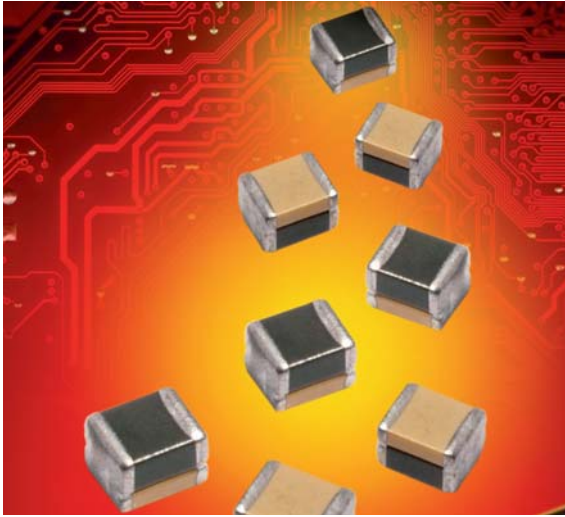


# Surface Mount CapGuard™

## Varistor/Capacitor Combination for EMI/Surge Suppression



AVX's surface mount CapGuard™ products are designed to provide both transient voltage protection and EMI/RFI suppression for electronic circuits. CapGuards are ideally suited to filter out EMI/RFI noise generated by switch mode power supplies or motors on DC lines or I/O lines in electronic circuits. With multilayer varistor (MLV) utilized in CapGuard product, effective transient voltage protection is achieved to protect sensitive electronics from high voltage transients. The capacitor, on the other hand, absorbs high frequency noise on the line. The MLCC capacitors are designed with temperature stable X7R dielectric, allowing for wide temperature use with good capacitance stability. The surface mount CapGuards are characterized with a very small form factor to minimize board space. The parts are assembled using high melting point solder (268°C solidus / 290°C liquidus) allowing for standard reflow processing during board level assembly without a risk of reflowing HMP solder.

### HOW TO ORDER

|   |                                |  |  |  |                              |   |                           |                         |
|---|--------------------------------|--|--|--|------------------------------|---|---------------------------|-------------------------|
| <b>MV</b>   | <b>10</b>                      | <b>18</b>  | <b>J</b>   | <b>104</b>   | <b>M</b>                     | <b>A</b>                                  | <b>A</b>                  | <b>1</b>                |
| <b>Product Designation</b><br>MLCC/Varistor (MLV) | <b>Component Style</b><br>1210 | <b>Working Voltage</b><br>18 = 18V<br>26 = 26V<br>48 = 48V<br>60 = 60V | <b>Transient Energy Rating</b><br>J = 1.5 - 1.6J<br>H = 1.2J | <b>Capacitance Code</b><br>(2 significant digits + no. of zeros)<br>Examples:<br>0.012µF = 123<br>0.047µF = 473<br>0.1µF = 104 | <b>Tolerance</b><br>M = ±20% | <b>Specification Code</b><br>A = Standard | <b>Termination</b><br>HMP | <b>Packaging</b><br>T&R |

### PRODUCT OFFERING

|                | Operating Voltage (V) | Nominal Breakdown Voltage (V) | Breakdown Voltage Range (V) | Clamping Voltage (V) | Current for Clamping Voltage (Amp) | Transient Energy (J) | Peak Current (Amp) | Typical Capacitance (µF) |
|----------------|-----------------------|-------------------------------|-----------------------------|----------------------|------------------------------------|----------------------|--------------------|--------------------------|
| MV1018J123MAA1 | 18                    | 25                            | 23 - 28                     | 42                   | 5                                  | 1.6                  | 500                | 0.012                    |
| MV1018J473MAA1 | 18                    | 25                            | 23 - 28                     | 42                   | 5                                  | 1.6                  | 500                | 0.047                    |
| MV1018J104MAA1 | 18                    | 25                            | 23 - 28                     | 42                   | 5                                  | 1.6                  | 500                | 0.1                      |
| MV1026H123MAA1 | 26                    | 34.5                          | 31 - 38                     | 60                   | 5                                  | 1.2                  | 300                | 0.012                    |
| MV1026H473MAA1 | 26                    | 34.5                          | 31 - 38                     | 60                   | 5                                  | 1.2                  | 300                | 0.047                    |
| MV1026H104MAA1 | 26                    | 34.5                          | 31 - 38                     | 60                   | 5                                  | 1.2                  | 300                | 0.1                      |
| MV1048H123MAA1 | 48                    | 62                            | 55 - 69                     | 100                  | 5                                  | 1.2                  | 250                | 0.012                    |
| MV1048H473MAA1 | 48                    | 62                            | 55 - 69                     | 100                  | 5                                  | 1.2                  | 250                | 0.047                    |
| MV1048H104MAA1 | 48                    | 62                            | 55 - 69                     | 100                  | 5                                  | 1.2                  | 250                | 0.1                      |
| MV1060J123MAA1 | 60                    | 76                            | 68 - 84                     | 120                  | 5                                  | 1.5                  | 250                | 0.012                    |
| MV1060J473MAA1 | 60                    | 76                            | 68 - 84                     | 120                  | 5                                  | 1.5                  | 250                | 0.047                    |
| MV1060J104MAA1 | 60                    | 76                            | 68 - 84                     | 120                  | 5                                  | 1.5                  | 250                | 0.1                      |

# Surface Mount CapGuard™

## Varistor/Capacitor Combination for EMI/Surge Suppression

### FEATURES

- High Capacitance / EMI Filtering
- Bi-Directional Protection
- Fast Turn-On Time
- Multiple Strike Capability
- HMP Solder Termination
- 1210 EIA Case Size

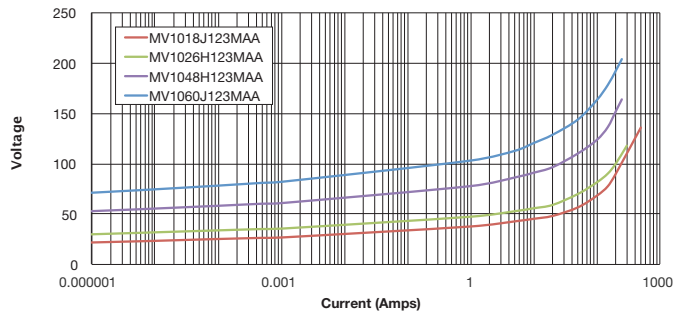
### TARGET APPLICATIONS

Avionics, Military, I/O port protection  
EMI filtering with surge protection

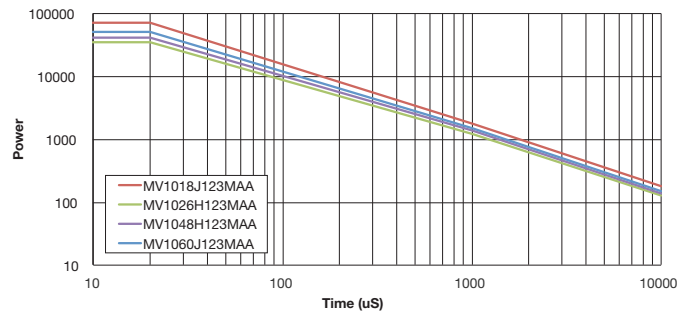
### GENERAL CHARACTERISTICS

Storage Temperature: -55°C to +125°C  
Operating Temperature: -55°C to +125°C

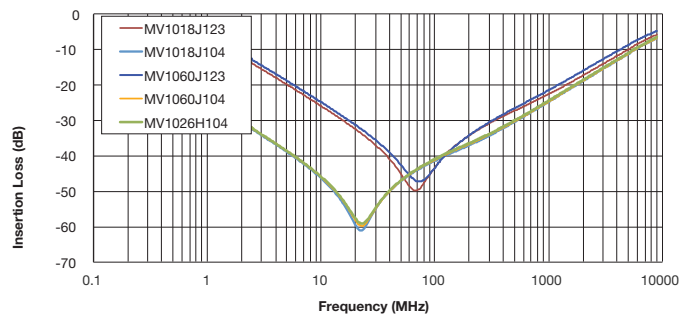
### TYPICAL VOLTAGE CURRENT RESPONSE



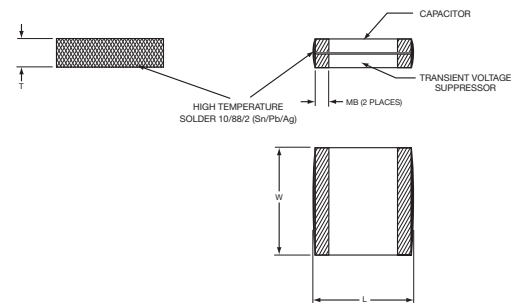
### TYPICAL PULSE POWER DURATION



### TYPICAL HIGH FREQUENCY CHARACTERISTICS



### DIMENSIONS



millimeters (inches)

| Length (L)                         | Width (W)                          | Thickness (T)         | Metallized Bands (MB)         |
|------------------------------------|------------------------------------|-----------------------|-------------------------------|
| 3.302 ± 0.381<br>(0.130) ± (0.015) | 2.540 ± 0.381<br>(0.100) ± (0.015) | 2.794 (0.110)<br>Max. | 0.5 ± 0.25<br>(0.02) ± (0.01) |