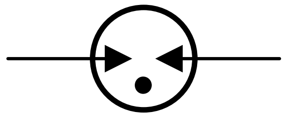
Features

- Stable breakdown voltage
- High insulation resistance
- High current rating
- Low capacitance (≤0.5pF)
- Stable performance over life
- Large absorbing transient current capability
- Fast response time
- RoHS compliant
- Standard Size: 3.2mm*2.5mm*2.5mm
- Meets MSL level 1, per J-STD-020
- Storage and operating temperature: -40℃ ~ +90℃

GDT Graphical Symbol



Applications

- Repeaters, Modems
- Subscriber protection
- Telephone Interface, Line cards
- Data communication equipment
- Line test equipment
- Branch exchange
- Subscriber protection
- Alarm system
- Tuner
- Antenna protection

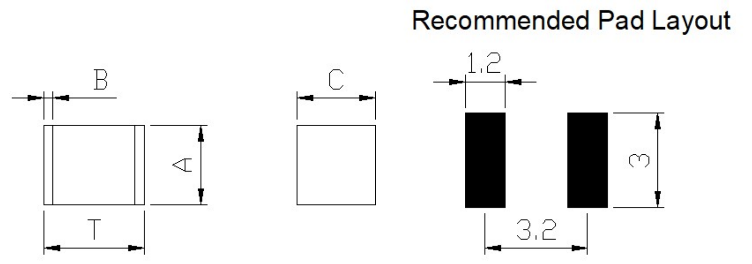
Part Number Code and Marking

2R 090 S M — EH

- EH: Produce Series 3.2mm*2.5mm*2.5mm
- M: Lead Type M: SMD
- S: Electrical Characteristics
- 090: DC Spark-over Voltage: 90V
- 2R: Two Electrodes

None

Dimensions



Symbol	Dimensions(mm)
T	3.2±0.3
A	2.5±0.3
B	0.3±0.1
C	2.5±0.3

Electrical Characteristics (T_A=25℃)

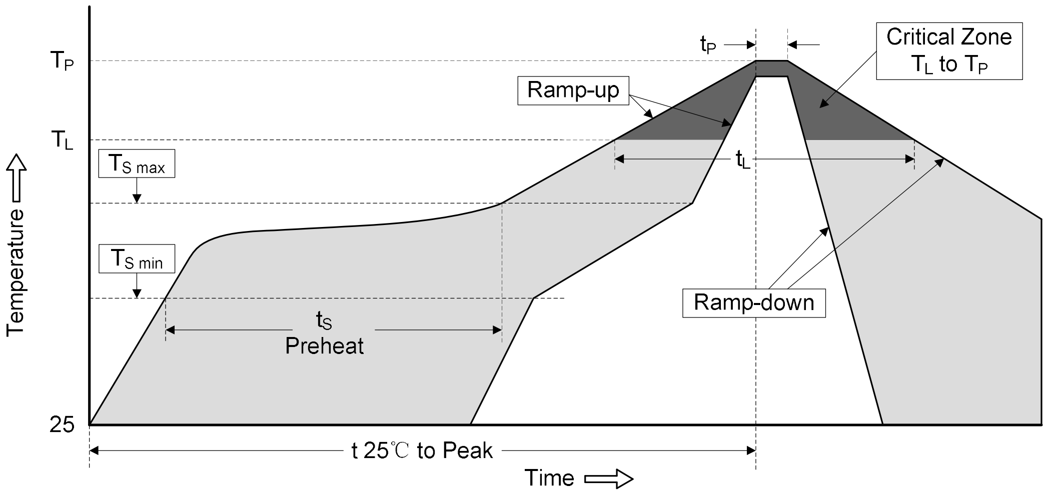
Part Number	Marking	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Minimum Insulation Resistance		Maximum Capacitance	Impulse Withstanding Voltage Capacity
		100V/s	1000V/µs	8/20µs, 10 times	Test Voltage	GΩ	1MHz	10/700µs, 10 times
2R090SM-EH	None	90V±30%	700V	1KA	50VDC	1	0.5pF	6kV
2R150SM-EH	None	150V±30%	750V	1KA	100VDC	1	0.5pF	6kV
2R200SM-EH	None	200V±30%	800V	1KA	100VDC	1	0.5pF	6kV
2R300SM-EH	None	300V±30%	850V	1KA	100VDC	1	0.5pF	6kV
2R400SM-EH	None	400V±30%	950V	1KA	100VDC	1	0.5pF	6kV

Test Methods and Results

Items	Test Method	Standard
DC Spark-over Voltage	measured with voltage ramp dv/dt=100V/s.	To meet the specified value
Maximum Impulse Spark-over Voltage	measured with voltage ramp dv/dt=1000V/µs.	
Impulse Discharge Current	applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time,	
Insulation Resistance	measured between two electrodes.	
Capacitance	measured between two electrodes. Test frequency: 1MHz	
Impulse Withstanding Voltage	10/700µs surge that can be applied to the Gas Tube, 5 positive and 5 negative surges, with 1 minute interval time.	

Soldering Parameters

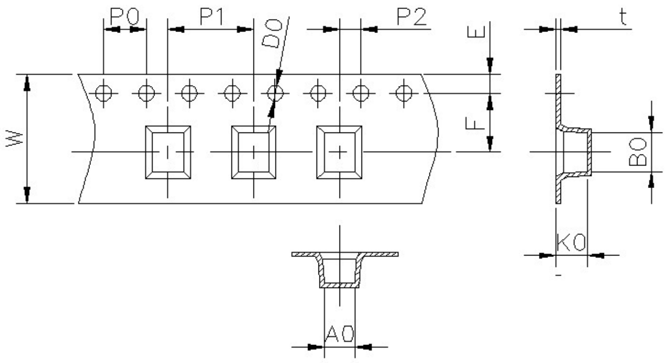
Reflow Soldering



Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

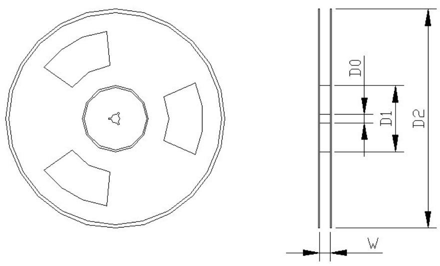
Packaging Specification

Tape



Symbol	Dimension (mm)
W	12.0±0.2
P0	4.0±0.1
P1	8.0±0.2
P2	2.0±0.1
D0	1.55±0.1
E	1.75±0.1
F	5.5±0.1
A0	2.9±0.1
K0	2.9±0.1
B0	3.6±0.1
t0	0.4±0.1

Reel



Symbol	Dimension (mm)
D0	13.3±1.0
D1	100.0±2.0
D2	330.0±2.0
W	8.5±0.5
Quantity: 2500pcs	