

Spark Gap (SPG) in SMD

Features

- Approximately zero leaking current before clamping voltage
- Less decay at on/off state.
- High capability to withstand repeated lightning strikes.
- Low electrode capacitance($\leq 0.8\text{pF}$) and high isolation($\geq 100\text{M}\Omega$).
- RoHS compliant.
- Bilateral symmetrical.
- Temperature, humidity and lightness insensitive.
- Operating temperature: $-25^{\circ}\text{C} \sim +65^{\circ}\text{C}$
- Storage temperature: $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- Meets MSL level 1, per J-STD-020

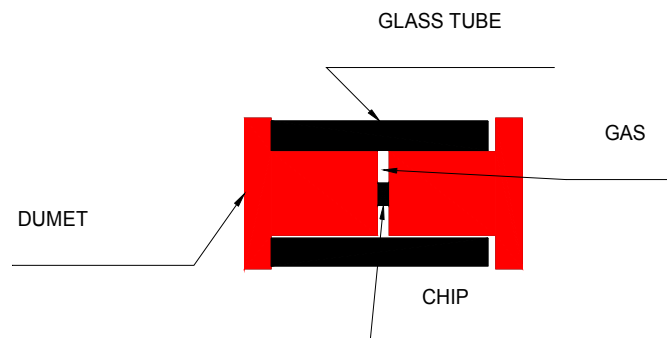


Mechanical Data

- **Case:** SMD(plastic package).
Lead free; RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
 $260^{\circ}\text{C}/10\text{ sec.}$ at terminals

Application

- Power Supplies
- Motor sparks eliminating
- Relay switching spark absorbing
- Data line pulse guarding
- Telephone/Fax/Modem
- High frequency signal transmitters/receivers



Electrical Characteristics

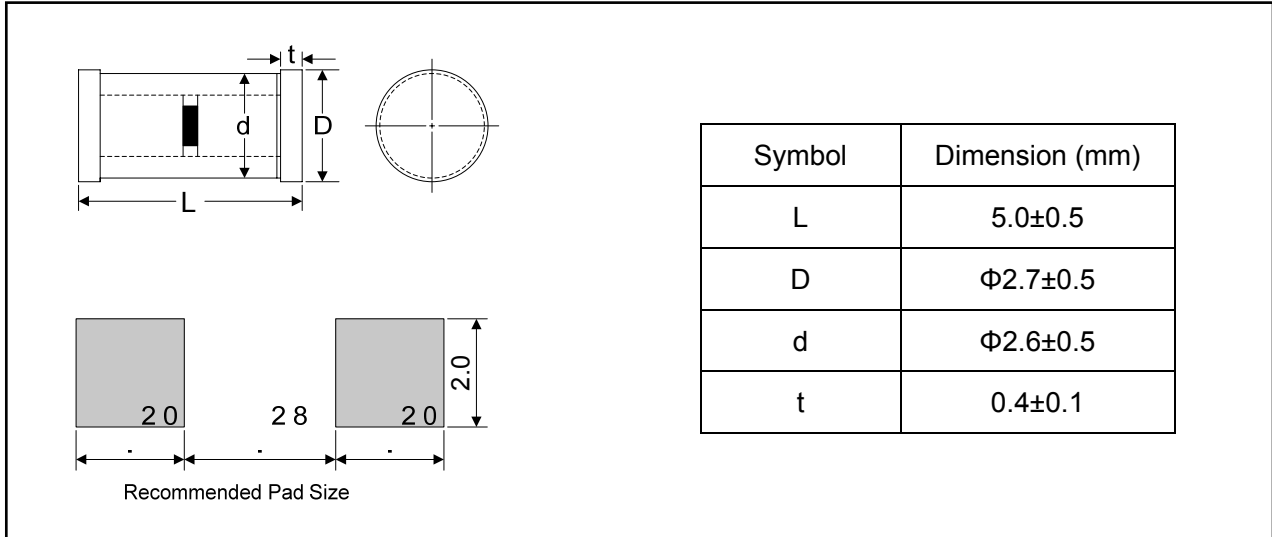
Part Number ①	DC Spark-over Voltage	Minimum Insulation Resistance		Maximum Capacitance (1KHz-6V _{MAX})	Surge current capacity (8/20μs)
	Vs(V)	Test Voltage(V)	IR _{OHM} (MΩ)	C(pf)	
CPG-141x-SMD	140	50	100	0.8	1000A
CPG-181x-SMD	180	50	100	0.8	1000A
CPG-201x-SMD	200	100	100	0.8	1000A
CPG-301x-SMD	300	100	100	0.8	1000A
CPG-401x-SMD	400	250	100	0.8	1000A
CPG-501x-SMD	500	250	100	0.8	1000A

Note: ① Vs±XX% L: ±15%,M: ±20% N: ±30%

Test Methods and Results

Items	Test Method	Standard
DC Spark-over Voltage	Add and measure the DC Voltage gradually Maxto get the discharge threshold voltage. The measuring current is 1mA/1 second max.	Meet specified value.
Insulation Resistance	Measure the insulation resistance across the terminal at regular voltage. But the test voltage doesn't over the DC spark-over voltage.	
Capacitance	Measure the electrostatic capacitance by applying a voltage of less than 6V (at 1KHz) between terminals.	
Static Life	10KV with 1500pf condenser is discharged through 0Ω resistor. 200 times at an interval of 10sec.	Rate-of-change, within ±30% insulation resistance & capacitance, conformed to rated spec.
Surge Current Capacity	1.2/50μs & 8/20μs, 1000A, electrically connected with a resistor (1~2Ω), ±5 times, each time interval 60 seconds. Thereafter, outer appearance shall be visually examined.	No crack and no failures
Cold Resistance	Measurement after -40°C/1000 HRS & normal temperature/2 HRS.	Features are conformed to rated spec.
Heat Resistance	Measurement after 125°C/1000 HRS & normal temperature/2 HRS.	
Humidity Resistance	Measurement after humidity 90~95°C(45°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	Apply flux and immerse in molten solder 230±5°C for 3sec up to the point of 1.5mm from body. Check for solder adhesion.	Lead wire is evenly covered by solder.
Solder Heat	Measurement after lead wire is dipped up to the point of 1.5mm from body into 260±5°C solder for 10sec.	Conformed to rated spec.

Package Dimensions



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
CPG-SMD Series	SMD	Tape and reel	1500pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
23-May-2020	1.0	Initial release

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