



**Features**

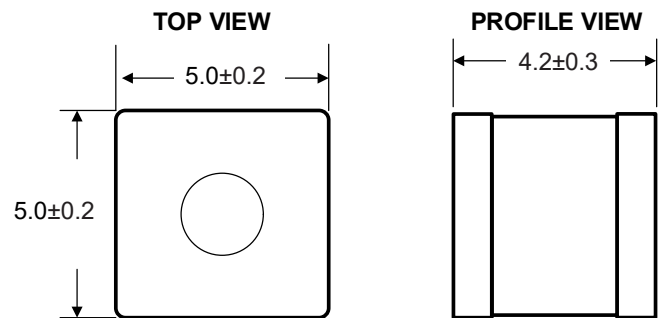
- 2-electrode arrester
- High insulation resistance
- Extremely fast response time
- Low capacitance ( $\leq 1\text{pF}$ )
- Surge current capacity 5KA 8/20us
- Storage and operating temperature:  $-40\text{ }^{\circ}\text{C} \sim +85\text{ }^{\circ}\text{C}$
- RoHS compliant
- Meets MSL level 1



**Applications**

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

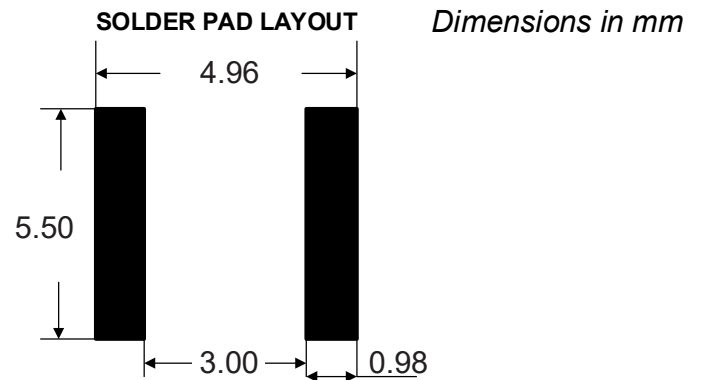
**Dimensional drawing**



**PartNumber Code**

**2R090N-S5042**

- 2R:2-electrode arrester
- 090: DC Spark-over Voltage 90V
- M: Tolerance of DC Spark-Over Voltage  
M:20% N: 30%
- S:SMD
- 5042: Size: 5.0mm\*5.0mm\*4.2mm



**Electrical Characteristics**

Part Number	DC Spark-over Voltage	Max.Impulse Spark-over Voltage	Impulse Discharge Current (8/20us)	AC discharge Current	Impulse Life	Minimum Insulation Resistance		Max. Capacitance 1MHz
	100V/S	1KV /us	10 times	50Hz,1S	10/700us			
	%	V	KA	A	KV	DC(V)	(GΩ)	(pF)
2R075N-S5042	75V±30%	650V	5	5	6	50	1	1
2R090N-S5042	90V±30%	650V	5	5	6	50	1	1
2R120N-S5042	120V±30%	650V	5	5	6	50	1	1
2R150N-S5042	150V±30%	650V	5	5	6	100	1	1
2R200N-S5042	200V±30%	650V	5	5	6	100	1	1
2R230N-S5042	230V±30%	700V	5	5	6	100	1	1
2R300N-S5042	300V±30%	700V	5	5	6	100	1	1
2R350N-S5042	350V±30%	750V	5	5	6	100	1	1
2R400N-S5042	400V±30%	800V	5	5	6	250	1	1
2R420N-S5042	420V±30%	850V	5	5	6	250	1	1
2R470N-S5042	470V±30%	900V	5	5	6	250	1	1
2R500N-S5042	500V±30%	900V	5	5	6	250	1	1
2R600N-S5042	600V±30%	900V	5	5	6	250	1	1
2R800N-S5042	800V±30%	1100V	5	5	6	250	1	1

**Electrical Ratings**

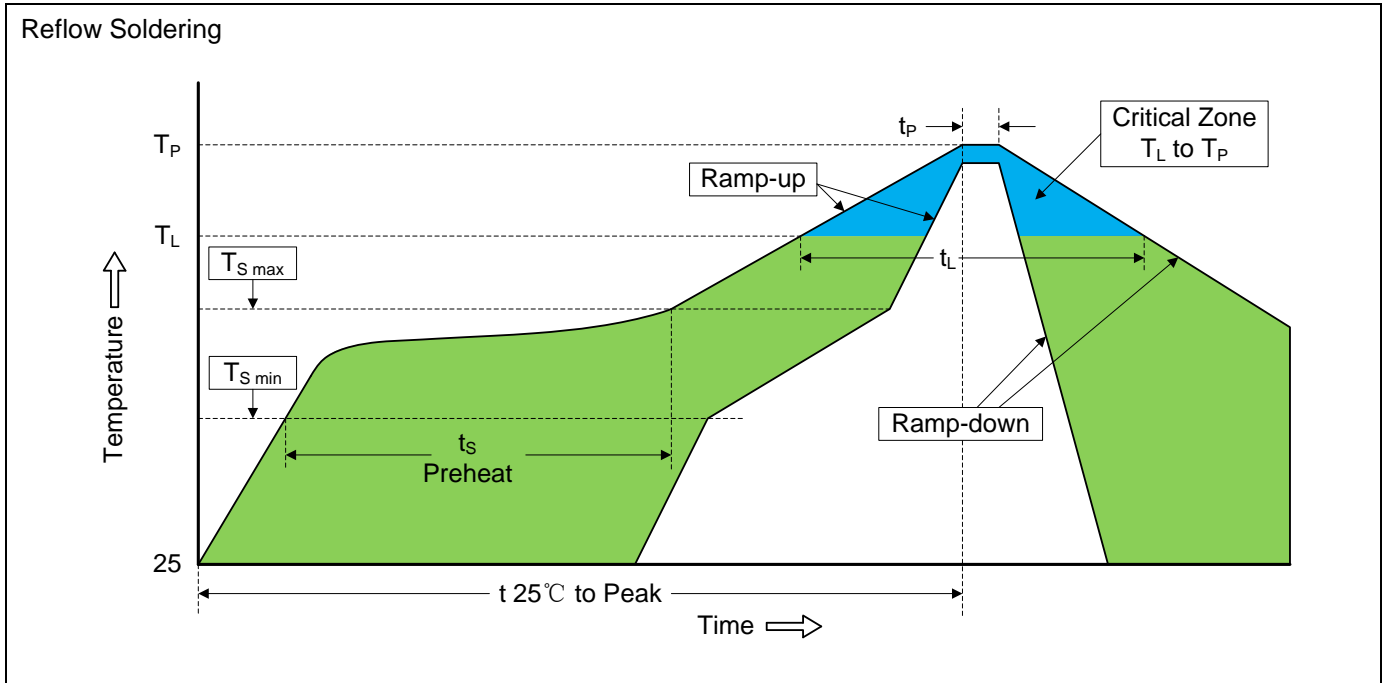
Items	Test Condition/Description	Requirement
DC Spark-over Voltage	The voltage is measured with voltage ramp $dv/dt=100V/s$ .	To meet the specified value
Maximum Impulse Spark-over Voltage	The maximum impulse spark-over voltage is measured with voltage ramp $dv/dt=1000V/\mu s$ .	
Insulation Resistance	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	
Impulse Discharge Current	Maximum $8/20\mu s$ surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time, without causing the DC spark-over voltage to change more than 30% from its initial value.	
Impulse Withstanding Voltage	The maximum $10/700\mu s$ surge that can be applied to the Gas Tube, 5 positive and 5 negative surges, with 1 minute interval time, without causing the DC spark-over voltage to change more than 25% from its initial value.	

**Reliability**

Items	Test conditions / Methods	Standard
Cold Resistance	Measurement after $-40^{\circ}C/1000$ HRS & normal temperature/2 HRS.	Features are conformed to rated spec.
Heat Resistance	Measurement after $125^{\circ}C/1000$ HRS & normal temperature/2 HRS.	
Humidity Resistance	Measurement after humidity $90\sim 95^{\circ}C(45^{\circ}C)$ /1000 HRS & normal temperature/2 HRS.	
Temperature Cycle	10 times repetition of cycle $-40^{\circ}C/30min \rightarrow$ normal, temp/2 min $\rightarrow 125^{\circ}C/30min$ , measurement after normal temp/2 HRS.	
Solder Ability	Check for solder adhesion after $260\pm 5^{\circ}C$ for 3sec , The body immersion depth 1.5mm in molten solder	Evenly covered by solder.
Solder Heat	Measurement after $260\pm 5^{\circ}C$ solder for 10sec, The body immersion depth 1.5mm in molten solder	Conformed to rated spec.



Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T <sub>L</sub> to T <sub>P</sub> )	3°C/second max.
Preheat	
-Temperature Min (T <sub>S min</sub> )	150°C
-Temperature Max (T <sub>S max</sub> )	200°C
-Time (min to max) (t <sub>s</sub> )	60-180 seconds
T <sub>S max</sub> to T <sub>L</sub>	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T <sub>L</sub> )	217°C
-Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>P</sub> )	260°C
Time within 5°C of actual Peak Temperature (t <sub>P</sub> )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.



Packaging

Tape	Items	Dimension (mm)		
		Spec.	Tolerance	
<p>SMD-tape according to IEC 60286-3</p>	W	16.0	±0.30	
	A0	5.30	±0.10	
	B0	4.30	±0.10	
	K0	5.20	±0.10	
	P	12.0	±0.10	
	F	7.50	±0.10	
	E	1.75	±0.10	
	D	1.50	±0.10	
	P0	4.00	±0.10	
	P2	2.00	±0.10	
	T	0.40	±0.10	
Reel	D0	13.30	±0.15	
	D1	330.0	±2.00	
	D2	100.0	±2.00	
	W1	16.50	±0.40	
	Quantity: 1000pcs			

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