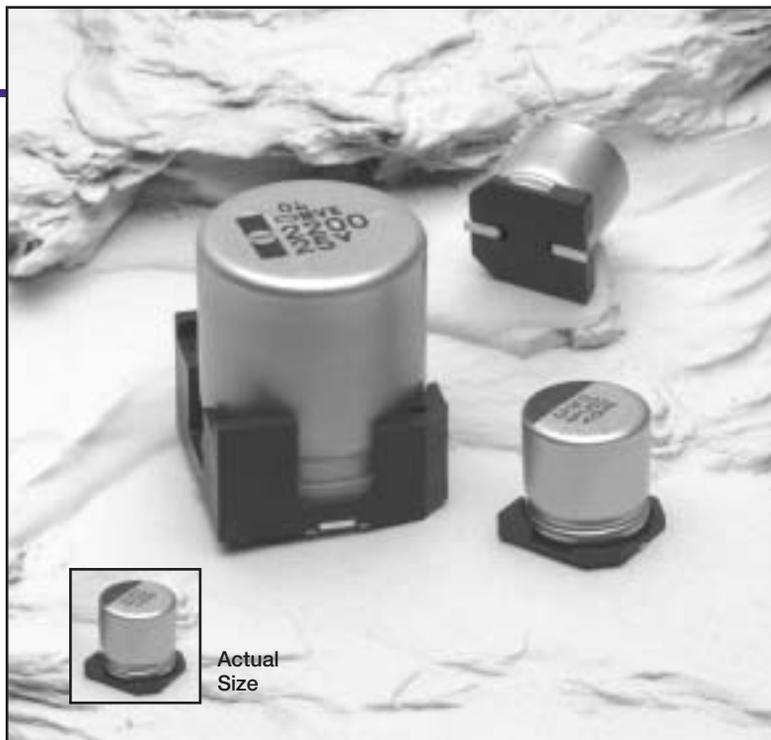


MVE Series


 UNITED
CHEMI-CON

- Surface Mount
- High CV
- Vertical Chip
- Solvent Proof (6.3-63V)
- +105°C Maximum Temperature



The MVE series is a general purpose +105°C surface mount capacitor series from United Chemi-Con. This series has higher CV values, higher voltage ratings and larger case size options, when compared to the current MVK series. The larger sizes and higher voltages will allow a surface mount component to be used in a wider variety of applications where a radial capacitor would normally be required.

The MVE series capacitors *except for those rated at 100-450 volts* are solvent proof. Refer to the Mini-Glossary for cleaning guidelines and recommended cleaning agents that are compatible with United Chemi-Con products.

Summary of Specifications

- Surface mount lead terminals.
- Capacitance range: 0.47 to 6,800 μ F.
- Voltage range: 6.3 to 450VDC.
- Category temperature range: -40°C to +105°C.
- Leakage current: See specifications table for leakage current values at +20°C.
- Standard capacitance tolerance: $\pm 20\%$
- Nominal case size (D \times L): 4 \times 5.2mm to 18 \times 21.5mm.
- Rated lifetime: 1,000 to 2,000 hours at +105°C depending on case size.

MVE Specifications

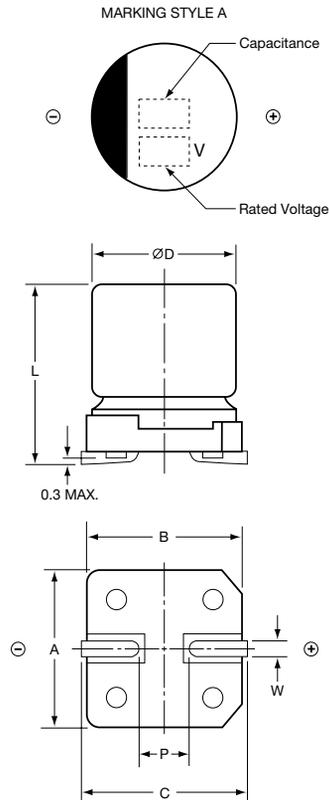
| Item | Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|-----------|---|----------------|-------------|--|--|--|---|---------|---------|---------|-----------------------|-----------|---|---|---|---|---|---|---|---|---|---|-----------|---|---|---|---|---|---|---|---|---|---|-----------------------|-----------|----|---|---|---|---|---|---|---|---|---|-----------|----|---|---|---|---|---|---|---|---|----|
| Category Temperature Range | - 40 to +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 450VDC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Range | 0.47 to 6,800 μ F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | \pm 20% (M) at +20°C, 120Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | <table border="1"> <tr> <td>Case D55 - J10</td> <td>6.3 -100V</td> <td>I = 0.01CV or 3μA, whichever is greater, after 2 minutes at +20°C</td> </tr> <tr> <td>Case K14 - M22</td> <td>6.3 -100V</td> <td>I = 0.03CV or 4μA, whichever is greater, after 1 minute at +20°C</td> </tr> <tr> <td>Case K14 - M22</td> <td>160 -450V</td> <td>I = 0.04CV +100μA after 1 minute at +20°C</td> </tr> </table> <p>Where I = Max. leakage current (μA), C = Nominal capacitance (μF) and V = Rated voltage (V)</p> | Case D55 - J10 | 6.3 -100V | I = 0.01CV or 3 μ A, whichever is greater, after 2 minutes at +20°C | Case K14 - M22 | 6.3 -100V | I = 0.03CV or 4 μ A, whichever is greater, after 1 minute at +20°C | Case K14 - M22 | 160 -450V | I = 0.04CV +100 μ A after 1 minute at +20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case D55 - J10 | 6.3 -100V | I = 0.01CV or 3 μ A, whichever is greater, after 2 minutes at +20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case K14 - M22 | 6.3 -100V | I = 0.03CV or 4 μ A, whichever is greater, after 1 minute at +20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case K14 - M22 | 160 -450V | I = 0.04CV +100 μ A after 1 minute at +20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (Tan δ) | Tan δ (DF) at +20°C, 120Hz shall not exceed the specified values given in the Ratings Tables. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics | <p>At 120Hz, impedance (Z) ratio between the -25°C or -40°C value and +20°C value shall not exceed the values given below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160-250</th> <th>400-450</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Z (-25°C) / Z (+20°C)</td> <td>D55 - J10</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>-</td> <td>-</td> </tr> <tr> <td>K14 - M22</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>6</td> </tr> <tr> <td rowspan="2">Z (-40°C) / Z (+20°C)</td> <td>D55 - J10</td> <td>12</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>-</td> <td>-</td> </tr> <tr> <td>K14 - M22</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>6</td> <td>10</td> </tr> </tbody> </table> | Rated Voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160-250 | 400-450 | Z (-25°C) / Z (+20°C) | D55 - J10 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | - | - | K14 - M22 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | Z (-40°C) / Z (+20°C) | D55 - J10 | 12 | 8 | 6 | 4 | 3 | 3 | 3 | 4 | - | - | K14 - M22 | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 6 | 10 |
| Rated Voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160-250 | 400-450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z (-25°C) / Z (+20°C) | D55 - J10 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | K14 - M22 | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z (-40°C) / Z (+20°C) | D55 - J10 | 12 | 8 | 6 | 4 | 3 | 3 | 3 | 4 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | K14 - M22 | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 6 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endurance (Load Life) | <p>The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for the specified test time at +105°C.</p> <table border="1"> <tr> <td>Case Code</td> <td>D55 - F80</td> <td>H10 - M22</td> </tr> <tr> <td>Test Time</td> <td>1,000 Hours</td> <td>2,000 Hours</td> </tr> </table> <table border="0"> <tr> <td style="vertical-align: top;"> <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 30% of initial measured value Tan δ (DF): \leq 300% of initial specified value Leakage current: \leq initial specified value </td> <td style="vertical-align: top;"> <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value </td> </tr> </table> | Case Code | D55 - F80 | H10 - M22 | Test Time | 1,000 Hours | 2,000 Hours | <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 30% of initial measured value Tan δ (DF): \leq 300% of initial specified value Leakage current: \leq initial specified value | <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case Code | D55 - F80 | H10 - M22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Time | 1,000 Hours | 2,000 Hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 30% of initial measured value Tan δ (DF): \leq 300% of initial specified value Leakage current: \leq initial specified value | <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | <p>The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for the specified test time at +105°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements.</p> <table border="1"> <tr> <td>Case Code</td> <td>D55 - F80</td> <td>H10 - M22</td> </tr> <tr> <td>Test Time</td> <td>500 Hours</td> <td>1,000 Hours</td> </tr> </table> <table border="0"> <tr> <td style="vertical-align: top;"> <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 25% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value </td> <td style="vertical-align: top;"> <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value </td> </tr> </table> | Case Code | D55 - F80 | H10 - M22 | Test Time | 500 Hours | 1,000 Hours | <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 25% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Case Code | D55 - F80 | H10 - M22 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Test Time | 500 Hours | 1,000 Hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Case Code D55 - F80</p> <hr/> Capacitance change: $\leq \pm$ 25% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | <p>Case Code H10 - M22</p> <hr/> Capacitance change: $\leq \pm$ 20% of initial measured value Tan δ (DF): \leq 200% of initial specified value Leakage current: \leq initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Diagram of Dimensions

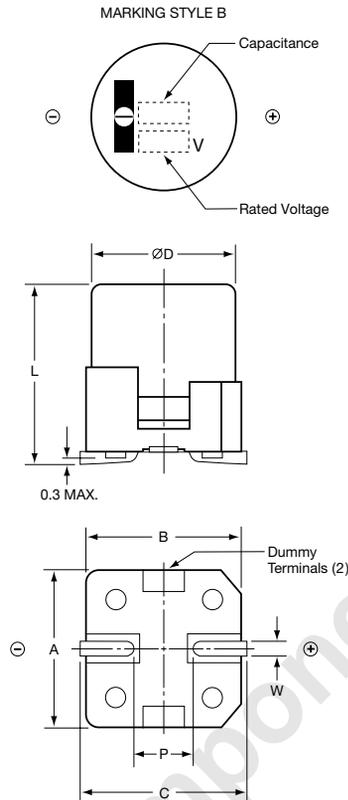
Vertical Chip SMD Lead Terminals

Unit: mm

VC Type $\varnothing D = \varnothing 4 - \varnothing 12.5^*$

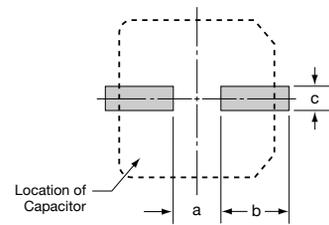


VD Type $\varnothing D = \varnothing 16 \text{ \& } \varnothing 18$



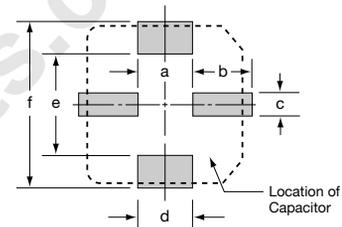
Recommended PCB Land Patterns

VC Type $\varnothing D = \varnothing 4 - \varnothing 12.5$



Solder Land

VD Type $\varnothing D = \varnothing 16 \text{ \& } \varnothing 18$



Solder Land

*Marking Style B is used for all $\varnothing 12.5$ VC Type products.

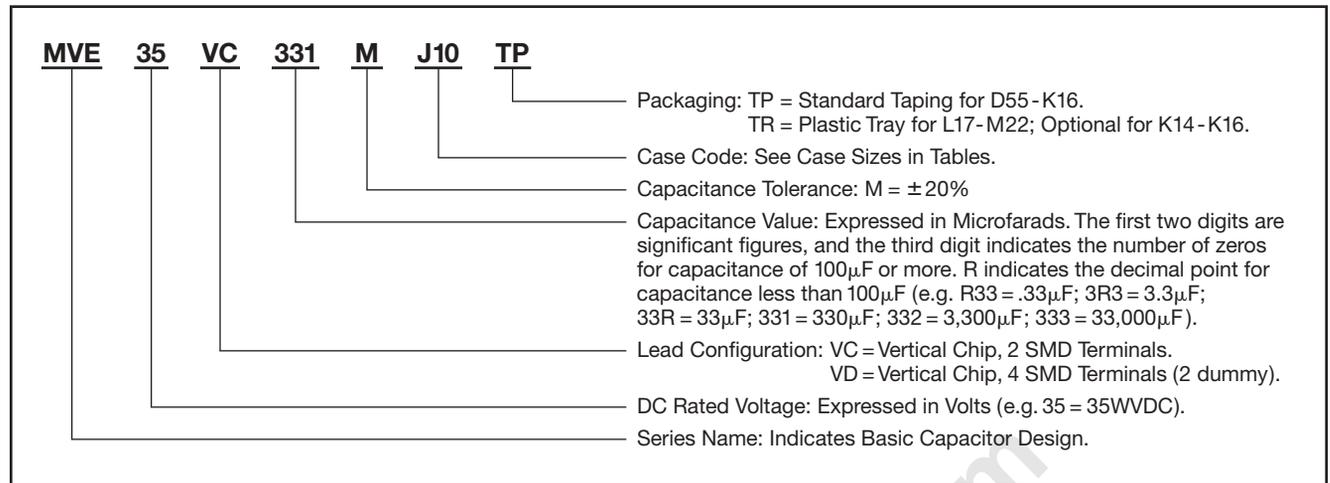
Refer to Packaging section for Surface Mount taping, reel and tray specifications and Surface Mount Soldering section for reflow soldering conditions.

Case and PCB Land Pattern Dimensions

| Case Code | $\varnothing D \pm 0.5$ | L | A ± 0.2 | B ± 0.2 | C ± 0.2 | W | P | a | b | c | d | e | f |
|-----------|-------------------------|----------------|-------------|-------------|-------------|---------|-----|-----|-----|-----|-----|------|------|
| D55 | $\varnothing 4$ | 5.2 ± 0.3 | 4.3 | 4.3 | 5.1 | 0.5-0.8 | 1.0 | 1.0 | 2.6 | 1.6 | - | - | - |
| E55 | $\varnothing 5$ | 5.2 ± 0.3 | 5.3 | 5.3 | 5.9 | 0.5-0.8 | 1.4 | 1.4 | 3.0 | 1.6 | - | - | - |
| F55 | $\varnothing 6.3$ | 5.2 ± 0.3 | 6.6 | 6.6 | 7.2 | 0.5-0.8 | 1.9 | 1.9 | 3.5 | 1.6 | - | - | - |
| F60 | $\varnothing 6.3$ | 5.7 ± 0.3 | 6.6 | 6.6 | 7.2 | 0.5-0.8 | 1.9 | 1.9 | 3.5 | 1.6 | - | - | - |
| F80 | $\varnothing 6.3$ | 7.7 ± 0.3 | 6.6 | 6.6 | 7.2 | 0.5-0.8 | 1.9 | 1.9 | 3.5 | 1.6 | - | - | - |
| H10 | $\varnothing 8$ | 10.0 ± 0.5 | 8.3 | 8.3 | 9.0 | 0.7-1.1 | 3.1 | 3.1 | 4.2 | 2.2 | - | - | - |
| J10 | $\varnothing 10$ | 10.0 ± 0.5 | 10.3 | 10.3 | 11.0 | 0.7-1.1 | 4.5 | 4.5 | 4.4 | 2.2 | - | - | - |
| K14 | $\varnothing 12.5$ | 13.5 ± 0.5 | 13.0 | 13.0 | 13.7 | 1.0-1.3 | 4.2 | 4.0 | 5.7 | 2.5 | - | - | - |
| K16 | $\varnothing 12.5$ | 16.0 ± 0.5 | 13.0 | 13.0 | 13.7 | 1.0-1.3 | 4.2 | 4.0 | 5.7 | 2.5 | - | - | - |
| L17 | $\varnothing 16$ | 16.5 ± 0.5 | 17.0 | 17.0 | 18.0 | 1.0-1.3 | 6.5 | 6.0 | 6.9 | 2.5 | 6.5 | 11.0 | 19.2 |
| L22 | $\varnothing 16$ | 21.5 ± 0.5 | 17.0 | 17.0 | 18.0 | 1.0-1.3 | 6.5 | 6.0 | 6.9 | 2.5 | 6.5 | 11.0 | 19.2 |
| M17 | $\varnothing 18$ | 16.5 ± 0.5 | 19.0 | 19.0 | 20.0 | 1.0-1.3 | 6.5 | 6.0 | 7.9 | 2.5 | 6.5 | 13.0 | 21.2 |
| M22 | $\varnothing 18$ | 21.5 ± 0.5 | 19.0 | 19.0 | 20.0 | 1.0-1.3 | 6.5 | 6.0 | 7.9 | 2.5 | 6.5 | 13.0 | 21.2 |

Part Numbering System for MVE Series

When ordering, always specify complete catalog number for MVE Series.



Standard Voltage Ratings - Surface Mount

| Rated Voltage (WVDC) | Capacitance (μ F) | Catalog Part Number | Nominal Case Size* D x L (mm) | Case Code | Dissipation Factor (Tan δ) +20°C, 120Hz | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (mA rms) at +105°C, 120Hz |
|----------------------------|------------------------|---------------------|-------------------------------|-----------|---|--|--|
| 6.3 Volts 8 Volts Surge | 22 | MVE6.3VC22RMD55TP | 4 x 5.2 | D55 | 0.30 | 22.602 | 22 |
| | 33 | MVE6.3VC33RME55TP | 5 x 5.2 | E55 | 0.30 | 15.068 | 34 |
| | 47 | MVE6.3VC47RME55TP | 5 x 5.2 | E55 | 0.30 | 10.58 | 38 |
| | 100 | MVE6.3VC101MF55TP | 6.3 x 5.2 | F55 | 0.30 | 4.973 | 69 |
| | 220 | MVE6.3VC221MF80TP | 6.3 x 7.7 | F80 | 0.45 | 3.39 | 120 |
| | 330 | MVE6.3VC331MH10TP | 8 x 10 | H10 | 0.40 | 2.009 | 290 |
| | 470 | MVE6.3VC471MH10TP | 8 x 10 | H10 | 0.45 | 1.587 | 320 |
| | 680 | MVE6.3VC681MH10TP | 8 x 10 | H10 | 0.45 | 1.097 | 340 |
| | 1,000 | MVE6.3VC102MJ10TP | 10 x 10 | J10 | 0.40 | 0.663 | 410 |
| | 1,500 | MVE6.3VC152MJ10TP | 10 x 10 | J10 | 0.45 | 0.497 | 550 |
| | 2,200 | MVE6.3VC222MK14TP | 12.5 x 13.5 | K14 | 0.40 | 0.301 | 680 |
| | 2,200 | MVE6.3VD222ML17TR | 16 x 16.5 | L17 | 0.40 | 0.301 | 840 |
| | 3,300 | MVE6.3VC332MK16TP | 12.5 x 16 | K16 | 0.42 | 0.211 | 850 |
| | 3,300 | MVE6.3VD332MM17TR | 18 x 16.5 | M17 | 0.42 | 0.211 | 1,000 |
| | 4,700 | MVE6.3VD472ML22TR | 16 x 21.5 | L22 | 0.44 | 0.155 | 1,200 |
| 4,700 | MVE6.3VD472MM17TR | 18 x 16.5 | M17 | 0.44 | 0.155 | 1,200 | |
| 6,800 | MVE6.3VD682ML22TR | 16 x 21.5 | L22 | 0.48 | 0.117 | 1,200 | |
| 6,800 | MVE6.3VD682MM22TR | 18 x 21.5 | M22 | 0.48 | 0.117 | 1,350 | |
| 10 Volts 13 Volts Surge | 22 | MVE10VC22RME55TP | 5 x 5.2 | E55 | 0.24 | 18.082 | 30 |
| | 33 | MVE10VC33RME55TP | 5 x 5.2 | E55 | 0.24 | 12.055 | 34 |
| | 47 | MVE10VC47RMF55TP | 6.3 x 5.2 | F55 | 0.24 | 8.464 | 48 |
| | 100 | MVE10VC101MF55TP | 6.3 x 5.2 | F55 | 0.30 | 4.973 | 69 |
| | 150 | MVE10VC151MF80TP | 6.3 x 7.7 | F80 | 0.35 | 3.868 | 100 |
| | 220 | MVE10VC221MF80TP | 6.3 x 7.7 | F80 | 0.35 | 2.637 | 120 |
| | 330 | MVE10VC331MH10TP | 8 x 10 | H10 | 0.35 | 1.758 | 290 |
| | 470 | MVE10VC471MH10TP | 8 x 10 | H10 | 0.35 | 1.234 | 320 |
| | 1,000 | MVE10VC102MJ10TP | 10 x 10 | J10 | 0.35 | 0.58 | 410 |
| | 2,200 | MVE10VC222MK16TP | 12.5 x 16 | K16 | 0.36 | 0.271 | 750 |
| | 2,200 | MVE10VD222ML17TR | 16 x 16.5 | L17 | 0.36 | 0.271 | 850 |
| | 3,300 | MVE10VD332ML17TR | 16 x 16.5 | L17 | 0.38 | 0.191 | 1,000 |
| | 3,300 | MVE10VD332MM17TR | 18 x 16.5 | M17 | 0.38 | 0.191 | 1,100 |
| | 4,700 | MVE10VD472ML22TR | 16 x 21.5 | L22 | 0.40 | 0.141 | 1,300 |
| | 4,700 | MVE10VD472MM22TR | 18 x 21.5 | M22 | 0.40 | 0.141 | 1,350 |
| 16 Volts 20 Volts Surge | 10 | MVE16VC10RMD55TP | 4 x 5.2 | D55 | 0.20 | 33.15 | 17 |
| | 22 | MVE16VC22RME55TP | 5 x 5.2 | E55 | 0.20 | 15.068 | 30 |
| | 33 | MVE16VC33RMF55TP | 6.3 x 5.2 | F55 | 0.20 | 10.045 | 45 |
| | 47 | MVE16VC47RMF55TP | 6.3 x 5.2 | F55 | 0.20 | 7.053 | 48 |

* Refer to diagrams for detailed case size dimensions.

Standard Voltage Ratings - Surface Mount

| Rated Voltage (WVDC) | Capacitance (µF) | Catalog Part Number | Nominal Case Size* D × L (mm) | Case Code | Dissipation Factor (Tan δ) +20°C, 120Hz | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (mA rms) at +105°C, 120Hz |
|-----------------------------------|------------------|---------------------|-------------------------------|-----------|---|---------------------------------|--|
| 16 Volts 20 Volts Surge | 100 | MVE16VC101MF55TP | 6.3 × 5.2 | F55 | 0.26 | 4.31 | 69 |
| | 150 | MVE16VC151MF80TP | 6.3 × 7.7 | F80 | 0.28 | 3.094 | 100 |
| | 220 | MVE16VC221MF80TP | 6.3 × 7.7 | F80 | 0.28 | 2.11 | 120 |
| | 330 | MVE16VC331MH10TP | 8 × 10 | H10 | 0.28 | 1.406 | 290 |
| | 470 | MVE16VC471MH10TP | 8 × 10 | H10 | 0.28 | 0.987 | 320 |
| | 680 | MVE16VC681MJ10TP | 10 × 10 | J10 | 0.28 | 0.683 | 470 |
| | 1,000 | MVE16VC102MK14TP | 12.5 × 13.5 | K14 | 0.30 | 0.497 | 550 |
| | 1,000 | MVE16VD102ML17TR | 16 × 16.5 | L17 | 0.30 | 0.497 | 650 |
| | 2,200 | MVE16VD222ML17TR | 16 × 16.5 | L17 | 0.32 | 0.241 | 950 |
| | 2,200 | MVE16VD222MM17TR | 18 × 16.5 | M17 | 0.32 | 0.241 | 1,000 |
| | 3,300 | MVE16VD332ML22TR | 16 × 21.5 | L22 | 0.34 | 0.171 | 1,200 |
| 3,300 | MVE16VD332MM17TR | 18 × 16.5 | M17 | 0.34 | 0.171 | 1,200 | |
| 25 Volts 32 Volts Surge | 10 | MVE25VC10RME55TP | 5 × 5.2 | E55 | 0.16 | 26.52 | 27 |
| | 22 | MVE25VC22RMF55TP | 6.3 × 5.2 | F55 | 0.16 | 12.055 | 44 |
| | 33 | MVE25VC33RMF55TP | 6.3 × 5.2 | F55 | 0.16 | 8.036 | 50 |
| | 47 | MVE25VC47RMF55TP | 6.3 × 5.2 | F55 | 0.16 | 5.643 | 60 |
| | 100 | MVE25VC101MF80TP | 6.3 × 7.7 | F80 | 0.18 | 2.984 | 100 |
| | 150 | MVE25VC151MH10TP | 8 × 10 | H10 | 0.18 | 1.989 | 240 |
| | 220 | MVE25VC221MH10TP | 8 × 10 | H10 | 0.18 | 1.356 | 320 |
| | 330 | MVE25VC331MJ10TP | 10 × 10 | J10 | 0.16 | 0.804 | 450 |
| | 470 | MVE25VC471MJ10TP | 10 × 10 | J10 | 0.18 | 0.635 | 490 |
| | 1,000 | MVE25VD102ML17TR | 16 × 16.5 | L17 | 0.26 | 0.431 | 820 |
| | 1,000 | MVE25VD102MM17TR | 18 × 16.5 | M17 | 0.26 | 0.431 | 880 |
| | 2,200 | MVE25VD222ML22TR | 16 × 21.5 | L22 | 0.28 | 0.211 | 1,250 |
| 2,200 | MVE25VD222MM22TR | 18 × 21.5 | M22 | 0.28 | 0.211 | 1,300 | |
| 35 Volts 44 Volts Surge | 4.7 | MVE35VC4R7MD55TP | 4 × 5.2 | D55 | 0.14 | 49.372 | 16 |
| | 10 | MVE35VC10RME55TP | 5 × 5.2 | E55 | 0.14 | 23.205 | 27 |
| | 22 | MVE35VC22RMF55TP | 6.3 × 5.2 | F55 | 0.14 | 10.548 | 44 |
| | 33 | MVE35VC33RMF60TP | 6.3 × 5.7 | F60 | 0.14 | 7.032 | 54 |
| | 47 | MVE35VC47RMF80TP | 6.3 × 7.7 | F80 | 0.16 | 5.643 | 80 |
| | 100 | MVE35VC101MF80TP | 6.3 × 7.7 | F80 | 0.16 | 2.652 | 100 |
| | 150 | MVE35VC151MH10TP | 8 × 10 | H10 | 0.16 | 1.768 | 260 |
| | 220 | MVE35VC221MJ10TP | 10 × 10 | J10 | 0.16 | 1.205 | 375 |
| | 330 | MVE35VC331MJ10TP | 10 × 10 | J10 | 0.16 | 0.804 | 450 |
| | 470 | MVE35VC471MK14TP | 12.5 × 13.5 | K14 | 0.22 | 0.776 | 520 |
| | 470 | MVE35VD471ML17TR | 16 × 16.5 | L17 | 0.22 | 0.776 | 650 |
| | 1,000 | MVE35VD102ML17TR | 16 × 16.5 | L17 | 0.22 | 0.365 | 750 |
| | 1,000 | MVE35VD102MM17TR | 18 × 16.5 | M17 | 0.22 | 0.365 | 1,000 |
| | 2,200 | MVE35VD222MM22TR | 18 × 21.5 | M22 | 0.24 | 0.181 | 1,450 |
| 50 Volts 63 Volts Surge | 0.47 | MVE50VCR47MD55TP | 4 × 5.2 | D55 | 0.12 | 423.191 | 5 |
| | 1.0 | MVE50VC1R0MD55TP | 4 × 5.2 | D55 | 0.12 | 198.9 | 8 |
| | 2.2 | MVE50VC2R2MD55TP | 4 × 5.2 | D55 | 0.12 | 90.409 | 12 |
| | 3.3 | MVE50VC3R3MD55TP | 4 × 5.2 | D55 | 0.12 | 60.273 | 15 |
| | 4.7 | MVE50VC4R7ME55TP | 5 × 5.2 | E55 | 0.12 | 42.319 | 20 |
| | 10 | MVE50VC10RMF55TP | 6.3 × 5.2 | F55 | 0.12 | 19.89 | 32 |
| | 22 | MVE50VC22RMF60TP | 6.3 × 5.7 | F60 | 0.12 | 9.041 | 47 |
| | 33 | MVE50VC33RMF80TP | 6.3 × 7.7 | F80 | 0.14 | 7.032 | 65 |
| | 47 | MVE50VC47RMF80TP | 6.3 × 7.7 | F80 | 0.14 | 4.937 | 80 |
| | 100 | MVE50VC101MH10TP | 8 × 10 | H10 | 0.14 | 2.321 | 230 |
| | 220 | MVE50VC221MJ10TP | 10 × 10 | J10 | 0.14 | 1.055 | 375 |
| | 330 | MVE50VC331MK14TP | 12.5 × 13.5 | K14 | 0.18 | 0.904 | 500 |
| | 330 | MVE50VD331ML17TR | 16 × 16.5 | L17 | 0.18 | 0.904 | 600 |
| | 470 | MVE50VD471ML17TR | 16 × 16.5 | L17 | 0.18 | 0.635 | 700 |
| | 470 | MVE50VD471MM17TR | 18 × 16.5 | M17 | 0.18 | 0.635 | 750 |
| | 1,000 | MVE50VD102MM22TR | 18 × 21.5 | M22 | 0.18 | 0.298 | 1,200 |

*Refer to diagrams for detailed case size dimensions.

Standard Voltage Ratings - Surface Mount

| Rated Voltage (WVDC) | Capacitance (µF) | Catalog Part Number | Nominal Case Size* D × L (mm) | Case Code | Dissipation Factor (Tan δ) +20°C, 120Hz | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (mA rms) at +105°C, 120Hz |
|--|-------------------|---------------------|-------------------------------|-----------|---|---------------------------------|--|
| 63 Volts 79 Volts Surge | 0.47 | MVE63VCR47MD55TP | 4 × 5.2 | D55 | 0.12 | 423.191 | 5 |
| | 1.0 | MVE63VC1R0MD55TP | 4 × 5.2 | D55 | 0.12 | 198.9 | 8 |
| | 2.2 | MVE63VC2R2MD55TP | 4 × 5.2 | D55 | 0.12 | 90.409 | 12 |
| | 3.3 | MVE63VC3R3ME55TP | 5 × 5.2 | E55 | 0.12 | 60.273 | 17 |
| | 4.7 | MVE63VC4R7MF55TP | 6.3 × 5.2 | F55 | 0.12 | 42.319 | 22 |
| | 10 | MVE63VC10RMF55TP | 6.3 × 5.2 | F55 | 0.12 | 19.89 | 32 |
| | 22 | MVE63VC22RMF80TP | 6.3 × 7.7 | F80 | 0.12 | 9.041 | 58 |
| | 33 | MVE63VC33RMH10TP | 8 × 10 | H10 | 0.12 | 6.027 | 140 |
| | 47 | MVE63VC47RMH10TP | 8 × 10 | H10 | 0.12 | 4.232 | 170 |
| | 100 | MVE63VC101MJ10TP | 10 × 10 | J10 | 0.12 | 1.989 | 310 |
| | 220 | MVE63VC221MK14TP | 12.5 × 13.5 | K14 | 0.14 | 1.055 | 470 |
| | 220 | MVE63VD221ML17TR | 16 × 16.5 | L17 | 0.14 | 1.055 | 560 |
| | 330 | MVE63VD331ML17TR | 16 × 16.5 | L17 | 0.14 | 0.703 | 700 |
| | 330 | MVE63VD331MM17TR | 18 × 16.5 | M17 | 0.14 | 0.703 | 750 |
| 470 | MVE63VD471ML22TR | 16 × 21.5 | L22 | 0.14 | 0.494 | 900 | |
| 470 | MVE63VD471MM17TR | 18 × 16.5 | M17 | 0.14 | 0.494 | 900 | |
| 100 Volts 125 Volts Surge Not Solvent Proof | 22 | MVE100VC22RMH10TP | 8 × 10 | H10 | 0.12 | 9.041 | 100 |
| | 33 | MVE100VC33RMJ10TP | 10 × 10 | J10 | 0.12 | 6.027 | 150 |
| | 47 | MVE100VC47RMK14TP | 12.5 × 13.5 | K14 | 0.10 | 3.527 | 250 |
| | 68 | MVE100VC68RMK14TP | 12.5 × 13.5 | K14 | 0.10 | 2.438 | 300 |
| | 100 | MVE100VC101MK14TP | 12.5 × 13.5 | K14 | 0.10 | 1.658 | 380 |
| | 100 | MVE100VD101ML17TR | 16 × 16.5 | L17 | 0.10 | 1.658 | 450 |
| | 220 | MVE100VD221ML22TR | 16 × 21.5 | L22 | 0.10 | 0.753 | 750 |
| | 220 | MVE100VD221MM17TR | 18 × 16.5 | M17 | 0.10 | 0.753 | 750 |
| 330 | MVE100VD331MM22TR | 18 × 21.5 | M22 | 0.10 | 0.502 | 980 | |
| 160 Volts 200 Volts Surge Not Solvent Proof | 33 | MVE160VC33RMK14TP | 12.5 × 13.5 | K14 | 0.15 | 7.534 | 95 |
| | 47 | MVE160VD47RML17TR | 16 × 16.5 | L17 | 0.15 | 5.29 | 260 |
| | 68 | MVE160VD68RML22TR | 16 × 21.5 | L22 | 0.15 | 3.656 | 320 |
| | 68 | MVE160VD68RMM17TR | 18 × 16.5 | M17 | 0.15 | 3.656 | 320 |
| | 100 | MVE160VD101ML22TR | 16 × 21.5 | L22 | 0.15 | 2.486 | 380 |
| 200 Volts 250 Volts Surge Not Solvent Proof | 10 | MVE200VC10RMK14TP | 12.5 × 13.5 | K14 | 0.15 | 24.863 | 80 |
| | 22 | MVE200VC22RMK16TP | 12.5 × 16 | K16 | 0.15 | 11.301 | 110 |
| | 33 | MVE200VD33RML17TR | 16 × 16.5 | L17 | 0.15 | 7.534 | 220 |
| | 47 | MVE200VD47RML22TR | 16 × 21.5 | L22 | 0.15 | 5.29 | 270 |
| | 47 | MVE200VD47RMM17TR | 18 × 16.5 | M17 | 0.15 | 5.29 | 270 |
| | 68 | MVE200VD68RMM22TR | 18 × 21.5 | M22 | 0.15 | 3.656 | 330 |
| 250 Volts 300 Volts Surge Not Solvent Proof | 4.7 | MVE250VC4R7MK14TP | 12.5 × 13.5 | K14 | 0.15 | 52.899 | 65 |
| | 10 | MVE250VC10RMK16TP | 12.5 × 16 | K16 | 0.15 | 24.863 | 105 |
| | 22 | MVE250VD22RML17TR | 16 × 16.5 | L17 | 0.15 | 11.301 | 180 |
| | 33 | MVE250VD33RML22TR | 16 × 21.5 | L22 | 0.15 | 7.534 | 230 |
| | 33 | MVE250VD33RMM17TR | 18 × 16.5 | M17 | 0.15 | 7.534 | 230 |
| | 47 | MVE250VD47RMM22TR | 18 × 21.5 | M22 | 0.15 | 5.29 | 280 |
| 400 Volts 450 Volts Surge Not Solvent Proof | 4.7 | MVE400VC4R7MK16TP | 12.5 × 16 | K16 | 0.20 | 70.532 | 50 |
| | 10 | MVE400VD10RML17TR | 16 × 16.5 | L17 | 0.20 | 33.15 | 85 |
| | 22 | MVE400VD22RMM22TR | 18 × 21.5 | M22 | 0.20 | 15.068 | 130 |
| 450 Volts 500 Volts Surge Not Solvent Proof | 3.3 | MVE450VC3R3MK14TP | 12.5 × 13.5 | K14 | 0.20 | 100.455 | 40 |
| | 4.7 | MVE450VC4R7MK16TP | 12.5 × 16 | K16 | 0.20 | 70.532 | 50 |
| | 10 | MVE450VD10RML17TR | 16 × 16.5 | L17 | 0.20 | 33.15 | 85 |
| | 22 | MVE450VD22RMM22TR | 18 × 21.5 | M22 | 0.20 | 15.068 | 130 |

*Refer to diagrams for detailed case size dimensions.