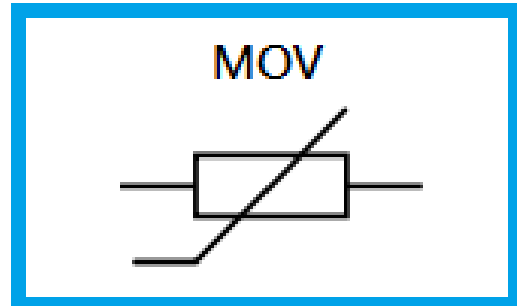


PMV0603 Series MOV Devices

Features

- Wide operating voltages ranging from 2.4 Vrms to 30 Vrms (3.3 Vdc to 38 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.



Applications

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

General Characteristics Definition

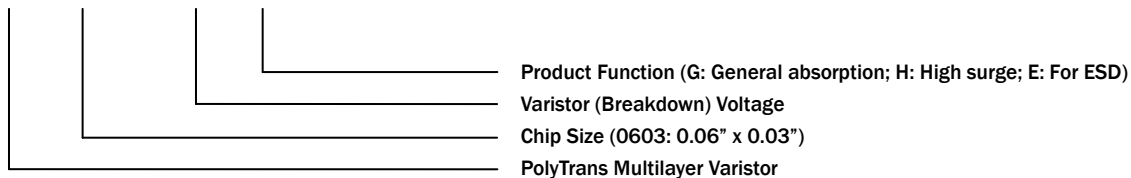
- Operating temperature: -40 ~ 125°C
- Storage temperature: -40 ~ 125°C

Material

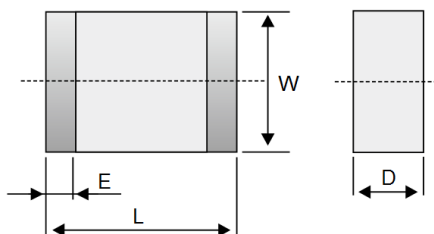
- Electrode: Ag/Ni/Sn
- Chip body: Zinc oxide

Part Number Code

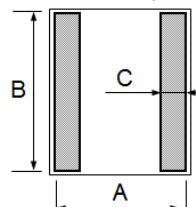
PMV 0603 - □□□ □



Physical Dimensions



Solder pad layout



| Symbol | Dimension (mm) |
|--------|----------------|
| L | 1.6±0.2 |
| W | 0.8±0.2 |
| D | 0.9 max. |
| E | - |
| A | 2.6 typ. |
| B | 0.8 typ. |
| C | 0.9 typ. |

Note:

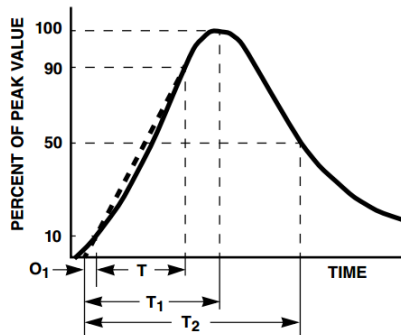
1. All dimensions are in millimeters.
2. No marking on the device.

PMV0603 Series MOV Devices

Electrical Characteristics

| Part Number | Max Allowable Voltage | | Varistor Voltage $V_b @ 1 \text{ mA}$ | Energy 10/1000 μs | Withstand Surge Current I_{PP} 8/20 μs | Max Clamping Voltage V_c | | Typical Capacitance (pF) | Safety Certification UL/CSA |
|--------------|-----------------------|----------|--|---------------------------------|---|-------------------------------|-----|--------------------------------|-----------------------------------|
| | V_{RMS} | V_{DC} | | | | V | I | | |
| | (V) | (V) | (V) | (J) | (A) | (V) | (A) | (pF) | UL/CSA |
| PMV0603-5R0G | 2.4 | 3.3 | 5 | 0.1 | 30 | 12 | 1 | 130 | - |
| PMV0603-8R0G | 4.0 | 5.5 | 8 | 0.1 | 30 | 18 | 1 | 360 | - |
| PMV0603-120G | 7.0 | 9.0 | 12 | 0.1 | 30 | 24 | 1 | 150 | - |
| PMV0603-180G | 11 | 14 | 18 | 0.1 | 30 | 30 | 1 | 150 | - |
| PMV0603-240G | 14 | 18 | 24 | 0.1 | 30 | 38 | 1 | 270 | - |
| PMV0603-270G | 17 | 22 | 27 | 0.1 | 30 | 44 | 1 | 250 | - |
| PMV0603-300G | 19 | 24 | 30 | 0.1 | 30 | 48 | 1 | 250 | - |
| PMV0603-330G | 20 | 26 | 33 | 0.1 | 30 | 54 | 1 | 250 | - |
| PMV0603-360G | 22 | 28 | 36 | 0.1 | 30 | 59 | 1 | 250 | - |
| PMV0603-390G | 25 | 30 | 39 | 0.1 | 30 | 65 | 1 | 250 | - |
| PMV0603-420G | 26 | 33 | 42 | 0.1 | 30 | 72 | 1 | 250 | - |
| PMV0603-470G | 30 | 38 | 47 | 0.1 | 30 | 77 | 1 | 250 | - |

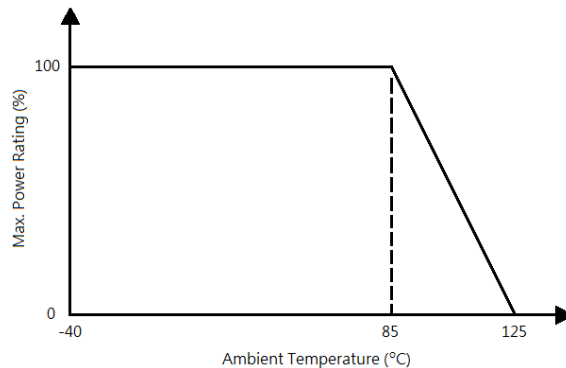
Peak Pulse Current Test Waveform



O_1 = Virtual Origin of Wave
 T = Time from 10% to 90% of Peak
 T_1 = Rise Time = $1.25 \times T$
 T_2 = Decay Time

Example - For an 8/20 ms current waveform
 $8 \mu\text{s} = T_1 = \text{Rise Time}$
 $20 \mu\text{s} = T_2 = \text{Decay Time}$

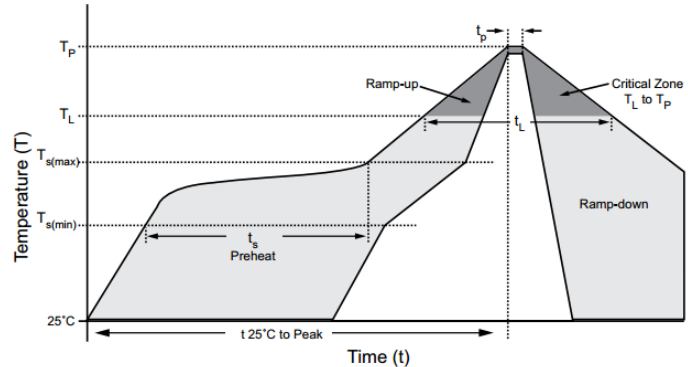
Power Derating Curve



PMV0603 Series MOV Devices

Lead Free Reflow Soldering Recommendations

| | |
|--|-------------------|
| Preheat | |
| - Temperature Min (T_{s_min}) | 150°C |
| - Temperature Max (T_{s_max}) | 200°C |
| - Time (T_{s_min} to T_{s_max}) | 60-180 seconds |
| - Average Ramp-Up Rate | 1~3°C/second |
| Peak Temperature | 260°C max. |
| Time within 5°C of actual Peak Temperature (t_p) | 40 seconds max. |
| Ramp-Down Rate | 6 °C /second max. |



Note: If the wave soldering temperatures exceed the recommended profile, devices may not meet the performance requirements.

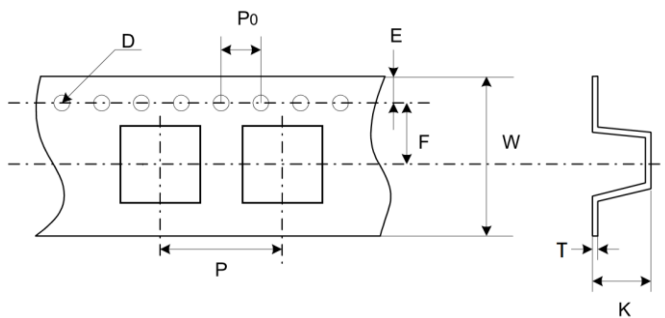
Reliability Test

| Environmental Ratings | | | | | | | | | | |
|-----------------------------|--|------------------------------|------------------------------------|--------|--------------------|--------|-----------------------------------|--------|--------------------|---|
| Test Parameter | Test Condition / Description | Performance Requirements | | | | | | | | |
| 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 temperature and normal humidity over 2 hours. Thereafter, the change of V_b and mechanical damage shall be examined. Ambient temp: $85 \pm 2^\circ\text{C}$ / Period: 1000 ± 24 hours | $\Delta V_b / V_b \leq 10\%$ | | | | | | | | |
| High Temp Storage | In a dry oven without load. Ambient temp: $125 \pm 2^\circ\text{C}$ / Period: 1000 ± 24 hours | $\Delta V_b / V_b \leq 10\%$ | | | | | | | | |
| Damp Heat/ Humidity Loading | The specimen shall be applied continuously the maximum allowable voltage at the specified conditions for specified period and then stored at room temperature and normal humidity over 2 hours. Thereafter, the change of V_b and mechanical damage shall be examined. Ambient temp: $40 \pm 2^\circ\text{C}$, 90~95%RH / Period: 1000 ± 24 hours | $\Delta V_b / V_b \leq 10\%$ | | | | | | | | |
| Temperature Cycle | Condition the specimen to each temperature from step 1 to step 4 in this order for the period shown in the table of specifications. The change of V_b and mechanical damage shall be examined after 2 hours. <table border="1" style="margin-left: 20px;"> <tr> <td>Step 1</td> <td>$-40 \pm 3^\circ\text{C}$ / 30min.</td> </tr> <tr> <td>Step 2</td> <td>Room temp / 15min.</td> </tr> <tr> <td>Step 3</td> <td>$85 \pm 2^\circ\text{C}$ / 30min.</td> </tr> <tr> <td>Step 4</td> <td>Room temp / 15min.</td> </tr> </table> | Step 1 | $-40 \pm 3^\circ\text{C}$ / 30min. | Step 2 | Room temp / 15min. | Step 3 | $85 \pm 2^\circ\text{C}$ / 30min. | Step 4 | Room temp / 15min. | No Visible damage $\Delta V_b / V_b \leq 10\%$ |
| Step 1 | $-40 \pm 3^\circ\text{C}$ / 30min. | | | | | | | | | |
| Step 2 | Room temp / 15min. | | | | | | | | | |
| Step 3 | $85 \pm 2^\circ\text{C}$ / 30min. | | | | | | | | | |
| Step 4 | Room temp / 15min. | | | | | | | | | |
| Low Temp Storage | In a cooling chamber without load. Ambient temp: $-40 \pm 2^\circ\text{C}$ / Period: 1000 ± 24 hours | $\Delta V_b / V_b \leq 10\%$ | | | | | | | | |

PMV0603 Series MOV Devices

Packaging Information

| Part Number | Carrier Material | Quantity (EA/Roll) | Reel Dimension (mm) | |
|----------------|------------------|-----------------------|------------------------------|-----------|
| | | | Diameter | Thickness |
| PMV0603 Series | Paper | 4000 | 178.0±1.0 (7" Paper Reel) | 9.0±0.5 |



| Symbol | Dimension (mm) |
|--------|----------------|
| P | 4.0±0.1 |
| P0 | 4.0±0.1 |
| D | 1.55±0.05 |
| E | 1.75±0.1 |
| F | 3.5±0.1 |
| W | 8.0±0.2 |
| T | 0.22±0.05 |
| K | 1.2±0.1 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Varistors](#) category:

Click to view products by [Polytronics](#) manufacturer:

Other Similar products are found below :

[820443211E](#) [MLV0402E30703T](#) [MLV0603E30403T](#) [B72205S271K111](#) [B72207S350K311](#) [B72207S381K101](#) [B72260B102K1](#)
[B72260B251K1](#) [B72280B0381K001](#) [B72280B0461K001](#) [B72280B271K1](#) [B72650M0151K093](#) [B72660M0271K093](#) [S10K11G5S5](#) [ERZ-](#)
[C07DK221U](#) [TND10V-471KB00AAA0](#) [B72205S301K211](#) [B72207S141K111](#) [B72210S271K111](#) [B72214S350K551](#) [B72220P3351K101](#)
[B72280B0231K001](#) [B72280B112K1](#) [B72280B381K1](#) [B72590D360A60](#) [B72650M0400K072](#) [B72650M0500K072](#) [B72660M0200K072](#)
[B72660M1300K072](#) [B72670M1140K72](#) [MLV0603E30703T](#) [MLV0603E32503T](#) [TVZ18EC271KBS](#) [TVZ20EB911KBS](#) [TVZ25D201KBS](#)
[TVZ25D241KBS](#) [419-2080-101](#) [ERZ-V20R201](#) [MLV0805E31103T](#) [MLV0805E30703T](#) [ERZ-V20R221](#) [B72205S350K211](#)
[B72210P2511K101](#) [B72214S271K501](#) [B72220P3551K101](#) [B72240B681K1](#) [B72650M350K72](#) [TVZ20ECN511KBS](#) [TVZ20EC911KBS](#)
[TVZ20EBN911KBS](#)