

- Snap Mount
- Large Capacitance
- High CV
- High Ripple
- RoHS Compliant
- +85°C Maximum Temperature



The SMH series capacitors are the standard +85°C, large capacitance, snap-in capacitors from United Chemi-Con. The load life for the SMH series is 2,000 hours at +85°C with the rated ripple current applied. The very high CV values and ripple current capabilities make these capacitors ideal for use in power supply filter circuits. The SMH capacitors are available in 2 or 4-pin snap-in styles and 4 or 5-pin straight terminals. The SMH series is RoHS compliant offering Pb-free construction.

The standard SMH series capacitors are *not* solvent proof. Refer to guidelines and precautions on the website for usage and installation conditions recommended for United Chemi-Con products.

## Summary of Specifications

- PC board 2 or 4-pin snap-in; optional 4 or 5-pin straight terminals.
- Capacitance range: 56 to 270,000µF.
- Voltage range: 6.3 to 450VDC.
- Category temperature range: -40°C to +85°C for 6.3 to 100V; -25°C to +85°C for 160 to 450V.
- Leakage current: 0.02CV(µA) or 3mA, whichever is smaller, after 5 minutes at +20°C.
- Standard capacitance tolerance: ±20%
- Nominal case size (D × L): 22 × 20mm to 40 × 80mm.
- Rated lifetime: 2,000 hours at +85°C with the rated ripple current applied.

## SMH Specifications - Snap Mount

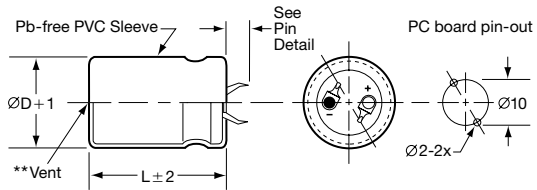
| Item                             | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|--------|---------|---------|---------|---------|---------|-----------------------|---------|------------------|-------|------|-------|--------|---------|-----------------------|------|-------|------|------|------|---------|------|------|------|------|------|------|----------|------|------|------|------|------|------|----------|------|------|------|------|------|------|
| Category Temperature Range       | − 40 to +85°C for 6.3 to 100VDC; − 25 to +85°C for 160 to 450VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Rated Voltage Range              | 6.3 to 450VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Capacitance Range                | 56 to 270,000μF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Capacitance Tolerance            | ±20% (M) at +20°C, 120Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Leakage Current                  | I = 0.02CV (μA) or 3mA, whichever is smaller, after 5 minutes at +20°C.<br>Where I = Max. leakage current (μA), C = Nominal capacitance (μF) and V = Rated voltage (V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Dissipation Factor (Tan δ)       | At +20°C, 120Hz <table><tr><td>Rated Voltage (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63-100</td><td>160-250</td><td>315-450</td></tr><tr><td>Tan δ (DF) Max.†</td><td>0.60</td><td>0.50</td><td>0.40</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.15</td><td>0.10*</td><td>0.15</td></tr></table> <p>*0.15 maximum for 35mm and 40mm diameter.<br/>† For rated voltages ≤ 63V, values are not valid for case sizes &gt;35mm in diameter or &gt;50mm in length.</p>                                                                                                                                                                                                                                                   | Rated Voltage (V) | 6.3    | 10     | 16      | 25      | 35      | 50      | 63-100  | 160-250               | 315-450 | Tan δ (DF) Max.† | 0.60  | 0.50 | 0.40  | 0.30   | 0.25    | 0.20                  | 0.15 | 0.10* | 0.15 |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Rated Voltage (V)                | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                | 16     | 25     | 35      | 50      | 63-100  | 160-250 | 315-450 |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Tan δ (DF) Max.†                 | 0.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.50              | 0.40   | 0.30   | 0.25    | 0.20    | 0.15    | 0.10*   | 0.15    |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Low Temperature Characteristics  | At 120Hz, impedance (Z) ratio between the − 25°C or − 40°C value and +20°C value shall not exceed the values given below. <table><tr><td>Rated Voltage (V)</td><td>6.3-16</td><td>25</td><td>35</td><td>50, 63</td><td>80, 100</td><td>160-400</td><td>450</td></tr><tr><td>Z (−25°C) / Z (+20°C)</td><td>4</td><td>3</td><td>3</td><td>2</td><td>2</td><td>4</td><td>8</td></tr><tr><td>Z (−40°C) / Z (+20°C)</td><td>15</td><td>10</td><td>8</td><td>6</td><td>5</td><td>—</td><td>—</td></tr></table>                                                                                                                                                                                                                                                        | Rated Voltage (V) | 6.3-16 | 25     | 35      | 50, 63  | 80, 100 | 160-400 | 450     | Z (−25°C) / Z (+20°C) | 4       | 3                | 3     | 2    | 2     | 4      | 8       | Z (−40°C) / Z (+20°C) | 15   | 10    | 8    | 6    | 5    | —       | —    |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Rated Voltage (V)                | 6.3-16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25                | 35     | 50, 63 | 80, 100 | 160-400 | 450     |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Z (−25°C) / Z (+20°C)            | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3                 | 3      | 2      | 2       | 4       | 8       |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Z (−40°C) / Z (+20°C)            | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10                | 8      | 6      | 5       | —       | —       |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Rated Ripple Current Multipliers | Ambient Temperature (°C) <table><tr><td>+45°C</td><td>+60°C</td><td>+70°C</td><td>+85°C</td></tr><tr><td>1.73</td><td>1.50</td><td>1.32</td><td>1.00</td></tr></table> <p>Frequency (Hz)</p> <table><tr><td>DC Rated Voltage</td><td>50Hz</td><td>120Hz</td><td>300Hz</td><td>1kHz</td><td>10kHz</td><td>100kHz</td></tr><tr><td>6.3-50V</td><td>0.95</td><td>1.00</td><td>1.03</td><td>1.05</td><td>1.08</td><td>1.08</td></tr><tr><td>63-100V</td><td>0.92</td><td>1.00</td><td>1.07</td><td>1.13</td><td>1.19</td><td>1.20</td></tr><tr><td>160-250V</td><td>0.81</td><td>1.00</td><td>1.17</td><td>1.32</td><td>1.45</td><td>1.50</td></tr><tr><td>315-450V</td><td>0.77</td><td>1.00</td><td>1.16</td><td>1.30</td><td>1.41</td><td>1.43</td></tr></table> | +45°C             | +60°C  | +70°C  | +85°C   | 1.73    | 1.50    | 1.32    | 1.00    | DC Rated Voltage      | 50Hz    | 120Hz            | 300Hz | 1kHz | 10kHz | 100kHz | 6.3-50V | 0.95                  | 1.00 | 1.03  | 1.05 | 1.08 | 1.08 | 63-100V | 0.92 | 1.00 | 1.07 | 1.13 | 1.19 | 1.20 | 160-250V | 0.81 | 1.00 | 1.17 | 1.32 | 1.45 | 1.50 | 315-450V | 0.77 | 1.00 | 1.16 | 1.30 | 1.41 | 1.43 |
| +45°C                            | +60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | +70°C             | +85°C  |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| 1.73                             | 1.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.32              | 1.00   |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| DC Rated Voltage                 | 50Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 120Hz             | 300Hz  | 1kHz   | 10kHz   | 100kHz  |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| 6.3-50V                          | 0.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.00              | 1.03   | 1.05   | 1.08    | 1.08    |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| 63-100V                          | 0.92                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.00              | 1.07   | 1.13   | 1.19    | 1.20    |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| 160-250V                         | 0.81                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.00              | 1.17   | 1.32   | 1.45    | 1.50    |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| 315-450V                         | 0.77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1.00              | 1.16   | 1.30   | 1.41    | 1.43    |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Endurance (Load Life)            | The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to DC voltage for 2,000 hours at +85°C with the rated ripple current applied. The sum of the DC voltage and peak AC voltage must not exceed the full rated voltage of the capacitors.<br><br>Capacitance change: ≤ ±20% of initial measured value<br>Tan δ (DF) : ≤ 200% of initial specified value<br>Leakage current : ≤ initial specified value                                                                                                                                                                                                                                                                                              |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |
| Shelf Life                       | The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for 1,000 hours at +85°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.<br><br>Capacitance change: ≤ ±20% of initial measured value<br>Tan δ (DF) : ≤ 150% of initial specified value<br>Leakage current : ≤ initial specified value                                                                                                                                                                                                                                                                            |                   |        |        |         |         |         |         |         |                       |         |                  |       |      |       |        |         |                       |      |       |      |      |      |         |      |      |      |      |      |      |          |      |      |      |      |      |      |          |      |      |      |      |      |      |

## Diagram of Dimensions - Snap Mount

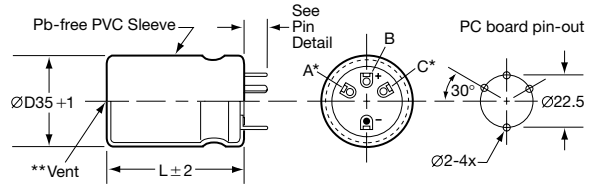
### Snap Mount

Unit: mm

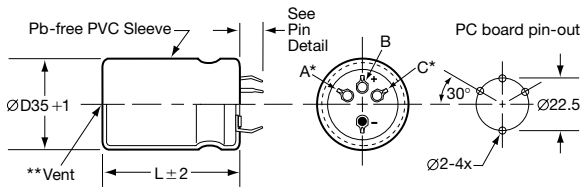
#### Types VSN & VNN $\varnothing 22\sim\varnothing 35$



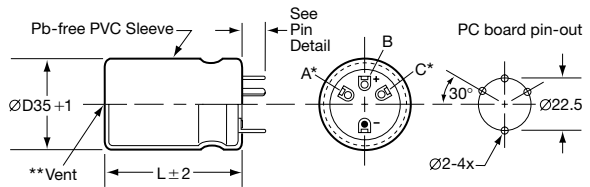
#### Type VRD $\varnothing 35$



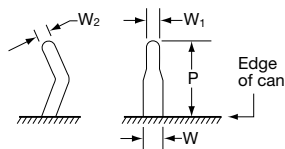
#### Type VND $\varnothing 35$ & $\varnothing 40$



#### Type VQD $\varnothing 35$

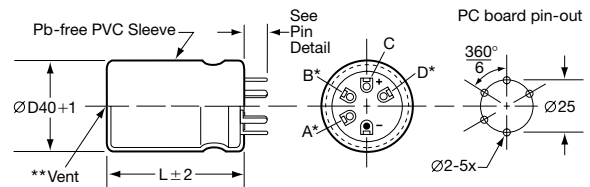


#### VS & VN Pin Dimensions



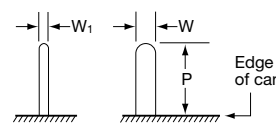
| Type                                   | P             | W             | W <sub>1</sub> | W <sub>2</sub> |
|----------------------------------------|---------------|---------------|----------------|----------------|
| VSN $\varnothing 22\sim\varnothing 30$ | $4.0 \pm 0.5$ | $1.5 \pm 0.2$ | 1.0            | 1.0            |
| VSN $\varnothing 35$                   | $3.5 \pm 0.5$ |               |                |                |
| VNN $\varnothing 22\sim\varnothing 35$ | $5.8 \pm 1.0$ |               |                |                |
| VND $\varnothing 35\sim\varnothing 40$ | $5.8 \pm 1.0$ |               |                |                |

#### Type VQT $\varnothing 40$

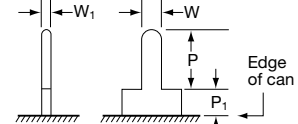


#### VR & VQ Pin Dimensions

##### VR Straight Pin



##### VQ Standoff Pin



| Type              | P              | P <sub>1</sub> | W             | W <sub>1</sub> |
|-------------------|----------------|----------------|---------------|----------------|
| Straight Pin (VR) | $5.50 \pm 1.0$ | —              | $1.5 \pm 0.1$ | 0.7            |
| Standoff Pin (VQ) | $3.75 \pm 1.0$ | 2.0 max.       |               |                |

#### CAUTION:

\*Use the blank terminals for mechanical support only. The blank terminals must not be connected to a solder trace on the PC board, but be electrically isolated from the negative or positive terminal.

\*\*Vent may be located either on the bottom or side of the can.

## Part Numbering System for SMH Series

When ordering, always specify complete 18-field global part number.



- 9 Supplement Code.** Field 18.  
All construction options listed have Sn100% terminal plating.  
S = PET sleeve without end disk.  
W = PET sleeve with end disk.  
M = Pb-free PVC sleeve without end disk.  
T = Pb-free PVC sleeve with end disk.
- 8 Case Size.** Fields 15, 16 and 17.  
The single letter diameter code is inserted in field 15.  
P = Ø22mm  
Q = Ø25.4mm  
R = Ø30mm  
A = Ø35mm  
B = Ø40mm  
  
The double digit length code is inserted in fields 16 and 17.  
20 = 20mm  
25 = 25mm  
30 = 30mm  
35 = 35mm  
40 = 40mm  
45 = 45mm  
50 = 50mm  
63 = 63mm  
80 = 80mm
- 7 Capacitance Tolerance.** Field 14.  
M =  $\pm 20\%$
- 6 Capacitance.** Fields 11, 12 and 13.  
Expressed in Microfarads. The first two digits are significant figures inserted in fields 11 and 12, and the third digit inserted in field 13 indicates the number of zeros for capacitance of  $10\mu\text{F}$  or more. R indicates the decimal point for capacitance less than  $10\mu\text{F}$  (e.g. 4R7 =  $4.7\mu\text{F}$ ; 470 =  $47\mu\text{F}$ ; 471 =  $470\mu\text{F}$ ; 472 =  $4,700\mu\text{F}$ ; 473 =  $47,000\mu\text{F}$ ).
- 5 Dummy Terminals.** Field 10.  
N = No dummy terminals.  
D = 2 dummy terminals.  
T = 3 dummy terminals.
- 4 Terminal Type.** Fields 8 and 9.  
VS = Snap-in pins, 4.0mm in length, 3.5mm for Ø35 only.  
VN = Snap-in pins, 5.8mm in length.  
VR = Straight pins.  
VQ = Straight standoff pins.
- 3 DC Rated Voltage.** Fields 5, 6 and 7.  
Expressed in Volts. The first two digits are significant figures inserted in fields 5 and 6, and the third digit inserted in field 7 indicates the number of zeros for rated voltage of 10VDC or more. R indicates the decimal point for rated voltage less than 10VDC (e.g. 2R0 = 2.0VDC; 200 = 20VDC; 201 = 200VDC).  
Rule Exception: Coding for rated voltage 315VDC = 3B1.
- 2 Series Name.** Fields 2, 3 and 4.  
Enter the 3-letter/digit series name in fields 2, 3 and 4. If the series name is only 2 letters/digits, place a dash in field 4.  
For a series name with more than 3 letters/digits, refer to the individual series for the appropriate 3-field series name.
- 1 Capacitor Type.** Field 1.  
Aluminum Electrolytic Capacitor (Polar).

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC)       | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| 6.3 Volts<br>8 Volts Surge | 15,000           | ESMH6R3VSN153MP25T  | 22 × 25                       | P25            | 0.066                           | 2.44                                         |
|                            | 18,000           | ESMH6R3VSN183MP30T  | 22 × 30                       | P30            | 0.055                           | 2.67                                         |
|                            | 22,000           | ESMH6R3VSN223MP30T  | 22 × 30                       | P30            | 0.045                           | 3.06                                         |
|                            | 27,000           | ESMH6R3VSN273MP35T  | 22 × 35                       | P35            | 0.037                           | 3.49                                         |
|                            | 33,000           | ESMH6R3VSN333MP40T  | 22 × 40                       | P40            | 0.03                            | 3.97                                         |
|                            | 39,000           | ESMH6R3VSN393MP50T  | 22 × 50                       | P50            | 0.026                           | 4.55                                         |
|                            | 18,000           | ESMH6R3VSN183MQ25T  | 25.4 × 25                     | Q25            | 0.055                           | 2.7                                          |
|                            | 22,000           | ESMH6R3VSN223MQ25T  | 25.4 × 25                     | Q25            | 0.045                           | 3.07                                         |
|                            | 27,000           | ESMH6R3VSN273MQ30T  | 25.4 × 30                     | Q30            | 0.037                           | 3.52                                         |
|                            | 33,000           | ESMH6R3VSN333MQ35T  | 25.4 × 35                     | Q35            | 0.03                            | 4.02                                         |
|                            | 39,000           | ESMH6R3VSN393MQ40T  | 25.4 × 40                     | Q40            | 0.026                           | 4.5                                          |
|                            | 47,000           | ESMH6R3VSN473MQ45T  | 25.4 × 45                     | Q45            | 0.021                           | 5.09                                         |
|                            | 56,000           | ESMH6R3VSN563MQ50T  | 25.4 × 50                     | Q50            | 0.018                           | 5.71                                         |
|                            | 27,000           | ESMH6R3VSN273MR25T  | 30 × 25                       | R25            | 0.037                           | 3.57                                         |
|                            | 33,000           | ESMH6R3VSN333MR25T  | 30 × 25                       | R25            | 0.03                            | 3.95                                         |
|                            | 39,000           | ESMH6R3VSN393MR30T  | 30 × 30                       | R30            | 0.026                           | 4.45                                         |
|                            | 47,000           | ESMH6R3VSN473MR35T  | 30 × 35                       | R35            | 0.021                           | 5.06                                         |
|                            | 56,000           | ESMH6R3VSN563MR40T  | 30 × 40                       | R40            | 0.018                           | 5.7                                          |
|                            | 68,000           | ESMH6R3VSN683MR45T  | 30 × 45                       | R45            | 0.015                           | 6.48                                         |
|                            | 82,000           | ESMH6R3VSN823MR50T  | 30 × 50                       | R50            | 0.012                           | 7.32                                         |
|                            | 39,000           | ESMH6R3VSN393MA25T  | 35 × 25                       | A25            | 0.026                           | 4.51                                         |
|                            | 47,000           | ESMH6R3VSN473MA30T  | 35 × 30                       | A30            | 0.021                           | 5.01                                         |
|                            | 56,000           | ESMH6R3VSN563MA30T  | 35 × 30                       | A30            | 0.018                           | 5.77                                         |
|                            | 68,000           | ESMH6R3VSN683MA35T  | 35 × 35                       | A35            | 0.015                           | 6.42                                         |
|                            | 82,000           | ESMH6R3VSN823MA40T  | 35 × 40                       | A40            | 0.012                           | 7.29                                         |
|                            | 100,000          | ESMH6R3VSN104MA45T  | 35 × 45                       | A45            | 0.01                            | 8.31                                         |
|                            | 150,000          | ESMH6R3VSN154MA63T  | 35 × 63                       | A63            | 0.01                            | 10.91                                        |
|                            | 180,000          | ESMH6R3VSN184MA80T  | 35 × 80                       | A80            | 0.009                           | 12.78                                        |
|                            | 56,000           | ESMH6R3VQT563MB25T  | 40 × 25                       | B25            | 0.027                           | 5.48                                         |
|                            | 82,000           | ESMH6R3VQT823MB30T  | 40 × 30                       | B30            | 0.02                            | 6.94                                         |
|                            | 100,000          | ESMH6R3VQT104MB35T  | 40 × 35                       | B35            | 0.017                           | 7.95                                         |
|                            | 120,000          | ESMH6R3VQT124MB40T  | 40 × 40                       | B40            | 0.014                           | 8.97                                         |
|                            | 150,000          | ESMH6R3VQT154MB50T  | 40 × 50                       | B50            | 0.012                           | 10.66                                        |
|                            | 220,000          | ESMH6R3VQT224MB63T  | 40 × 63                       | B63            | 0.009                           | 13.79                                        |
|                            | 270,000          | ESMH6R3VQT274MB80T  | 40 × 80                       | B80            | 0.008                           | 16.62                                        |
| 10 Volts<br>13 Volts Surge | 12,000           | ESMH100VSN123MP25T  | 22 × 25                       | P25            | 0.069                           | 2.39                                         |
|                            | 15,000           | ESMH100VSN153MP30T  | 22 × 30                       | P30            | 0.055                           | 2.76                                         |
|                            | 18,000           | ESMH100VSN183MP35T  | 22 × 35                       | P35            | 0.046                           | 3.12                                         |
|                            | 22,000           | ESMH100VSN223MP40T  | 22 × 40                       | P40            | 0.038                           | 3.55                                         |
|                            | 27,000           | ESMH100VSN273MP45T  | 22 × 45                       | P45            | 0.031                           | 4.04                                         |
|                            | 33,000           | ESMH100VSN333MP50T  | 22 × 50                       | P50            | 0.025                           | 4.58                                         |
|                            | 15,000           | ESMH100VSN153MQ25T  | 25.4 × 25                     | Q25            | 0.055                           | 2.77                                         |
|                            | 18,000           | ESMH100VSN183MQ25T  | 25.4 × 25                     | Q25            | 0.046                           | 3.04                                         |
|                            | 22,000           | ESMH100VSN223MQ30T  | 25.4 × 30                     | Q30            | 0.038                           | 3.48                                         |
|                            | 27,000           | ESMH100VSN273MQ35T  | 25.4 × 35                     | Q35            | 0.031                           | 3.98                                         |
|                            | 33,000           | ESMH100VSN333MQ40T  | 25.4 × 40                     | Q40            | 0.025                           | 4.54                                         |
|                            | 39,000           | ESMH100VSN393MQ45T  | 25.4 × 45                     | Q45            | 0.021                           | 5.08                                         |
|                            | 47,000           | ESMH100VSN473MQ50T  | 25.4 × 50                     | Q50            | 0.018                           | 5.73                                         |
|                            | 22,000           | ESMH100VSN223MR25T  | 30 × 25                       | R25            | 0.038                           | 3.53                                         |
|                            | 27,000           | ESMH100VSN273MR30T  | 30 × 30                       | R30            | 0.031                           | 3.73                                         |
|                            | 33,000           | ESMH100VSN333MR30T  | 30 × 30                       | R30            | 0.025                           | 4.13                                         |
|                            | 39,000           | ESMH100VSN393MR35T  | 30 × 35                       | R35            | 0.021                           | 5.05                                         |
|                            | 47,000           | ESMH100VSN473MR40T  | 30 × 40                       | R40            | 0.018                           | 5.72                                         |
|                            | 56,000           | ESMH100VSN563MR45T  | 30 × 45                       | R45            | 0.015                           | 6.44                                         |
|                            | 27,000           | ESMH100VSN273MA25T  | 35 × 25                       | A25            | 0.031                           | 3.73                                         |
|                            | 33,000           | ESMH100VSN333MA25T  | 35 × 25                       | A25            | 0.025                           | 4.13                                         |
|                            | 39,000           | ESMH100VSN393MA30T  | 35 × 30                       | A30            | 0.021                           | 4.8                                          |
|                            | 47,000           | ESMH100VSN473MA30T  | 35 × 30                       | A30            | 0.018                           | 5.27                                         |
|                            | 56,000           | ESMH100VSN563MA35T  | 35 × 35                       | A35            | 0.015                           | 6.38                                         |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (VWDC) | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|

|                            |         |                    |         |     |       |       |
|----------------------------|---------|--------------------|---------|-----|-------|-------|
| 10 Volts<br>13 Volts Surge | 68,000  | ESMH100VSN683MA40T | 35 × 40 | A40 | 0.012 | 7.27  |
|                            | 82,000  | ESMH100VSN823MA50T | 35 × 50 | A50 | 0.01  | 8.49  |
|                            | 100,000 | ESMH100VSN104MA63T | 35 × 63 | A63 | 0.01  | 8.91  |
|                            | 150,000 | ESMH100VSN154MA80T | 35 × 80 | A80 | 0.009 | 11.67 |
|                            | 47,000  | ESMH100VQT473MB25T | 40 × 25 | B25 | 0.026 | 5.02  |
|                            | 56,000  | ESMH100VQT563MB30T | 40 × 30 | B30 | 0.021 | 5.74  |
|                            | 68,000  | ESMH100VQT683MB35T | 40 × 35 | B35 | 0.018 | 6.56  |
|                            | 82,000  | ESMH100VQT823MB40T | 40 × 40 | B40 | 0.015 | 7.42  |
|                            | 120,000 | ESMH100VQT124MB50T | 40 × 50 | B50 | 0.012 | 9.54  |
|                            | 150,000 | ESMH100VQT154MB63T | 40 × 63 | B63 | 0.01  | 11.39 |
|                            | 220,000 | ESMH100VQT224MB80T | 40 × 80 | B80 | 0.008 | 15.0  |

|                            |         |                    |           |     |       |       |
|----------------------------|---------|--------------------|-----------|-----|-------|-------|
| 16 Volts<br>20 Volts Surge | 8,200   | ESMH160VSN822MP25T | 22 × 25   | P25 | 0.081 | 2.51  |
|                            | 10,000  | ESMH160VSN103MP25T | 22 × 25   | P25 | 0.066 | 2.77  |
|                            | 12,000  | ESMH160VSN123MP30T | 22 × 30   | P30 | 0.055 | 2.86  |
|                            | 15,000  | ESMH160VSN153MP35T | 22 × 35   | P35 | 0.044 | 3.29  |
|                            | 18,000  | ESMH160VSN183MP40T | 22 × 40   | P40 | 0.037 | 3.72  |
|                            | 22,000  | ESMH160VSN223MP50T | 22 × 50   | P50 | 0.03  | 4.37  |
|                            | 12,000  | ESMH160VSN123MQ25T | 25.4 × 25 | Q25 | 0.055 | 2.95  |
|                            | 15,000  | ESMH160VSN153MQ30T | 25.4 × 30 | Q30 | 0.044 | 3.46  |
|                            | 18,000  | ESMH160VSN183MQ35T | 25.4 × 35 | Q35 | 0.037 | 3.98  |
|                            | 22,000  | ESMH160VSN223MQ40T | 25.4 × 40 | Q40 | 0.03  | 4.26  |
|                            | 27,000  | ESMH160VSN273MQ45T | 25.4 × 45 | Q45 | 0.025 | 4.72  |
|                            | 33,000  | ESMH160VSN333MQ50T | 25.4 × 50 | Q50 | 0.02  | 5.33  |
|                            | 15,000  | ESMH160VSN153MR25T | 30 × 25   | R25 | 0.044 | 3.66  |
|                            | 18,000  | ESMH160VSN183MR25T | 30 × 25   | R25 | 0.037 | 4.0   |
|                            | 22,000  | ESMH160VSN223MR30T | 30 × 30   | R30 | 0.03  | 4.21  |
|                            | 27,000  | ESMH160VSN273MR35T | 30 × 35   | R35 | 0.025 | 4.82  |
|                            | 33,000  | ESMH160VSN333MR40T | 30 × 40   | R40 | 0.02  | 5.36  |
|                            | 39,000  | ESMH160VSN393MR45T | 30 × 45   | R45 | 0.017 | 6.01  |
|                            | 47,000  | ESMH160VSN473MR50T | 30 × 50   | R50 | 0.014 | 6.79  |
|                            | 22,000  | ESMH160VSN223MA25T | 35 × 25   | A25 | 0.03  | 4.15  |
|                            | 27,000  | ESMH160VSN273MA30T | 35 × 30   | A30 | 0.025 | 4.65  |
|                            | 33,000  | ESMH160VSN333MA30T | 35 × 30   | A30 | 0.02  | 5.15  |
|                            | 39,000  | ESMH160VSN393MA35T | 35 × 35   | A35 | 0.017 | 5.95  |
|                            | 47,000  | ESMH160VSN473MA40T | 35 × 40   | A40 | 0.014 | 6.76  |
|                            | 56,000  | ESMH160VSN563MA45T | 35 × 45   | A45 | 0.012 | 7.62  |
|                            | 68,000  | ESMH160VSN683MA50T | 35 × 50   | A50 | 0.01  | 8.63  |
|                            | 82,000  | ESMH160VSN823MA63T | 35 × 63   | A63 | 0.011 | 9.88  |
|                            | 100,000 | ESMH160VSN104MA80T | 35 × 80   | A80 | 0.009 | 11.67 |
|                            | 33,000  | ESMH160VQT333MB25T | 40 × 25   | B25 | 0.027 | 5.15  |
|                            | 39,000  | ESMH160VQT393MB30T | 40 × 30   | B30 | 0.022 | 5.86  |
|                            | 47,000  | ESMH160VQT473MB35T | 40 × 35   | B35 | 0.019 | 6.68  |
|                            | 68,000  | ESMH160VQT683MB40T | 40 × 40   | B40 | 0.015 | 8.27  |
|                            | 82,000  | ESMH160VQT823MB50T | 40 × 50   | B50 | 0.012 | 9.66  |
|                            | 100,000 | ESMH160VQT104MB63T | 40 × 63   | B63 | 0.01  | 11.39 |
|                            | 150,000 | ESMH160VQT154MB80T | 40 × 80   | B80 | 0.008 | 15.17 |

|                            |        |                    |           |     |       |      |
|----------------------------|--------|--------------------|-----------|-----|-------|------|
| 25 Volts<br>32 Volts Surge | 5,600  | ESMH250VSN562MP25T | 22 × 25   | P25 | 0.089 | 2.21 |
|                            | 6,800  | ESMH250VSN682MP30T | 22 × 30   | P30 | 0.073 | 2.4  |
|                            | 8,200  | ESMH250VSN822MP35T | 22 × 35   | P35 | 0.061 | 2.72 |
|                            | 10,000 | ESMH250VSN103MP40T | 22 × 40   | P40 | 0.05  | 3.09 |
|                            | 12,000 | ESMH250VSN123MP45T | 22 × 45   | P45 | 0.041 | 3.48 |
|                            | 15,000 | ESMH250VSN153MP50T | 22 × 50   | P50 | 0.033 | 4.0  |
|                            | 6,800  | ESMH250VSN682MQ25T | 25.4 × 25 | Q25 | 0.073 | 2.56 |
|                            | 8,200  | ESMH250VSN822MQ25T | 25.4 × 25 | Q25 | 0.061 | 2.8  |
|                            | 10,000 | ESMH250VSN103MQ30T | 25.4 × 30 | Q30 | 0.05  | 3.12 |
|                            | 12,000 | ESMH250VSN123MQ35T | 25.4 × 35 | Q35 | 0.041 | 3.43 |
|                            | 15,000 | ESMH250VSN153MQ40T | 25.4 × 40 | Q40 | 0.033 | 3.95 |
|                            | 18,000 | ESMH250VSN183MQ45T | 25.4 × 45 | Q45 | 0.028 | 4.45 |

†For terminal and construction options, refer to the part numbering system for descriptions and codes.

\*Refer to diagram of dimensions for detailed case size specifications.



## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC) | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|

|                                    |         |                    |         |     |       |       |
|------------------------------------|---------|--------------------|---------|-----|-------|-------|
| <b>25 Volts<br/>32 Volts Surge</b> | 10,000  | ESMH250VSN103MR25T | 30 × 25 | R25 | 0.05  | 3.21  |
|                                    | 12,000  | ESMH250VSN123MR30T | 30 × 30 | R30 | 0.041 | 3.86  |
|                                    | 15,000  | ESMH250VSN153MR30T | 30 × 30 | R30 | 0.033 | 4.0   |
|                                    | 18,000  | ESMH250VSN183MR35T | 30 × 35 | R35 | 0.028 | 4.46  |
|                                    | 22,000  | ESMH250VSN223MR45T | 30 × 45 | R45 | 0.023 | 5.21  |
|                                    | 27,000  | ESMH250VSN273MR50T | 30 × 50 | R50 | 0.018 | 5.94  |
|                                    | 12,000  | ESMH250VSN123MA25T | 35 × 25 | A25 | 0.041 | 3.54  |
|                                    | 15,000  | ESMH250VSN153MA25T | 35 × 25 | A25 | 0.033 | 3.95  |
|                                    | 18,000  | ESMH250VSN183MA30T | 35 × 30 | A30 | 0.028 | 4.63  |
|                                    | 22,000  | ESMH250VSN223MA35T | 35 × 35 | A35 | 0.023 | 5.16  |
|                                    | 27,000  | ESMH250VSN273MA40T | 35 × 40 | A40 | 0.018 | 5.92  |
|                                    | 33,000  | ESMH250VSN333MA45T | 35 × 45 | A45 | 0.015 | 6.75  |
|                                    | 39,000  | ESMH250VSN393MA50T | 35 × 50 | A50 | 0.013 | 7.56  |
|                                    | 47,000  | ESMH250VSN473MA63T | 35 × 63 | A63 | 0.012 | 8.63  |
|                                    | 68,000  | ESMH250VSN683MA80T | 35 × 80 | A80 | 0.009 | 11.11 |
|                                    | 22,000  | ESMH250VQT223MB25T | 40 × 25 | B25 | 0.027 | 4.86  |
|                                    | 27,000  | ESMH250VQT273MB30T | 40 × 30 | B30 | 0.021 | 5.63  |
|                                    | 33,000  | ESMH250VQT333MB35T | 40 × 35 | B35 | 0.018 | 6.46  |
|                                    | 39,000  | ESMH250VQT393MB40T | 40 × 40 | B40 | 0.015 | 7.24  |
|                                    | 56,000  | ESMH250VQT563MB50T | 40 × 50 | B50 | 0.012 | 9.21  |
|                                    | 68,000  | ESMH250VQT683MB63T | 40 × 63 | B63 | 0.01  | 10.84 |
|                                    | 100,000 | ESMH250VQT104MB80T | 40 × 80 | B80 | 0.008 | 14.31 |

|                                    |        |                    |           |     |       |       |
|------------------------------------|--------|--------------------|-----------|-----|-------|-------|
| <b>35 Volts<br/>44 Volts Surge</b> | 3,900  | ESMH350VSN392MP25T | 22 × 25   | P25 | 0.106 | 2.22  |
|                                    | 4,700  | ESMH350VSN472MP30T | 22 × 30   | P30 | 0.088 | 2.41  |
|                                    | 5,600  | ESMH350VSN562MP35T | 22 × 35   | P35 | 0.074 | 2.75  |
|                                    | 6,800  | ESMH350VSN682MP40T | 22 × 40   | P40 | 0.061 | 2.8   |
|                                    | 8,200  | ESMH350VSN822MP45T | 22 × 45   | P45 | 0.051 | 3.47  |
|                                    | 10,000 | ESMH350VSN103MP50T | 22 × 50   | P50 | 0.041 | 3.57  |
|                                    | 4,700  | ESMH350VSN472MQ25T | 25.4 × 25 | Q25 | 0.088 | 2.42  |
|                                    | 5,600  | ESMH350VSN562MQ25T | 25.4 × 25 | Q25 | 0.074 | 2.64  |
|                                    | 6,800  | ESMH350VSN682MQ30T | 25.4 × 30 | Q30 | 0.061 | 2.74  |
|                                    | 8,200  | ESMH350VSN822MQ35T | 25.4 × 35 | Q35 | 0.051 | 3.1   |
|                                    | 10,000 | ESMH350VSN103MQ40T | 25.4 × 40 | Q40 | 0.041 | 3.53  |
|                                    | 12,000 | ESMH350VSN123MQ45T | 25.4 × 45 | Q45 | 0.035 | 3.98  |
|                                    | 15,000 | ESMH350VSN153MQ50T | 25.4 × 50 | Q50 | 0.028 | 4.54  |
|                                    | 6,800  | ESMH350VSN682MR25T | 30 × 25   | R25 | 0.061 | 2.97  |
|                                    | 8,200  | ESMH350VSN822MR30T | 30 × 30   | R30 | 0.051 | 3.13  |
|                                    | 10,000 | ESMH350VSN103MR30T | 30 × 30   | R30 | 0.041 | 3.46  |
|                                    | 12,000 | ESMH350VSN123MR35T | 30 × 35   | R35 | 0.035 | 4.01  |
|                                    | 15,000 | ESMH350VSN153MR40T | 30 × 40   | R40 | 0.028 | 4.52  |
|                                    | 18,000 | ESMH350VSN183MR45T | 30 × 45   | R45 | 0.023 | 4.71  |
|                                    | 22,000 | ESMH350VSN223MR50T | 30 × 50   | R50 | 0.019 | 5.33  |
|                                    | 8,200  | ESMH350VSN822MA25T | 35 × 25   | A25 | 0.051 | 2.73  |
|                                    | 10,000 | ESMH350VSN103MA25T | 35 × 25   | A25 | 0.041 | 3.02  |
|                                    | 12,000 | ESMH350VSN123MA30T | 35 × 30   | A30 | 0.035 | 4.42  |
|                                    | 15,000 | ESMH350VSN153MA35T | 35 × 35   | A35 | 0.028 | 5.01  |
|                                    | 18,000 | ESMH350VSN183MA40T | 35 × 40   | A40 | 0.023 | 5.54  |
|                                    | 22,000 | ESMH350VSN223MA45T | 35 × 45   | A45 | 0.019 | 6.04  |
|                                    | 27,000 | ESMH350VSN273MA50T | 35 × 50   | A50 | 0.015 | 6.89  |
|                                    | 33,000 | ESMH350VSN333MA63T | 35 × 63   | A63 | 0.012 | 7.93  |
|                                    | 47,000 | ESMH350VSN473MA80T | 35 × 80   | A80 | 0.01  | 10.12 |
|                                    | 15,000 | ESMH350VQT153MB25T | 40 × 25   | B25 | 0.028 | 4.39  |
|                                    | 18,000 | ESMH350VQT183MB30T | 40 × 30   | B30 | 0.023 | 5.04  |
|                                    | 22,000 | ESMH350VQT223MB35T | 40 × 35   | B35 | 0.019 | 5.78  |
|                                    | 27,000 | ESMH350VQT273MB40T | 40 × 40   | B40 | 0.016 | 6.59  |
|                                    | 39,000 | ESMH350VQT393MB50T | 40 × 50   | B50 | 0.012 | 8.42  |
|                                    | 47,000 | ESMH350VQT473MB63T | 40 × 63   | B63 | 0.01  | 9.88  |
|                                    | 68,000 | ESMH350VQT683MB80T | 40 × 80   | B80 | 0.008 | 12.92 |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC)       | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| 50 Volts<br>63 Volts Surge | 2,200            | ESMH500VSN222MP25T  | 22 × 25                       | P25            | 0.151                           | 1.91                                         |
|                            | 3,300            | ESMH500VSN332MP30T  | 22 × 30                       | P30            | 0.10                            | 2.37                                         |
|                            | 3,900            | ESMH500VSN392MP35T  | 22 × 35                       | P35            | 0.085                           | 2.65                                         |
|                            | 4,700            | ESMH500VSN472MP40T  | 22 × 40                       | P40            | 0.071                           | 2.99                                         |
|                            | 5,600            | ESMH500VSN562MP45T  | 22 × 45                       | P45            | 0.059                           | 3.36                                         |
|                            | 6,800            | ESMH500VSN682MP50T  | 22 × 50                       | P50            | 0.049                           | 3.81                                         |
|                            | 3,300            | ESMH500VSN332MQ25T  | 25.4 × 25                     | Q25            | 0.10                            | 2.38                                         |
|                            | 3,900            | ESMH500VSN392MQ30T  | 25.4 × 30                     | Q30            | 0.085                           | 2.68                                         |
|                            | 4,700            | ESMH500VSN472MQ35T  | 25.4 × 35                     | Q35            | 0.071                           | 3.03                                         |
|                            | 5,600            | ESMH500VSN562MQ35T  | 25.4 × 35                     | Q35            | 0.059                           | 3.31                                         |
|                            | 6,800            | ESMH500VSN682MQ40T  | 25.4 × 40                     | Q40            | 0.049                           | 3.81                                         |
|                            | 8,200            | ESMH500VSN822MQ50T  | 25.4 × 50                     | Q50            | 0.04                            | 4.37                                         |
|                            | 3,900            | ESMH500VSN392MR25T  | 30 × 25                       | R25            | 0.085                           | 2.55                                         |
|                            | 4,700            | ESMH500VSN472MR25T  | 30 × 25                       | R25            | 0.071                           | 2.81                                         |
|                            | 5,600            | ESMH500VSN562MR30T  | 30 × 30                       | R30            | 0.059                           | 3.37                                         |
|                            | 6,800            | ESMH500VSN682MR35T  | 30 × 35                       | R35            | 0.049                           | 3.85                                         |
|                            | 8,200            | ESMH500VSN822MR40T  | 30 × 40                       | R40            | 0.04                            | 4.36                                         |
|                            | 10,000           | ESMH500VSN103MR45T  | 30 × 45                       | R45            | 0.033                           | 4.97                                         |
|                            | 12,000           | ESMH500VSN123MR50T  | 30 × 50                       | R50            | 0.028                           | 5.6                                          |
|                            | 5,600            | ESMH500VSN562MA25T  | 35 × 25                       | A25            | 0.059                           | 3.42                                         |
|                            | 6,800            | ESMH500VSN682MA30T  | 35 × 30                       | A30            | 0.049                           | 3.85                                         |
|                            | 8,200            | ESMH500VSN822MA30T  | 35 × 30                       | A30            | 0.04                            | 4.41                                         |
|                            | 10,000           | ESMH500VSN103MA35T  | 35 × 35                       | A35            | 0.033                           | 4.92                                         |
|                            | 12,000           | ESMH500VSN123MA40T  | 35 × 40                       | A40            | 0.028                           | 5.58                                         |
|                            | 15,000           | ESMH500VSN153MA45T  | 35 × 45                       | A45            | 0.022                           | 6.44                                         |
|                            | 18,000           | ESMH500VSN183MA50T  | 35 × 50                       | A50            | 0.018                           | 6.71                                         |
|                            | 22,000           | ESMH500VSN223MA63T  | 35 × 63                       | A63            | 0.013                           | 7.23                                         |
|                            | 27,000           | ESMH500VSN273MA80T  | 35 × 80                       | A80            | 0.011                           | 8.57                                         |
|                            | 8,200            | ESMH500VQT822MB25T  | 40 × 25                       | B25            | 0.033                           | 3.63                                         |
|                            | 12,000           | ESMH500VQT123MB30T  | 40 × 30                       | B30            | 0.024                           | 4.6                                          |
|                            | 15,000           | ESMH500VQT153MB35T  | 40 × 35                       | B35            | 0.02                            | 5.33                                         |
|                            | 18,000           | ESMH500VQT183MB40T  | 40 × 40                       | B40            | 0.017                           | 6.02                                         |
|                            | 22,000           | ESMH500VQT223MB50T  | 40 × 50                       | B50            | 0.014                           | 7.07                                         |
|                            | 33,000           | ESMH500VQT333MB63T  | 40 × 63                       | B63            | 0.011                           | 9.25                                         |
|                            | 39,000           | ESMH500VQT393MB80T  | 40 × 80                       | B80            | 0.009                           | 10.94                                        |
| 63 Volts<br>79 Volts Surge | 1,800            | ESMH630VSN182MP25T  | 22 × 25                       | P25            | 0.138                           | 1.82                                         |
|                            | 2,200            | ESMH630VSN222MP30T  | 22 × 30                       | P30            | 0.113                           | 2.31                                         |
|                            | 2,700            | ESMH630VSN272MP35T  | 22 × 35                       | P35            | 0.092                           | 2.4                                          |
|                            | 3,300            | ESMH630VSN332MP35T  | 22 × 35                       | P35            | 0.075                           | 2.62                                         |
|                            | 3,900            | ESMH630VSN392MP40T  | 22 × 40                       | P40            | 0.064                           | 2.93                                         |
|                            | 4,700            | ESMH630VSN472MP50T  | 22 × 50                       | P50            | 0.053                           | 3.39                                         |
|                            | 2,200            | ESMH630VSN222MQ25T  | 25.4 × 25                     | Q25            | 0.113                           | 2.3                                          |
|                            | 2,700            | ESMH630VSN272MQ25T  | 25.4 × 25                     | Q25            | 0.092                           | 2.4                                          |
|                            | 3,300            | ESMH630VSN332MQ30T  | 25.4 × 30                     | Q30            | 0.075                           | 2.64                                         |
|                            | 3,900            | ESMH630VSN392MQ35T  | 25.4 × 35                     | Q35            | 0.064                           | 2.97                                         |
|                            | 4,700            | ESMH630VSN472MQ40T  | 25.4 × 40                     | Q40            | 0.053                           | 3.36                                         |
|                            | 5,600            | ESMH630VSN562MQ45T  | 25.4 × 45                     | Q45            | 0.044                           | 3.77                                         |
|                            | 6,800            | ESMH630VSN682MQ50T  | 25.4 × 50                     | Q50            | 0.037                           | 4.27                                         |
|                            | 3,300            | ESMH630VSN332MR25T  | 30 × 25                       | R25            | 0.075                           | 2.78                                         |
|                            | 3,900            | ESMH630VSN392MR30T  | 30 × 30                       | R30            | 0.064                           | 3.0                                          |
|                            | 4,700            | ESMH630VSN472MR30T  | 30 × 30                       | R30            | 0.053                           | 3.32                                         |
|                            | 5,600            | ESMH630VSN562MR35T  | 30 × 35                       | R35            | 0.044                           | 3.75                                         |
|                            | 6,800            | ESMH630VSN682MR40T  | 30 × 40                       | R40            | 0.037                           | 4.27                                         |
|                            | 8,200            | ESMH630VSN822MR45T  | 30 × 45                       | R45            | 0.03                            | 4.83                                         |
|                            | 10,000           | ESMH630VSN103MR50T  | 30 × 50                       | R50            | 0.025                           | 5.49                                         |
|                            | 3,900            | ESMH630VSN392MA25T  | 35 × 25                       | A25            | 0.064                           | 3.0                                          |
|                            | 4,700            | ESMH630VSN472MA25T  | 35 × 25                       | A25            | 0.053                           | 3.36                                         |
|                            | 5,600            | ESMH630VSN562MA30T  | 35 × 30                       | A30            | 0.044                           | 3.76                                         |
|                            | 6,800            | ESMH630VSN682MA30T  | 35 × 30                       | A30            | 0.037                           | 4.15                                         |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.



## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC)                | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|-------------------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| <b>63 Volts</b><br>79 Volts Surge   | 8,200            | ESMH630VSN822MA35T  | 35 × 35                       | A35            | 0.03                            | 4.79                                         |
|                                     | 10,000           | ESMH630VSN103MA40T  | 35 × 40                       | A40            | 0.025                           | 5.47                                         |
|                                     | 12,000           | ESMH630VSN123MA45T  | 35 × 45                       | A45            | 0.021                           | 6.19                                         |
|                                     | 15,000           | ESMH630VSN153MA63T  | 35 × 63                       | A63            | 0.015                           | 6.9                                          |
|                                     | 22,000           | ESMH630VSN223MA80T  | 35 × 80                       | A80            | 0.011                           | 8.94                                         |
|                                     | 6,800            | ESMH630VQT682MB25T  | 40 × 25                       | B25            | 0.036                           | 3.82                                         |
|                                     | 8,200            | ESMH630VQT822MB30T  | 40 × 30                       | B30            | 0.029                           | 4.39                                         |
|                                     | 10,000           | ESMH630VQT103MB35T  | 40 × 35                       | B35            | 0.024                           | 5.03                                         |
|                                     | 12,000           | ESMH630VQT123MB40T  | 40 × 40                       | B40            | 0.02                            | 5.68                                         |
|                                     | 18,000           | ESMH630VQT183MB50T  | 40 × 50                       | B50            | 0.015                           | 7.39                                         |
| <b>80 Volts</b><br>100 Volts Surge  | 22,000           | ESMH630VQT223MB63T  | 40 × 63                       | B63            | 0.013                           | 8.72                                         |
|                                     | 33,000           | ESMH630VQT333MB80T  | 40 × 80                       | B80            | 0.01                            | 11.62                                        |
| <b>80 Volts</b><br>100 Volts Surge  | 1,200            | ESMH800VSN122MP25T  | 22 × 25                       | P25            | 0.207                           | 1.69                                         |
|                                     | 1,500            | ESMH800VSN182MP25T  | 22 × 25                       | P25            | 0.138                           | 1.88                                         |
|                                     | 1,800            | ESMH800VSN182MP30T  | 22 × 30                       | P30            | 0.138                           | 2.14                                         |
|                                     | 2,200            | ESMH800VSN222MP35T  | 22 × 35                       | P35            | 0.113                           | 2.44                                         |
|                                     | 2,700            | ESMH800VSN272MP40T  | 22 × 40                       | P40            | 0.092                           | 2.78                                         |
|                                     | 3,300            | ESMH800VSN332MP45T  | 22 × 45                       | P45            | 0.075                           | 3.16                                         |
|                                     | 3,900            | ESMH800VSN392MP50T  | 22 × 50                       | P50            | 0.064                           | 3.52                                         |
|                                     | 1,800            | ESMH800VSN182MQ25T  | 25.4 × 25                     | Q25            | 0.138                           | 2.26                                         |
|                                     | 2,200            | ESMH800VSN222MQ30T  | 25.4 × 30                     | Q30            | 0.113                           | 2.46                                         |
|                                     | 2,700            | ESMH800VSN272MQ35T  | 25.4 × 35                     | Q35            | 0.092                           | 2.81                                         |
|                                     | 3,300            | ESMH800VSN332MQ40T  | 25.4 × 40                     | Q40            | 0.075                           | 3.21                                         |
|                                     | 3,900            | ESMH800VSN392MQ45T  | 25.4 × 45                     | Q45            | 0.064                           | 3.59                                         |
|                                     | 4,700            | ESMH800VSN472MQ50T  | 25.4 × 50                     | Q50            | 0.053                           | 4.05                                         |
|                                     | 2,200            | ESMH800VSN222MR25T  | 30 × 25                       | R25            | 0.113                           | 2.49                                         |
|                                     | 2,700            | ESMH800VSN272MR25T  | 30 × 25                       | R25            | 0.092                           | 2.75                                         |
|                                     | 3,300            | ESMH800VSN332MR30T  | 30 × 30                       | R30            | 0.075                           | 3.17                                         |
|                                     | 3,900            | ESMH800VSN392MR35T  | 30 × 35                       | R35            | 0.064                           | 3.57                                         |
|                                     | 4,700            | ESMH800VSN472MR40T  | 30 × 40                       | R40            | 0.053                           | 4.05                                         |
|                                     | 5,600            | ESMH800VSN562MR45T  | 30 × 45                       | R45            | 0.044                           | 4.55                                         |
|                                     | 6,800            | ESMH800VSN682MR50T  | 30 × 50                       | R50            | 0.037                           | 5.16                                         |
|                                     | 3,300            | ESMH800VSN332MA25T  | 35 × 25                       | A25            | 0.075                           | 3.21                                         |
|                                     | 3,900            | ESMH800VSN392MA25T  | 35 × 25                       | A25            | 0.064                           | 3.5                                          |
|                                     | 4,700            | ESMH800VSN472MA30T  | 35 × 30                       | A30            | 0.053                           | 4.09                                         |
|                                     | 5,600            | ESMH800VSN562MA35T  | 35 × 35                       | A35            | 0.044                           | 4.51                                         |
|                                     | 6,800            | ESMH800VSN682MA40T  | 35 × 40                       | A40            | 0.037                           | 5.14                                         |
|                                     | 8,200            | ESMH800VSN822MA45T  | 35 × 45                       | A45            | 0.03                            | 5.83                                         |
|                                     | 10,000           | ESMH800VSN103MA50T  | 35 × 50                       | A50            | 0.025                           | 6.63                                         |
|                                     | 12,000           | ESMH800VSN123MA63T  | 35 × 63                       | A63            | 0.021                           | 6.9                                          |
|                                     | 15,000           | ESMH800VSN153MA80T  | 35 × 80                       | A80            | 0.017                           | 9.04                                         |
|                                     | 4,700            | ESMH800VQT472MB25T  | 40 × 25                       | B25            | 0.053                           | 3.89                                         |
|                                     | 5,600            | ESMH800VQT562MB30T  | 40 × 30                       | B30            | 0.044                           | 4.44                                         |
|                                     | 6,800            | ESMH800VQT682MB35T  | 40 × 35                       | B35            | 0.037                           | 5.08                                         |
|                                     | 8,200            | ESMH800VQT822MB40T  | 40 × 40                       | B40            | 0.03                            | 5.75                                         |
|                                     | 12,000           | ESMH800VQT123MB50T  | 40 × 50                       | B50            | 0.021                           | 7.39                                         |
|                                     | 15,000           | ESMH800VQT153MB63T  | 40 × 63                       | B63            | 0.017                           | 8.82                                         |
|                                     | 22,000           | ESMH800VQT223MB80T  | 40 × 80                       | B80            | 0.011                           | 11.62                                        |
| <b>100 Volts</b><br>125 Volts Surge | 820              | ESMH101VSN821MP25T  | 22 × 25                       | P25            | 0.303                           | 1.86                                         |
|                                     | 1,200            | ESMH101VSN122MP30T  | 22 × 30                       | P30            | 0.207                           | 2.09                                         |
|                                     | 1,500            | ESMH101VSN152MP35T  | 22 × 35                       | P35            | 0.166                           | 2.41                                         |
|                                     | 1,800            | ESMH101VSN182MP40T  | 22 × 40                       | P40            | 0.138                           | 2.71                                         |
|                                     | 2,200            | ESMH101VSN222MP45T  | 22 × 45                       | P45            | 0.113                           | 3.08                                         |
|                                     | 2,700            | ESMH101VSN272MP50T  | 22 × 50                       | P50            | 0.092                           | 3.53                                         |
|                                     | 1,200            | ESMH101VSN122MQ25T  | 25.4 × 25                     | Q25            | 0.207                           | 2.1                                          |
|                                     | 1,500            | ESMH101VSN152MQ30T  | 25.4 × 30                     | Q30            | 0.166                           | 2.43                                         |
|                                     | 1,800            | ESMH101VSN182MQ35T  | 25.4 × 35                     | Q35            | 0.138                           | 2.75                                         |
|                                     | 2,200            | ESMH101VSN222MQ40T  | 25.4 × 40                     | Q40            | 0.113                           | 3.13                                         |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (VWDC)                 | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|--------------------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| <b>100 Volts<br/>125 Volts Surge</b> | 2,700            | ESMH101VSN272MQ45T  | 25.4 × 45                     | Q45            | 0.092                           | 3.57                                         |
|                                      | 3,300            | ESMH101VSN332MQ50T  | 25.4 × 50                     | Q50            | 0.075                           | 4.06                                         |
|                                      | 1,500            | ESMH101VSN152MR25T  | 30 × 25                       | R25            | 0.166                           | 2.46                                         |
|                                      | 1,800            | ESMH101VSN182MR25T  | 30 × 25                       | R25            | 0.138                           | 2.72                                         |
|                                      | 2,200            | ESMH101VSN222MR30T  | 30 × 30                       | R30            | 0.113                           | 3.09                                         |
|                                      | 2,700            | ESMH101VSN272MR35T  | 30 × 35                       | R35            | 0.092                           | 3.55                                         |
|                                      | 3,300            | ESMH101VSN332MR40T  | 30 × 40                       | R40            | 0.075                           | 4.05                                         |
|                                      | 3,900            | ESMH101VSN392MR45T  | 30 × 45                       | R45            | 0.064                           | 4.54                                         |
|                                      | 4,700            | ESMH101VSN472MR50T  | 30 × 50                       | R50            | 0.053                           | 5.13                                         |
|                                      | 2,200            | ESMH101VSN222MA25T  | 35 × 25                       | A25            | 0.113                           | 3.14                                         |
|                                      | 2,700            | ESMH101VSN272MA30T  | 35 × 30                       | A30            | 0.092                           | 3.71                                         |
|                                      | 3,300            | ESMH101VSN332MA30T  | 35 × 30                       | A30            | 0.075                           | 4.05                                         |
|                                      | 3,900            | ESMH101VSN392MA35T  | 35 × 35                       | A35            | 0.064                           | 4.49                                         |
|                                      | 4,700            | ESMH101VSN472MA40T  | 35 × 40                       | A40            | 0.053                           | 5.11                                         |
|                                      | 5,600            | ESMH101VSN562MA45T  | 35 × 45                       | A45            | 0.044                           | 5.75                                         |
|                                      | 6,800            | ESMH101VSN682MA50T  | 35 × 50                       | A50            | 0.037                           | 6.50                                         |
|                                      | 8,200            | ESMH101VSN822MA80T  | 35 × 80                       | A80            | 0.03                            | 7.47                                         |
|                                      | 2,700            | ESMH101VQT272MB25T  | 40 × 25                       | B25            | 0.092                           | 3.29                                         |
|                                      | 3,300            | ESMH101VQT332MB30T  | 40 × 30                       | B30            | 0.075                           | 3.81                                         |
|                                      | 3,900            | ESMH101VQT392MB35T  | 40 × 35                       | B35            | 0.064                           | 4.3                                          |
|                                      | 4,700            | ESMH101VQT472MB40T  | 40 × 40                       | B40            | 0.053                           | 4.86                                         |
|                                      | 6,800            | ESMH101VQT682MB50T  | 40 × 50                       | B50            | 0.037                           | 6.22                                         |
|                                      | 8,200            | ESMH101VQT822MB63T  | 40 × 63                       | B63            | 0.03                            | 7.29                                         |
|                                      | 12,000           | ESMH101VQT123MB80T  | 40 × 80                       | B80            | 0.021                           | 9.6                                          |
| <b>160 Volts<br/>200 Volts Surge</b> | 270              | ESMH161VSN271MP20T  | 22 × 20                       | P20            | 0.614                           | 1.18                                         |
|                                      | 330              | ESMH161VSN331MP25T  | 22 × 25                       | P25            | 0.502                           | 1.4                                          |
|                                      | 470              | ESMH161VSN471MP30T  | 22 × 30                       | P30            | 0.353                           | 1.73                                         |
|                                      | 560              | ESMH161VSN561MP35T  | 22 × 35                       | P35            | 0.296                           | 1.95                                         |
|                                      | 680              | ESMH161VSN681MP40T  | 22 × 40                       | P40            | 0.244                           | 2.21                                         |
|                                      | 820              | ESMH161VSN821MP45T  | 22 × 45                       | P45            | 0.202                           | 2.49                                         |
|                                      | 1,000            | ESMH161VSN102MP50T  | 22 × 50                       | P50            | 0.166                           | 2.82                                         |
|                                      | 330              | ESMH161VSN331MQ20T  | 25.4 × 20                     | Q20            | 0.502                           | 1.35                                         |
|                                      | 470              | ESMH161VSN471MQ25T  | 25.4 × 25                     | Q25            | 0.353                           | 1.74                                         |
|                                      | 560              | ESMH161VSN561MQ25T  | 25.4 × 25                     | Q25            | 0.296                           | 1.95                                         |
|                                      | 680              | ESMH161VSN681MQ30T  | 25.4 × 30                     | Q30            | 0.244                           | 2.16                                         |
|                                      | 820              | ESMH161VSN821MQ35T  | 25.4 × 35                     | Q35            | 0.202                           | 2.45                                         |
|                                      | 1,000            | ESMH161VSN102MQ40T  | 25.4 × 40                     | Q40            | 0.166                           | 2.79                                         |
|                                      | 1,200            | ESMH161VSN122MQ45T  | 25.4 × 45                     | Q45            | 0.138                           | 3.15                                         |
|                                      | 1,500            | ESMH161VSN152MQ50T  | 25.4 × 50                     | Q50            | 0.111                           | 3.72                                         |
|                                      | 470              | ESMH161VSN471MR20T  | 30 × 20                       | R20            | 0.353                           | 1.7                                          |
|                                      | 680              | ESMH161VSN681MR25T  | 30 × 25                       | R25            | 0.244                           | 2.19                                         |
|                                      | 820              | ESMH161VSN821MR30T  | 30 × 30                       | R30            | 0.202                           | 2.5                                          |
|                                      | 1,000            | ESMH161VSN102MR30T  | 30 × 30                       | R30            | 0.166                           | 2.8                                          |
|                                      | 1,200            | ESMH161VSN122MR35T  | 30 × 35                       | R35            | 0.138                           | 3.13                                         |
|                                      | 1,500            | ESMH161VSN152MR45T  | 30 × 45                       | R45            | 0.111                           | 3.73                                         |
|                                      | 1,800            | ESMH161VSN182MR50T  | 30 × 50                       | R50            | 0.092                           | 4.2                                          |
|                                      | 680              | ESMH161VSN681MA20T  | 35 × 20                       | A20            | 0.366                           | 2.14                                         |
|                                      | 820              | ESMH161VSN821MA25T  | 35 × 25                       | A25            | 0.303                           | 2.5                                          |
|                                      | 1,000            | ESMH161VSN102MA25T  | 35 × 25                       | A25            | 0.249                           | 2.8                                          |
|                                      | 1,200            | ESMH161VSN122MA30T  | 35 × 30                       | A30            | 0.207                           | 3.27                                         |
|                                      | 1,500            | ESMH161VSN152MA35T  | 35 × 35                       | A35            | 0.166                           | 3.69                                         |
|                                      | 1,800            | ESMH161VSN182MA40T  | 35 × 40                       | A40            | 0.138                           | 4.18                                         |
|                                      | 2,200            | ESMH161VSN222MA45T  | 35 × 45                       | A45            | 0.113                           | 4.78                                         |
|                                      | 2,700            | ESMH161VSN272MA50T  | 35 × 50                       | A50            | 0.092                           | 5.45                                         |
|                                      | 3,300            | ESMH161VSN332MA63T  | 35 × 63                       | A63            | 0.075                           | 5.6                                          |
|                                      | 4,700            | ESMH161VSN472MA80T  | 35 × 80                       | A80            | 0.053                           | 7.15                                         |
|                                      | 1,500            | ESMH161VQT152MB25T  | 40 × 25                       | B25            | 0.166                           | 3.11                                         |
|                                      | 1,800            | ESMH161VQT182MB30T  | 40 × 30                       | B30            | 0.138                           | 3.56                                         |

†For terminal and construction options, refer to the part numbering system for descriptions and codes.

\*Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC) | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|

|                                            |       |                    |         |     |       |      |
|--------------------------------------------|-------|--------------------|---------|-----|-------|------|
| <b>160 Volts</b><br><b>200 Volts Surge</b> | 2,200 | ESMH161VQT222MB35T | 40 × 35 | B35 | 0.113 | 4.09 |
|                                            | 2,700 | ESMH161VQT272MB40T | 40 × 40 | B40 | 0.092 | 4.66 |
|                                            | 3,900 | ESMH161VQT392MB50T | 40 × 50 | B50 | 0.064 | 5.96 |
|                                            | 4,700 | ESMH161VQT472MB63T | 40 × 63 | B63 | 0.053 | 6.98 |
|                                            | 6,800 | ESMH161VQT682MB80T | 40 × 80 | B80 | 0.037 | 9.14 |

|                                            |       |                    |           |     |       |      |
|--------------------------------------------|-------|--------------------|-----------|-----|-------|------|
| <b>180 Volts</b><br><b>225 Volts Surge</b> | 220   | ESMH181VSN221MP20T | 22 × 20   | P20 | 0.753 | 1.06 |
|                                            | 270   | ESMH181VSN221MP25T | 22 × 25   | P25 | 0.614 | 1.27 |
|                                            | 390   | ESMH181VSN221MP30T | 22 × 30   | P30 | 0.425 | 1.58 |
|                                            | 470   | ESMH181VSN221MP35T | 22 × 35   | P35 | 0.353 | 1.79 |
|                                            | 560   | ESMH181VSN221MP40T | 22 × 40   | P40 | 0.296 | 2.0  |
|                                            | 680   | ESMH181VSN221MP45T | 22 × 45   | P45 | 0.244 | 2.27 |
|                                            | 820   | ESMH181VSN221MP50T | 22 × 50   | P50 | 0.202 | 2.55 |
|                                            | 270   | ESMH181VSN271MQ20T | 25.4 × 20 | Q20 | 0.614 | 1.22 |
|                                            | 390   | ESMH181VSN391MQ25T | 25.4 × 25 | Q25 | 0.425 | 1.58 |
|                                            | 560   | ESMH181VSN561MQ30T | 25.4 × 30 | Q30 | 0.296 | 1.96 |
|                                            | 680   | ESMH181VSN681MQ35T | 25.4 × 35 | Q35 | 0.244 | 2.23 |
|                                            | 820   | ESMH181VSN821MQ40T | 25.4 × 40 | Q40 | 0.202 | 2.53 |
|                                            | 1,000 | ESMH181VSN102MQ45T | 25.4 × 45 | Q45 | 0.166 | 2.87 |
|                                            | 390   | ESMH181VSN391MR20T | 30 × 20   | R20 | 0.425 | 1.55 |
|                                            | 560   | ESMH181VSN561MR25T | 30 × 25   | R25 | 0.296 | 1.99 |
|                                            | 820   | ESMH181VSN821MR30T | 30 × 30   | R30 | 0.202 | 2.7  |
|                                            | 1,000 | ESMH181VSN102MR35T | 30 × 35   | R35 | 0.166 | 2.86 |
|                                            | 1,200 | ESMH181VSN122MR40T | 30 × 40   | R40 | 0.138 | 3.23 |
|                                            | 1,500 | ESMH181VSN152MR50T | 30 × 50   | R50 | 0.111 | 3.83 |
|                                            | 560   | ESMH181VSN561MA20T | 35 × 20   | A20 | 0.444 | 1.94 |
|                                            | 820   | ESMH181VSN821MA25T | 35 × 25   | A25 | 0.303 | 2.53 |
|                                            | 1,000 | ESMH181VSN102MA30T | 35 × 30   | A30 | 0.249 | 2.99 |
|                                            | 1,200 | ESMH181VSN122MA35T | 35 × 35   | A35 | 0.207 | 3.31 |
|                                            | 1,500 | ESMH181VSN152MA40T | 35 × 40   | A40 | 0.166 | 3.82 |
|                                            | 1,800 | ESMH181VSN182MA45T | 35 × 45   | A45 | 0.138 | 4.32 |
|                                            | 2,200 | ESMH181VSN222MA50T | 35 × 50   | A50 | 0.113 | 4.92 |
|                                            | 2,700 | ESMH181VSN272MA63T | 35 × 63   | A63 | 0.092 | 5.67 |
|                                            | 3,900 | ESMH181VSN392MA80T | 35 × 80   | A80 | 0.064 | 7.29 |
|                                            | 1,200 | ESMH181VQT122MB25T | 40 × 25   | B25 | 0.207 | 3.11 |
|                                            | 1,500 | ESMH181VQT152MB30T | 40 × 30   | B30 | 0.166 | 3.64 |
|                                            | 1,800 | ESMH181VQT182MB35T | 40 × 35   | B35 | 0.138 | 4.13 |
|                                            | 2,200 | ESMH181VQT222MB40T | 40 × 40   | B40 | 0.113 | 4.71 |
|                                            | 3,300 | ESMH181VQT332MB50T | 40 × 50   | B50 | 0.075 | 6.13 |
|                                            | 3,900 | ESMH181VQT392MB63T | 40 × 63   | B63 | 0.064 | 7.11 |
|                                            | 5,600 | ESMH181VQT562MB80T | 40 × 80   | B80 | 0.044 | 9.27 |

|                                            |       |                    |           |     |       |      |
|--------------------------------------------|-------|--------------------|-----------|-----|-------|------|
| <b>200 Volts</b><br><b>250 Volts Surge</b> | 180   | ESMH201VSN181MP20T | 22 × 20   | P20 | 0.921 | 0.96 |
|                                            | 270   | ESMH201VSN271MP25T | 22 × 25   | P25 | 0.614 | 1.27 |
|                                            | 330   | ESMH201VSN331MP30T | 22 × 30   | P30 | 0.502 | 1.45 |
|                                            | 390   | ESMH201VSN391MP30T | 22 × 30   | P30 | 0.425 | 1.58 |
|                                            | 470   | ESMH201VSN471MP35T | 22 × 35   | P35 | 0.353 | 1.78 |
|                                            | 560   | ESMH201VSN561MP40T | 22 × 40   | P40 | 0.296 | 2.0  |
|                                            | 680   | ESMH201VSN681MP50T | 22 × 50   | P50 | 0.244 | 2.33 |
|                                            | 270   | ESMH201VSN271MQ20T | 25.4 × 20 | Q20 | 0.614 | 1.22 |
|                                            | 330   | ESMH201VSN331MQ25T | 25.4 × 25 | Q25 | 0.502 | 1.45 |
|                                            | 390   | ESMH201VSN391MQ25T | 25.4 × 25 | Q25 | 0.425 | 1.58 |
|                                            | 470   | ESMH201VSN471MQ30T | 25.4 × 30 | Q30 | 0.353 | 1.8  |
|                                            | 560   | ESMH201VSN561MQ35T | 25.4 × 35 | Q35 | 0.296 | 2.03 |
|                                            | 680   | ESMH201VSN681MQ40T | 25.4 × 40 | Q40 | 0.244 | 2.3  |
|                                            | 820   | ESMH201VSN821MQ45T | 25.4 × 45 | Q45 | 0.202 | 2.6  |
|                                            | 1,000 | ESMH201VSN102MQ50T | 25.4 × 50 | Q50 | 0.166 | 2.95 |
|                                            | 390   | ESMH201VSN391MR20T | 30 × 20   | R20 | 0.425 | 1.55 |
|                                            | 470   | ESMH201VSN471MR25T | 30 × 25   | R25 | 0.353 | 1.8  |
|                                            | 560   | ESMH201VSN561MR25T | 30 × 25   | R25 | 0.296 | 2.0  |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (VWDC)                 | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|--------------------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| <b>200 Volts<br/>250 Volts Surge</b> | 680              | ESMH201VSN681MR30T  | 30 × 30                       | R30            | 0.244                           | 2.28                                         |
|                                      | 820              | ESMH201VSN821MR35T  | 30 × 35                       | R35            | 0.202                           | 2.59                                         |
|                                      | 1,000            | ESMH201VSN102MR40T  | 30 × 40                       | R40            | 0.166                           | 2.95                                         |
|                                      | 1,200            | ESMH201VSN122MR45T  | 30 × 45                       | R45            | 0.138                           | 3.31                                         |
|                                      | 1,500            | ESMH201VSN152MR50T  | 30 × 50                       | R50            | 0.111                           | 3.82                                         |
|                                      | 560              | ESMH201VSN561MA20T  | 35 × 20                       | A20            | 0.444                           | 1.94                                         |
|                                      | 680              | ESMH201VSN681MA25T  | 35 × 25                       | A25            | 0.366                           | 2.31                                         |
|                                      | 820              | ESMH201VSN821MA25T  | 35 × 25                       | A25            | 0.303                           | 2.6                                          |
|                                      | 1,000            | ESMH201VSN102MA30T  | 35 × 30                       | A30            | 0.249                           | 2.95                                         |
|                                      | 1,200            | ESMH201VSN122MA35T  | 35 × 35                       | A35            | 0.207                           | 3.31                                         |
|                                      | 1,500            | ESMH201VSN152MA40T  | 35 × 40                       | A40            | 0.166                           | 3.82                                         |
|                                      | 1,800            | ESMH201VSN182MA45T  | 35 × 45                       | A45            | 0.138                           | 4.32                                         |
|                                      | 2,200            | ESMH201VSN222MA50T  | 35 × 50                       | A50            | 0.113                           | 4.92                                         |
|                                      | 2,700            | ESMH201VSN272MA63T  | 35 × 63                       | A63            | 0.092                           | 5.67                                         |
|                                      | 3,300            | ESMH201VSN332MA80T  | 35 × 80                       | A80            | 0.075                           | 6.7                                          |
|                                      | 1,000            | ESMH201VQT102MB25T  | 40 × 25                       | B25            | 0.249                           | 2.84                                         |
|                                      | 1,500            | ESMH201VQT152MB30T  | 40 × 30                       | B30            | 0.166                           | 3.64                                         |
|                                      | 1,800            | ESMH201VQT182MB35T  | 40 × 35                       | B35            | 0.138                           | 4.13                                         |
|                                      | 2,200            | ESMH201VQT222MB40T  | 40 × 40                       | B40            | 0.113                           | 4.71                                         |
|                                      | 2,700            | ESMH201VQT272MB50T  | 40 × 50                       | B50            | 0.092                           | 5.54                                         |
|                                      | 3,900            | ESMH201VQT392MB63T  | 40 × 63                       | B63            | 0.064                           | 7.11                                         |
|                                      | 4,700            | ESMH201VQT472MB80T  | 40 × 80                       | B80            | 0.053                           | 8.49                                         |

|                                      |       |                    |           |     |       |      |
|--------------------------------------|-------|--------------------|-----------|-----|-------|------|
| <b>250 Volts<br/>300 Volts Surge</b> | 120   | ESMH251VSN121MP20T | 22 × 20   | P20 | 1.381 | 0.78 |
|                                      | 180   | ESMH251VSN181MP25T | 22 × 25   | P25 | 0.921 | 1.04 |
|                                      | 220   | ESMH251VSN221MP25T | 22 × 25   | P25 | 0.753 | 1.15 |
|                                      | 270   | ESMH251VSN271MP30T | 22 × 30   | P30 | 0.614 | 1.31 |
|                                      | 330   | ESMH251VSN331MP35T | 22 × 35   | P35 | 0.502 | 1.49 |
|                                      | 390   | ESMH251VSN391MP40T | 22 × 40   | P40 | 0.425 | 1.67 |
|                                      | 470   | ESMH251VSN471MP45T | 22 × 45   | P45 | 0.353 | 1.88 |
|                                      | 560   | ESMH251VSN561MP50T | 22 × 50   | P50 | 0.296 | 2.1  |
|                                      | 180   | ESMH251VSN181MQ20T | 25.4 × 20 | Q20 | 0.921 | 1.0  |
|                                      | 270   | ESMH251VSN271MQ25T | 25.4 × 25 | Q25 | 0.614 | 1.32 |
|                                      | 330   | ESMH251VSN331MQ30T | 25.4 × 30 | Q30 | 0.502 | 1.51 |
|                                      | 390   | ESMH251VSN391MQ30T | 25.4 × 30 | Q30 | 0.425 | 1.66 |
|                                      | 470   | ESMH251VSN471MQ35T | 25.4 × 35 | Q35 | 0.353 | 1.86 |
|                                      | 560   | ESMH251VSN561MQ40T | 25.4 × 40 | Q40 | 0.296 | 2.09 |
|                                      | 680   | ESMH251VSN681MQ50T | 25.4 × 50 | Q50 | 0.244 | 2.44 |
|                                      | 270   | ESMH251VSN271MR20T | 30 × 20   | R20 | 0.614 | 1.29 |
|                                      | 330   | ESMH251VSN331MR25T | 30 × 25   | R25 | 0.502 | 1.52 |
|                                      | 390   | ESMH251VSN391MR25T | 30 × 25   | R25 | 0.425 | 1.66 |
|                                      | 470   | ESMH251VSN471MR30T | 30 × 30   | R30 | 0.353 | 1.89 |
|                                      | 560   | ESMH251VSN561MR35T | 30 × 35   | R35 | 0.296 | 2.14 |
|                                      | 680   | ESMH251VSN681MR40T | 30 × 40   | R40 | 0.244 | 2.43 |
|                                      | 820   | ESMH251VSN821MR45T | 30 × 45   | R45 | 0.202 | 2.75 |
|                                      | 1,000 | ESMH251VSN102MR50T | 30 × 50   | R50 | 0.166 | 3.31 |
|                                      | 390   | ESMH251VSN391MA20T | 35 × 20   | A20 | 0.638 | 1.62 |
|                                      | 470   | ESMH251VSN471MA25T | 35 × 25   | A25 | 0.529 | 1.88 |
|                                      | 560   | ESMH251VSN561MA25T | 35 × 25   | A25 | 0.444 | 2.06 |
|                                      | 680   | ESMH251VSN681MA30T | 35 × 30   | A30 | 0.366 | 2.46 |
|                                      | 820   | ESMH251VSN821MA35T | 35 × 35   | A35 | 0.303 | 2.77 |
|                                      | 1,000 | ESMH251VSN102MA40T | 35 × 40   | A40 | 0.249 | 3.32 |
|                                      | 1,200 | ESMH251VSN122MA45T | 35 × 45   | A45 | 0.207 | 3.53 |
|                                      | 1,500 | ESMH251VSN152MA50T | 35 × 50   | A50 | 0.166 | 4.04 |
|                                      | 1,800 | ESMH251VSN182MA63T | 35 × 63   | A63 | 0.138 | 4.63 |
|                                      | 2,200 | ESMH251VSN222MA80T | 35 × 80   | A80 | 0.113 | 5.47 |
|                                      | 680   | ESMH251VQT681MB25T | 40 × 25   | B25 | 0.366 | 2.34 |
|                                      | 1,000 | ESMH251VQT102MB30T | 40 × 30   | B30 | 0.249 | 2.97 |
|                                      | 1,200 | ESMH251VQT122MB35T | 40 × 35   | B35 | 0.207 | 3.37 |

†For terminal and construction options, refer to the part numbering system for descriptions and codes.

\*Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC) | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
|----------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|

|                                            |       |                    |         |     |       |      |
|--------------------------------------------|-------|--------------------|---------|-----|-------|------|
| <b>250 Volts</b><br><b>300 Volts Surge</b> | 1,500 | ESMH251VQT152MB40T | 40 × 40 | B40 | 0.166 | 3.89 |
|                                            | 1,800 | ESMH251VQT182MB50T | 40 × 50 | B50 | 0.138 | 4.52 |
|                                            | 2,200 | ESMH251VQT222MB63T | 40 × 63 | B63 | 0.113 | 5.34 |
|                                            | 3,300 | ESMH251VQT332MB80T | 40 × 80 | B80 | 0.075 | 7.12 |

|                                            |       |                    |           |     |       |      |
|--------------------------------------------|-------|--------------------|-----------|-----|-------|------|
| <b>315 Volts</b><br><b>365 Volts Surge</b> | 82    | ESMH3B1VSN820MP20T | 22 × 20   | P20 | 3.032 | 0.65 |
|                                            | 120   | ESMH3B1VSN121MP25T | 22 × 25   | P25 | 2.072 | 0.94 |
|                                            | 150   | ESMH3B1VSN151MP30T | 22 × 30   | P30 | 1.658 | 1.11 |
|                                            | 180   | ESMH3B1VSN181MP35T | 22 × 35   | P35 | 1.381 | 1.2  |
|                                            | 220   | ESMH3B1VSN221MP40T | 22 × 40   | P40 | 1.13  | 1.41 |
|                                            | 270   | ESMH3B1VSN271MP45T | 22 × 45   | P45 | 0.921 | 1.6  |
|                                            | 330   | ESMH3B1VSN331MP50T | 22 × 50   | P50 | 0.753 | 1.82 |
|                                            | 100   | ESMH3B1VSN101MQ20T | 25.4 × 20 | Q20 | 2.486 | 0.74 |
|                                            | 150   | ESMH3B1VSN151MQ25T | 25.4 × 25 | Q25 | 1.658 | 1.1  |
|                                            | 180   | ESMH3B1VSN181MQ25T | 25.4 × 25 | Q25 | 1.381 | 1.2  |
|                                            | 220   | ESMH3B1VSN221MQ30T | 25.4 × 30 | Q30 | 1.13  | 1.38 |
|                                            | 270   | ESMH3B1VSN271MQ35T | 25.4 × 35 | Q35 | 0.921 | 1.59 |
|                                            | 330   | ESMH3B1VSN331MQ40T | 25.4 × 40 | Q40 | 0.753 | 1.8  |
|                                            | 390   | ESMH3B1VSN391MQ45T | 25.4 × 45 | Q45 | 0.638 | 2.01 |
|                                            | 470   | ESMH3B1VSN471MQ45T | 25.4 × 45 | Q45 | 0.529 | 2.2  |
|                                            | 150   | ESMH3B1VSN151MR20T | 30 × 20   | R20 | 1.658 | 0.96 |
|                                            | 220   | ESMH3B1VSN221MR25T | 30 × 25   | R25 | 1.13  | 1.4  |
|                                            | 270   | ESMH3B1VSN271MR30T | 30 × 30   | R30 | 0.921 | 1.59 |
|                                            | 330   | ESMH3B1VSN331MR30T | 30 × 30   | R30 | 0.753 | 1.8  |
|                                            | 390   | ESMH3B1VSN391MR35T | 30 × 35   | R35 | 0.638 | 1.99 |
|                                            | 470   | ESMH3B1VSN471MR40T | 30 × 40   | R40 | 0.529 | 2.27 |
|                                            | 560   | ESMH3B1VSN561MR45T | 30 × 45   | R45 | 0.444 | 2.56 |
|                                            | 680   | ESMH3B1VSN681MR50T | 30 × 50   | R50 | 0.366 | 2.88 |
|                                            | 220   | ESMH3B1VSN221MA20T | 35 × 20   | A20 | 1.13  | 1.22 |
|                                            | 270   | ESMH3B1VSN271MA25T | 35 × 25   | A25 | 0.921 | 1.59 |
|                                            | 330   | ESMH3B1VSN331MA25T | 35 × 25   | A25 | 0.753 | 1.8  |
|                                            | 390   | ESMH3B1VSN391MA30T | 35 × 30   | A30 | 0.638 | 2.0  |
|                                            | 470   | ESMH3B1VSN471MA30T | 35 × 30   | A30 | 0.529 | 2.23 |
|                                            | 560   | ESMH3B1VSN561MA35T | 35 × 35   | A35 | 0.444 | 2.49 |
|                                            | 680   | ESMH3B1VSN681MA40T | 35 × 40   | A40 | 0.366 | 2.87 |
|                                            | 820   | ESMH3B1VSN821MA45T | 35 × 45   | A45 | 0.303 | 3.25 |
|                                            | 1,000 | ESMH3B1VSN102MA50T | 35 × 50   | A50 | 0.249 | 3.69 |
|                                            | 1,200 | ESMH3B1VSN122MA63T | 35 × 63   | A63 | 0.207 | 4.36 |
|                                            | 1,500 | ESMH3B1VSN152MA80T | 35 × 80   | A80 | 0.166 | 5.22 |
|                                            | 390   | ESMH3B1VQT391MB25T | 40 × 25   | B25 | 0.638 | 2.04 |
|                                            | 560   | ESMH3B1VQT561MB30T | 40 × 30   | B30 | 0.444 | 2.57 |
|                                            | 680   | ESMH3B1VQT681MB35T | 40 × 35   | B35 | 0.366 | 2.93 |
|                                            | 820   | ESMH3B1VQT821MB40T | 40 × 40   | B40 | 0.303 | 3.32 |
|                                            | 1,200 | ESMH3B1VQT122MB50T | 40 × 50   | B50 | 0.207 | 4.27 |
|                                            | 1,500 | ESMH3B1VQT152MB63T | 40 × 63   | B63 | 0.166 | 5.09 |
|                                            | 2,200 | ESMH3B1VQT222MB80T | 40 × 80   | B80 | 0.113 | 6.71 |

|                                            |     |                    |           |     |       |      |
|--------------------------------------------|-----|--------------------|-----------|-----|-------|------|
| <b>350 Volts</b><br><b>400 Volts Surge</b> | 68  | ESMH351VSN680MP20T | 22 × 20   | P20 | 3.656 | 0.59 |
|                                            | 100 | ESMH351VSN101MP25T | 22 × 25   | P25 | 2.486 | 0.86 |
|                                            | 120 | ESMH351VSN121MP30T | 22 × 30   | P30 | 2.072 | 0.99 |
|                                            | 150 | ESMH351VSN151MP35T | 22 × 35   | P35 | 1.658 | 1.14 |
|                                            | 180 | ESMH351VSN181MP40T | 22 × 40   | P40 | 1.381 | 1.28 |
|                                            | 220 | ESMH351VSN221MP45T | 22 × 45   | P45 | 1.13  | 1.44 |
|                                            | 270 | ESMH351VSN271MP50T | 22 × 50   | P50 | 0.921 | 1.64 |
|                                            | 82  | ESMH351VSN820MQ20T | 25.4 × 20 | Q20 | 3.032 | 0.67 |
|                                            | 120 | ESMH351VSN121MQ25T | 25.4 × 25 | Q25 | 2.072 | 0.99 |
|                                            | 150 | ESMH351VSN151MQ25T | 25.4 × 25 | Q25 | 1.658 | 1.1  |
|                                            | 180 | ESMH351VSN181MQ30T | 25.4 × 30 | Q30 | 1.381 | 1.24 |
|                                            | 220 | ESMH351VSN221MQ35T | 25.4 × 35 | Q35 | 1.13  | 1.44 |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.

## Standard Voltage Ratings - Snap Mount

| Rated Voltage (VWDC)                 | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|--------------------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| <b>350 Volts<br/>400 Volts Surge</b> | 270              | ESMH351VSN271MQ40T  | 25.4 × 40                     | Q40            | 0.921                           | 1.63                                         |
|                                      | 330              | ESMH351VSN331MQ50T  | 25.4 × 50                     | Q50            | 0.753                           | 1.88                                         |
|                                      | 120              | ESMH351VSN121MR20T  | 30 × 20                       | R20            | 2.072                           | 0.86                                         |
|                                      | 180              | ESMH351VSN181MR25T  | 30 × 25                       | R25            | 1.381                           | 1.27                                         |
|                                      | 220              | ESMH351VSN221MR30T  | 30 × 30                       | R30            | 1.13                            | 1.44                                         |
|                                      | 270              | ESMH351VSN271MR35T  | 30 × 35                       | R35            | 0.921                           | 1.66                                         |
|                                      | 330              | ESMH351VSN331MR35T  | 30 × 35                       | R35            | 0.753                           | 1.83                                         |
|                                      | 390              | ESMH351VSN391MR40T  | 30 × 40                       | R40            | 0.638                           | 2.06                                         |
|                                      | 470              | ESMH351VSN471MR50T  | 30 × 50                       | R50            | 0.529                           | 2.4                                          |
|                                      | 180              | ESMH351VSN181MA20T  | 35 × 20                       | A20            | 1.381                           | 1.1                                          |
|                                      | 220              | ESMH351VSN221MA25T  | 35 × 25                       | A25            | 1.13                            | 1.44                                         |
|                                      | 270              | ESMH351VSN271MA25T  | 35 × 25                       | A25            | 0.921                           | 1.63                                         |
|                                      | 330              | ESMH351VSN331MA30T  | 35 × 30                       | A30            | 0.753                           | 1.87                                         |
|                                      | 390              | ESMH351VSN391MA30T  | 35 × 30                       | A30            | 0.638                           | 2.03                                         |
|                                      | 470              | ESMH351VSN471MA35T  | 35 × 35                       | A35            | 0.529                           | 2.33                                         |
|                                      | 560              | ESMH351VSN561MA40T  | 35 × 40                       | A40            | 0.444                           | 2.6                                          |
|                                      | 680              | ESMH351VSN681MA45T  | 35 × 45                       | A45            | 0.366                           | 2.96                                         |
|                                      | 820              | ESMH351VSN821MA50T  | 35 × 50                       | A50            | 0.303                           | 3.04                                         |
|                                      | 1,000            | ESMH351VSN102MA63T  | 35 × 63                       | A63            | 0.249                           | 3.98                                         |
|                                      | 1,200            | ESMH351VSN122MA80T  | 35 × 80                       | A80            | 0.207                           | 4.67                                         |
|                                      | 330              | ESMH351VQT331MB25T  | 40 × 25                       | B25            | 0.753                           | 1.88                                         |
|                                      | 470              | ESMH351VQT471MB30T  | 40 × 30                       | B30            | 0.529                           | 2.35                                         |
|                                      | 560              | ESMH351VQT561MB35T  | 40 × 35                       | B35            | 0.444                           | 2.66                                         |
|                                      | 680              | ESMH351VQT681MB40T  | 40 × 40                       | B40            | 0.366                           | 3.02                                         |
|                                      | 1,000            | ESMH351VQT102MB50T  | 40 × 50                       | B50            | 0.249                           | 3.89                                         |
|                                      | 1,500            | ESMH351VQT152MB63T  | 40 × 63                       | B63            | 0.166                           | 5.09                                         |
|                                      | 1,800            | ESMH351VQT182MB80T  | 40 × 80                       | B80            | 0.138                           | 6.07                                         |
| <b>400 Volts<br/>450 Volts Surge</b> | 56               | ESMH401VSN560MP20T  | 22 × 20                       | P20            | 4.44                            | 0.53                                         |
|                                      | 82               | ESMH401VSN820MP25T  | 22 × 25                       | P25            | 3.032                           | 0.78                                         |
|                                      | 100              | ESMH401VSN101MP30T  | 22 × 30                       | P30            | 2.486                           | 0.9                                          |
|                                      | 120              | ESMH401VSN121MP35T  | 22 × 35                       | P35            | 2.072                           | 1.02                                         |
|                                      | 150              | ESMH401VSN151MP40T  | 22 × 40                       | P40            | 1.658                           | 1.16                                         |
|                                      | 180              | ESMH401VSN181MP45T  | 22 × 45                       | P45            | 1.381                           | 1.31                                         |
|                                      | 220              | ESMH401VSN221MP50T  | 22 × 50                       | P50            | 1.13                            | 1.49                                         |
|                                      | 270              | ESMH401VSN271MP50T  | 22 × 50                       | P50            | 0.921                           | 1.64                                         |
|                                      | 68               | ESMH401VSN680MQ20T  | 25.4 × 20                     | Q20            | 3.656                           | 0.61                                         |
|                                      | 100              | ESMH401VSN101MQ25T  | 25.4 × 25                     | Q25            | 2.486                           | 0.9                                          |
|                                      | 120              | ESMH401VSN121MQ25T  | 25.4 × 25                     | Q25            | 2.072                           | 0.98                                         |
|                                      | 150              | ESMH401VSN151MQ30T  | 25.4 × 30                     | Q30            | 1.658                           | 1.14                                         |
|                                      | 180              | ESMH401VSN181MQ35T  | 25.4 × 35                     | Q35            | 1.381                           | 1.30                                         |
|                                      | 220              | ESMH401VSN221MQ40T  | 25.4 × 40                     | Q40            | 1.13                            | 1.47                                         |
|                                      | 270              | ESMH401VSN271MQ45T  | 25.4 × 45                     | Q45            | 0.921                           | 1.67                                         |
|                                      | 330              | ESMH401VSN331MQ50T  | 25.4 × 50                     | Q50            | 0.753                           | 1.88                                         |
|                                      | 100              | ESMH401VSN101MR20T  | 30 × 20                       | R20            | 2.486                           | 0.78                                         |
|                                      | 150              | ESMH401VSN151MR25T  | 30 × 25                       | R25            | 1.658                           | 1.16                                         |
|                                      | 180              | ESMH401VSN181MR30T  | 30 × 30                       | R30            | 1.381                           | 1.44                                         |
|                                      | 220              | ESMH401VSN221MR30T  | 30 × 30                       | R30            | 1.13                            | 1.47                                         |
|                                      | 270              | ESMH401VSN271MR35T  | 30 × 35                       | R35            | 0.921                           | 1.66                                         |
|                                      | 330              | ESMH401VSN331MR40T  | 30 × 40                       | R40            | 0.753                           | 1.9                                          |
|                                      | 390              | ESMH401VSN391MR45T  | 30 × 45                       | R45            | 0.638                           | 2.13                                         |
|                                      | 470              | ESMH401VSN471MR50T  | 30 × 50                       | R50            | 0.529                           | 2.4                                          |
|                                      | 150              | ESMH401VSN151MA20T  | 35 × 20                       | A20            | 1.658                           | 1.0                                          |
|                                      | 180              | ESMH401VSN181MA25T  | 35 × 25                       | A25            | 1.381                           | 1.32                                         |
|                                      | 220              | ESMH401VSN221MA25T  | 35 × 25                       | A25            | 1.13                            | 1.47                                         |
|                                      | 270              | ESMH401VSN271MA30T  | 35 × 30                       | A30            | 0.921                           | 1.69                                         |
|                                      | 330              | ESMH401VSN331MA30T  | 35 × 30                       | A30            | 0.753                           | 1.87                                         |
|                                      | 390              | ESMH401VSN391MA35T  | 35 × 35                       | A35            | 0.638                           | 2.08                                         |
|                                      | 470              | ESMH401VSN471MA40T  | 35 × 40                       | A40            | 0.529                           | 2.39                                         |
|                                      | 560              | ESMH401VSN561MA45T  | 35 × 45                       | A45            | 0.444                           | 2.69                                         |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.



## Standard Voltage Ratings - Snap Mount

| Rated Voltage (WVDC)         | Capacitance (μF) | Global Part Number† | Nominal Case Size* D × L (mm) | Case Size Code | Maximum ESR (Ω) at +20°C, 120Hz | Rated Ripple Current (A rms) at +85°C, 120Hz |
|------------------------------|------------------|---------------------|-------------------------------|----------------|---------------------------------|----------------------------------------------|
| 400 Volts<br>450 Volts Surge | 680              | ESMH401VSN681MA50T  | 35 × 50                       | A50            | 0.366                           | 3.04                                         |
|                              | 820              | ESMH401VSN821MA63T  | 35 × 63                       | A63            | 0.303                           | 3.61                                         |
|                              | 1,200            | ESMH401VSN122MA80T  | 35 × 80                       | A80            | 0.207                           | 4.67                                         |
|                              | 270              | ESMH401VQT271MB25T  | 40 × 25                       | B25            | 0.921                           | 1.7                                          |
|                              | 390              | ESMH401VQT391MB30T  | 40 × 30                       | B30            | 0.638                           | 2.14                                         |
|                              | 560              | ESMH401VQT561MB35T  | 40 × 35                       | B35            | 0.444                           | 2.66                                         |
|                              | 680              | ESMH401VQT681MB40T  | 40 × 40                       | B40            | 0.366                           | 3.02                                         |
|                              | 820              | ESMH401VQT821MB50T  | 40 × 50                       | B50            | 0.303                           | 3.53                                         |
|                              | 1,200            | ESMH401VQT122MB63T  | 40 × 63                       | B63            | 0.207                           | 4.56                                         |
|                              | 1,500            | ESMH401VQT152MB80T  | 40 × 80                       | B80            | 0.166                           | 5.54                                         |
| 450 Volts<br>500 Volts Surge | 56               | ESMH451VSN560MP25T  | 22 × 25                       | P25            | 4.44                            | 0.65                                         |
|                              | 68               | ESMH451VSN680MP25T  | 22 × 25                       | P25            | 3.656                           | 0.71                                         |
|                              | 82               | ESMH451VSN820MP30T  | 22 × 30                       | P30            | 3.032                           | 0.82                                         |
|                              | 100              | ESMH451VSN101MP35T  | 22 × 35                       | P35            | 2.486                           | 0.93                                         |
|                              | 120              | ESMH451VSN121MP40T  | 22 × 40                       | P40            | 2.072                           | 1.04                                         |
|                              | 150              | ESMH451VSN151MP45T  | 22 × 45                       | P45            | 1.658                           | 1.19                                         |
|                              | 180              | ESMH451VSN181MP50T  | 22 × 50                       | P50            | 1.381                           | 1.34                                         |
|                              | 82               | ESMH451VSN820MQ25T  | 25.4 × 25                     | Q25            | 3.032                           | 0.82                                         |
|                              | 100              | ESMH451VSN101MQ25T  | 25.4 × 25                     | Q25            | 2.486                           | 0.9                                          |
|                              | 120              | ESMH451VSN121MQ30T  | 25.4 × 30                     | Q30            | 2.072                           | 1.02                                         |
|                              | 150              | ESMH451VSN151MQ35T  | 25.4 × 35                     | Q35            | 1.658                           | 1.19                                         |
|                              | 180              | ESMH451VSN181MQ40T  | 25.4 × 40                     | Q40            | 1.381                           | 1.33                                         |
|                              | 220              | ESMH451VSN221MQ50T  | 25.4 × 50                     | Q50            | 1.13                            | 1.54                                         |
|                              | 120              | ESMH451VSN121MR25T  | 30 × 25                       | R25            | 2.072                           | 1.03                                         |
|                              | 150              | ESMH451VSN151MR30T  | 30 × 30                       | R30            | 1.658                           | 1.19                                         |
|                              | 180              | ESMH451VSN181MR35T  | 30 × 35                       | R35            | 1.381                           | 1.35                                         |
|                              | 220              | ESMH451VSN221MR40T  | 30 × 40                       | R40            | 1.13                            | 1.55                                         |
|                              | 270              | ESMH451VSN271MR45T  | 30 × 45                       | R45            | 0.921                           | 1.78                                         |
|                              | 330              | ESMH451VSN331MR50T  | 30 × 50                       | R50            | 0.753                           | 2.01                                         |
|                              | 150              | ESMH451VSN151MA25T  | 35 × 25                       | A25            | 1.658                           | 1.19                                         |
|                              | 180              | ESMH451VSN181MA25T  | 35 × 25                       | A25            | 1.381                           | 1.33                                         |
|                              | 220              | ESMH451VSN221MA30T  | 35 × 30                       | A30            | 1.13                            | 1.53                                         |
|                              | 270              | ESMH451VSN271MA35T  | 35 × 35                       | A35            | 0.921                           | 1.73                                         |
|                              | 330              | ESMH451VSN331MA40T  | 35 × 40                       | A40            | 0.753                           | 2.0                                          |
|                              | 390              | ESMH451VSN391MA45T  | 35 × 45                       | A45            | 0.638                           | 2.24                                         |
|                              | 470              | ESMH451VSN471MA50T  | 35 × 50                       | A50            | 0.529                           | 2.53                                         |
|                              | 560              | ESMH451VSN561MA63T  | 35 × 63                       | A63            | 0.444                           | 2.98                                         |
|                              | 820              | ESMH451VSN821MA80T  | 35 × 80                       | A80            | 0.303                           | 3.86                                         |
|                              | 220              | ESMH451VQT221MB25T  | 40 × 25                       | B25            | 1.13                            | 1.54                                         |
|                              | 270              | ESMH451VQT271MB30T  | 40 × 30                       | B30            | 0.921                           | 1.78                                         |
|                              | 390              | ESMH451VQT391MB35T  | 40 × 35                       | B35            | 0.638                           | 2.22                                         |
|                              | 470              | ESMH451VQT471MB40T  | 40 × 40                       | B40            | 0.529                           | 2.51                                         |
|                              | 680              | ESMH451VQT681MB50T  | 40 × 50                       | B50            | 0.366                           | 3.21                                         |
|                              | 820              | ESMH451VQT821MB63T  | 40 × 63                       | B63            | 0.303                           | 3.77                                         |
|                              | 1,200            | ESMH451VQT122MB80T  | 40 × 80                       | B80            | 0.207                           | 4.96                                         |

† For terminal and construction options, refer to the part numbering system for descriptions and codes.

\* Refer to diagram of dimensions for detailed case size specifications.