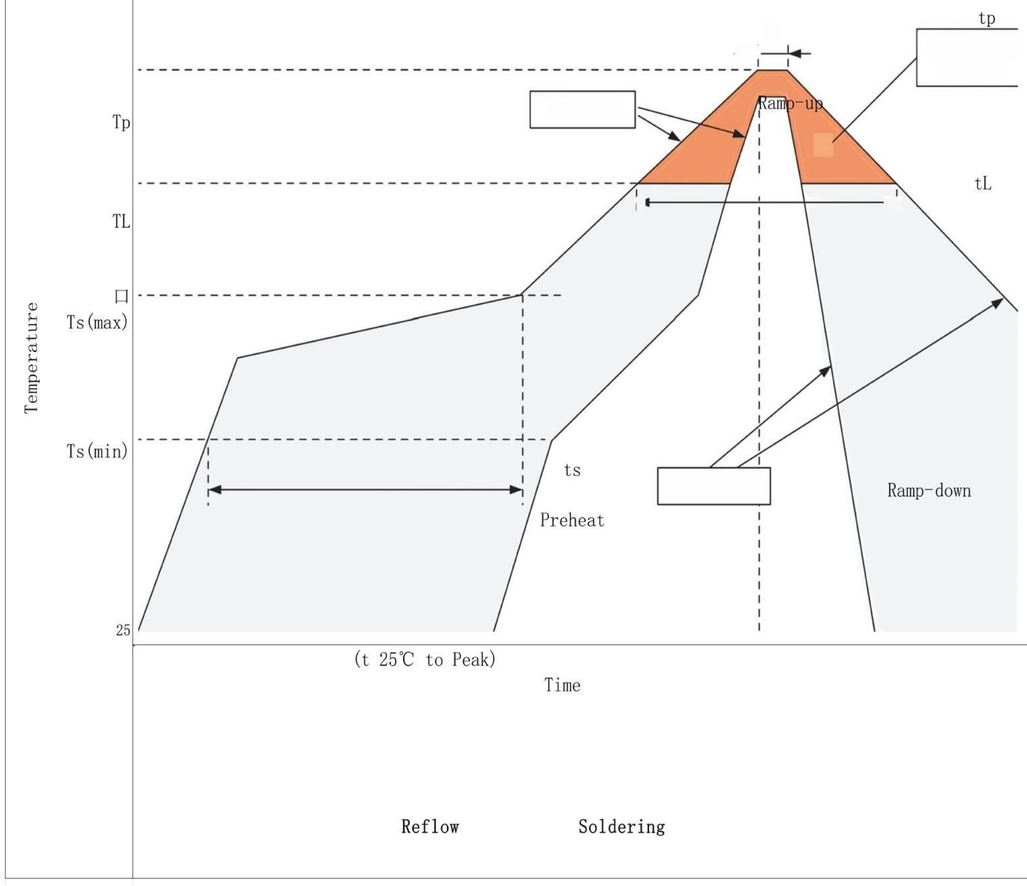
Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Part Number		DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current@8/20μs	Alternating Discharge Current @8/20μs	Impulse Life@ 10/1000μs	Minimum Insulation Resistance		Maximum Capacitance
		100V/S	1000V/μs	±5times	50Hz,1sec 10 times	100A	Test Voltage	GΩ	1MHz
		(V)	(V)	(KA)	(A)	(times)	DC(V)		(pF)
2R075SA-5	2R075TA-5	75±20%	600	5	5	300	25	1	1.5
2R090SA-5	2R090TA-5	90±20%	600	5	5	300	50	1	1.5
2R150SA-5	2R150TA-5	150±20%	600	5	5	300	100	1	1.5
2R230SA-5	2R230TA-5	230±20%	700	5	5	300	100	1	1.5
2R250SA-5	2R250TA-5	250±20%	700	5	5	300	100	1	1.5
2R300SA-5	2R300TA-5	300±20%	850	5	5	300	100	1	1.5
2R350SA-5	2R350TA-5	350±20%	900	5	5	300	100	1	1.5
2R400SA-5	2R400TA-5	400±20%	950	5	5	300	100	1	1.5
2R420SA-5	2R420TA-5	420±20%	950	5	5	300	100	1	1.5
2R470SA-5	2R470TA-5	470±20%	1000	5	5	300	250	1	1.5
2R600SA-5	2R600TA-5	600±20%	1200	5	5	300	250	1	1.5
2R800SA-5	2R800TA-5	800±20%	1400	5	5	300	250	1	1.5
2R075SB-5	2R075TB-5	75±20%	600	10	5	300	25	1	1.5
2R090SB-5	2R090TB-5	90±20%	600	10	10	300	50	1	1.5
2R120SB-5	2R120TB-5	120±20%	600	10	10	300	50	1	1.5
2R150SB-5	2R150TB-5	150±20%	600	10	10	300	100	1	1.5
2R230SB-5	2R230TB-5	230±20%	700	10	10	300	100	1	1.5
2R350SB-5	2R350TB-5	350±20%	900	10	10	300	100	1	1.5
2R470SB-5	2R470TB-5	470±20%	1000	10	10	300	250	1	1.5

Recommended Soldering Conditions



Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min(Ts(min)	+150℃
	Temperature Max(Ts(max)	+200℃
	Time(Min to Max)(ts)	60-180 secs.
Average ramp up rate (Liquid us Temp(TL)to peak)		3℃/sec.Max
Ts(max)to T-Ramp-up Rate		3℃/sec.Max
Reflow	Temperature(TL)(Liquid us)	+217℃
	Temperature(tL)	60-150 secs.
Peak Temp(Tp)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp(tp)		20-40secs
Ramp-down Rate		6℃/sec.Max
Time 25℃ to Peak Temp(Tp)		8 min.Max
Do not exceed		+260℃

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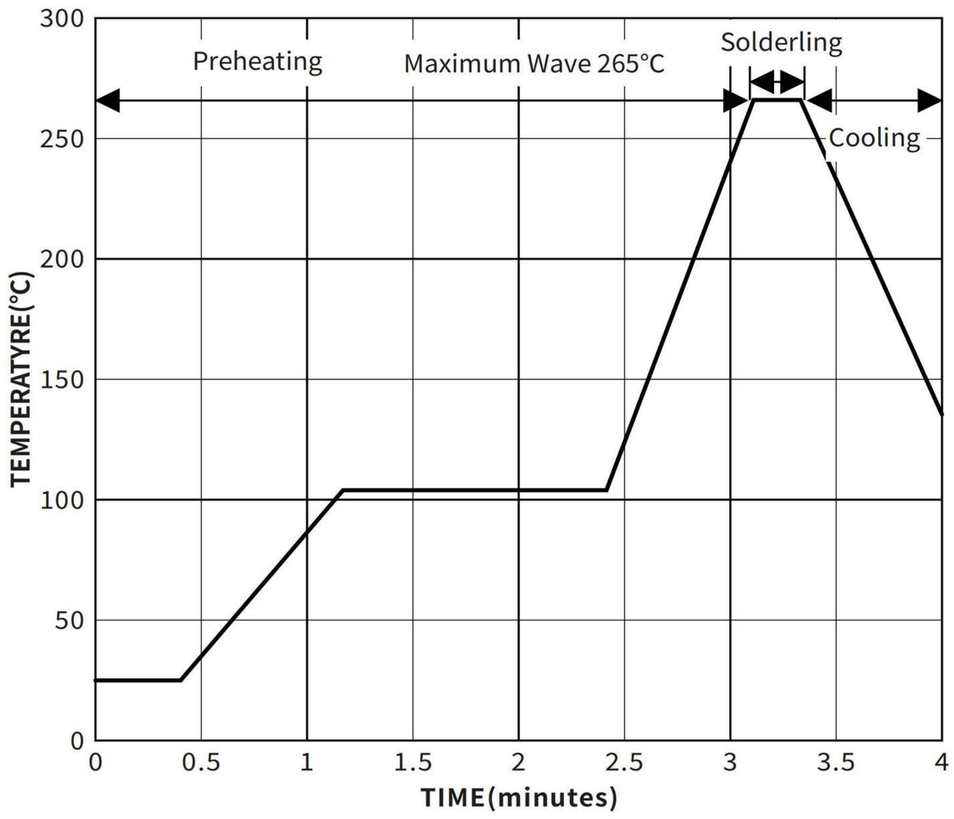
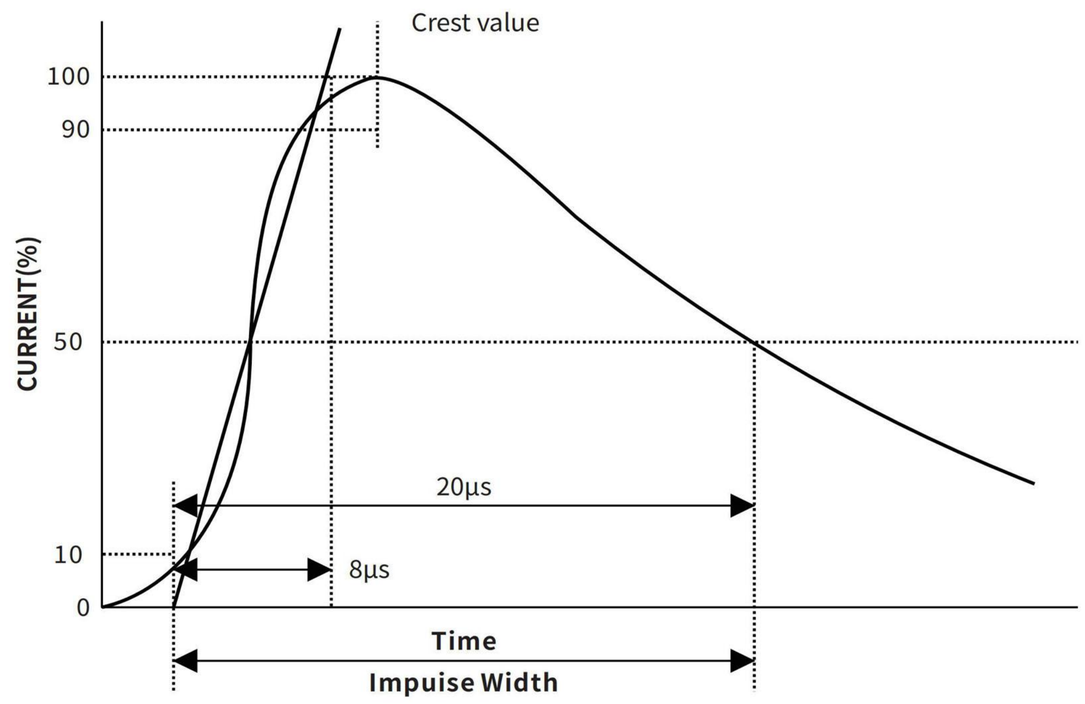
Recommended Soldering Conditions



Wave Soldering

Wave Soldering Condition	Pb-Free Assembly
Minimum pre-heat temperature	100°C
Pre-heat Time	60-180 secs.
Peak Temperature	265°C
Dipping Time	10 secs. Max
Soldering	1 time

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	

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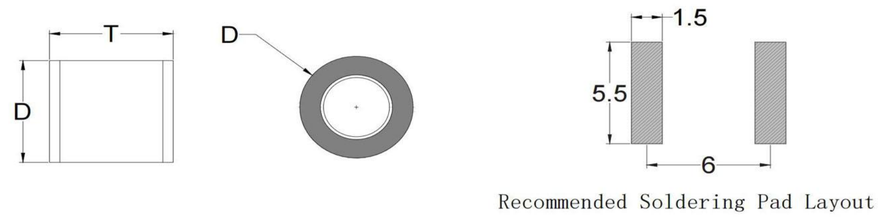
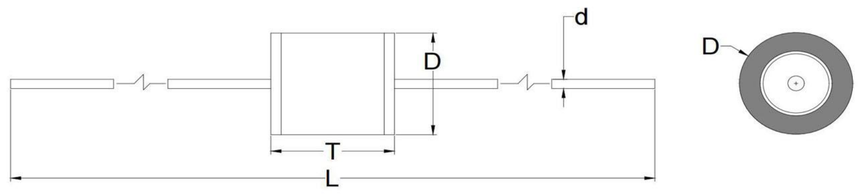
Physical Dimensions & Recommended Pad Layout



Recommended Soldering Pad Layout

SMD SERIES



LEAD SERIES

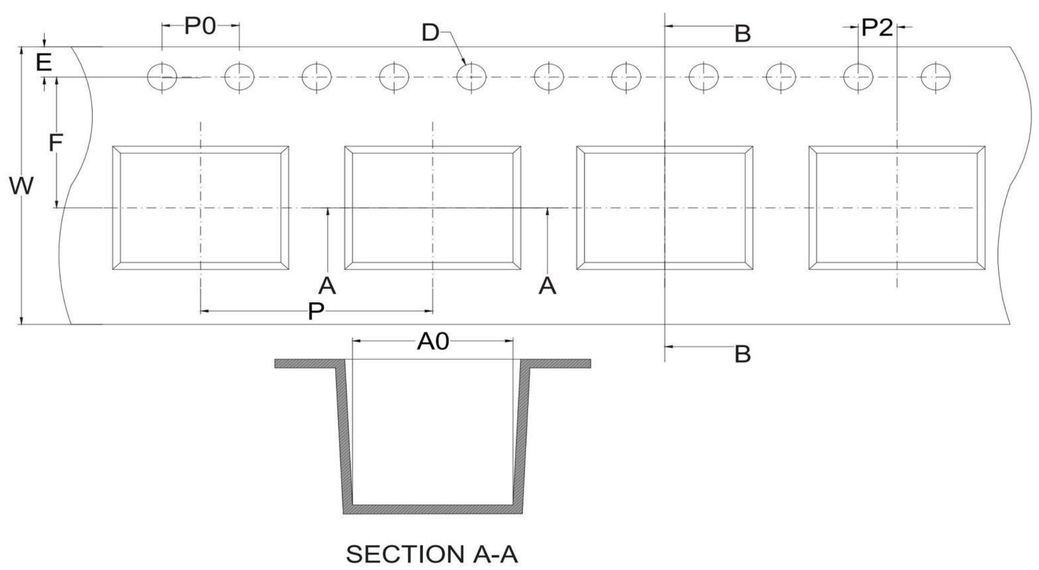
Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
D	5.3	5.7	0.209	0.224
T	5.7	6.3	0.224	0.248

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
D	5.3	5.7	0.209	0.224
T	5.7	6.3	0.224	0.248
d	0.75	0.85	0.030	0.033
L	60	64	2.362	2.520

Ordering Information

SERIES	SIZE(mm)	DELIVERY MODE	MPQ(PCS)	BOX(PCS)
2R-5 SMD TYPE	Φ5.5×6	13''REEL	1,000	3,000
2R-5 LEAD TYPE	Φ5.5×6-62	13''REEL	1,000	1,000

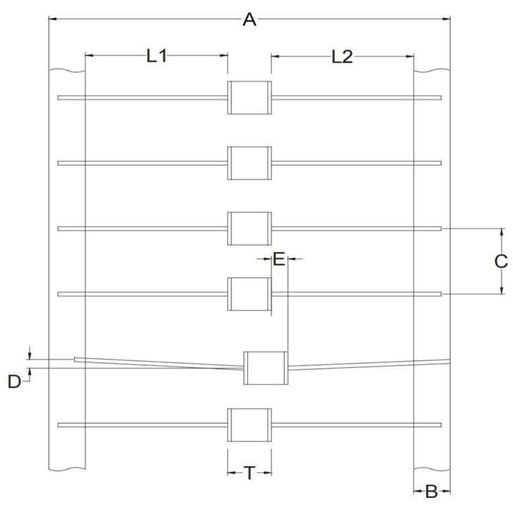
Packaging Information



SECTION A-A

SECTION B-B

Symbol	Dimensions(mm)	
	Millimeters	Inches
W	16±0.3	0.63±0.012
A0	5.8±0.1	0.228±0.004
B0	6.3±0.1	0.248±0.004
K0	5.6±0.1	0.220±0.004
P	8±0.1	0.315±0.004
F	7.5±0.1	0.295±0.004
E	1.75±0.1	0.069±0.004
D	1.5±0.1	0.059±0.004
P0	4±0.1	0.157±0.004
P2	2±0.1	0.079±0.004
T	0.4±0.05	0.016±0.002



Symbol	Dimensions(mm)	
	Millimeters	Inches
A	65±2	2.559±0.079
B	6±1	0.236±0.012
C	10±0.5	0.394±0.020
L1	23.5±1	0.925±0.039
L2	23.5±1	0.925±0.039
D	1.2 Max.	0.047 Max.
E	1.2 Max.	0.047 Max.
T	6±0.3	0.236±0.012