

Gas Discharge Tube (GDT) Data Sheet

Features

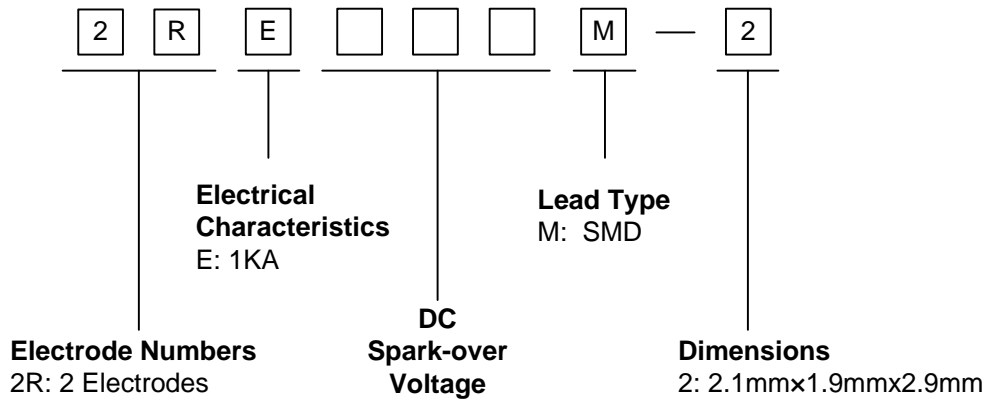
- High insulation resistance
- Low capacitance ($\leq 0.5\text{pF}$)
- 1KA 8/20 μs maximum surge current capacity in accordance with IEC61000-4-5
- Surface mounted gas arrester
- Micro-Gap Design
- Size : 2.1mm*1.9mm*2.9mm
- Storage and operating temperature: $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$
- Meets MSL level 1, per J-STD-020
- Safety certification: UL E465643



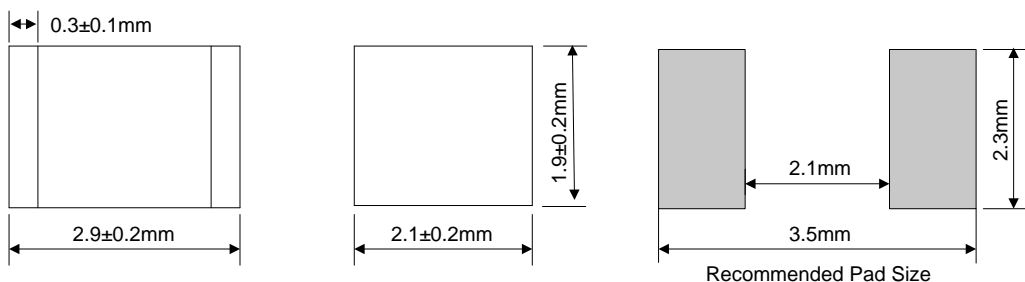
Applications

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

Part Number Code



Dimensions



Electrical Characteristics

Part Number	DC Spark-over Voltage	Maximum Impulse Spark-over Voltage	Nominal Impulse Discharge Current	Impulse Withstanding Voltage Capacity	Minimum Insulation Resistance		Maximum Capacitance	Device Marking Code
	100V/s	1000V/ μ s	8/20 μ s 10times	10/700 μ s 10times	Test Voltage	(G Ω)	(1MHz)	
	(V)	(V)	(KA)	(KV)	DC(V)		(pF)	
2RE090M-2	90 \pm 30%	700	1.0	4.0	50	1.0	0.5	None
2RE150M-2	150 \pm 30%	650	1.0	4.0	100	1.0	0.5	None
2RE200M-2	200 \pm 30%	650	1.0	4.0	100	1.0	0.5	None
2RE230M-2	230 \pm 30%	700	1.0	4.0	100	1.0	0.5	None
2RE300M-2	300 \pm 30%	900	1.0	4.0	100	1.0	0.5	None
2RE350M-2	350 \pm 30%	900	1.0	4.0	100	1.0	0.5	None
2RE400M-2	400 \pm 30%	1000	1.0*	4.0	100	1.0	0.5	None
2RE420M-2	420 \pm 30%	1000	1.0*	4.0	100	1.0	0.5	None
2RE470M-2	470 \pm 30%	1100	1.0*	4.0	100	1.0	0.5	None
2RE500M-2	500 \pm 30%	1300	1.0*	4.0	100	1.0	0.5	None

* Measured with an 8/20 μ s waveform, 1KA 1time or 0.5KA 10times

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 μ s surge current that can be applied between two electrodes, 5 positive and 5 negative surges, with 3 minutes interval time.	

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 90~95 $^{\circ}$ C (45 $^{\circ}$ C) /1000 HRS & normal temperature/2 HRS.	

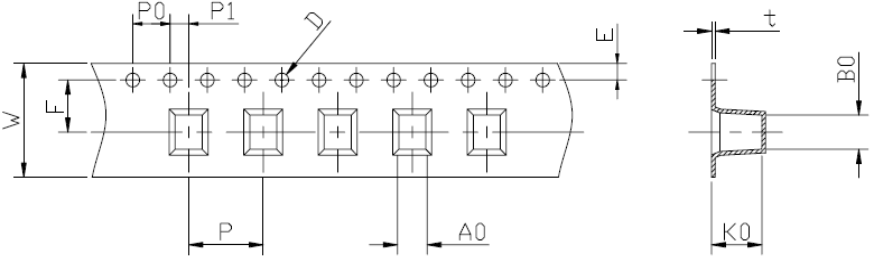
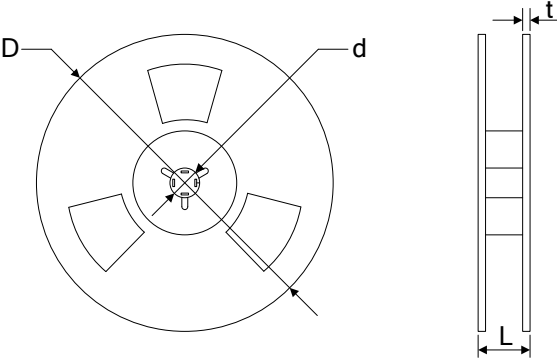
Temperature Cycle	10 times repetition of cycle -40°C/30min →normal, temp/2 min →125°C/30min, measurement after normal temp/2 HRS.	
Solder Ability	Check for solder adhesion after 260±5°C for 3sec , The body immersion depth 1.5mm in molten solder	Evenly covered by solder.
Solder Heat	Measurement after 260±5°C solder for 10sec, The body immersion depth 1.5mm in molten solder	Conformed to rated spec.

Recommended Soldering Conditions

Reflow Soldering

Profile Feature	Pb-Free Assembly
Average ramp-up rate (TL to TP)	3°C/second max.
Preheat -Temperature Min (TSmin) -Temperature Max (TSmax) -Time (min to max) (ts)	150°C 200°C 60-180 seconds
TSmax to TL -Ramp-up Rate	3°C/second max.
Time maintained above: -Temperature (TL) -Time (tL)	217°C 60-150 seconds
Peak Temperature (TP)	260°C
Time within 5°C of actual Peak Temperature (tP)	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	
	W	12.00	±0.20	
	A0	2.40	±0.10	
	B0	3.20	±0.10	
	K0	2.20	±0.10	
	E	1.75	±0.10	
	F	5.50	±0.10	
	D	1.55	±0.10	
	P	8.00	±0.10	
	P0	4.00	±0.10	
	P1	2.00	±0.10	
	t	0.40	±0.10	
		D	300.00	±1.00
		d	13.00	±0.50
		L	16.00	±0.50
t		2.00	±0.20	
		Quantity: 2500pcs		