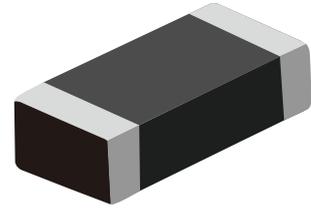


## FEATURES

- | Fast response, instantly clamping the transient over voltage.
- | High surge current handling capability.
- | High energy absorption capability.
- | Low clamping voltages, providing better surge protection.
- | Low capacitance values, providing digital switching circuitry protection.
- | High insulation resistance, preventing electric arcing to the adjacent devices or circuits.



## APPLICATIONS

- | Universal Serial Bus (USB).
- | Mobile communication.
- | Computer/DSP product.
- | Video and audio ports.
- | Portable/Hand-Held Products.
- | Data, Diagnostic I/O ports.

## APPROVALS

|             |                                    |
|-------------|------------------------------------|
| <b>RoHS</b> | Compliance with 2011/65/EU         |
| <b>HF</b>   | Compliance with IEC61249-2-21:2003 |

## ELECTRICAL SPECIFICATION

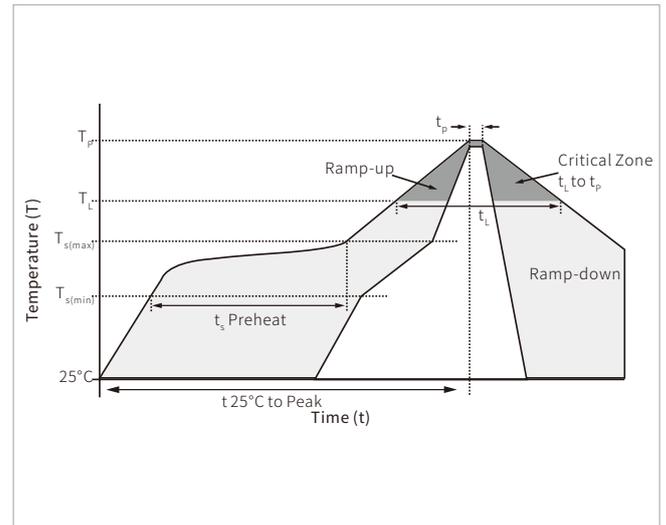
| Technical Data                             | Symbol     | Value    | Unit |
|--|------------|----------|------|
| Maximum allowable continuous DC voltage    | $V_{DC}$   | 12       | V    |
| Varistor breakdown voltage                 | $V_V$      | 18-30    | V    |
| Typical capacitance value measured at 1MHz | C          | 330      | pF   |
| Typical capacitance value tolerance        | t          | ±30      | %    |
| Maximum allowable clamping voltage         | $V_C$      | 50       | V    |
| Leakage current at VDC (at initial state)  | $I_{LDC}$  | <1       | uA   |
| Leakage current at VDC (after ESD test)    | $I_{LDCA}$ | <2       | uA   |
| Response time                              | $T_{rise}$ | <1       | ns   |
| ESD Per IEC 61000-4-2 (Air)                | $V_{ESD}$  | ±15      | kV   |
| ESD Per IEC 61000-4-2 (Contact)            | $V_{ESD}$  | ±8       | kV   |
| Operation ambient temperature              | $T_{OPT}$  | -55~+125 | °C   |
| Storage temperature range                  | $T_{STG}$  | -55~+125 | °C   |

## RELIABILITY TESTING PROCEDURES

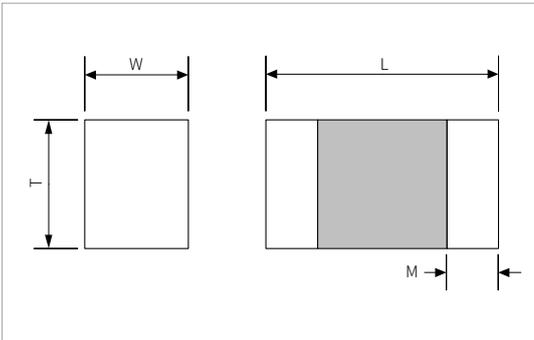
| Characteristic                   | Test method and description  |      |                  |          |
|----------------------------------|--|------|------------------|----------|
| High Temperature Storage         | The specimen shall be subjected to 125°C for 1000 hours in a thermostatic bath without load and then stored at room temperature and humidity for 1 to 2 hours. The change of varistor voltage shall be within 10%.                                 |      |                  |          |
| Temperature Cycle                | The temperature cycle of specified temperature shall be repeated five times and then stored at room temperature and humidity for one two hours. The change of varistor voltage shall be within 10% and mechanical damage shall be examined.        | Step | Temperature      | Period   |
|                                  |  | 1    | -40±3°C          | 30min±3  |
|                                  |  | 2    | Room Temperature | 1~2hours |
|                                  |  | 3    | 125±2°C          | 30min±3  |
|                                  |  | 4    | Room Temperature | 1~2hours |
| High Temperature Load            | After being continuously applied the maximum allowable voltage at 125°C for 1000hours, the specimen shall be stored at room temperature and humidity for one or hours, the change of varistor voltage shall be within 10%                          |      |                  |          |
| Damp Heat Load/<br>Humidity Load | The specimen should be subjected to 40°C,90 to 95%RH environment, and the maximum allowable voltage applied for 1000 hours, then stored at room temperature and humidity for one or two hours. The change of varistor voltage shall be within 10%. |      |                  |          |
| Low Temperature Storage          | The specimen should be subjected to -40°C, without load for 1000 hours and then stored at room temperature for one two hours. The change of varistor voltage shall be within 10%.  |      |                  |          |

## SOLDERING RECOMMENDATIONS

| Reflow Condition                                       |                                  | Lead-free assembly |
|--|----------------------------------|--------------------|
| Pre Heat   | Temperature Max ( $T_{s(min)}$ ) | 150°C              |
|  | Temperature Max ( $T_{s(max)}$ ) | 200°C              |
|  | Time (min to max) ( $t_s$ )      | 60 – 180 secs      |
| Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak) |                                  | 3°C/second max     |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate                   |                                  | 3°C/second max     |
| Reflow   | Temperature ( $T_L$ ) (Liquidus) | 217°C              |
|  | Time (min to max) ( $t_L$ )      | 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 ( $T_p$ )                |                                  | 8 minutes max.     |
| Do not exceed  |                                  | 260°C              |



## DIMENSION SPECIFICATION



| Size | L(mm)     | W(mm)     | H(mm)  | L1(mm)    |
|------|-----------|-----------|--------|-----------|
| 0805 | 2.00±0.25 | 1.20±0.25 | ≤ 1.40 | 0.25±0.20 |

## ORDERING INFORMATION

| Part Number | Package&Size       | QTY/Reel | Reel Size |
|-------------|--------------------|----------|-----------|
| SME0805B12A | 0805 (2.0 x 1.2mm) | 4000PCS  | 7"        |

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