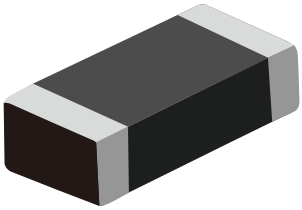
# FEATURES

- Wide operating voltages ranging from 4.0 Vrms to 35 Vrms (5.5 Vdc to 45 Vdc)
- 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



0805

# APPLICATIONS

- Universal Serial Bus (USB)
- Mobile communication
- Computer/DSP product
  Video and audio ports
- Portable/Hand- Held Products
- Portable/Hand- Held Products

# APPROVALS

| | |
|---|---|
| **RoHS** | Compliance with 2011/65/EU |
| **HF** | Compliance with IEC61249-2-21:2003 |

# GENERAL CHARACTERISTICS DEFINITION

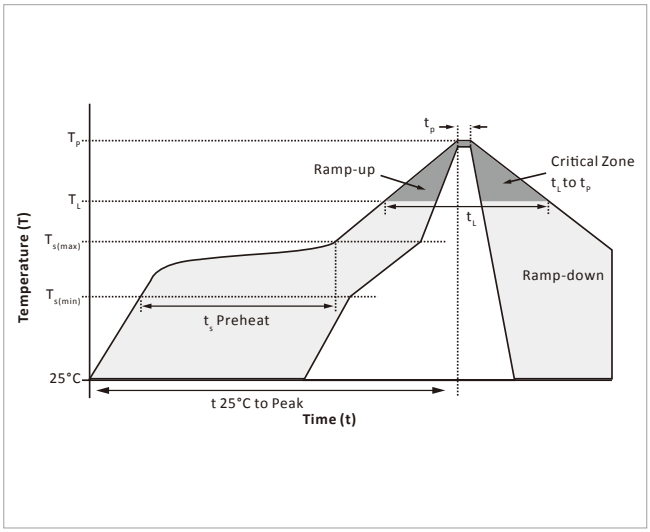
- Operating Temperature Range :-40℃ ~ +85℃
- Storage Temperature Range :-40℃ ~ +125℃

# ELECTRICAL CHARACTERISTICS

| Part Number | Max Allowable Voltage | | Varistor Voltage $V_B$@1mA | Energy 10/1000us | Withstanding Surge Current $I_{PP}$(8/20μs) | Max Clamping Voltage $V_C$ | | Typical Capacitance (Reference) |
|---|---|---|---|---|---|---|---|---|
| | $V_{RMS}$(V) | $V_{DC}$(V) | (V) | J | (A) | V(V) | I(A) | (pF) |
| SMV0805B8.0A | 4.0 | 5.5 | 8(6.6-9.9) | 0.2 | 80 | 18 | 2 | 1100 |
| SMV0805B12A | 7.0 | 9.0 | 12(10.2-13.8) | 0.2 | 100 | 24 | 2 | 750 |
| SMV0805B18A | 11.0 | 14.0 | 18(15.3-21.7) | 0.2 | 100 | 30 | 2 | 600 |
| SMV0805B22A | 12.0 | 16.0 | 22(19.8-24.2) | 0.2 | 100 | 36 | 2 | 580 |
| SMV0805B24A | 14.0 | 18.0 | 24(21.6-26.4) | 0.2 | 100 | 38 | 2 | 480 |
| SMV0805B27A | 17.0 | 22.0 | 27(24.3-29.7) | 0.2 | 100 | 44 | 2 | 400 |
| SMV0805B30A | 19.0 | 24.0 | 30(27.2-33.0) | 0.2 | 100 | 48 | 2 | 400 |
| SMV0805B33A | 20.0 | 26.0 | 33(29.7-36.3) | 0.2 | 100 | 54 | 2 | 380 |
| SMV0805B36A | 22.0 | 28.0 | 36(32.7-39.6) | 0.2 | 100 | 59 | 2 | 350 |
| SMV0805B39A | 25.0 | 30.0 | 39(35.1-42.9) | 0.2 | 100 | 65 | 2 | 350 |
| SMV0805B42A | 26.0 | 33.0 | 42(38.1-46.2) | 0.2 | 80 | 72 | 2 | 350 |
| SMV0805B47A | 30.0 | 38.0 | 47(42.3-51.7) | 0.2 | 80 | 77 | 2 | 280 |
| SMV0805B56A | 35.0 | 45.0 | 56(50.4-61.6) | 0.2 | 80 | 90 | 2 | 280 |

# SOLDERING PARAMETERS

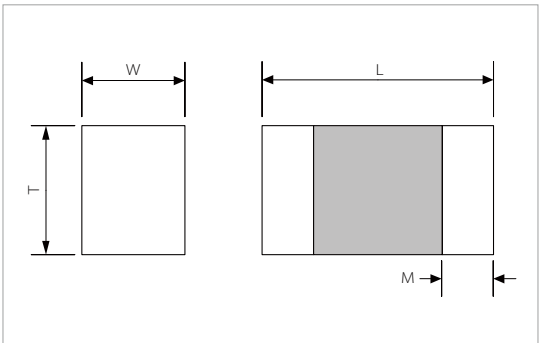
| Reflow Condition | | Lead–free assembly |
|---|---|---|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) ($t_s$) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp ($T_L$) to peak | | 3°C/second max |
| | $T_{S(max)}$ to $T_L$ - 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 |



# CHARACTERISTIC CURVES

| Items | Test condition/Description | Specifications |
|---|---|---|
| Dry Heat Loading | The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room tem- perature and normal humidity over 2 hours . Thereafter, the change of Vb and mechanical damage shall be examined .Ambient temp: 85±2°C / Period: 1000±24hours | $\triangle V_b / V_b \leq 10\%$ |
| High Temp Storage | In a dry oven without load .<br>Ambient temp: 125±2°C / Period: 1000±24hours | $\triangle V_b / V_b \leq 10\%$ |
| Damp Heat/<br>Humidity Loading | The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room tem- perature and normal humidity over 2 hours . Thereafter, the change of Vb and mechanical damage shall be examined .Ambient temp: 40±2°C,90~95%RH/Period: 1000±24hours | $\triangle V_b / V_b \leq 10\%$ |
| Temperature Cycle | Condition the specimen to each temperature from step 1 to step 4 in this or- der for the period shown in the table of specifications . The change of Vb and mechanical damage shall be examined after 2 hours<br>Step 1: -40±3°C / 30 min<br>Step 2: -40±3°C / 30 min<br>Step 3: 85±2°C / 30 min<br>Step 4: Room temp / 15 min | No visible damage<br>$\triangle V_b / V_b \leq 10\%$ |
| Low Temp Storage | In a cooling chamber without load .<br>Ambient temp: -40±2°C / Period: 1000±24hours | $\triangle V_b / V_b \leq 10\%$ |

# DIMENSION SPECIFICATION




| Size | L(mm) | W(mm) | T(mm) | M(mm) |
|---|---|---|---|---|
| 0805 | 2.00±0.20 | 1.25±0.20 | 0.85±0.20 | 0.50±0.30 |

# DRDERING INF ORMATIOON

| Part Number | Component Package | QTY/Reel | Reel Size |
|---|---|---|---|
| SMV0805 Series | 0805 | 4000PCS | 7″ |

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