

## Overview

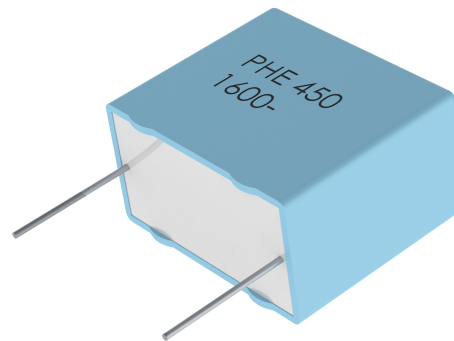
The PHE450 Series is a polypropylene dielectric with double metallized polyester film as electrodes. The capacitor is encapsulated in self-extinguishing resin in a box of material meeting the requirements of UL 94 V-0.

## Applications

Typical applications include high frequency applications with high current stress such as deflection circuits in televisions and protection circuits in switched mode power supply (SMPS) and electronic ballasts.

## Benefits

- Rated voltage: 250 – 3,000 VDC
- Rated voltage: 180 – 1,000 VAC
- Capacitance range: 0.00033 – 10  $\mu$ F
- Lead spacing: 7.5 – 37.5 mm
- Capacitance tolerance:  $\pm 5\%$ , other tolerances on request
- Climatic category: 55/105/56, IEC 60068-1
- Tape and reel packaging in accordance with IEC 60286-2
- RoHS Compliant and lead-free terminations
- Category temperature range of  $-55^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$



## Legacy Part Number System

| PHE450                   | P                                                                                         | B                                                                   | 5180                                                                                                        | J                                                                                                                     | B04                 | R06                        |
|--------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------|
| Series                   | Rated Voltage (VDC)                                                                       | Lead Spacing (mm)                                                   | Capacitance Code (pF)                                                                                       | Capacitance Tolerance                                                                                                 | Optional Box Code   | Packaging                  |
| Metallized Polypropylene | H = 250<br>K = 400<br>M = 630<br>P = 1000<br>R = 1600<br>S = 2000<br>T = 2500<br>X = 3000 | K = 7.5<br>A = 10.0<br>B = 15.0<br>D = 22.5<br>F = 27.5<br>R = 37.5 | The last three digits represent significant figures. First digit specifies the number of zeros to be added. | J = $\pm 5\%$<br>On request:<br>F = $\pm 1\%$<br>G = $\pm 2\%$<br>H = $\pm 2.5\%$<br>K = $\pm 10\%$<br>M = $\pm 20\%$ | See Dimension Table | See Ordering Options Table |

## New KEMET Part Number System

| F               | 450                      | B                                                                   | D                   | 183                                                                                    | J                                                                                                                     | 1K0                                                                                                       | C                          |
|-----------------|--------------------------|---------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------|
| Capacitor Class | Series                   | Lead Spacing (mm)                                                   | Size Code           | Capacitance Code (pF)                                                                  | Capacitance Tolerance                                                                                                 | Rated Voltage (VDC)                                                                                       | Packaging                  |
| F = Film        | Metallized Polypropylene | K = 7.5<br>A = 10.0<br>B = 15.0<br>D = 22.5<br>F = 27.5<br>R = 37.5 | See Dimension Table | First two digits represent significant figures. Third digit specifies number of zeros. | J = $\pm 5\%$<br>On request:<br>F = $\pm 1\%$<br>G = $\pm 2\%$<br>H = $\pm 2.5\%$<br>K = $\pm 10\%$<br>M = $\pm 20\%$ | 250 = 250<br>400 = 400<br>630 = 630<br>1K0 = 1000<br>1K6 = 1600<br>2K0 = 2000<br>2K5 = 2500<br>3K0 = 3000 | See Ordering Options Table |

## Ordering Options Table

| Lead Spacing Nominal (mm) | Type of Leads and Packaging                | Lead Length (mm)             | KEMET Lead and Packaging Code | Legacy Lead and Packaging Code |
|---------------------------|--------------------------------------------|------------------------------|-------------------------------|--------------------------------|
| 7.5                       | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Bag) – Short Leads                   | 5 +0/-1                      | C                             | R05                            |
|                           | Ammo Pack                                  | H <sub>0</sub> = 18.5 +/-0.5 | R                             | R17TA                          |
|                           | Bulk (Bag) – Long Leads                    | 17 +0/-1                     | A                             | R17                            |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Bag) – Max Length Leads              | 20 +5/-0                     | ALL0L                         | R20                            |
|                           | Tape & Reel (Standard Reel)                | H <sub>0</sub> = 18.5 +/-0.5 | L                             | R17T0                          |
|                           | Tape & Reel (Large Reel)                   | H <sub>0</sub> = 18.5 +/-0.5 | P                             | R17T1                          |
| 10                        | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Bag) – Short Leads                   | 5 +0/-1                      | C                             | R05                            |
|                           | Bulk (Bag) – Long Leads                    | 17 +0/-1                     | A                             | R17                            |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Bag) – Max Length Leads              | 20 +5/-0                     | ALL0L                         | R20                            |
|                           | Tape & Reel (Standard Reel)                | H <sub>0</sub> = 18.5 +/-0.5 | L                             | R17T0                          |
|                           | Tape & Reel (Large Reel)                   | H <sub>0</sub> = 18.5 +/-0.5 | P                             | R17T1                          |
| 15                        | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Bag) – Short Leads                   | 6 +0/-1                      | C                             | R06                            |
|                           | Bulk (Bag) – Long Leads                    | 17 +0/-1                     | A                             | R17                            |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Bag) – Max Length Leads              | 25 +5/-0                     | ALR0L                         | R25                            |
|                           | Tape & Reel (Standard Reel)                | H <sub>0</sub> = 18.5 +/-0.5 | L                             | R17T0                          |
| Native 15 formed to 7.5   | Tape & Reel (Large Reel)                   | H <sub>0</sub> = 18.5 +/-0.5 | P                             | R17T1                          |
|                           | Ammo Pack                                  | H <sub>0</sub> = 16.5 +/-0.5 | XLAF1                         | R25XA                          |
|                           | Tape & Reel (Standard Reel)                | H <sub>0</sub> = 16.5 +/-0.5 | XLTF1                         | R25X2                          |
| 22.5                      | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Tray) – Short Leads                  | 6 +0/-1                      | C                             | R06L2 <sup>(1)</sup>           |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Tray) – Max Length Leads             | 30 +5/-0                     | ALW0L                         | R30                            |
|                           | Tape & Reel (Standard Reel)                | H <sub>0</sub> = 18.5 +/-0.5 | L                             | R17T0                          |
|                           | Tape & Reel (Large Reel)                   | H <sub>0</sub> = 18.5 +/-0.5 | P                             | R17T1                          |
|                           | Pizza Pack                                 | 6 +0/-1                      | Z                             | R06L2 <sup>(1)</sup>           |

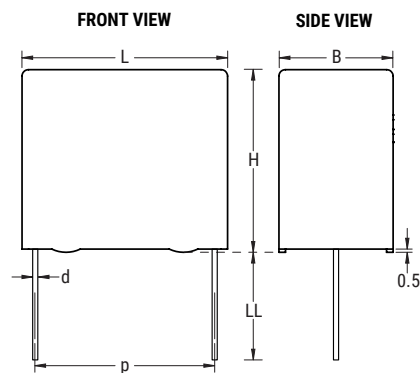
(1) Please specify Bulk (Tray) or Pizza Packaging.

## Ordering Options Table cont'd

| Lead Spacing Nominal (mm) | Type of Leads and Packaging                | Lead Length (mm)             | KEMET Lead and Packaging Code | Legacy Lead and Packaging Code |
|---------------------------|--------------------------------------------|------------------------------|-------------------------------|--------------------------------|
| 27.5                      | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Tray) – Straight Leads               | 6 +0/-1                      | C                             | R06L2 <sup>(1)</sup>           |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Tray) – Max Length Leads             | 30 +5/-0                     | ALW0L                         | R30                            |
|                           | Tape & Reel (Large Reel)                   | H <sub>0</sub> = 18.5 +/-0.5 | P                             | R17T1                          |
|                           | Pizza Pack                                 | 6 +0/-1                      | Z                             | R06L2 <sup>(1)</sup>           |
| 37.5                      | <b>Standard Lead and Packaging Options</b> |                              |                               |                                |
|                           | Bulk (Tray) – Short Leads                  | 6 +0/-1                      | C                             | R06L2 <sup>(1)</sup>           |
|                           | <b>Other Lead and Packaging Options</b>    |                              |                               |                                |
|                           | Bulk (Tray) – Max Length Leads             | 30 +5/-0                     | ALW0L                         | R30                            |
|                           | Pizza Pack                                 | 6 +0/-1                      | Z                             | R06L2 <sup>(1)</sup>           |

(1) Please specify Bulk (Tray) or Pizza Packaging.

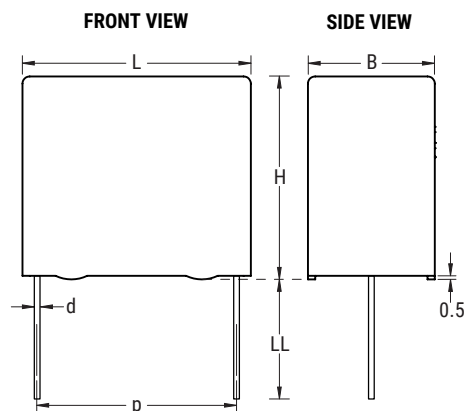
## Dimensions – Millimeters



| KEMET Size Code | Legacy Size Code | p       |           | B       |           | H       |           | L       |           | d       |           |
|-----------------|------------------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
|                 |                  | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance |
| KG              | K01              | 7.5     | +/-0.4    | 4       | Maximum   | 8       | Maximum   | 10      | Maximum   | 0.6     | +/-0.05   |
| KK              | K03              | 7.5     | +/-0.4    | 5       | Maximum   | 11      | Maximum   | 10      | Maximum   | 0.6     | +/-0.05   |
| KM              | K04              | 7.5     | +/-0.4    | 6       | Maximum   | 12      | Maximum   | 10.5    | Maximum   | 0.6     | +/-0.05   |
| AG              | A01              | 10      | +/-0.4    | 4       | Maximum   | 9       | Maximum   | 13      | Maximum   | 0.6     | +/-0.05   |
| AH              | A02              | 10      | +/-0.4    | 4.5     | Maximum   | 10.5    | Maximum   | 13      | Maximum   | 0.6     | +/-0.05   |
| AK              | A03              | 10      | +/-0.4    | 5       | Maximum   | 11      | Maximum   | 13      | Maximum   | 0.6     | +/-0.05   |
| AP              | A04              | 10      | +/-0.4    | 6       | Maximum   | 12      | Maximum   | 13      | Maximum   | 0.6     | +/-0.05   |
| BD              | B04              | 15      | +/-0.4    | 5.5     | Maximum   | 10.5    | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BE              | B05              | 15      | +/-0.4    | 5.5     | Maximum   | 12.5    | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |

Note: See Ordering Options Table for lead length (LL) options.

## Dimensions – Millimeters cont'd



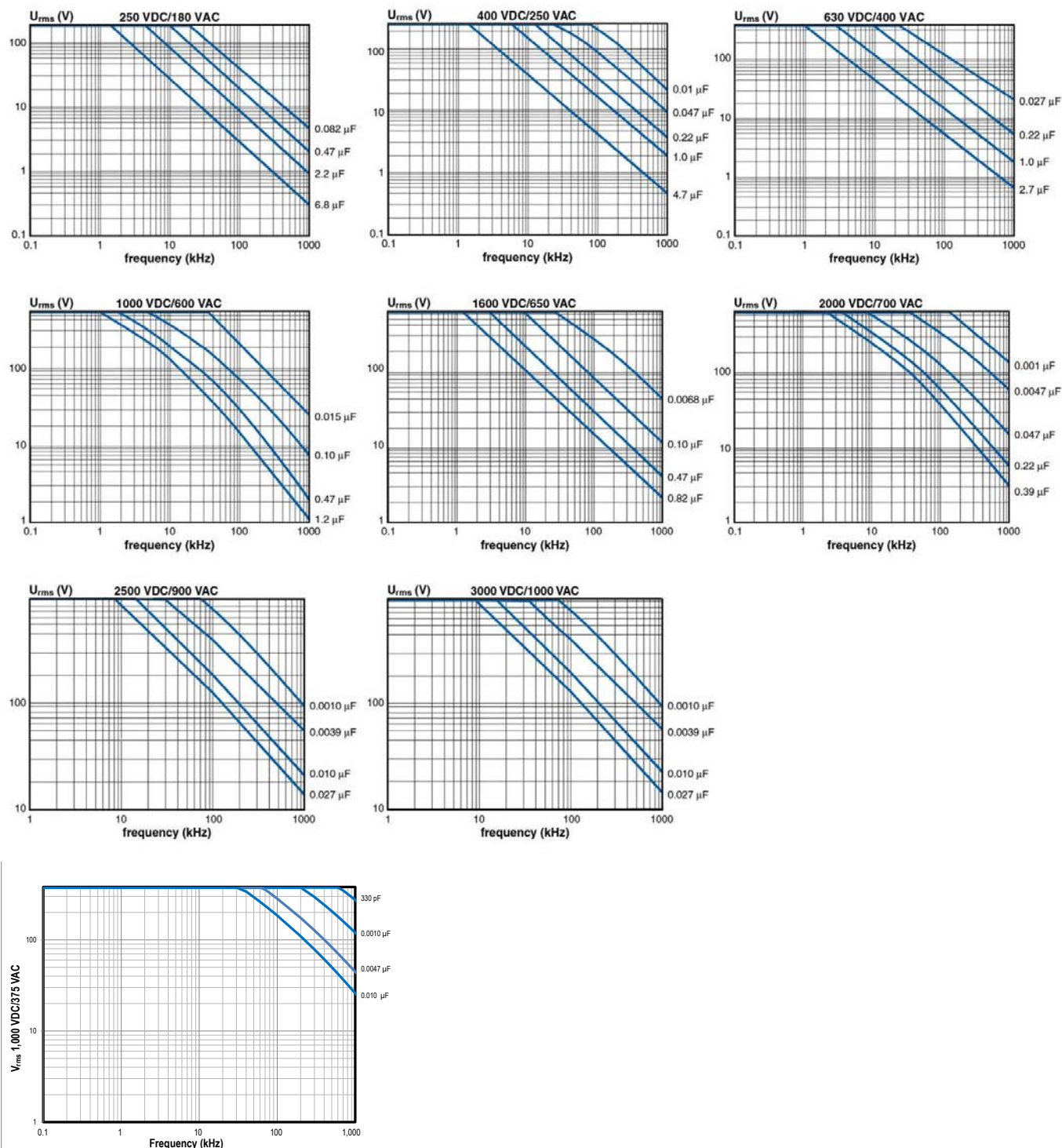
| KEMET Size Code | Legacy Size Code | P       |           | B       |           | H       |           | L       |           | d       |           |
|-----------------|------------------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
|                 |                  | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance |
| BL              | B06              | 15      | +/-0.4    | 7.5     | Maximum   | 14.5    | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BJ              | B10              | 15      | +/-0.4    | 6.5     | Maximum   | 12.5    | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BQ              | B11              | 15      | +/-0.4    | 8.5     | Maximum   | 16      | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BM              | B12              | 15      | +/-0.4    | 8       | Maximum   | 15      | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BV              | B14              | 15      | +/-0.4    | 9.5     | Maximum   | 17.5    | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| BY              | B16              | 15      | +/-0.4    | 11      | Maximum   | 19      | Maximum   | 18      | Maximum   | 0.8     | +/-0.05   |
| DD              | D13              | 22.5    | +/-0.4    | 6.5     | Maximum   | 14.5    | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DH              | D14              | 22.5    | +/-0.4    | 8       | Maximum   | 16      | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DM              | D15              | 22.5    | +/-0.4    | 9       | Maximum   | 18.5    | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DT              | D16              | 22.5    | +/-0.4    | 11      | Maximum   | 21.5    | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DF              | D17              | 22.5    | +/-0.4    | 7       | Maximum   | 16.5    | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DR              | D18              | 22.5    | +/-0.4    | 10.5    | Maximum   | 19      | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DY              | D19              | 22.5    | +/-0.4    | 15.5    | Maximum   | 24.5    | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| DW              | D20              | 22.5    | +/-0.4    | 13.5    | Maximum   | 23      | Maximum   | 26      | Maximum   | 0.8     | +/-0.05   |
| FK              | F03              | 27.5    | +/-0.4    | 13.5    | Maximum   | 23      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FE              | F11              | 27.5    | +/-0.4    | 10.5    | Maximum   | 20.5    | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FG              | F12              | 27.5    | +/-0.4    | 11.5    | Maximum   | 22.5    | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FM              | F13              | 27.5    | +/-0.4    | 14.5    | Maximum   | 24.5    | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FR              | F14              | 27.5    | +/-0.4    | 17.5    | Maximum   | 28      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FS              | F15              | 27.5    | +/-0.4    | 19      | Maximum   | 29      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FV              | F16              | 27.5    | +/-0.4    | 21      | Maximum   | 30      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FH              | F17              | 27.5    | +/-0.4    | 21      | Maximum   | 12.5    | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FT              | F18              | 27.5    | +/-0.4    | 31      | Maximum   | 19      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| FQ              | F19              | 27.5    | +/-0.4    | 27.5    | Maximum   | 16      | Maximum   | 31.5    | Maximum   | 0.8     | +/-0.05   |
| RK              | R02              | 37.5    | +/-0.4    | 16.5    | Maximum   | 32      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |
| RM              | R03              | 37.5    | +/-0.4    | 19      | Maximum   | 36      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |
| RH              | R04              | 37.5    | +/-0.4    | 15      | Maximum   | 26      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |
| RF              | R05              | 37.5    | +/-0.4    | 13      | Maximum   | 24      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |
| RP              | R06              | 37.5    | +/-0.4    | 21      | Maximum   | 38      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |
| RS              | R08              | 37.5    | +/-0.4    | 28      | Maximum   | 43      | Maximum   | 41      | Maximum   | 1       | +/-0.05   |

**Note: See Ordering Options Table for lead length (LL) options.**

## Performance Characteristics

| Sections                   | 1                                                                                                                                                                     | 1             | 1               | 2                   | 1                | 2            | 2          | 2            | 3             | 3             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|---------------------|------------------|--------------|------------|--------------|---------------|---------------|
| Voltage Range (VDC)        | 250                                                                                                                                                                   | 400           | 630             | 630                 | 1000             | 1000         | 1600       | 2000         | 2500          | 3000          |
| Voltage Range (VAC)        | 180                                                                                                                                                                   | 250           | 300             | 400                 | 375              | 600          | 650        | 700          | 900           | 1000          |
| Capacitance Range (μF)     | 0.00033 – 0.033                                                                                                                                                       | 0.00033 – 5.6 | 0.00033 – 0.039 | 0.01 – 3.3          | 0.00033 – 0.018  | 0.0039 – 2.2 | 0.0027 – 1 | 0.001 – 0.68 | 0.0010 – 0.33 | 0.001 – 0.033 |
| Capacitance Values         | In accordance with IEC E12 series                                                                                                                                     |               |                 |                     |                  |              |            |              |               |               |
| Capacitance Tolerance      | ±5%, other tolerances on request                                                                                                                                      |               |                 |                     |                  |              |            |              |               |               |
| Category Temperature Range | -55°C to +105°C                                                                                                                                                       |               |                 |                     |                  |              |            |              |               |               |
| Rated Temperature          | +85°C                                                                                                                                                                 |               |                 |                     |                  |              |            |              |               |               |
| Voltage Derating           | The rated voltage is decreased with 1.3%/°C between +85°C and +105°C                                                                                                  |               |                 |                     |                  |              |            |              |               |               |
| Climatic Category          | IEC 60068–1, 55/105/56/B                                                                                                                                              |               |                 |                     |                  |              |            |              |               |               |
| Passive Flammability       | Category B according to IEC 60065                                                                                                                                     |               |                 |                     |                  |              |            |              |               |               |
| Maximum Pulse Steepness    | dV/dt according to Table 1. For peak to peak voltages lower than rated voltage ( $V_{pp} < V_R$ ), the specified dV/dt can be multiplied by the factor $V_R/V_{pp}$ . |               |                 |                     |                  |              |            |              |               |               |
| Self-Inductance            | Approximately 6 nH/cm for the total length of capacitor winding and the leads                                                                                         |               |                 |                     |                  |              |            |              |               |               |
| Dissipation Factor tanδ    | Maximum Values at +23°C                                                                                                                                               |               |                 |                     |                  |              |            |              |               |               |
|                            |                                                                                                                                                                       | C ≤ 0.1 μF    |                 | 0.1 μF < C ≤ 1.0 μF |                  | C > 1.0 μF   |            |              |               |               |
|                            | 1 kHz                                                                                                                                                                 | 0.0003        |                 | 0.0003              |                  | 0.0003       |            |              |               |               |
|                            | 10 kHz                                                                                                                                                                | 0.0004        |                 | 0.0006              |                  | –            |            |              |               |               |
|                            | 100 kHz                                                                                                                                                               | 0.0015        |                 | –                   |                  | –            |            |              |               |               |
| Insulation Resistance      | Measured at +23°C, 100 VDC 60 seconds for $V_R < 500$ VDC and at 500 VDC for $V_R \geq 500$ VDC                                                                       |               |                 |                     |                  |              |            |              |               |               |
|                            | Minimum Values Between Terminals                                                                                                                                      |               |                 |                     |                  |              |            |              |               |               |
|                            | C ≤ 0.33 μF                                                                                                                                                           |               |                 |                     | ≥ 100 000 MΩ     |              |            |              |               |               |
|                            | C > 0.33 μF                                                                                                                                                           |               |                 |                     | ≥ 30 000 MΩ • μF |              |            |              |               |               |
|                            | Minimum Values Between Terminals and Case                                                                                                                             |               |                 |                     |                  |              |            |              |               |               |
|                            |                                                                                                                                                                       |               |                 |                     | ≥ 100 000 MΩ     |              |            |              |               |               |

## Derating of $V_{rms}$ vs. Frequency, +85°C Ambient Temperature and 10°C Internal Heating, Typical Values



## Environmental Test Data

| Test                         | IEC Publication         | Procedure                                                                                    | Requirements                                                                                                                                                                                                                                                                                              |
|------------------------------|-------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voltage Proof                | 60384-1 Clause 4.6      | $1.6 \times V_R$ after 60 seconds                                                            | The capacitors must withstand the voltage without breakdowns or flashovers and without decreased insulation resistance below the value in each detail specification. No visible damage.                                                                                                                   |
|                              | Clause 4.6 2.3          | $2 \times V_R$ (minimum 400 VDC to case) after 60 seconds                                    | As above                                                                                                                                                                                                                                                                                                  |
| Vibration                    | 60068-2-6 Test Fc       | 6 hours with 10 – 500 Hz and 0.75 mm amplitude or 98 m/s <sup>2</sup> depending on frequency | No visible damage<br>$\tan\delta \leq 1.2 \times$ stated value at 100 kHz<br>$\Delta C/C \leq \pm 0.5 \%$                                                                                                                                                                                                 |
| Bump                         | 60068-2-29 Test Eb      | 4,000 bumps with 390 m/s <sup>2</sup> mounted on PCB                                         | $\Delta C/C \leq \pm 0.5 \%$<br>$\tan\delta \leq 1.2 \times$ stated value at 100 kHz<br>Insulation resistance:<br>$\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$<br>$\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$                                          |
| Resistance to Soldering Heat | 60068-2-20 Method 1A    | Solder bath at $+260^\circ\text{C} \pm 5^\circ\text{C}$ with screening                       | Immersion of the terminations into the solder bath shall be completed in a time not exceeding 1 second and the terminations shall remain immersed to the specified depth for 10 + 1 second and then be withdrawn.<br>$\Delta C/C \leq \pm 1.0 \%$<br>$\tan\delta$ increase $< 0.001$<br>No visible damage |
| Climatic Sequence            | 60384-1 Paragraph 4:21  | 60068-2.2 dry heat 16 hours<br>60068-2-34 damp heat, one cycle<br>60068-2-1 Test Aa 2 hours  | Insulation resistance:<br>$\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$<br>$\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$<br>$\Delta C/C \leq \pm 0.5 \%$<br>$\tan\delta \leq 1.2 \times$ stated value at 100 kHz                                          |
| Damp Heat Steady State       | 60068-2-3 Test Ca       | $+40^\circ\text{C}$ and 90 – 95% RH                                                          | 56 days no visible damage<br>Insulation resistance:<br>$\geq 50,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$<br>$\geq 15,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$<br>$\Delta C/C \leq \pm 1\%$<br>$\tan\delta \leq 1.2 \times$ stated value at 100 kHz                 |
| Endurance, AC                |                         | 1,000 hours at $+85^\circ\text{C}$ and $1.25 \times V_R$ AC                                  | No visible damage<br>$\Delta C/C \leq \pm 3\%$<br>$\tan\delta \leq 1.5 \times$ stated value at 100 kHz<br>Insulation resistance:<br>$\geq 100,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$<br>$\geq 30,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$                        |
| Charge and Discharge         | 60384-17 Paragraph 4.13 | 10,000 pulses and with (2 x) dV/dt according to detail specification                         | $\tan\delta$ (100 kHz) $\leq 2 \times$ stated value (100 kHz)<br>$\Delta C/C \leq \pm 0.5 \%$<br>Insulation resistance:<br>$\geq 50,000 \text{ M}\Omega$ for $C_R \leq 0.33 \mu\text{F}$<br>$\geq 15,000 \text{ M}\Omega \cdot \mu\text{F}$ for $C_R > 0.33 \mu\text{F}$                                  |

## Environmental Compliance

All KEMET pulse capacitors are RoHS Compliant.

**Table 1 – Ratings & Part Number Reference**

| VDC | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number |
|-----|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------|-----------------------|--------------------|
|     |     |                | B                | H      | L      |                  |              |                        |                                    |                       |                    |
| 250 | 180 | 0.00033        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG331J250(1)      | PHE450HK3330J(1)   |
| 250 | 180 | 0.00039        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG391J250(1)      | PHE450HK3390J(1)   |
| 250 | 180 | 0.00047        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG471J250(1)      | PHE450HK3470J(1)   |
| 250 | 180 | 0.00056        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG561J250(1)      | PHE450HK3560J(1)   |
| 250 | 180 | 0.00068        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG681J250(1)      | PHE450HK3680J(1)   |
| 250 | 180 | 0.00082        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG821J250(1)      | PHE450HK3820J(1)   |
| 250 | 180 | 0.0010         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG102J250(1)      | PHE450HK4100J(1)   |
| 250 | 180 | 0.0012         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG122J250(1)      | PHE450HK4120J(1)   |
| 250 | 180 | 0.0015         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG152J250(1)      | PHE450HK4150J(1)   |
| 250 | 180 | 0.0018         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG182J250(1)      | PHE450HK4180J(1)   |
| 250 | 180 | 0.0022         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG222J250(1)      | PHE450HK4220J(1)   |
| 250 | 180 | 0.0027         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG272J250(1)      | PHE450HK4270J(1)   |
| 250 | 180 | 0.0033         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG332J250(1)      | PHE450HK4330J(1)   |
| 250 | 180 | 0.0039         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG392J250(1)      | PHE450HK4390J(1)   |
| 250 | 180 | 0.0047         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                | F450KG472J250(1)      | PHE450HK4470J(1)   |
| 250 | 180 | 0.0056         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                | F450KG562J250(1)      | PHE450HK4560J(1)   |
| 250 | 180 | 0.0068         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                | F450KG682J250(1)      | PHE450HK4680J(1)   |
| 250 | 180 | 0.0082         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                | F450KG822J250(1)      | PHE450HK4820J(1)   |
| 250 | 180 | 0.010          | 4.0              | 8.0    | 10.0   | 7.5              | 1200         | KG/K01                 | 160                                | F450KG103J250(1)      | PHE450HK5100J(1)   |
| 250 | 180 | 0.012          | 4.0              | 8.0    | 10.0   | 7.5              | 1200         | KG/K01                 | 160                                | F450KG123J250(1)      | PHE450HK5120J(1)   |
| 250 | 180 | 0.015          | 4.0              | 8.0    | 10.0   | 7.5              | 800          | KG/K01                 | 160                                | F450KG153J250(1)      | PHE450HK5150J(1)   |
| 250 | 180 | 0.018          | 4.0              | 8.0    | 10.0   | 7.5              | 800          | KG/K01                 | 160                                | F450KG183J250(1)      | PHE450HK5180J(1)   |
| 250 | 180 | 0.022          | 4.0              | 8.0    | 10.0   | 7.5              | 800          | KG/K01                 | 160                                | F450KG223J250(1)      | PHE450HK5220J(1)   |
| 250 | 180 | 0.027          | 5.0              | 11.0   | 10.0   | 7.5              | 800          | KK/K03                 | 160                                | F450KK273J250(1)      | PHE450HK5270J(1)   |
| 250 | 180 | 0.033          | 5.0              | 11.0   | 10.0   | 7.5              | 800          | KK/K03                 | 160                                | F450KK333J250(1)      | PHE450HK5330J(1)   |
| 250 | 180 | 0.039          | 5.0              | 11.0   | 10.0   | 7.5              | 800          | KK/K03                 | 160                                | F450KK393J250(1)      | PHE450HK5390J(1)   |
| 250 | 180 | 0.047          | 5.0              | 11.0   | 10.0   | 7.5              | 800          | KK/K03                 | 160                                | F450KK473J250(1)      | PHE450HK5470J(1)   |
| 250 | 180 | 0.056          | 5.0              | 11.0   | 10.0   | 7.5              | 800          | KK/K03                 | 160                                | F450KK563J250(1)      | PHE450HK5560J(1)   |
| 250 | 180 | 0.068          | 6.0              | 12.0   | 10.5   | 7.5              | 800          | KM/K04                 | 160                                | F450KM683J250(1)      | PHE450HK5680J(1)   |
| 250 | 180 | 0.0010         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG102J250(1)      | PHE450HA4100J(1)   |
| 250 | 180 | 0.0012         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG122J250(1)      | PHE450HA4120J(1)   |
| 250 | 180 | 0.0015         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG152J250(1)      | PHE450HA4150J(1)   |
| 250 | 180 | 0.0018         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG182J250(1)      | PHE450HA4180J(1)   |
| 250 | 180 | 0.0022         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG222J250(1)      | PHE450HA4220J(1)   |
| 250 | 180 | 0.0027         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG272J250(1)      | PHE450HA4270J(1)   |
| 250 | 180 | 0.0033         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG332J250(1)      | PHE450HA4330J(1)   |
| 250 | 180 | 0.0039         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG392J250(1)      | PHE450HA4390J(1)   |
| 250 | 180 | 0.0047         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG472J250(1)      | PHE450HA4470J(1)   |
| 250 | 180 | 0.0056         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG562J250(1)      | PHE450HA4560J(1)   |
| 250 | 180 | 0.0068         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG682J250(1)      | PHE450HA4680J(1)   |
| 250 | 180 | 0.0082         | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                | F450AG822J250(1)      | PHE450HA4820J(1)   |
| 250 | 180 | 0.010          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                | F450AG103J250(1)      | PHE450HA5100J(1)   |
| 250 | 180 | 0.012          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                | F450AG123J250(1)      | PHE450HA5120J(1)   |
| 250 | 180 | 0.015          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                | F450AG153J250(1)      | PHE450HA5150J(1)   |
| 250 | 180 | 0.018          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                | F450AG183J250(1)      | PHE450HA5180J(1)   |
| 250 | 180 | 0.022          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                | F450AG223J250(1)      | PHE450HA5220J(1)   |
| 250 | 180 | 0.027          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                | F450AG273J250(1)      | PHE450HA5270J(1)   |
| 250 | 180 | 0.033          | 4.0              | 9.0    | 13.0   | 10               | 700          | AG/A01                 | 142                                | F450AG333J250(1)      | PHE450HA5330J(1)   |
| 250 | 180 | 0.039          | 4.0              | 9.0    | 13.0   | 10               | 700          | AG/A01                 | 142                                | F450AG393J250(1)      | PHE450HA5390J(1)   |
| 250 | 180 | 0.047          | 4.0              | 9.0    | 13.0   | 10               | 700          | AG/A01                 | 142                                | F450AG473J250(1)      | PHE450HA5470J(1)   |
| 250 | 180 | 0.056          | 4.5              | 10.5   | 13.0   | 10               | 700          | AH/A02                 | 122                                | F450AH563J250(1)      | PHE450HA5560J(1)   |
| 250 | 180 | 0.068          | 4.5              | 10.5   | 13.0   | 10               | 700          | AH/A02                 | 122                                | F450AH683J250(1)      | PHE450HA5680J(1)   |
| 250 | 180 | 0.082          | 5.0              | 11.0   | 13.0   | 10               | 700          | AK/A03                 | 116                                | F450AK823J250(1)      | PHE450HA5820J(1)   |
| 250 | 180 | 0.10           | 6.0              | 12.0   | 13.0   | 10               | 700          | AP/A04                 | 105                                | F450AP104J250(1)      | PHE450HA6100J(1)   |
| 250 | 180 | 0.12           | 6.0              | 12.0   | 13.0   | 10               | 700          | AP/A04                 | 105                                | F450AP124J250(1)      | PHE450HA6120J(1)   |
| 250 | 180 | 0.047          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                | F450BD473J250(1)      | PHE450HB5470J(1)   |
| 250 | 180 | 0.056          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                | F450BD563J250(1)      | PHE450HB5560J(1)   |
| 250 | 180 | 0.068          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                | F450BD683J250(1)      | PHE450HB5680J(1)   |
| 250 | 180 | 0.082          | 5.5              | 10.5   | 18.0   | 15               | 600          | BD/B04                 | 101                                | F450BD823J250(1)      | PHE450HB5820J(1)   |
| VDC | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |
|-----|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|--------------------|
|     |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                    |
| 250 | 180 | 0.10           | 5.5              | 10.5   | 18.0   | 15               | 600          | BD/B04                 | 100                                      | F450BD104J250(1)      | PHE450HB6100J(1)   |
| 250 | 180 | 0.12           | 5.5              | 10.5   | 18.0   | 15               | 600          | BD/B04                 | 99                                       | F450BD124J250(1)      | PHE450HB6120J(1)   |
| 250 | 180 | 0.15           | 5.5              | 12.5   | 18.0   | 15               | 600          | BE/B05                 | 85                                       | F450BE154J250(1)      | PHE450HB6150J(1)   |
| 250 | 180 | 0.18           | 6.5              | 12.5   | 18.0   | 15               | 600          | BJ/B10                 | 83                                       | F450BJ184J250(1)      | PHE450HB6180J(1)   |
| 250 | 180 | 0.22           | 7.5              | 14.5   | 18.0   | 15               | 600          | BL/B06                 | 74                                       | F450BL224J250(1)      | PHE450HB6220J(1)   |
| 250 | 180 | 0.27           | 7.5              | 14.5   | 18.0   | 15               | 600          | BL/B06                 | 73                                       | F450BL274J250(1)      | PHE450HB6270J(1)   |
| 250 | 180 | 0.33           | 8.0              | 15.0   | 18.0   | 15               | 600          | BM/B12                 | 67                                       | F450BM334J250(1)      | PHE450HB6330J(1)   |
| 250 | 180 | 0.39           | 8.5              | 16.0   | 18.0   | 15               | 600          | BQ/B11                 | 65                                       | F450BQ394J250(1)      | PHE450HB6390J(1)   |
| 250 | 180 | 0.47           | 9.5              | 17.5   | 18.0   | 15               | 600          | BV/B14                 | 60                                       | F450BV474J250(1)      | PHE450HB6470J(1)   |
| 250 | 180 | 0.18           | 6.5              | 14.5   | 26.0   | 22.5             | 600          | DD/D13                 | 58                                       | F450DD184J250(1)      | PHE450HD6180J(1)   |
| 250 | 180 | 0.22           | 6.5              | 14.5   | 26.0   | 22.5             | 400          | DD/D13                 | 60                                       | F450DD224J250(1)      | PHE450HD6220J(1)   |
| 250 | 180 | 0.27           | 6.5              | 14.5   | 26.0   | 22.5             | 400          | DD/D13                 | 59                                       | F450DD274J250(1)      | PHE450HD6270J(1)   |
| 250 | 180 | 0.33           | 6.5              | 14.5   | 26.0   | 22.5             | 400          | DD/D13                 | 58                                       | F450DD334J250(1)      | PHE450HD6330J(1)   |
| 250 | 180 | 0.39           | 7.0              | 16.5   | 26.0   | 22.5             | 400          | DF/D17                 | 54                                       | F450DF394J250(1)      | PHE450HD6390J(1)   |
| 250 | 180 | 0.47           | 7.0              | 16.5   | 26.0   | 22.5             | 400          | DF/D17                 | 53                                       | F450DF474J250(1)      | PHE450HD6470J(1)   |
| 250 | 180 | 0.56           | 9.0              | 18.5   | 26.0   | 22.5             | 400          | DM/D15                 | 49                                       | F450DM564J250(1)      | PHE450HD6560J(1)   |
| 250 | 180 | 0.68           | 9.0              | 18.5   | 26.0   | 22.5             | 400          | DM/D15                 | 47                                       | F450DM684J250(1)      | PHE450HD6680J(1)   |
| 250 | 180 | 0.82           | 10.5             | 19.0   | 26.0   | 22.5             | 400          | DR/D18                 | 43                                       | F450DR824J250(1)      | PHE450HD6820J(1)   |
| 250 | 180 | 1.0            | 11.0             | 21.5   | 26.0   | 22.5             | 400          | DT/D16                 | 40                                       | F450DT105J250(1)      | PHE450HD7100J(1)   |
| 250 | 180 | 1.2            | 13.5             | 23.0   | 26.0   | 22.5             | 400          | DW/D20                 | 38                                       | F450DW125J250(1)      | PHE450HD7120J(1)   |
| 250 | 180 | 1.5            | 13.5             | 23.0   | 26.0   | 22.5             | 400          | DW/D20                 | 36                                       | F450DW155J250(1)      | PHE450HD7150J(1)   |
| 250 | 180 | 1.8            | 15.5             | 24.5   | 26.0   | 22.5             | 400          | DY/D19                 | 36                                       | F450DY185J250(1)      | PHE450HD7180J(1)   |
| 250 | 180 | 0.82           | 10.5             | 20.5   | 31.5   | 27.5             | 300          | FE/F11                 | 38                                       | F450FE824J250(1)      | PHE450HF6820J(1)   |
| 250 | 180 | 1.0            | 10.5             | 20.5   | 31.5   | 27.5             | 300          | FE/F11                 | 38                                       | F450FE105J250(1)      | PHE450HF7100J(1)   |
| 250 | 180 | 1.2            | 10.5             | 20.5   | 31.5   | 27.5             | 300          | FE/F11                 | 37                                       | F450FE125J250(1)      | PHE450HF7120J(1)   |
| 250 | 180 | 1.2            | 21.0             | 12.5   | 31.5   | 27.5             | 300          | FH/F17                 | 37                                       | F450FH125J250(1)      | PHE450HT7120J(1)   |
| 250 | 180 | 1.5            | 11.5             | 22.5   | 31.5   | 27.5             | 300          | FG/F12                 | 34                                       | F450FG155J250(1)      | PHE450HF7150J(1)   |
| 250 | 180 | 1.8            | 13.5             | 23.0   | 31.5   | 27.5             | 300          | FK/F03                 | 32                                       | F450FK185J250(1)      | PHE450HF7180J(1)   |
| 250 | 180 | 2.2            | 14.5             | 24.5   | 31.5   | 27.5             | 300          | FM/F13                 | 31                                       | F450FM225J250(1)      | PHE450HF7220J(1)   |
| 250 | 180 | 2.2            | 27.5             | 16.0   | 31.5   | 27.5             | 300          | FQ/F19                 | 31                                       | F450FQ225J250(1)      | PHE450HT7220J(1)   |
| 250 | 180 | 2.7            | 17.5             | 28.0   | 31.5   | 27.5             | 300          | FR/F14                 | 27                                       | F450FR275J250(1)      | PHE450HF7270J(1)   |
| 250 | 180 | 3.3            | 19.0             | 29.0   | 31.5   | 27.5             | 300          | FS/F15                 | 25                                       | F450FS335J250(1)      | PHE450HF7330J(1)   |
| 250 | 180 | 3.9            | 21.0             | 30.0   | 31.5   | 27.5             | 300          | FV/F16                 | 23                                       | F450FV395J250(1)      | PHE450HF7390J(1)   |
| 250 | 180 | 3.9            | 31.0             | 19.0   | 31.5   | 27.5             | 300          | FT/F18                 | 23                                       | F450FT395J250(1)      | PHE450HT7390J(1)   |
| 250 | 180 | 1.8            | 13.0             | 24.0   | 41.0   | 37.5             | 200          | RF/R05                 | 28                                       | F450RF185J250(1)      | PHE450HR7180J(1)   |
| 250 | 180 | 2.2            | 13.0             | 24.0   | 41.0   | 37.5             | 200          | RF/R05                 | 28                                       | F450RF225J250(1)      | PHE450HR7220J(1)   |
| 250 | 180 | 2.7            | 13.0             | 24.0   | 41.0   | 37.5             | 200          | RF/R05                 | 27                                       | F450RF275J250(1)      | PHE450HR7270J(1)   |
| 250 | 180 | 3.3            | 15.0             | 26.0   | 41.0   | 37.5             | 200          | RH/R04                 | 25                                       | F450RH335J250(1)      | PHE450HR7330J(1)   |
| 250 | 180 | 3.9            | 16.5             | 32.0   | 41.0   | 37.5             | 200          | RK/R02                 | 22                                       | F450RK395J250(1)      | PHE450HR7390J(1)   |
| 250 | 180 | 4.7            | 16.5             | 32.0   | 41.0   | 37.5             | 200          | RK/R02                 | 22                                       | F450RK475J250(1)      | PHE450HR7470J(1)   |
| 250 | 180 | 5.6            | 19.0             | 36.0   | 41.0   | 37.5             | 200          | RM/R03                 | 18                                       | F450RM565J250(1)      | PHE450HR7560J(1)   |
| 250 | 180 | 6.8            | 21.0             | 38.0   | 41.0   | 37.5             | 200          | RP/R06                 | 17                                       | F450RP685J250(1)      | PHE450HR7680J(1)   |
| 250 | 180 | 8.2            | 28.0             | 43.0   | 41.0   | 37.5             | 200          | RS/R08                 | 17                                       | F450RS825J250(1)      | PHE450HR7820J(1)   |
| 250 | 180 | 10             | 28.0             | 43.0   | 41.0   | 37.5             | 200          | RS/R08                 | 17                                       | F450RS106J250(1)      | PHE450HR8100J(1)   |
| 400 | 250 | 0.00033        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG331J400(1)      | PHE450KK3330J(1)   |
| 400 | 250 | 0.00039        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG391J400(1)      | PHE450KK3390J(1)   |
| 400 | 250 | 0.00047        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG471J400(1)      | PHE450KK3470J(1)   |
| 400 | 250 | 0.00056        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG561J400(1)      | PHE450KK3560J(1)   |
| 400 | 250 | 0.00068        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG681J400(1)      | PHE450KK3680J(1)   |
| 400 | 250 | 0.00082        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG821J400(1)      | PHE450KK3820J(1)   |
| 400 | 250 | 0.0010         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG102J400(1)      | PHE450KK4100J(1)   |
| 400 | 250 | 0.0012         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG122J400(1)      | PHE450KK4120J(1)   |
| 400 | 250 | 0.0015         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG152J400(1)      | PHE450KK4150J(1)   |
| 400 | 250 | 0.0018         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG182J400(1)      | PHE450KK4180J(1)   |
| 400 | 250 | 0.0022         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG222J400(1)      | PHE450KK4220J(1)   |
| 400 | 250 | 0.0027         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG272J400(1)      | PHE450KK4270J(1)   |
| 400 | 250 | 0.0033         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG332J400(1)      | PHE450KK4330J(1)   |
| 400 | 250 | 0.0039         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG392J400(1)      | PHE450KK4390J(1)   |
| 400 | 250 | 0.0047         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG472J400(1)      | PHE450KK4470J(1)   |
| VDC | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |
|-----|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|--------------------|
|     |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                    |
| 400 | 250 | 0.0056         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG562J400(1)      | PHE450KK4560J(1)   |
| 400 | 250 | 0.0068         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG682J400(1)      | PHE450KK4680J(1)   |
| 400 | 250 | 0.0082         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG822J400(1)      | PHE450KK4820J(1)   |
| 400 | 250 | 0.010          | 4.0              | 8.0    | 10.0   | 7.5              | 1200         | KG/K01                 | 160                                      | F450KG103J400(1)      | PHE450KK5100J(1)   |
| 400 | 250 | 0.012          | 4.0              | 8.0    | 10.0   | 7.5              | 1200         | KG/K01                 | 160                                      | F450KG123J400(1)      | PHE450KK5120J(1)   |
| 400 | 250 | 0.015          | 5.0              | 11.0   | 10.0   | 7.5              | 1200         | KK/K03                 | 160                                      | F450KK153J400(1)      | PHE450KK5150J(1)   |
| 400 | 250 | 0.018          | 5.0              | 11.0   | 10.0   | 7.5              | 1200         | KK/K03                 | 160                                      | F450KK183J400(1)      | PHE450KK5180J(1)   |
| 400 | 250 | 0.022          | 5.0              | 11.0   | 10.0   | 7.5              | 1200         | KK/K03                 | 160                                      | F450KK223J400(1)      | PHE450KK5220J(1)   |
| 400 | 250 | 0.027          | 5.0              | 11.0   | 10.0   | 7.5              | 1200         | KK/K03                 | 160                                      | F450KK273J400(1)      | PHE450KK5270J(1)   |
| 400 | 250 | 0.033          | 5.0              | 11.0   | 10.0   | 7.5              | 1200         | KK/K03                 | 160                                      | F450KK333J400(1)      | PHE450KK5330J(1)   |
| 400 | 250 | 0.039          | 6.0              | 12.0   | 10.5   | 7.5              | 1200         | KM/K04                 | 160                                      | F450KM393J400(1)      | PHE450KK5390J(1)   |
| 400 | 250 | 0.047          | 6.0              | 12.0   | 10.5   | 7.5              | 1200         | KM/K04                 | 160                                      | F450KM473J400(1)      | PHE450KK5470J(1)   |
| 400 | 250 | 0.0010         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG102J400(1)      | PHE450KA4100J(1)   |
| 400 | 250 | 0.0012         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG122J400(1)      | PHE450KA4120J(1)   |
| 400 | 250 | 0.0015         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG152J400(1)      | PHE450KA4150J(1)   |
| 400 | 250 | 0.0018         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG182J400(1)      | PHE450KA4180J(1)   |
| 400 | 250 | 0.0022         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG222J400(1)      | PHE450KA4220J(1)   |
| 400 | 250 | 0.0027         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG272J400(1)      | PHE450KA4270J(1)   |
| 400 | 250 | 0.0033         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG332J400(1)      | PHE450KA4330J(1)   |
| 400 | 250 | 0.0039         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG392J400(1)      | PHE450KA4390J(1)   |
| 400 | 250 | 0.0047         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG472J400(1)      | PHE450KA4470J(1)   |
| 400 | 250 | 0.0056         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG562J400(1)      | PHE450KA4560J(1)   |
| 400 | 250 | 0.0068         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG682J400(1)      | PHE450KA4680J(1)   |
| 400 | 250 | 0.0082         | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG822J400(1)      | PHE450KA4820J(1)   |
| 400 | 250 | 0.010          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG103J400(1)      | PHE450KA5100J(1)   |
| 400 | 250 | 0.012          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG123J400(1)      | PHE450KA5120J(1)   |
| 400 | 250 | 0.015          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG153J400(1)      | PHE450KA5150J(1)   |
| 400 | 250 | 0.018          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                      | F450AG183J400(1)      | PHE450KA5180J(1)   |
| 400 | 250 | 0.022          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                      | F450AG223J400(1)      | PHE450KA5220J(1)   |
| 400 | 250 | 0.027          | 4.0              | 9.0    | 13.0   | 10               | 1100         | AG/A01                 | 142                                      | F450AG273J400(1)      | PHE450KA5270J(1)   |
| 400 | 250 | 0.033          | 4.5              | 10.5   | 13.0   | 10               | 1100         | AH/A02                 | 122                                      | F450AH333J400(1)      | PHE450KA5330J(1)   |
| 400 | 250 | 0.039          | 5.0              | 11.0   | 13.0   | 10               | 1100         | AK/A03                 | 116                                      | F450AK393J400(1)      | PHE450KA5390J(1)   |
| 400 | 250 | 0.047          | 6.0              | 12.0   | 13.0   | 10               | 1100         | AP/A04                 | 105                                      | F450AP473J400(1)      | PHE450KA5470J(1)   |
| 400 | 250 | 0.056          | 6.0              | 12.0   | 13.0   | 10               | 1100         | AP/A04                 | 105                                      | F450AP563J400(1)      | PHE450KA5560J(1)   |
| 400 | 250 | 0.033          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD333J400(1)      | PHE450KB5330J(1)   |
| 400 | 250 | 0.039          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                      | F450BD393J400(1)      | PHE450KB5390J(1)   |
| 400 | 250 | 0.047          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                      | F450BD473J400(1)      | PHE450KB5470J(1)   |
| 400 | 250 | 0.056          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                      | F450BD563J400(1)      | PHE450KB5560J(1)   |
| 400 | 250 | 0.068          | 5.5              | 10.5   | 18.0   | 15               | 1000         | BD/B04                 | 100                                      | F450BD683J400(1)      | PHE450KB5680J(1)   |
| 400 | 250 | 0.082          | 5.5              | 12.5   | 18.0   | 15               | 1000         | BE/B05                 | 99                                       | F450BE823J400(1)      | PHE450KB5820J(1)   |
| 400 | 250 | 0.10           | 6.5              | 12.5   | 18.0   | 15               | 1000         | BJ/B10                 | 85                                       | F450BJ104J400(1)      | PHE450KB6100J(1)   |
| 400 | 250 | 0.12           | 7.5              | 14.5   | 18.0   | 15               | 1000         | BL/B06                 | 75                                       | F450BL124J400(1)      | PHE450KB6120J(1)   |
| 400 | 250 | 0.15           | 7.5              | 14.5   | 18.0   | 15               | 1000         | BL/B06                 | 75                                       | F450BL154J400(1)      | PHE450KB6150J(1)   |
| 400 | 250 | 0.18           | 8.0              | 15.0   | 18.0   | 15               | 1000         | BM/B12                 | 71                                       | F450BM184J400(1)      | PHE450KB6180J(1)   |
| 400 | 250 | 0.22           | 9.5              | 17.5   | 18.0   | 15               | 1000         | BV/B14                 | 60                                       | F450BV224J400(1)      | PHE450KB6220J(1)   |
| 400 | 250 | 0.27           | 9.5              | 17.5   | 18.0   | 15               | 1000         | BV/B14                 | 59                                       | F450BV274J400(1)      | PHE450KB6270J(1)   |
| 400 | 250 | 0.12           | 6.5              | 14.5   | 26.0   | 22.5             | 600          | DD/D13                 | 58                                       | F450DD124J400(1)      | PHE450KD6120J(1)   |
| 400 | 250 | 0.15           | 6.5              | 14.5   | 26.0   | 22.5             | 600          | DD/D13                 | 58                                       | F450DD154J400(1)      | PHE450KD6150J(1)   |
| 400 | 250 | 0.18           | 6.5              | 14.5   | 26.0   | 22.5             | 600          | DD/D13                 | 58                                       | F450DD184J400(1)      | PHE450KD6180J(1)   |
| 400 | 250 | 0.22           | 7.0              | 16.5   | 26.0   | 22.5             | 600          | DF/D17                 | 52                                       | F450DF224J400(1)      | PHE450KD6220J(1)   |
| 400 | 250 | 0.27           | 7.0              | 16.5   | 26.0   | 22.5             | 600          | DF/D17                 | 52                                       | F450DF274J400(1)      | PHE450KD6270J(1)   |
| 400 | 250 | 0.33           | 9.0              | 18.5   | 26.0   | 22.5             | 600          | DM/D15                 | 48                                       | F450DM334J400(1)      | PHE450KD6330J(1)   |
| 400 | 250 | 0.39           | 9.0              | 18.5   | 26.0   | 22.5             | 600          | DM/D15                 | 48                                       | F450DM394J400(1)      | PHE450KD6390J(1)   |
| 400 | 250 | 0.47           | 10.5             | 19.0   | 26.0   | 22.5             | 600          | DR/D18                 | 45                                       | F450DR474J400(1)      | PHE450KD6470J(1)   |
| 400 | 250 | 0.56           | 11.0             | 21.5   | 26.0   | 22.5             | 600          | DT/D16                 | 40                                       | F450DT564J400(1)      | PHE450KD6560J(1)   |
| 400 | 250 | 0.68           | 13.5             | 23.0   | 26.0   | 22.5             | 600          | DW/D20                 | 35                                       | F450DW684J400(1)      | PHE450KD6680J(1)   |
| 400 | 250 | 0.82           | 13.5             | 23.0   | 26.0   | 22.5             | 600          | DW/D20                 | 35                                       | F450DW824J400(1)      | PHE450KD6820J(1)   |
| 400 | 250 | 1.0            | 15.5             | 24.5   | 26.0   | 22.5             | 600          | DY/D19                 | 33                                       | F450DY105J400(1)      | PHE450KD7100J(1)   |
| 400 | 250 | 0.47           | 10.5             | 20.5   | 31.5   | 27.5             | 500          | FE/F11                 | 38                                       | F450FE474J400(1)      | PHE450KF6470J(1)   |
| VDC | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |
|-----|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|--------------------|
|     |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                    |
| 400 | 250 | 0.56           | 10.5             | 20.5   | 31.5   | 27.5             | 500          | FE/F11                 | 38                                       | F450FE564J400(1)      | PHE450KF6560J(1)   |
| 400 | 250 | 0.68           | 10.5             | 20.5   | 31.5   | 27.5             | 500          | FE/F11                 | 38                                       | F450FE684J400(1)      | PHE450KF6680J(1)   |
| 400 | 250 | 0.68           | 21.0             | 12.5   | 31.5   | 27.5             | 500          | FH/F17                 | 38                                       | F450FH684J400(1)      | PHE450KT6680J(1)   |
| 400 | 250 | 0.82           | 11.5             | 22.5   | 31.5   | 27.5             | 500          | FG/F12                 | 34                                       | F450FG824J400(1)      | PHE450KF6820J(1)   |
| 400 | 250 | 1.0            | 13.5             | 23.0   | 31.5   | 27.5             | 500          | FK/F03                 | 32                                       | F450FK105J400(1)      | PHE450KF7100J(1)   |
| 400 | 250 | 1.2            | 14.5             | 24.5   | 31.5   | 27.5             | 500          | FM/F13                 | 30                                       | F450FM125J400(1)      | PHE450KF7120J(1)   |
| 400 | 250 | 1.5            | 17.5             | 28.0   | 31.5   | 27.5             | 500          | FR/F14                 | 27                                       | F450FR155J400(1)      | PHE450KF7150J(1)   |
| 400 | 250 | 1.5            | 27.5             | 16.0   | 31.5   | 27.5             | 500          | FQ/F19                 | 27                                       | F450FQ155J400(1)      | PHE450KT7150J(1)   |
| 400 | 250 | 1.8            | 19.0             | 29.0   | 31.5   | 27.5             | 500          | FS/F15                 | 25                                       | F450FS185J400(1)      | PHE450KF7180J(1)   |
| 400 | 250 | 2.2            | 21.0             | 30.0   | 31.5   | 27.5             | 500          | FV/F16                 | 24                                       | F450FV225J400(1)      | PHE450KF7220J(1)   |
| 400 | 250 | 2.2            | 31.0             | 19.0   | 31.5   | 27.5             | 500          | FT/F18                 | 24                                       | F450FT225J400(1)      | PHE450KT7220J(1)   |
| 400 | 250 | 1.0            | 13.0             | 24.0   | 41.0   | 37.5             | 300          | RF/R05                 | 27                                       | F450RF105J400(1)      | PHE450KR7100J(1)   |
| 400 | 250 | 1.2            | 13.0             | 24.0   | 41.0   | 37.5             | 300          | RF/R05                 | 27                                       | F450RF125J400(1)      | PHE450KR7120J(1)   |
| 400 | 250 | 1.5            | 13.0             | 24.0   | 41.0   | 37.5             | 300          | RF/R05                 | 27                                       | F450RF155J400(1)      | PHE450KR7150J(1)   |
| 400 | 250 | 1.8            | 15.0             | 26.0   | 41.0   | 37.5             | 300          | RH/R04                 | 25                                       | F450RH185J400(1)      | PHE450KR7180J(1)   |
| 400 | 250 | 2.2            | 16.5             | 32.0   | 41.0   | 37.5             | 300          | RK/R02                 | 22                                       | F450RK225J400(1)      | PHE450KR7220J(1)   |
| 400 | 250 | 2.7            | 16.5             | 32.0   | 41.0   | 37.5             | 300          | RK/R02                 | 22                                       | F450RK275J400(1)      | PHE450KR7270J(1)   |
| 400 | 250 | 3.3            | 19.0             | 36.0   | 41.0   | 37.5             | 300          | RM/R03                 | 19                                       | F450RM335J400(1)      | PHE450KR7330J(1)   |
| 400 | 250 | 3.9            | 19.0             | 36.0   | 41.0   | 37.5             | 300          | RM/R03                 | 19                                       | F450RM395J400(1)      | PHE450KR7390J(1)   |
| 400 | 250 | 4.7            | 21.0             | 38.0   | 41.0   | 37.5             | 300          | RP/R06                 | 17                                       | F450RP475J400(1)      | PHE450KR7470J(1)   |
| 400 | 250 | 5.6            | 28.0             | 43.0   | 41.0   | 37.5             | 300          | RS/R08                 | 17                                       | F450RS565J400(1)      | PHE450KR7560J(1)   |
| 630 | 300 | 0.00039        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG391J630(1)      | PHE450MK3390J(1)   |
| 630 | 300 | 0.00047        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG471J630(1)      | PHE450MK3470J(1)   |
| 630 | 300 | 0.00056        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG561J630(1)      | PHE450MK3560J(1)   |
| 630 | 300 | 0.00068        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG681J630(1)      | PHE450MK3680J(1)   |
| 630 | 300 | 0.00082        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG821J630(1)      | PHE450MK3820J(1)   |
| 630 | 300 | 0.0010         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG102J630(1)      | PHE450MK4100J(1)   |
| 630 | 300 | 0.0012         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG122J630(1)      | PHE450MK4120J(1)   |
| 630 | 300 | 0.0015         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG152J630(1)      | PHE450MK4150J(1)   |
| 630 | 300 | 0.0018         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG182J630(1)      | PHE450MK4180J(1)   |
| 630 | 300 | 0.0022         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG222J630(1)      | PHE450MK4220J(1)   |
| 630 | 300 | 0.0027         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG272J630(1)      | PHE450MK4270J(1)   |
| 630 | 300 | 0.0033         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG332J630(1)      | PHE450MK4330J(1)   |
| 630 | 300 | 0.0039         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG392J630(1)      | PHE450MK4390J(1)   |
| 630 | 300 | 0.0047         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG472J630(1)      | PHE450MK4470J(1)   |
| 630 | 300 | 0.0056         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG562J630(1)      | PHE450MK4560J(1)   |
| 630 | 300 | 0.0068         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG682J630(1)      | PHE450MK4680J(1)   |
| 630 | 300 | 0.0082         | 4.0              | 8.0    | 10.0   | 7.5              | 1400         | KG/K01                 | 160                                      | F450KG822J630(1)      | PHE450MK4820J(1)   |
| 630 | 300 | 0.010          | 5.0              | 11.0   | 10.0   | 7.5              | 1400         | KK/K03                 | 160                                      | F450KK103J630(1)      | PHE450MK5100J(1)   |
| 630 | 300 | 0.012          | 5.0              | 11.0   | 10.0   | 7.5              | 1400         | KK/K03                 | 160                                      | F450KK123J630(1)      | PHE450MK5120J(1)   |
| 630 | 300 | 0.015          | 5.0              | 11.0   | 10.0   | 7.5              | 1400         | KK/K03                 | 160                                      | F450KK153J630(1)      | PHE450MK5150J(1)   |
| 630 | 300 | 0.018          | 5.0              | 11.0   | 10.0   | 7.5              | 1400         | KK/K03                 | 160                                      | F450KK183J630(1)      | PHE450MK5180J(1)   |
| 630 | 300 | 0.022          | 6.0              | 12.0   | 10.5   | 7.5              | 1400         | KM/K04                 | 160                                      | F450KM223J630(1)      | PHE450MK5220J(1)   |
| 630 | 300 | 0.0010         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG102J630(1)      | PHE450MA4100J(1)   |
| 630 | 300 | 0.0012         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG122J630(1)      | PHE450MA4120J(1)   |
| 630 | 300 | 0.0015         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG152J630(1)      | PHE450MA4150J(1)   |
| 630 | 300 | 0.0018         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG182J630(1)      | PHE450MA4180J(1)   |
| 630 | 300 | 0.0022         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG222J630(1)      | PHE450MA4220J(1)   |
| 630 | 300 | 0.0027         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG272J630(1)      | PHE450MA4270J(1)   |
| 630 | 300 | 0.0033         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG332J630(1)      | PHE450MA4330J(1)   |
| 630 | 300 | 0.0039         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG392J630(1)      | PHE450MA4390J(1)   |
| 630 | 300 | 0.0047         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG472J630(1)      | PHE450MA4470J(1)   |
| 630 | 300 | 0.0056         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG562J630(1)      | PHE450MA4560J(1)   |
| 630 | 300 | 0.0068         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                      | F450AG682J630(1)      | PHE450MA4680J(1)   |
| 630 | 300 | 0.0082         | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG822J630(1)      | PHE450MA4820J(1)   |
| 630 | 300 | 0.010          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG103J630(1)      | PHE450MA5100J(1)   |
| 630 | 300 | 0.012          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG123J630(1)      | PHE450MA5120J(1)   |
| 630 | 300 | 0.015          | 4.0              | 9.0    | 13.0   | 10               | 1200         | AG/A01                 | 142                                      | F450AG153J630(1)      | PHE450MA5150J(1)   |
| 630 | 300 | 0.018          | 4.5              | 10.5   | 13.0   | 10               | 1200         | AH/A02                 | 122                                      | F450AH183J630(1)      | PHE450MA5180J(1)   |
| VDC | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |
|------|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|--------------------|
|      |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                    |
| 630  | 300 | 0.022          | 4.5              | 10.5   | 13.0   | 10               | 1200         | AH/A02                 | 122                                      | F450AH223J630(1)      | PHE450MA5220J(1)   |
| 630  | 300 | 0.027          | 5.0              | 11.0   | 13.0   | 10               | 1200         | AK/A03                 | 116                                      | F450AK273J630(1)      | PHE450MA5270J(1)   |
| 630  | 300 | 0.033          | 6.0              | 12.0   | 13.0   | 10               | 1200         | AP/A04                 | 105                                      | F450AP333J630(1)      | PHE450MA5330J(1)   |
| 630  | 300 | 0.039          | 6.0              | 12.0   | 13.0   | 10               | 1200         | AP/A04                 | 105                                      | F450AP393J630(1)      | PHE450MA5390J(1)   |
| 630  | 400 | 0.010          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD103J630(1)      | PHE450MB5100J(1)   |
| 630  | 400 | 0.012          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD123J630(1)      | PHE450MB5120J(1)   |
| 630  | 400 | 0.015          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD153J630(1)      | PHE450MB5150J(1)   |
| 630  | 400 | 0.018          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD183J630(1)      | PHE450MB5180J(1)   |
| 630  | 400 | 0.022          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD223J630(1)      | PHE450MB5220J(1)   |
| 630  | 400 | 0.027          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD273J630(1)      | PHE450MB5270J(1)   |
| 630  | 400 | 0.033          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 100                                      | F450BD333J630(1)      | PHE450MB5330J(1)   |
| 630  | 400 | 0.039          | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 90                                       | F450BE393J630(1)      | PHE450MB5390J(1)   |
| 630  | 400 | 0.047          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 85                                       | F450BJ473J630(1)      | PHE450MB5470J(1)   |
| 630  | 400 | 0.056          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 85                                       | F450BJ563J630(1)      | PHE450MB5560J(1)   |
| 630  | 400 | 0.068          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 75                                       | F450BL683J630(1)      | PHE450MB5680J(1)   |
| 630  | 400 | 0.082          | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 72                                       | F450BM823J630(1)      | PHE450MB5820J(1)   |
| 630  | 400 | 0.10           | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 70                                       | F450BQ104J630(1)      | PHE450MB6100J(1)   |
| 630  | 400 | 0.12           | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 61                                       | F450BV124J630(1)      | PHE450MB6120J(1)   |
| 630  | 400 | 0.15           | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 61                                       | F450BV154J630(1)      | PHE450MB6150J(1)   |
| 630  | 400 | 0.033          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD333J630(1)      | PHE450MD5330J(1)   |
| 630  | 400 | 0.039          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD393J630(1)      | PHE450MD5390J(1)   |
| 630  | 400 | 0.047          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD473J630(1)      | PHE450MD5470J(1)   |
| 630  | 400 | 0.056          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD563J630(1)      | PHE450MD5560J(1)   |
| 630  | 400 | 0.068          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 59                                       | F450DD683J630(1)      | PHE450MD5680J(1)   |
| 630  | 400 | 0.082          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 59                                       | F450DD823J630(1)      | PHE450MD5820J(1)   |
| 630  | 400 | 0.10           | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 59                                       | F450DD104J630(1)      | PHE450MD6100J(1)   |
| 630  | 400 | 0.12           | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF124J630(1)      | PHE450MD6120J(1)   |
| 630  | 400 | 0.15           | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF154J630(1)      | PHE450MD6150J(1)   |
| 630  | 400 | 0.18           | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                       | F450DM184J630(1)      | PHE450MD6180J(1)   |
| 630  | 400 | 0.22           | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                       | F450DM224J630(1)      | PHE450MD6220J(1)   |
| 630  | 400 | 0.27           | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT274J630(1)      | PHE450MD6270J(1)   |
| 630  | 400 | 0.33           | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT334J630(1)      | PHE450MD6330J(1)   |
| 630  | 400 | 0.39           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW394J630(1)      | PHE450MD6390J(1)   |
| 630  | 400 | 0.47           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW474J630(1)      | PHE450MD6470J(1)   |
| 630  | 400 | 0.56           | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 34                                       | F450DY564J630(1)      | PHE450MD6560J(1)   |
| 630  | 400 | 0.22           | 10.5             | 20.5   | 31.5   | 27.5             | 1100         | FE/F11                 | 38                                       | F450FE224J630(1)      | PHE450MF6220J(1)   |
| 630  | 400 | 0.27           | 10.5             | 20.5   | 31.5   | 27.5             | 1100         | FE/F11                 | 38                                       | F450FE274J630(1)      | PHE450MF6270J(1)   |
| 630  | 400 | 0.33           | 10.5             | 20.5   | 31.5   | 27.5             | 1100         | FE/F11                 | 38                                       | F450FE334J630(1)      | PHE450MF6330J(1)   |
| 630  | 400 | 0.39           | 10.5             | 20.5   | 31.5   | 27.5             | 1100         | FE/F11                 | 38                                       | F450FE394J630(1)      | PHE450MF6390J(1)   |
| 630  | 400 | 0.39           | 21.0             | 12.5   | 31.5   | 27.5             | 1100         | FH/F17                 | 38                                       | F450FH394J630(1)      | PHE450MT6390J(1)   |
| 630  | 400 | 0.47           | 11.5             | 22.5   | 31.5   | 27.5             | 1100         | FG/F12                 | 35                                       | F450FG474J630(1)      | PHE450MF6470J(1)   |
| 630  | 400 | 0.56           | 13.5             | 23.0   | 31.5   | 27.5             | 1100         | FK/F03                 | 34                                       | F450FK564J630(1)      | PHE450MF6560J(1)   |
| 630  | 400 | 0.68           | 14.5             | 24.5   | 31.5   | 27.5             | 1100         | FM/F13                 | 33                                       | F450FM684J630(1)      | PHE450MF6680J(1)   |
| 630  | 400 | 0.82           | 17.5             | 28.0   | 31.5   | 27.5             | 1100         | FR/F14                 | 30                                       | F450FR824J630(1)      | PHE450MF6820J(1)   |
| 630  | 400 | 0.82           | 27.5             | 16.0   | 31.5   | 27.5             | 1100         | FQ/F19                 | 30                                       | F450FQ824J630(1)      | PHE450MT6820J(1)   |
| 630  | 400 | 1.0            | 17.5             | 28.0   | 31.5   | 27.5             | 1100         | FR/F14                 | 30                                       | F450FR105J630(1)      | PHE450MF7100J(1)   |
| 630  | 400 | 1.2            | 21.0             | 30.0   | 31.5   | 27.5             | 1100         | FV/F16                 | 25                                       | F450FV125J630(1)      | PHE450MF7120J(1)   |
| 630  | 400 | 1.2            | 31.0             | 19.0   | 31.5   | 27.5             | 1100         | FT/F18                 | 25                                       | F450FT125J630(1)      | PHE450MT7120J(1)   |
| 630  | 400 | 0.56           | 13.0             | 24.0   | 41.0   | 37.5             | 700          | RF/R05                 | 29                                       | F450RF564J630(1)      | PHE450MR6560J(1)   |
| 630  | 400 | 0.68           | 13.0             | 24.0   | 41.0   | 37.5             | 700          | RF/R05                 | 28                                       | F450RF684J630(1)      | PHE450MR6680J(1)   |
| 630  | 400 | 0.82           | 13.0             | 24.0   | 41.0   | 37.5             | 700          | RF/R05                 | 28                                       | F450RF824J630(1)      | PHE450MR6820J(1)   |
| 630  | 400 | 1.0            | 15.0             | 26.0   | 41.0   | 37.5             | 700          | RH/R04                 | 27                                       | F450RH105J630(1)      | PHE450MR7100J(1)   |
| 630  | 400 | 1.2            | 15.0             | 26.0   | 41.0   | 37.5             | 700          | RH/R04                 | 27                                       | F450RH125J630(1)      | PHE450MR7120J(1)   |
| 630  | 400 | 1.5            | 16.5             | 32.0   | 41.0   | 37.5             | 700          | RK/R02                 | 24                                       | F450RK155J630(1)      | PHE450MR7150J(1)   |
| 630  | 400 | 1.8            | 19.0             | 36.0   | 41.0   | 37.5             | 700          | RM/R03                 | 20                                       | F450RM185J630(1)      | PHE450MR7180J(1)   |
| 630  | 400 | 2.2            | 19.0             | 36.0   | 41.0   | 37.5             | 700          | RM/R03                 | 20                                       | F450RM225J630(1)      | PHE450MR7220J(1)   |
| 630  | 400 | 2.7            | 21.0             | 38.0   | 41.0   | 37.5             | 700          | RP/R06                 | 18                                       | F450RP275J630(1)      | PHE450MR7270J(1)   |
| 630  | 400 | 3.3            | 28.0             | 43.0   | 41.0   | 37.5             | 700          | RS/R08                 | 18                                       | F450RS335J630(1)      | PHE450MR7330J(1)   |
| 1000 | 375 | 0.00033        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                      | F450KG331J1K0(1)      | PHE450PK3330J(1)   |
| VDC  | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number  |
|------|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------|-----------------------|---------------------|
|      |     |                | B                | H      | L      |                  |              |                        |                                    |                       |                     |
| 1000 | 375 | 0.00039        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG391J1K0(1)      | PHE450PK3390J(1)    |
| 1000 | 375 | 0.00047        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG471J1K0(1)      | PHE450PK3470J(1)    |
| 1000 | 375 | 0.00056        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG561J1K0(1)      | PHE450PK3560J(1)    |
| 1000 | 375 | 0.00068        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG681J1K0(1)      | PHE450PK3680J(1)    |
| 1000 | 375 | 0.00082        | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG821J1K0(1)      | PHE450PK3820J(1)    |
| 1000 | 375 | 0.0010         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG102J1K0(1)      | PHE450PK4100J(1)    |
| 1000 | 375 | 0.0012         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG122J1K0(1)      | PHE450PK4120J(1)    |
| 1000 | 375 | 0.0015         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG152J1K0(1)      | PHE450PK4150J(1)    |
| 1000 | 375 | 0.0018         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG182J1K0(1)      | PHE450PK4180J(1)    |
| 1000 | 375 | 0.0022         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG222J1K0(1)      | PHE450PK4220J(1)    |
| 1000 | 375 | 0.0027         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG272J1K0(1)      | PHE450PK4270J(1)    |
| 1000 | 375 | 0.0033         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG332J1K0(1)      | PHE450PK4330J(1)    |
| 1000 | 375 | 0.0039         | 4.0              | 8.0    | 10.0   | 7.5              | 2000         | KG/K01                 | 160                                | F450KG392J1K0(1)      | PHE450PK4390J(1)    |
| 1000 | 375 | 0.0047         | 5.0              | 11.0   | 10.0   | 7.5              | 2000         | KK/K03                 | 160                                | F450KK472J1K0(1)      | PHE450PK4470J(1)    |
| 1000 | 375 | 0.0056         | 5.0              | 11.0   | 10.0   | 7.5              | 2000         | KK/K03                 | 160                                | F450KK562J1K0(1)      | PHE450PK4560J(1)    |
| 1000 | 375 | 0.0068         | 5.0              | 11.0   | 10.0   | 7.5              | 2000         | KK/K03                 | 160                                | F450KK682J1K0(1)      | PHE450PK4680J(1)    |
| 1000 | 375 | 0.0082         | 5.0              | 11.0   | 10.0   | 7.5              | 2000         | KK/K03                 | 160                                | F450KK822J1K0(1)      | PHE450PK4820J(1)    |
| 1000 | 375 | 0.010          | 6.0              | 12.0   | 10.5   | 7.5              | 2000         | KM/K04                 | 160                                | F450KM103J1K0(1)      | PHE450PK5100J(1)    |
| 1000 | 375 | 0.012          | 6.0              | 12.0   | 10.5   | 7.5              | 2000         | KM/K04                 | 160                                | F450KM123J1K0(1)      | PHE450PK5120J(1)    |
| 1000 | 375 | 0.0010         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG102J1K0(1)      | PHE450PA4100J(1)    |
| 1000 | 375 | 0.0012         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG122J1K0(1)      | PHE450PA4120J(1)    |
| 1000 | 375 | 0.0015         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG152J1K0(1)      | PHE450PA4150J(1)    |
| 1000 | 375 | 0.0018         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG182J1K0(1)      | PHE450PA4180J(1)    |
| 1000 | 375 | 0.0022         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG222J1K0(1)      | PHE450PA4220J(1)    |
| 1000 | 375 | 0.0027         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG272J1K0(1)      | PHE450PA4270J(1)    |
| 1000 | 375 | 0.0033         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG332J1K0(1)      | PHE450PA4330J(1)    |
| 1000 | 375 | 0.0039         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG392J1K0(1)      | PHE450PA4390J(1)    |
| 1000 | 375 | 0.0047         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG472J1K0(1)      | PHE450PA4470J(1)    |
| 1000 | 375 | 0.0056         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG562J1K0(1)      | PHE450PA4560J(1)    |
| 1000 | 375 | 0.0068         | 4.0              | 9.0    | 13.0   | 10               | 1400         | AG/A01                 | 142                                | F450AG682J1K0(1)      | PHE450PA4680J(1)    |
| 1000 | 375 | 0.0082         | 4.5              | 10.5   | 13.0   | 10               | 1400         | AH/A02                 | 122                                | F450AH822J1K0(1)      | PHE450PA4820J(1)    |
| 1000 | 375 | 0.010          | 4.5              | 10.5   | 13.0   | 10               | 1400         | AH/A02                 | 122                                | F450AH103J1K0(1)      | PHE450PA5100J(1)    |
| 1000 | 375 | 0.012          | 5.0              | 11.0   | 13.0   | 10               | 1400         | AK/A03                 | 116                                | F450AK123J1K0(1)      | PHE450PA5120J(1)    |
| 1000 | 375 | 0.015          | 6.0              | 12.0   | 13.0   | 10               | 1400         | AP/A04                 | 105                                | F450AP153J1K0(1)      | PHE450PA5150J(1)    |
| 1000 | 375 | 0.018          | 6.0              | 12.0   | 13.0   | 10               | 1400         | AP/A04                 | 105                                | F450AP183J1K0(1)      | PHE450PA5180J(1)    |
| 1000 | 600 | 0.0039         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD392J1K0(1)      | PHE450PB4390J(1)    |
| 1000 | 600 | 0.0047         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD472J1K0(1)      | PHE450PB4470J(1)    |
| 1000 | 600 | 0.0056         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD562J1K0(1)      | PHE450PB4560J(1)    |
| 1000 | 600 | 0.0068         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                 | F450BD682J1K0(1)      | PHE450PB4680J(1)    |
| 1000 | 600 | 0.0082         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                 | F450BD822J1K0(1)      | PHE450PB4820J(1)    |
| 1000 | 600 | 0.010          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                 | F450BD103J1K0(1)      | PHE450PB5100J(1)    |
| 1000 | 600 | 0.012          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                 | F450BD123J1K0(1)      | PHE450PB5120J(1)    |
| 1000 | 600 | 0.015          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                 | F450BD153J1K0(1)      | PHE450PB5150J(1)    |
| 1000 | 600 | 0.018          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD183J1K0(1)      | PHE450PB5180JB04(1) |
| 1000 | 600 | 0.022          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD223J1K0(1)      | PHE450PB5220JB04(1) |
| 1000 | 600 | 0.027          | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 90                                 | F450BE273J1K0(1)      | PHE450PB5270JB05(1) |
| 1000 | 600 | 0.033          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 87                                 | F450BJ333J1K0(1)      | PHE450PB5330JB10(1) |
| 1000 | 600 | 0.039          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 78                                 | F450BL393J1K0(1)      | PHE450PB5390J(1)    |
| 1000 | 600 | 0.047          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 78                                 | F450BL473J1K0(1)      | PHE450PB5470JB06(1) |
| 1000 | 600 | 0.056          | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 75                                 | F450BM563J1K0(1)      | PHE450PB5560JB12(1) |
| 1000 | 600 | 0.068          | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 70                                 | F450BQ683J1K0(1)      | PHE450PB5680JB11(1) |
| 1000 | 600 | 0.082          | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                 | F450BV823J1K0(1)      | PHE450PB5820JB14(1) |
| 1000 | 600 | 0.10           | 11.0             | 19.0   | 18.0   | 15               | 2500         | BY/B16                 | 55                                 | F450BY104J1K0(1)      | PHE450PB6100JB16(1) |
| 1000 | 600 | 0.12           | 11.0             | 19.0   | 18.0   | 15               | 2500         | BY/B16                 | 55                                 | F450BY124J1K0(1)      | PHE450PB6120JB16(1) |
| 1000 | 600 | 0.022          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD223J1K0(1)      | PHE450PD5220J(1)    |
| 1000 | 600 | 0.027          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD273J1K0(1)      | PHE450PD5270J(1)    |
| 1000 | 600 | 0.033          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD333J1K0(1)      | PHE450PD5330J(1)    |
| 1000 | 600 | 0.039          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD393J1K0(1)      | PHE450PD5390J(1)    |
| 1000 | 600 | 0.047          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD473J1K0(1)      | PHE450PD5470J(1)    |
| VDC  | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number  |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |
|------|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|--------------------|
|      |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                    |
| 1000 | 600 | 0.056          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD563J1K0(1)      | PHE450PD5560J(1)   |
| 1000 | 600 | 0.068          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 55                                       | F450DD683J1K0(1)      | PHE450PD5680J(1)   |
| 1000 | 600 | 0.082          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 54                                       | F450DD823J1K0(1)      | PHE450PD5820J(1)   |
| 1000 | 600 | 0.10           | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 52                                       | F450DF104J1K0(1)      | PHE450PD6100J(1)   |
| 1000 | 600 | 0.12           | 8.0              | 16.0   | 26.0   | 22.5             | 1800         | DH/D14                 | 52                                       | F450DH124J1K0(1)      | PHE450PD6120J(1)   |
| 1000 | 600 | 0.15           | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 49                                       | F450DM154J1K0(1)      | PHE450PD6150J(1)   |
| 1000 | 600 | 0.18           | 10.5             | 19.0   | 26.0   | 22.5             | 1800         | DR/D18                 | 46                                       | F450DR184J1K0(1)      | PHE450PD6180J(1)   |
| 1000 | 600 | 0.22           | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 44                                       | F450DT224J1K0(1)      | PHE450PD6220J(1)   |
| 1000 | 600 | 0.27           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW274J1K0(1)      | PHE450PD6270J(1)   |
| 1000 | 600 | 0.33           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DM/D20                 | 40                                       | F450DM234J1K0(1)      | PHE450PD6330J(1)   |
| 1000 | 600 | 0.39           | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 35                                       | F450DY394J1K0(1)      | PHE450PD6390J(1)   |
| 1000 | 600 | 0.15           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 38                                       | F450FE154J1K0(1)      | PHE450PF6150J(1)   |
| 1000 | 600 | 0.18           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 38                                       | F450FE184J1K0(1)      | PHE450PF6180J(1)   |
| 1000 | 600 | 0.22           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 36                                       | F450FE224J1K0(1)      | PHE450PF6220J(1)   |
| 1000 | 600 | 0.22           | 21.0             | 12.5   | 31.5   | 27.5             | 1300         | FH/F17                 | 36                                       | F450FH224J1K0(1)      | PHE450PT6220J(1)   |
| 1000 | 600 | 0.27           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 36                                       | F450FE274J1K0(1)      | PHE450PF6270J(1)   |
| 1000 | 600 | 0.33           | 11.5             | 22.5   | 31.5   | 27.5             | 1300         | FG/F12                 | 35                                       | F450FG334J1K0(1)      | PHE450PF6330J(1)   |
| 1000 | 600 | 0.39           | 13.5             | 23.0   | 31.5   | 27.5             | 1300         | FK/F03                 | 34                                       | F450FK394J1K0(1)      | PHE450PF6390J(1)   |
| 1000 | 600 | 0.47           | 14.5             | 24.5   | 31.5   | 27.5             | 1300         | FM/F13                 | 34                                       | F450FM474J1K0(1)      | PHE450PF6470J(1)   |
| 1000 | 600 | 0.47           | 27.5             | 16.0   | 31.5   | 27.5             | 1300         | FQ/F19                 | 30                                       | F450FQ474J1K0(1)      | PHE450PT6470J(1)   |
| 1000 | 600 | 0.56           | 17.5             | 28.0   | 31.5   | 27.5             | 1300         | FR/F14                 | 28                                       | F450FR564J1K0(1)      | PHE450PF6560J(1)   |
| 1000 | 600 | 0.68           | 17.5             | 28.0   | 31.5   | 27.5             | 1300         | FR/F14                 | 28                                       | F450FR684J1K0(1)      | PHE450PF6680J(1)   |
| 1000 | 600 | 0.68           | 31.0             | 19.0   | 31.5   | 27.5             | 1300         | FT/F18                 | 25                                       | F450FT684J1K0(1)      | PHE450PT6680J(1)   |
| 1000 | 600 | 0.82           | 19.0             | 29.0   | 31.5   | 27.5             | 1300         | FS/F15                 | 25                                       | F450FS824J1K0(1)      | PHE450PF6820J(1)   |
| 1000 | 600 | 1.0            | 21.0             | 30.0   | 31.5   | 27.5             | 1300         | FV/F16                 | 25                                       | F450FV105J1K0(1)      | PHE450PF7100J(1)   |
| 1000 | 600 | 0.33           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 28                                       | F450RF334J1K0(1)      | PHE450PR6330J(1)   |
| 1000 | 600 | 0.39           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 28                                       | F450RF394J1K0(1)      | PHE450PR6390J(1)   |
| 1000 | 600 | 0.47           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 28                                       | F450RF474J1K0(1)      | PHE450PR6470J(1)   |
| 1000 | 600 | 0.56           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF564J1K0(1)      | PHE450PR6560J(1)   |
| 1000 | 600 | 0.68           | 15.0             | 26.0   | 41.0   | 37.5             | 800          | RH/R04                 | 25                                       | F450RH684J1K0(1)      | PHE450PR6680J(1)   |
| 1000 | 600 | 0.82           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 25                                       | F450RK824J1K0(1)      | PHE450PR6820J(1)   |
| 1000 | 600 | 1.0            | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 20                                       | F450RK105J1K0(1)      | PHE450PR7100J(1)   |
| 1000 | 600 | 1.2            | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 19                                       | F450RM125J1K0(1)      | PHE450PR7120J(1)   |
| 1000 | 600 | 1.5            | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 19                                       | F450RM155J1K0(1)      | PHE450PR7150J(1)   |
| 1000 | 600 | 1.8            | 21.0             | 38.0   | 41.0   | 37.5             | 800          | RP/R06                 | 19                                       | F450RP185J1K0(1)      | PHE450PR7180J(1)   |
| 1000 | 600 | 2.2            | 28.0             | 43.0   | 41.0   | 37.5             | 800          | RS/R08                 | 19                                       | F450RS225J1K0(1)      | PHE450PR7220J(1)   |
| 1600 | 650 | 0.0027         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD272J1K6(1)      | PHE450RB4270J(1)   |
| 1600 | 650 | 0.0033         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD332J1K6(1)      | PHE450RB4330J(1)   |
| 1600 | 650 | 0.0039         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD392J1K6(1)      | PHE450RB4390J(1)   |
| 1600 | 650 | 0.0047         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD472J1K6(1)      | PHE450RB4470J(1)   |
| 1600 | 650 | 0.0056         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD562J1K6(1)      | PHE450RB4560J(1)   |
| 1600 | 650 | 0.0068         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD682J1K6(1)      | PHE450RB4680J(1)   |
| 1600 | 650 | 0.0082         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD822J1K6(1)      | PHE450RB4820J(1)   |
| 1600 | 650 | 0.010          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD103J1K6(1)      | PHE450RB5100J(1)   |
| 1600 | 650 | 0.012          | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 99                                       | F450BD123J1K6(1)      | PHE450RB5120J(1)   |
| 1600 | 650 | 0.015          | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 90                                       | F450BE153J1K6(1)      | PHE450RB5150J(1)   |
| 1600 | 650 | 0.018          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 88                                       | F450BJ183J1K6(1)      | PHE450RB5180J(1)   |
| 1600 | 650 | 0.022          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 89                                       | F450BJ223J1K6(1)      | PHE450RB5220J(1)   |
| 1600 | 650 | 0.027          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                       | F450BL273J1K6(1)      | PHE450RB5270J(1)   |
| 1600 | 650 | 0.033          | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 75                                       | F450BM333J1K6(1)      | PHE450RB5330J(1)   |
| 1600 | 650 | 0.039          | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 73                                       | F450BQ393J1K6(1)      | PHE450RB5390J(1)   |
| 1600 | 650 | 0.047          | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                       | F450BV473J1K6(1)      | PHE450RB5470J(1)   |
| 1600 | 650 | 0.056          | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                       | F450BV563J1K6(1)      | PHE450RB5560J(1)   |
| 1600 | 650 | 0.010          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD103J1K6(1)      | PHE450RD5100J(1)   |
| 1600 | 650 | 0.012          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD123J1K6(1)      | PHE450RD5120J(1)   |
| 1600 | 650 | 0.015          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD153J1K6(1)      | PHE450RD5150J(1)   |
| 1600 | 650 | 0.018          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD183J1K6(1)      | PHE450RD5180J(1)   |
| 1600 | 650 | 0.022          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD223J1K6(1)      | PHE450RD5220J(1)   |
| 1600 | 650 | 0.027          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD273J1K6(1)      | PHE450RD5270J(1)   |
| VDC  | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number  |
|------|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|---------------------|
|      |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                     |
| 1600 | 650 | 0.033          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD333J1K6(1)      | PHE450RD5330J(1)    |
| 1600 | 650 | 0.039          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD393J1K6(1)      | PHE450RD5390J(1)    |
| 1600 | 650 | 0.047          | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF473J1K6(1)      | PHE450RD5470J(1)    |
| 1600 | 650 | 0.056          | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF563J1K6(1)      | PHE450RD5560J(1)    |
| 1600 | 650 | 0.068          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                       | F450DM683J1K6(1)      | PHE450RD5680J(1)    |
| 1600 | 650 | 0.082          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                       | F450DM823J1K6(1)      | PHE450RD5820J(1)    |
| 1600 | 650 | 0.10           | 10.5             | 19.0   | 26.0   | 22.5             | 1800         | DR/D18                 | 48                                       | F450DR104J1K6(1)      | PHE450RD6100J(1)    |
| 1600 | 650 | 0.12           | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT124J1K6(1)      | PHE450RD6120J(1)    |
| 1600 | 650 | 0.15           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW154J1K6(1)      | PHE450RD6150J(1)    |
| 1600 | 650 | 0.18           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW184J1K6(1)      | PHE450RD6180J(1)    |
| 1600 | 650 | 0.22           | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 34                                       | F450DY224J1K6(1)      | PHE450RD6220J(1)    |
| 1600 | 650 | 0.082          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 37                                       | F450FE823J1K6(1)      | PHE450RF5820J(1)    |
| 1600 | 650 | 0.10           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 37                                       | F450FE104J1K6(1)      | PHE450RF6100J(1)    |
| 1600 | 650 | 0.10           | 21.0             | 12.5   | 31.5   | 27.5             | 1300         | FH/F17                 | 37                                       | F450FH104J1K6(1)      | PHE450RT6100J(1)    |
| 1600 | 650 | 0.12           | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 37                                       | F450FE124J1K6(1)      | PHE450RF6120J(1)    |
| 1600 | 650 | 0.15           | 11.5             | 22.5   | 31.5   | 27.5             | 1300         | FG/F12                 | 36                                       | F450FG154J1K6(1)      | PHE450RF6150J(1)    |
| 1600 | 650 | 0.18           | 13.5             | 23.0   | 31.5   | 27.5             | 1300         | FK/F03                 | 35                                       | F450FK184J1K6(1)      | PHE450RF6180J(1)    |
| 1600 | 650 | 0.22           | 14.5             | 24.5   | 31.5   | 27.5             | 1300         | FM/F13                 | 35                                       | F450FM224J1K6(1)      | PHE450RF6220J(1)    |
| 1600 | 650 | 0.22           | 27.5             | 16.0   | 31.5   | 27.5             | 1300         | FQ/F19                 | 35                                       | F450FQ224J1K6(1)      | PHE450RT6220J(1)    |
| 1600 | 650 | 0.27           | 17.5             | 28.0   | 31.5   | 27.5             | 1300         | FR/F14                 | 32                                       | F450FR274J1K6(1)      | PHE450RF6270J(1)    |
| 1600 | 650 | 0.33           | 19.0             | 29.0   | 31.5   | 27.5             | 1300         | FS/F15                 | 28                                       | F450FS334J1K6(1)      | PHE450RF6330J(1)    |
| 1600 | 650 | 0.33           | 31.0             | 19.0   | 31.5   | 27.5             | 1300         | FT/F18                 | 28                                       | F450FT334J1K6(1)      | PHE450RT6330J(1)    |
| 1600 | 650 | 0.39           | 21.0             | 30.0   | 31.5   | 27.5             | 1300         | FV/F16                 | 25                                       | F450FV394J1K6(1)      | PHE450RF6390J(1)    |
| 1600 | 650 | 0.18           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF184J1K6(1)      | PHE450RR6180J(1)    |
| 1600 | 650 | 0.22           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF224J1K6(1)      | PHE450RR6220J(1)    |
| 1600 | 650 | 0.27           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF274J1K6(1)      | PHE450RR6270J(1)    |
| 1600 | 650 | 0.33           | 15.0             | 26.0   | 41.0   | 37.5             | 800          | RH/R04                 | 26                                       | F450RH334J1K6(1)      | PHE450RR6330J(1)    |
| 1600 | 650 | 0.39           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 24                                       | F450RK394J1K6(1)      | PHE450RR6390J(1)    |
| 1600 | 650 | 0.47           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 24                                       | F450RK474J1K6(1)      | PHE450RR6470J(1)    |
| 1600 | 650 | 0.56           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 20                                       | F450RK564J1K6(1)      | PHE450RR6560J(1)    |
| 1600 | 650 | 0.68           | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 20                                       | F450RM684J1K6(1)      | PHE450RR6680J(1)    |
| 1600 | 650 | 0.82           | 21.0             | 38.0   | 41.0   | 37.5             | 800          | RP/R06                 | 18                                       | F450RP824J1K6(1)      | PHE450RR6820J(1)    |
| 1600 | 650 | 1.0            | 28.0             | 43.0   | 41.0   | 37.5             | 800          | RS/R08                 | 18                                       | F450RS105J1K6(1)      | PHE450RR7100JR08(1) |
| 2000 | 700 | 0.0010         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD102J2K0(1)      | PHE450SB4100J(1)    |
| 2000 | 700 | 0.0012         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD122J2K0(1)      | PHE450SB4120J(1)    |
| 2000 | 700 | 0.0015         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD152J2K0(1)      | PHE450SB4150J(1)    |
| 2000 | 700 | 0.0018         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD182J2K0(1)      | PHE450SB4180J(1)    |
| 2000 | 700 | 0.0022         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD222J2K0(1)      | PHE450SB4220J(1)    |
| 2000 | 700 | 0.0027         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD272J2K0(1)      | PHE450SB4270J(1)    |
| 2000 | 700 | 0.0033         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD332J2K0(1)      | PHE450SB4330J(1)    |
| 2000 | 700 | 0.0039         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD392J2K0(1)      | PHE450SB4390J(1)    |
| 2000 | 700 | 0.0047         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD472J2K0(1)      | PHE450SB4470J(1)    |
| 2000 | 700 | 0.0056         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD562J2K0(1)      | PHE450SB4560J(1)    |
| 2000 | 700 | 0.0068         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD682J2K0(1)      | PHE450SB4680J(1)    |
| 2000 | 700 | 0.0082         | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 92                                       | F450BE822J2K0(1)      | PHE450SB4820J(1)    |
| 2000 | 700 | 0.010          | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 90                                       | F450BJ103J2K0(1)      | PHE450SB5100J(1)    |
| 2000 | 700 | 0.012          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                       | F450BL123J2K0(1)      | PHE450SB5120J(1)    |
| 2000 | 700 | 0.015          | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                       | F450BL153J2K0(1)      | PHE450SB5150J(1)    |
| 2000 | 700 | 0.018          | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 75                                       | F450BM183J2K0(1)      | PHE450SB5180J(1)    |
| 2000 | 700 | 0.022          | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 70                                       | F450BQ223J2K0(1)      | PHE450SB5220J(1)    |
| 2000 | 700 | 0.027          | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 61                                       | F450BV273J2K0(1)      | PHE450SB5270J(1)    |
| 2000 | 700 | 0.0033         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD332J2K0(1)      | PHE450SD4330J(1)    |
| 2000 | 700 | 0.0039         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD392J2K0(1)      | PHE450SD4390J(1)    |
| 2000 | 700 | 0.0047         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD472J2K0(1)      | PHE450SD4470J(1)    |
| 2000 | 700 | 0.0056         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD562J2K0(1)      | PHE450SD4560J(1)    |
| 2000 | 700 | 0.0068         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD682J2K0(1)      | PHE450SD4680J(1)    |
| 2000 | 700 | 0.0082         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD822J2K0(1)      | PHE450SD4820J(1)    |
| 2000 | 700 | 0.010          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD103J2K0(1)      | PHE450SD5100J(1)    |
| 2000 | 700 | 0.012          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD123J2K0(1)      | PHE450SD5120J(1)    |
| VDC  | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number  |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number  |
|------|-----|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------------|-----------------------|---------------------|
|      |     |                | B                | H      | L      |                  |              |                        |                                          |                       |                     |
| 2000 | 700 | 0.015          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD153J2K0(1)      | PHE450SD5150J(1)    |
| 2000 | 700 | 0.018          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD183J2K0(1)      | PHE450SD5180J(1)    |
| 2000 | 700 | 0.022          | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                       | F450DD223J2K0(1)      | PHE450SD5220J(1)    |
| 2000 | 700 | 0.027          | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF273J2K0(1)      | PHE450SD5270J(1)    |
| 2000 | 700 | 0.033          | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                       | F450DF333J2K0(1)      | PHE450SD5330J(1)    |
| 2000 | 700 | 0.039          | 8.0              | 16.0   | 26.0   | 22.5             | 1800         | DH/D14                 | 53                                       | F450DH393J2K0(1)      | PHE450SD5390J(1)    |
| 2000 | 700 | 0.047          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 52                                       | F450DM473J2K0(1)      | PHE450SD5470J(1)    |
| 2000 | 700 | 0.056          | 10.5             | 19.0   | 26.0   | 22.5             | 1800         | DR/D18                 | 50                                       | F450DR563J2K0(1)      | PHE450SD5560J(1)    |
| 2000 | 700 | 0.068          | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT683J2K0(1)      | PHE450SD5680J(1)    |
| 2000 | 700 | 0.082          | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT823J2K0(1)      | PHE450SD5820J(1)    |
| 2000 | 700 | 0.10           | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 40                                       | F450DW104J2K0(1)      | PHE450SD6100J(1)    |
| 2000 | 700 | 0.12           | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 35                                       | F450DY124J2K0(1)      | PHE450SD6120J(1)    |
| 2000 | 700 | 0.047          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 37                                       | F450FE473J2K0(1)      | PHE450SF5470J(1)    |
| 2000 | 700 | 0.056          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 37                                       | F450FE563J2K0(1)      | PHE450SF5560J(1)    |
| 2000 | 700 | 0.056          | 21.0             | 12.5   | 31.5   | 27.5             | 1300         | FH/F17                 | 37                                       | F450FH563J2K0(1)      | PHE450ST5560J(1)    |
| 2000 | 700 | 0.068          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 36                                       | F450FE683J2K0(1)      | PHE450SF5680J(1)    |
| 2000 | 700 | 0.082          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 35                                       | F450FE823J2K0(1)      | PHE450SF5820J(1)    |
| 2000 | 700 | 0.10           | 11.5             | 22.5   | 31.5   | 27.5             | 1300         | FG/F12                 | 34                                       | F450FG104J2K0(1)      | PHE450SF6100JF12(1) |
| 2000 | 700 | 0.12           | 13.5             | 23.0   | 31.5   | 27.5             | 1300         | FK/F03                 | 32                                       | F450FK124J2K0(1)      | PHE450SF6120JF03(1) |
| 2000 | 700 | 0.12           | 27.5             | 16.0   | 31.5   | 27.5             | 1300         | FQ/F19                 | 32                                       | F450FQ124J2K0(1)      | PHE450ST6120J(1)    |
| 2000 | 700 | 0.15           | 14.5             | 24.5   | 31.5   | 27.5             | 1300         | FM/F13                 | 30                                       | F450FM154J2K0(1)      | PHE450SF6150JF13(1) |
| 2000 | 700 | 0.18           | 17.5             | 28.0   | 31.5   | 27.5             | 1300         | FR/F14                 | 28                                       | F450FR184J2K0(1)      | PHE450SF6180JF14(1) |
| 2000 | 700 | 0.18           | 31.0             | 19.0   | 31.5   | 27.5             | 1300         | FT/F18                 | 28                                       | F450FT184J2K0(1)      | PHE450ST6180J(1)    |
| 2000 | 700 | 0.22           | 19.0             | 29.0   | 31.5   | 27.5             | 1300         | FS/F15                 | 26                                       | F450FS224J2K0(1)      | PHE450SF6220JF15(1) |
| 2000 | 700 | 0.27           | 21.0             | 30.0   | 31.5   | 27.5             | 1300         | FV/F16                 | 25                                       | F450FV274J2K0(1)      | PHE450SF6270JF16(1) |
| 2000 | 700 | 0.10           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF104J2K0(1)      | PHE450SR6100J(1)    |
| 2000 | 700 | 0.12           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 27                                       | F450RF124J2K0(1)      | PHE450SR6120J(1)    |
| 2000 | 700 | 0.15           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 26                                       | F450RF154J2K0(1)      | PHE450SR6150JR05(1) |
| 2000 | 700 | 0.18           | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 26                                       | F450RF184J2K0(1)      | PHE450SR6180JR05(1) |
| 2000 | 700 | 0.22           | 15.0             | 26.0   | 41.0   | 37.5             | 800          | RH/R04                 | 24                                       | F450RH224J2K0(1)      | PHE450SR6220JR04(1) |
| 2000 | 700 | 0.27           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 22                                       | F450RK274J2K0(1)      | PHE450SR6270JR02(1) |
| 2000 | 700 | 0.33           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 22                                       | F450RK334J2K0(1)      | PHE450SR6330JR02(1) |
| 2000 | 700 | 0.39           | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 18                                       | F450RM394J2K0(1)      | PHE450SR6390JR03(1) |
| 2000 | 700 | 0.47           | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 18                                       | F450RM474J2K0(1)      | PHE450SR6470JR03(1) |
| 2000 | 700 | 0.56           | 21.0             | 38.0   | 41.0   | 37.5             | 800          | RP/R06                 | 18                                       | F450RP564J2K0(1)      | PHE450SR6560JR06(1) |
| 2000 | 700 | 0.68           | 28.0             | 43.0   | 41.0   | 37.5             | 800          | RS/R08                 | 18                                       | F450RS684J2K0(1)      | PHE450SR6680JR08(1) |
| 2500 | 900 | 0.0010         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD102J2K5(1)      | PHE450TB4100J(1)    |
| 2500 | 900 | 0.0012         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD122J2K5(1)      | PHE450TB4120J(1)    |
| 2500 | 900 | 0.0015         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD152J2K5(1)      | PHE450TB4150J(1)    |
| 2500 | 900 | 0.0018         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                       | F450BD182J2K5(1)      | PHE450TB4180J(1)    |
| 2500 | 900 | 0.0022         | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 92                                       | F450BE222J2K5(1)      | PHE450TB4220J(1)    |
| 2500 | 900 | 0.0027         | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 90                                       | F450BJ272J2K5(1)      | PHE450TB4270J(1)    |
| 2500 | 900 | 0.0033         | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                       | F450BL332J2K5(1)      | PHE450TB4330J(1)    |
| 2500 | 900 | 0.0039         | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                       | F450BL392J2K5(1)      | PHE450TB4390J(1)    |
| 2500 | 900 | 0.0047         | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 75                                       | F450BM472J2K5(1)      | PHE450TB4470J(1)    |
| 2500 | 900 | 0.0056         | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 70                                       | F450BQ562J2K5(1)      | PHE450TB4560J(1)    |
| 2500 | 900 | 0.0068         | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                       | F450BV682J2K5(1)      | PHE450TB4680JB14(1) |
| 2500 | 900 | 0.0082         | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                       | F450BV822J2K5(1)      | PHE450TB4820J(1)    |
| 2500 | 900 | 0.010          | 11.0             | 19.0   | 18.0   | 15               | 2500         | BY/B16                 | 55                                       | F450BY103J2K5(1)      | PHE450TB5100JB16(1) |
| 2500 | 900 | 0.0047         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD472J2K5(1)      | PHE450TD4470J(1)    |
| 2500 | 900 | 0.0056         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD562J2K5(1)      | PHE450TD4560J(1)    |
| 2500 | 900 | 0.0068         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 60                                       | F450DD682J2K5(1)      | PHE450TD4680J(1)    |
| 2500 | 900 | 0.0082         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 55                                       | F450DD822J2K5(1)      | PHE450TD4820JD13(1) |
| 2500 | 900 | 0.010          | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 53                                       | F450DF103J2K5(1)      | PHE450TD5100JD17(1) |
| 2500 | 900 | 0.012          | 8.0              | 16.0   | 26.0   | 22.5             | 1800         | DH/D14                 | 52                                       | F450DH123J2K5(1)      | PHE450TD5120JD14(1) |
| 2500 | 900 | 0.015          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 52                                       | F450DM153J2K5(1)      | PHE450TD5150J(1)    |
| 2500 | 900 | 0.018          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                       | F450DM183J2K5(1)      | PHE450TD5180JD15(1) |
| 2500 | 900 | 0.022          | 10.5             | 19.0   | 26.0   | 22.5             | 1800         | DR/D18                 | 48                                       | F450DR223J2K5(1)      | PHE450TD5220JD18(1) |
| 2500 | 900 | 0.027          | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 45                                       | F450DT273J2K5(1)      | PHE450TD5270JD16(1) |
| VDC  | VAC | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W<br>85°C<br>0.2m/s | New KEMET Part Number | Legacy Part Number  |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

**Table 1 – Ratings & Part Number Reference cont'd**

| VDC  | VAC  | Cap Value (μF) | Dimensions in mm |        |        | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number  |
|------|------|----------------|------------------|--------|--------|------------------|--------------|------------------------|------------------------------------|-----------------------|---------------------|
|      |      |                | B                | H      | L      |                  |              |                        |                                    |                       |                     |
| 2500 | 900  | 0.033          | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 38                                 | F450DW333J2K5(1)      | PHE450TD5330JD20(1) |
| 2500 | 900  | 0.039          | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 38                                 | F450DW393J2K5(1)      | PHE450TD5390JD20(1) |
| 2500 | 900  | 0.047          | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 35                                 | F450DY473J2K5(1)      | PHE450TD5470JD19(1) |
| 2500 | 900  | 0.027          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 38                                 | F450FE273J2K5(1)      | PHE450TF5270JF11(1) |
| 2500 | 900  | 0.033          | 10.5             | 20.5   | 31.5   | 27.5             | 1300         | FE/F11                 | 38                                 | F450FE333J2K5(1)      | PHE450TF5330JF11(1) |
| 2500 | 900  | 0.039          | 11.5             | 22.5   | 31.5   | 27.5             | 1300         | FG/F12                 | 36                                 | F450FG393J2K5(1)      | PHE450TF5390JF12(1) |
| 2500 | 900  | 0.047          | 13.5             | 23.0   | 31.5   | 27.5             | 1300         | FK/F03                 | 35                                 | F450FK473J2K5(1)      | PHE450TF5470JF03(1) |
| 2500 | 900  | 0.056          | 13.5             | 23.0   | 31.5   | 27.5             | 1300         | FK/F03                 | 35                                 | F450FK563J2K5(1)      | PHE450TF5560JF03(1) |
| 2500 | 900  | 0.068          | 14.5             | 24.5   | 31.5   | 27.5             | 1300         | FM/F13                 | 34                                 | F450FM683J2K5(1)      | PHE450TF5680JF13(1) |
| 2500 | 900  | 0.027          | 17.5             | 28.0   | 31.5   | 27.5             | 1300         | FR/F14                 | 30                                 | F450FR273J2K5(1)      | PHE450TF5270JF14(1) |
| 2500 | 900  | 0.10           | 19.0             | 29.0   | 31.5   | 27.5             | 1300         | FS/F15                 | 28                                 | F450FS104J2K5(1)      | PHE450TF6100JF15(1) |
| 2500 | 900  | 0.12           | 21.0             | 30.0   | 31.5   | 27.5             | 1300         | FV/F16                 | 25                                 | F450FV124J2K5(1)      | PHE450TF6120JF16(1) |
| 2500 | 900  | 0.068          | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 28                                 | F450RF683J2K5(1)      | PHE450TR5680JR05(1) |
| 2500 | 900  | 0.082          | 13.0             | 24.0   | 41.0   | 37.5             | 800          | RF/R05                 | 28                                 | F450RF823J2K5(1)      | PHE450TR5820JR05(1) |
| 2500 | 900  | 0.10           | 15.0             | 26.0   | 41.0   | 37.5             | 800          | RH/R04                 | 27                                 | F450RH104J2K5(1)      | PHE450TR6100JR04(1) |
| 2500 | 900  | 0.12           | 15.0             | 26.0   | 41.0   | 37.5             | 800          | RH/R04                 | 27                                 | F450RH124J2K5(1)      | PHE450TR6120JR04(1) |
| 2500 | 900  | 0.15           | 16.5             | 32.0   | 41.0   | 37.5             | 800          | RK/R02                 | 25                                 | F450RK154J2K5(1)      | PHE450TR6150JR02(1) |
| 2500 | 900  | 0.18           | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 20                                 | F450RM184J2K5(1)      | PHE450TR6180JR03(1) |
| 2500 | 900  | 0.22           | 19.0             | 36.0   | 41.0   | 37.5             | 800          | RM/R03                 | 20                                 | F450RM224J2K5(1)      | PHE450TR6220JR03(1) |
| 2500 | 900  | 0.22           | 21.0             | 38.0   | 41.0   | 37.5             | 800          | RP/R06                 | 19                                 | F450RP224J2K5(1)      | PHE450TR6220J(1)    |
| 2500 | 900  | 0.27           | 21.0             | 38.0   | 41.0   | 37.5             | 800          | RP/R06                 | 19                                 | F450RP274J2K5(1)      | PHE450TR6270JR06(1) |
| 2500 | 900  | 0.33           | 28.0             | 43.0   | 41.0   | 37.5             | 800          | RS/R08                 | 19                                 | F450RS334J2K5(1)      | PHE450TR6330JR08(1) |
| 3000 | 1000 | 0.0010         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD102J3K0(1)      | PHE450XB4100JB04(1) |
| 3000 | 1000 | 0.0012         | 5.5              | 10.5   | 18.0   | 15               | 2500         | BD/B04                 | 98                                 | F450BD122J3K0(1)      | PHE450XB4120JB04(1) |
| 3000 | 1000 | 0.0015         | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 92                                 | F450BE152J3K0(1)      | PHE450XB4150JB05(1) |
| 3000 | 1000 | 0.0018         | 5.5              | 12.5   | 18.0   | 15               | 2500         | BE/B05                 | 90                                 | F450BE182J3K0(1)      | PHE450XB4180JB05(1) |
| 3000 | 1000 | 0.0022         | 6.5              | 12.5   | 18.0   | 15               | 2500         | BJ/B10                 | 87                                 | F450BJ222J3K0(1)      | PHE450XB4220JB10(1) |
| 3000 | 1000 | 0.0027         | 7.5              | 14.5   | 18.0   | 15               | 2500         | BL/B06                 | 80                                 | F450BL272J3K0(1)      | PHE450XB4270JB06(1) |
| 3000 | 1000 | 0.0033         | 8.0              | 15.0   | 18.0   | 15               | 2500         | BM/B12                 | 75                                 | F450BM332J3K0(1)      | PHE450XB4330JB12(1) |
| 3000 | 1000 | 0.0039         | 8.5              | 16.0   | 18.0   | 15               | 2500         | BQ/B11                 | 70                                 | F450BQ392J3K0(1)      | PHE450XB4390JB11(1) |
| 3000 | 1000 | 0.0047         | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 61                                 | F450BV472J3K0(1)      | PHE450XB4470JB14(1) |
| 3000 | 1000 | 0.0056         | 9.5              | 17.5   | 18.0   | 15               | 2500         | BV/B14                 | 60                                 | F450BV562J3K0(1)      | PHE450XB4560JB14(1) |
| 3000 | 1000 | 0.0068         | 11.0             | 19.0   | 18.0   | 15               | 2500         | BY/B16                 | 55                                 | F450BY682J3K0(1)      | PHE450XB4680JB16(1) |
| 3000 | 1000 | 0.0047         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD472J3K0(1)      | PHE450XD4470JD13(1) |
| 3000 | 1000 | 0.0056         | 6.5              | 14.5   | 26.0   | 22.5             | 1800         | DD/D13                 | 58                                 | F450DD562J3K0(1)      | PHE450XD4560JD13(1) |
| 3000 | 1000 | 0.0068         | 7.0              | 16.5   | 26.0   | 22.5             | 1800         | DF/D17                 | 55                                 | F450DF682J3K0(1)      | PHE450XD4680JD17(1) |
| 3000 | 1000 | 0.0082         | 8.0              | 16.0   | 26.0   | 22.5             | 1800         | DH/D14                 | 54                                 | F450DH822J3K0(1)      | PHE450XD4820JD14(1) |
| 3000 | 1000 | 0.010          | 9.0              | 18.5   | 26.0   | 22.5             | 1800         | DM/D15                 | 50                                 | F450DM103J3K0(1)      | PHE450XD5100JD15(1) |
| 3000 | 1000 | 0.012          | 10.5             | 19.0   | 26.0   | 22.5             | 1800         | DR/D18                 | 49                                 | F450DR123J3K0(1)      | PHE450XD5120JD18(1) |
| 3000 | 1000 | 0.015          | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 44                                 | F450DT153J3K0(1)      | PHE450XD5150JD16(1) |
| 3000 | 1000 | 0.018          | 11.0             | 21.5   | 26.0   | 22.5             | 1800         | DT/D16                 | 44                                 | F450DT183J3K0(1)      | PHE450XD5180JD16(1) |
| 3000 | 1000 | 0.022          | 13.5             | 23.0   | 26.0   | 22.5             | 1800         | DW/D20                 | 38                                 | F450DW223J3K0(1)      | PHE450XD5220JD20(1) |
| 3000 | 1000 | 0.027          | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 35                                 | F450DY273J3K0(1)      | PHE450XD5270JD19(1) |
| 3000 | 1000 | 0.033          | 15.5             | 24.5   | 26.0   | 22.5             | 1800         | DY/D19                 | 35                                 | F450DY333J3K0(1)      | PHE450XD5330JD19(1) |
| VDC  | VAC  | Cap Value (μF) | B (mm)           | H (mm) | L (mm) | Lead Spacing (p) | dV/dt (V/μs) | Size Code (New/Legacy) | R <sub>thja</sub> °C/W 85°C 0.2m/s | New KEMET Part Number | Legacy Part Number  |

(1) Insert lead and packaging code. See Ordering Options Table for available options.

## Soldering Process

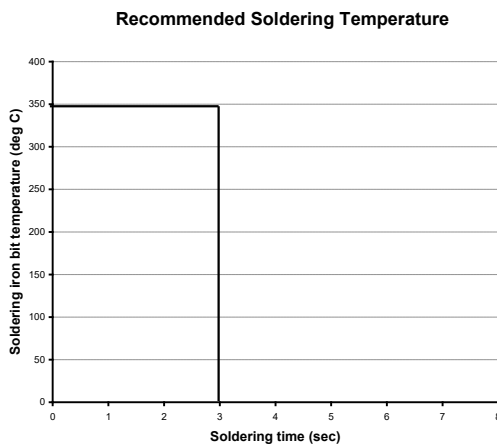
The implementation of the RoHS directive has resulted in the selection of SnAgCu (SAC) alloys or SnCu alloys as primary solder. This has increased the liquidus temperature from that of 183°C for SnPb eutectic alloy to 217 – 221°C for the new alloys. As a result, the heat stress to the components, even in wave soldering, has increased considerably due to higher pre-heat and wave temperatures. Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170°C). Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 mm to 15 mm), and great care has to be taken during soldering. The recommended solder profiles from KEMET should be used. Please consult KEMET with any questions. In general, the wave soldering curve from IEC Publication 61760-1 Edition 2 serves as a solid guideline for successful soldering. Please see Figure 1.

Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the above the recommended limits may result to degradation or permanent damage to the capacitors.

Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after the curing of surface mount parts. Consult KEMET to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process. A maximum two soldering cycles is recommended. Please allow time for the capacitor surface temperature to return to a normal temperature before the second soldering cycle.

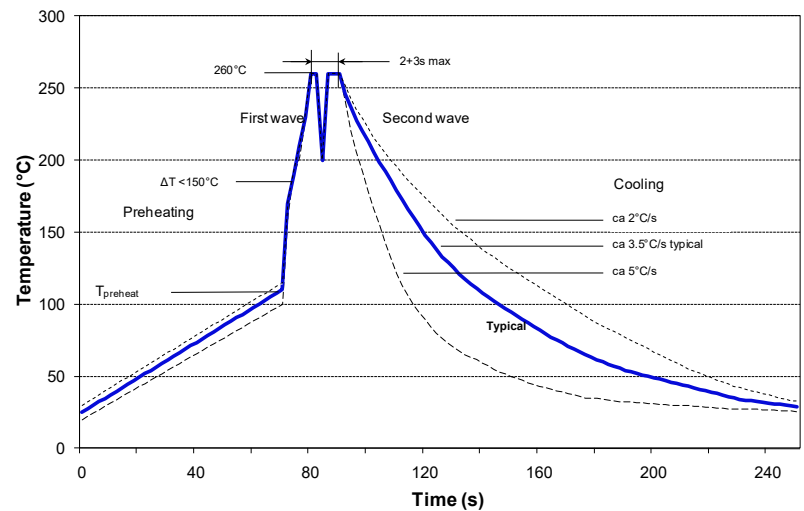
### Manual Soldering Recommendations

Following is the recommendation for manual soldering with a soldering iron.



The soldering iron tip temperature should be set at 350°C (+10°C maximum) with the soldering duration not to exceed more than 3 seconds.

### Wave Soldering Recommendations



## Soldering Process cont'd

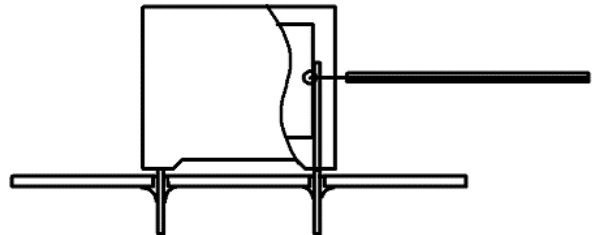
### Wave Soldering Recommendations cont'd

1. The table indicates the maximum set-up temperature of the soldering process  
Figure 1

| Dielectric Film Material | Maximum Preheat Temperature |                         |                         | Maximum Peak Soldering Temperature |                         |
|--------------------------|-----------------------------|-------------------------|-------------------------|------------------------------------|-------------------------|
|                          | Capacitor Pitch ≤ 10 mm     | Capacitor Pitch = 15 mm | Capacitor Pitch > 15 mm | Capacitor Pitch ≤ 15 mm            | Capacitor Pitch > 15 mm |
| Polyester                | 130°C                       | 130°C                   | 130°C                   | 270°C                              | 270°C                   |
| Polypropylene            | 100°C                       | 110°C                   | 130°C                   | 260°C                              | 270°C                   |
| Paper                    | 130°C                       | 130°C                   | 140°C                   | 270°C                              | 270°C                   |
| Polyphenylene Sulphide   | 150°C                       | 150°C                   | 160°C                   | 270°C                              | 270°C                   |

2. The maximum temperature measured inside the capacitor:  
Set the temperature so that inside the element the maximum temperature is below the limit:

| Dielectric Film Material | Maximum temperature measured inside the element |
|--------------------------|-------------------------------------------------|
| Polyester                | 160°C                                           |
| Polypropylene            | 110°C                                           |
| Paper                    | 160°C                                           |
| Polyphenylene sulphide   | 160°C                                           |



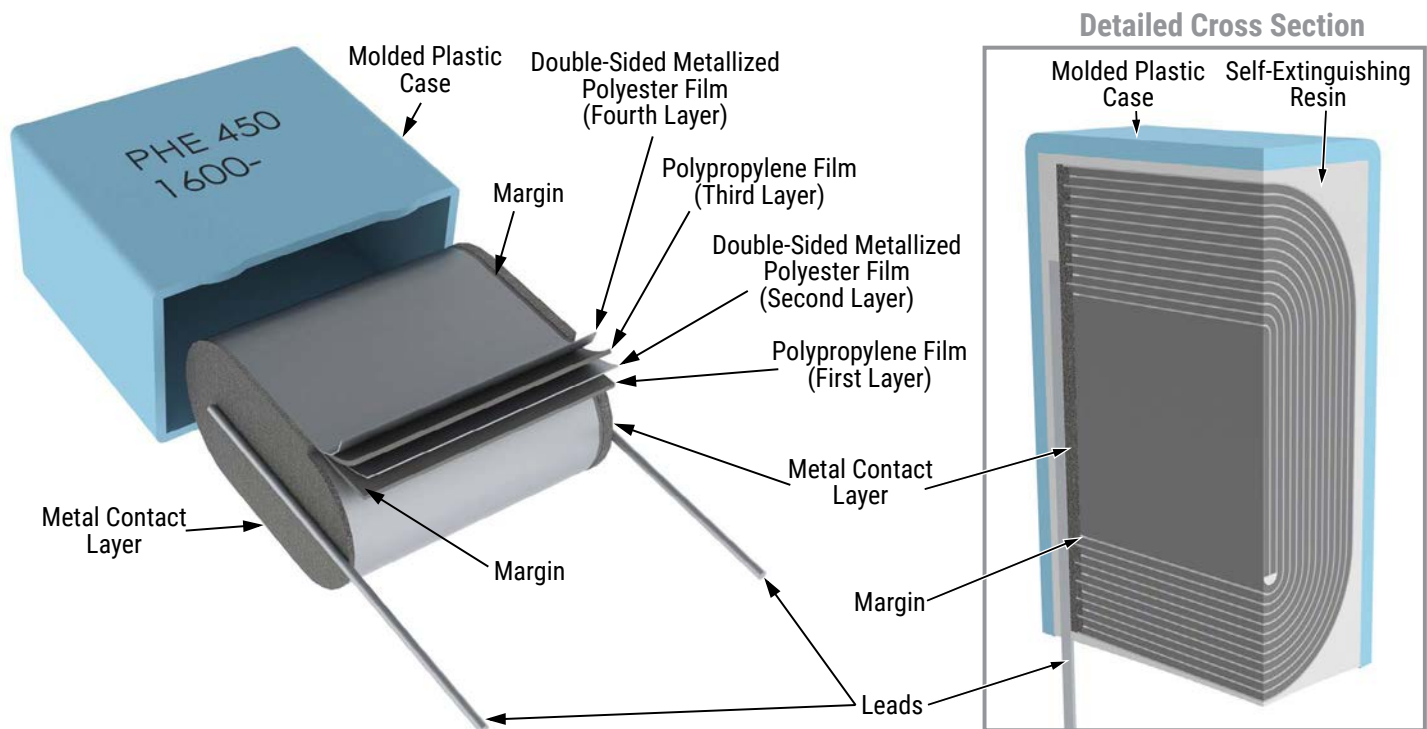
*Temperature monitored inside the capacitor.*

### Selective Soldering Recommendations

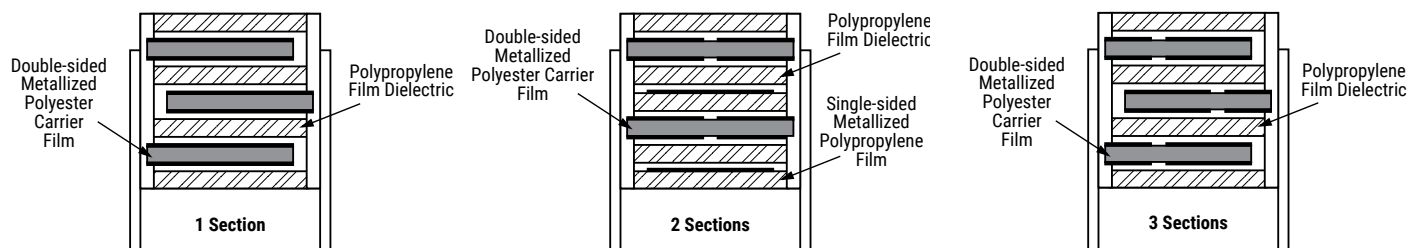
Selective dip soldering is a variation of reflow soldering. In this method, the printed circuit board with through-hole components to be soldered is preheated and transported over the solder bath as in normal flow soldering without touching the solder. When the board is over the bath, it is stopped and pre-designed solder pots are lifted from the bath with molten solder only at the places of the selected components, and pressed against the lower surface of the board to solder the components.

The temperature profile for selective soldering is similar to the double wave flow soldering outlined in this document, **however, instead of two baths, there is only one bath with a time from 3 to 10 seconds.** In selective soldering, the risk of overheating is greater than in double wave flow soldering, and great care must be taken so that the parts are not overheated.

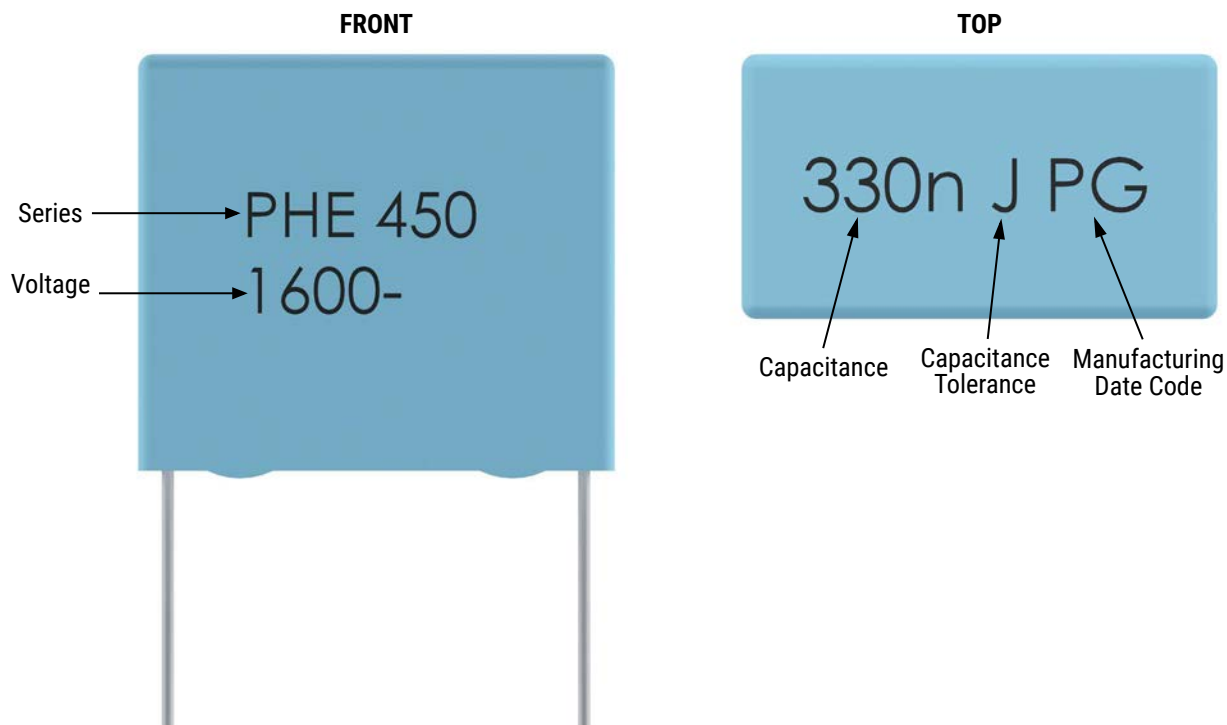
## Construction



## Winding Schemes



## Marking



## Packaging Quantities

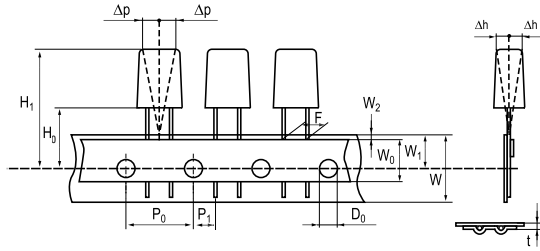
| KEMET Size Code | Legacy Size | Lead Spacing | Thickness (mm) | Height (mm) | Length (mm) | Bulk Short Leads | Bulk Long Leads | Standard Reel<br>ø 360 mm | Large Reel<br>ø 500 mm | Ammo | Pizza | Std Reel Formed | Ammo Formed |
|-----------------|-------------|--------------|----------------|-------------|-------------|------------------|-----------------|---------------------------|------------------------|------|-------|-----------------|-------------|
| KE              | K00         | 7.5          | 2.5            | 6           | 10          | 2000             | 2000            | 2500                      | 5000                   | 3000 |       |                 |             |
| KG              | K01         |              | 4              | 8           | 10          | 1000             | 1000            | 1700                      | 3400                   | 1900 |       |                 |             |
| KK              | K03         |              | 5              | 11          | 10          | 1000             | 1000            | 1300                      | 2600                   | 1500 |       |                 |             |
| KM              | K04         |              | 6              | 12          | 10          | 1000             | 1000            | 1000                      | 2000                   | 1200 |       |                 |             |
| AG              | A01         | 10           | 4              | 9           | 13          | 1000             | 1000            | 900                       | 1800                   |      |       |                 | 780         |
| AH              | A02         |              | 4.5            | 10.5        | 13          | 1000             | 1000            | 800                       | 1600                   |      |       |                 |             |
| AK              | A03         |              | 5              | 11          | 13          | 800              | 800             | 700                       | 1400                   |      |       |                 |             |
| AP              | A04         |              | 6              | 12          | 13          | 600              | 600             | 500                       | 1000                   |      |       |                 | 520         |
| AL              | A05         |              | 9.5            | 7.5         | 13          | 600              | 600             | 350                       | 700                    |      |       |                 |             |
| AE              | A06         |              | 4              | 8           | 13          | 1000             | 1000            | 900                       | 1800                   |      |       |                 |             |

## Packaging Quantities cont'd

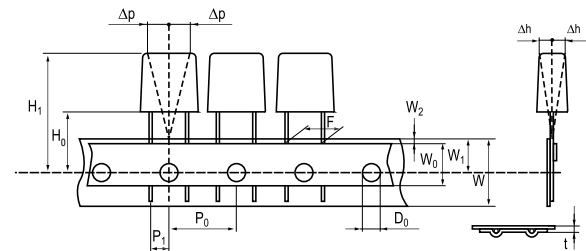
| KEMET<br>Size<br>Code | Legacy<br>Size | Lead<br>Spacing | Thickness<br>(mm) | Height<br>(mm) | Length<br>(mm) | Bulk<br>Short<br>Leads | Bulk<br>Long<br>Leads | Standard<br>Reel<br>ø 360 mm | Large Reel<br>ø 500 mm | Ammo | Pizza | Std<br>Reel<br>Formed | Ammo<br>Formed |
|-----------------------|----------------|-----------------|-------------------|----------------|----------------|------------------------|-----------------------|------------------------------|------------------------|------|-------|-----------------------|----------------|
| BD                    | B04            | 15              | 5.5               | 10.5           | 18             | 1000                   | 800                   | 600                          | 1200                   |      |       | 550                   | 570            |
| BE                    | B05            |                 | 5.5               | 12.5           | 18             | 1000                   | 800                   | 600                          | 1200                   |      |       | 550                   | 570            |
| BL                    | B06            |                 | 7.5               | 14.5           | 18             | 800                    | 400                   | 400                          | 800                    |      |       | 350                   | 378            |
| BJ                    | B10            |                 | 6.5               | 12.5           | 18             | 1000                   | 600                   | 500                          | 1000                   |      |       | 450                   | 480            |
| BQ                    | B11            |                 | 8.5               | 16             | 18             | 600                    | 400                   | 400                          | 800                    |      |       | 350                   | 324            |
| BM                    | B12            |                 | 8                 | 15             | 18             | 600                    | 400                   | 400                          | 800                    |      |       | 350                   | 351            |
| BV                    | B14            |                 | 9.5               | 17.5           | 18             | 500                    | 300                   | 350                          | 700                    |      |       | 250                   | 297            |
| BG                    | B15            |                 | 6                 | 12             | 18             | 1000                   | 800                   | 500                          | 1000                   |      |       | 450                   | 520            |
| BY                    | B16            |                 | 11                | 19             | 18             | 450                    | 250                   | 300                          | 600                    |      |       | 250                   | 252            |
| BU                    | B17            |                 | 13                | 12.5           | 18             | 400                    | 300                   | 250                          | 500                    |      |       | 200                   | 216            |
| DD                    | D13            | 22.5            | 6.5               | 14.5           | 26.5           | 234                    |                       | 300                          | 600                    |      | 440   |                       |                |
| DH                    | D14            |                 | 8                 | 16             | 26.5           | 186                    |                       | 250                          | 500                    |      | 352   |                       |                |
| DM                    | D15            |                 | 9                 | 18.5           | 26.5           | 308                    |                       | 250                          | 500                    |      | 308   |                       |                |
| DT                    | D16            |                 | 11                | 21.5           | 26.5           | 253                    |                       | 200                          | 400                    |      | 253   |                       |                |
| DF                    | D17            |                 | 7                 | 16.5           | 26.5           | 216                    |                       | 300                          | 600                    |      | 396   |                       |                |
| DR                    | D18            |                 | 10.5              | 19             | 26.5           | 264                    |                       | 200                          | 400                    |      | 264   |                       |                |
| DY                    | D19            |                 | 15.5              | 24.5           | 26.5           | 176                    |                       | 110                          | 250                    |      | 176   |                       |                |
| DW                    | D20            |                 | 13.5              | 23             | 26.5           | 209                    |                       | 160                          | 300                    |      | 209   |                       |                |
| FK                    | F03            | 27.5            | 13.5              | 23             | 31.5           | 171                    |                       |                              | 250                    |      | 171   |                       |                |
| FE                    | F11            |                 | 10.5              | 20.5           | 31.5           | 216                    |                       |                              | 350                    |      | 216   |                       |                |
| FG                    | F12            |                 | 11.5              | 22.5           | 31.5           | 198                    |                       |                              | 300                    |      | 198   |                       |                |
| FM                    | F13            |                 | 14.5              | 24.5           | 31.5           | 153                    |                       |                              | 250                    |      | 153   |                       |                |
| FR                    | F14            |                 | 17.5              | 28             | 31.5           | 126                    |                       |                              |                        |      | 126   |                       |                |
| FS                    | F15            |                 | 19                | 29             | 31.5           | 117                    |                       |                              |                        |      | 117   |                       |                |
| FV                    | F16            |                 | 21                | 30             | 31.5           | 108                    |                       |                              |                        |      | 108   |                       |                |
| FH                    | F17            |                 | 21                | 12.5           | 31.5           | 108                    |                       |                              |                        |      | 108   |                       |                |
| FT                    | F18            |                 | 31                | 18.5           | 31.5           | 72                     |                       |                              |                        |      | 72    |                       |                |
| FQ                    | F19            |                 | 27.5              | 16             | 31.5           | 81                     |                       |                              |                        |      | 81    |                       |                |
| RK                    | R02            | 37.5            | 16.5              | 32             | 41             | 105                    |                       |                              |                        |      | 105   |                       |                |
| RM                    | R03            |                 | 19                | 36             | 41             | 91                     |                       |                              |                        |      | 91    |                       |                |
| RH                    | R04            |                 | 15                | 26             | 41             | 119                    |                       |                              |                        |      | 119   |                       |                |
| RF                    | R05            |                 | 13                | 24             | 41             | 140                    |                       |                              |                        |      | 140   |                       |                |
| RP                    | R06            |                 | 21                | 38             | 41             | 84                     |                       |                              |                        |      | 84    |                       |                |
| RS                    | R08            |                 | 28                | 43             | 41             | 54                     |                       |                              |                        |      | 54    |                       |                |

## Lead Taping & Packaging (IEC 60286-2)

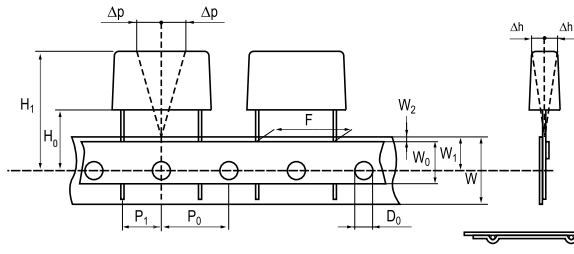
Lead Spacing 5 mm



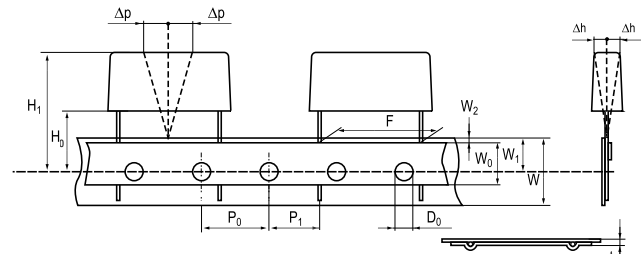
Lead Spacing 7.5 mm



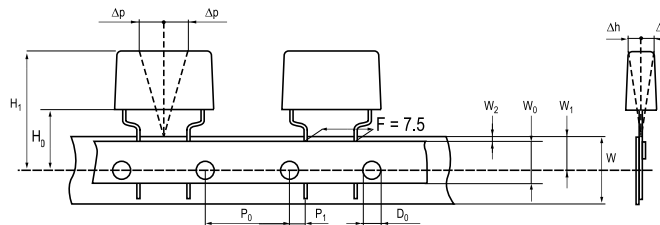
Lead Spacing 10 – 15mm



Lead Spacing 22.5 – 27.5 mm



Formed Leads from 10 and 15 mm to 7.5 mm



## Taping Specification

| Dimensions in mm              |         |                               |                        |                        |                        |                        |                        |                        |                        | Standard IEC 60286-2    |
|-------------------------------|---------|-------------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
| Lead spacing                  | +6/-0.1 | F                             | 5                      | 7.5                    | Formed 7.5             | 10                     | 15                     | 22.5                   | 27.5                   | F                       |
| Carrier tape width            | +/-0.5  | W                             | 18                     | 18                     | 18                     | 18                     | 18                     | 18                     | 18                     | 18 <sup>+1/-0.5</sup>   |
| Hold-down tape width          | +/-0.3  | W <sub>0</sub>                | 9                      | 9                      | 9                      | 12                     | 12                     | 12                     | 12                     |                         |
| Position of sprocket hole     | +/-0.5  | W <sub>1</sub>                | 9                      | 9                      | 9                      | 9                      | 9                      | 9                      | 9                      | 9 <sup>+0.75/-0.5</sup> |
| Distance between tapes        | Maximum | W <sub>2</sub>                | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      | 3                      | 3                       |
| Sprocket hole diameter        | +/-0.2  | D <sub>0</sub>                | 4                      | 4                      | 4                      | 4                      | 4                      | 4                      | 4                      | 4                       |
| Feed hole lead spacing        | +/-0.3  | P <sub>0</sub> <sup>(1)</sup> | 12.7                   | 12.7                   | 12.7 <sup>(4)</sup>    | 12.7                   | 12.7                   | 12.7                   | 12.7                   | 12.7                    |
| Distance lead – feed hole     | +/-0.7  | P <sub>1</sub>                | 3.85                   | 3.75                   | 3.75                   | 7.7                    | 5.2                    | 5.3                    | 5.3                    | P <sup>1</sup>          |
| Deviation tape – plane        | Maximum | Δp                            | 1.3                    | 1.3                    | 1.3                    | 1.3                    | 1.3                    | 1.3                    | 1.3                    | 1.3                     |
| Lateral deviation             | Maximum | Δh                            | 2                      | 2                      | 2                      | 2                      | 2                      | 2                      | 2                      | 2                       |
| Total thickness               | +/-0.2  | t                             | 0.7                    | 0.7                    | 0.7                    | 0.7                    | 0.7                    | 0.9 <sup>MAX</sup>     | 0.9 <sup>MAX</sup>     | 0.9 <sup>MAX</sup>      |
| Sprocket hole/cap body        | Nominal | H <sub>0</sub> <sup>(2)</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18.5 <sup>+/-0.5</sup> | 18 <sup>+2/-0</sup>     |
| Sprocket hole/top of cap body | Maximum | H <sub>1</sub> <sup>(3)</sup> | 32                     | 31                     | 43                     | 43                     | 43                     | 58                     | 58                     | 58 <sup>MAX</sup>       |

(1) Maximum cumulative feed hole error, 1 mm per 20 parts.

(2) 16.5 mm available on request.

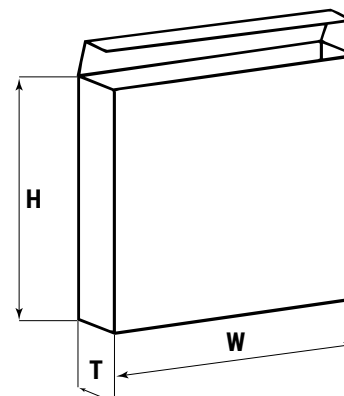
(3) Depending on case size.

(4) 15 mm available on request.

## Lead Taping & Packaging (IEC 60286-2) cont'd

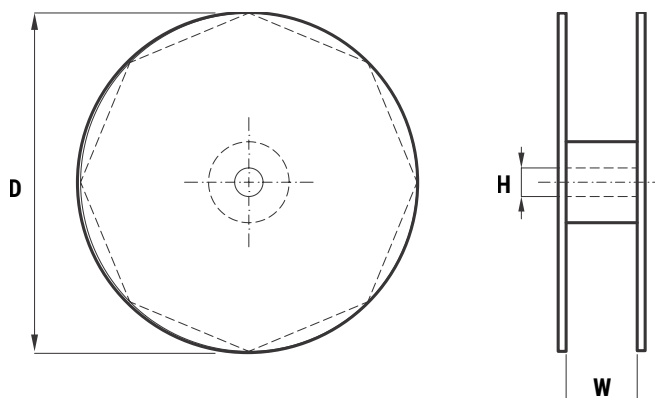
### Ammo Specifications

| Series                               | Dimensions (mm) |     |    |
|--------------------------------------|-----------------|-----|----|
|                                      | H               | W   | T  |
| R4x, R4x+R, R7x, RSB                 | 360             | 340 | 59 |
| F5A, F5B, F5D                        |                 |     |    |
| F6xx, F8xx                           |                 |     |    |
| PHExxx, PMExxx, PMRxxx,<br>SMR & PFR | 330             | 330 | 50 |



### Reel Specifications

| Series                               | Dimensions (mm) |    |          |
|--------------------------------------|-----------------|----|----------|
|                                      | D               | H  | W        |
| R4x, R4x+R, R7x, RSB                 | 355<br>500      | 30 | 55 (Max) |
| F5A, F5B, F5D                        |                 | 25 |          |
| F6xx, F8xx                           |                 |    |          |
| PHExxx, PMExxx, PMRxxx,<br>SMR & PFR | 360<br>500      | 30 | 46 (Max) |



### Manufacturing Date Code (IEC-60062)

| Y = Year, Z = Month |      |           |      |
|---------------------|------|-----------|------|
| Year                | Code | Month     | Code |
| 2000                | M    | January   | 1    |
| 2001                | N    | February  | 2    |
| 2002                | P    | March     | 3    |
| 2003                | R    | April     | 4    |
| 2004                | S    | May       | 5    |
| 2005                | T    | June      | 6    |
| 2006                | U    | July      | 7    |
| 2007                | V    | August    | 8    |
| 2008                | W    | September | 9    |
| 2009                | X    | October   | 0    |
| 2010                | A    | November  | N    |
| 2011                | B    | December  | D    |
| 2012                | C    |           |      |
| 2013                | D    |           |      |
| 2014                | E    |           |      |
| 2015                | F    |           |      |
| 2016                | H    |           |      |
| 2017                | J    |           |      |
| 2018                | K    |           |      |
| 2019                | L    |           |      |
| 2020                | M    |           |      |

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