

Features

- Provide ultra-fast response to surge voltage from slow-rising surge of 100V/s to rapid-rising surge of 1KV/μs
- Low capacitance (≤1.0pF)
- High holdover voltage
- High insulation resistance
- Stable breakdown voltage
- Large absorbing transient current capability
- Micro-Gap Design
- Operating and Storage Temperature : -40℃ ~ +125℃
- Meets MSL Level 1, per J-STD-020

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

Diagram illustrating the marking scheme for a 2R2E SMD package, showing the layout of characters and their corresponding specifications:

- Electrode Numbers:** 2R:2Electrodes
- Electrical Characteristics:** D: 5KA
- DC Spark-over Voltage:** (Indicated by a line pointing to the first six characters)
- Dimensions:** 5: 5 x 4.2mm
- Lead Type:** S: SMD
- Internal control code:** S: Square

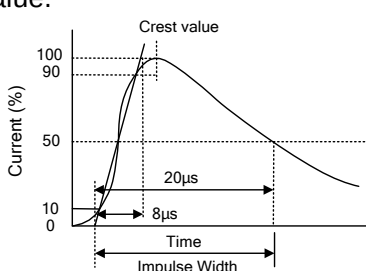
Recommended Pad Size

Symbol	Dimension (mm)
D	5.00±0.20
T	4.20±0.20
B	0.50±0.10

Electrical Characteristics

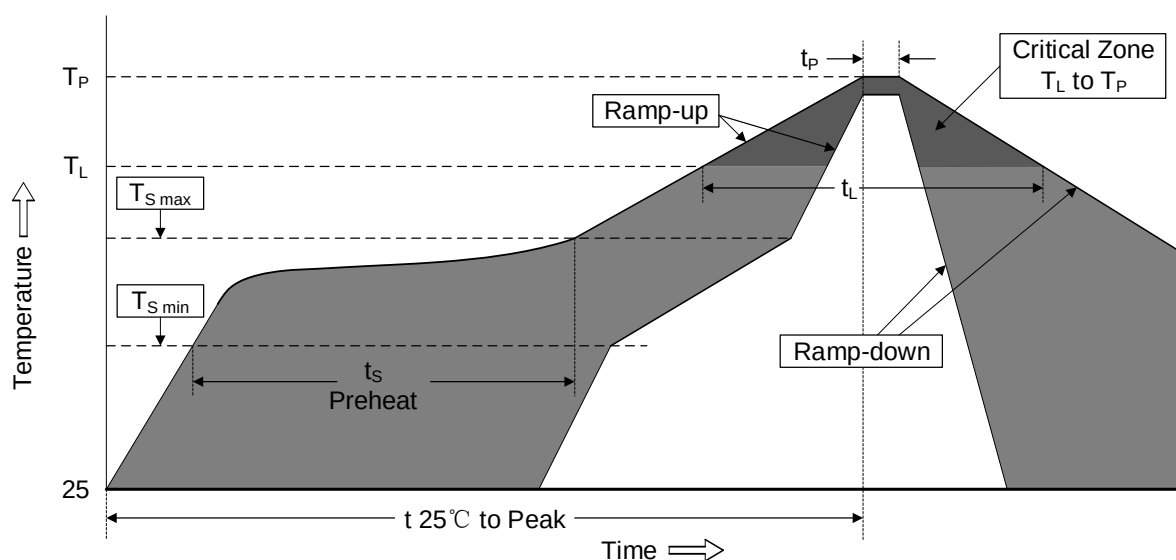
Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Impulse Life Test	Minimum Insulation Resistance		Maximum Capacitance	Nominal Impulse Discharge Current	Alternating Discharge Current	Device Marking Code
	100V/S	1KV/us	8/20us 100A	Test Voltage	(GΩ)	(1MHz 1V)	8/20us	50Hz,1S	
	(v)	(v)	(times)	DC(V)		(pF)	(KA)	(A)	
2RD090S-5S	90±20%	650	300	50	1	1.0	5	5	None
2RD150S-5S	150±20%	650	300	50	1	1.0	5	5	None
2RD200S-5S	200±20%	650	300	100	1	1.0	5	5	None
2RD230S-5S	230±20%	700	300	100	1	1.0	5	5	None
2RD300S-5S	300±20%	800	300	100	1	1.0	5	5	None
2RD350S-5S	350±20%	800	300	100	1	1.0	5	5	None
2RD400S-5S	400±20%	950	300	100	1	1.0	5	5	None
2RD470S-5S	470±20%	1000	300	250	1	1.0	5	5	None
2RD600S-5S	600±20%	1200	300	250	1	1.0	5	5	None

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 μs 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 25% from its initial value. 	
Alternating Discharge Current	Rated RMS value of AC current at 50Hz, 1 sec. for 10 times with interval time 3 min. DC spark-over voltage shall not change more than $\pm 25\%$ from its initial value. $IR > 10^8$ ohms (-20% , $+30\%$ for 70~90V).	

Soldering Recommendation

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)
	W	16.00±0.20
	P0	4.00±0.10
	P1	12.00±0.20
	P2	2.00±0.10
	D0	Φ1.55±0.05
	E	1.75±0.10
	F	7.50±0.10
	A0	5.30±0.1
	B0	4.50±0.1
Reel	K0	5.40±0.1
	T	0.40±0.1
	D	330.0±2.0
	d	13.0±0.5
	L	20.0±2.0
	t	2.0±0.2
	Quantity: 800PCS	

