

# Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

More than 100,000 Hours Operation at 65 °C and Rated 105 °C Ripple



The new 381EL extends expected life capability to 15 years or more in typical applications. And that's with the 105 °C rated ripple current applied. With 3.5 times the life of our long-life Type 381LX, the Type 381EL is the choice for hot applications like industrial power supplies, inverter lighting systems and motor drives.

## Highlights

- High value extended life.
- Withstands 7000 hours at 105 °C with rated ripple current.
- Expected life more than 100,000 hours at 65 °C with rated ripple.
- Rated voltage to 450 Vdc.
- Made in USA.
- 50% more ripple current than 381L.

## Specifications

**Operating Temperature:**

–40 °C to + 105 °C up to 300 V, –25 °C to 105 °C  $\geq 315$  V

**Rated Voltage:**

160 to 450 Vdc

**Capacitance:**

39  $\mu$ F to 2,200  $\mu$ F  $\pm 20\%$

**Leakage Current:**

$\leq 3 \sqrt{CV}$   $\mu$ A, at 5 minutes

**Ripple Current Multipliers:**

**Ambient Temperature**

| 45 °C | 60 °C | 70 °C | 85 °C | 105 °C |
|-------|-------|-------|-------|--------|
| 2.35  | 2.20  | 2.00  | 1.55  | 1.00   |

**Frequency**

| 50Hz | 60 Hz | 120 Hz | 500 Hz | 1 kHz | 10 kHz<br>& up |
|------|-------|--------|--------|-------|----------------|
| 0.75 | 0.80  | 1.00   | 1.20   | 1.25  | 1.40           |

**EIA Ripple Life:**

20,000 h at 85 °C, per EIA IS-749 with 105 °C ripple current.

$\Delta$  Capacitance  $\pm 20\%$

ESR 200% of limit

**Load LifeTest:**

7000 h at full load at 105 °C

$\Delta$ Capacitance  $\pm 20\%$

ESR 200% of limit

DCL 100% of limit

**Shelf Life:**

1000 h at 105 °C

$\Delta$  Capacitance  $\pm 20\%$

ESR 200% of limit

DCL 100% of limit

**Vibration:**

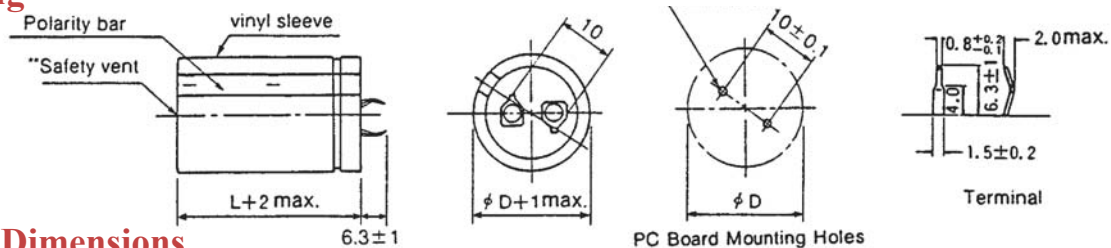
10 to 55 Hz, 0.06" and 10 g max, 2 h each plane



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

# Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

## Outline Drawing



## Insulated Case Dimensions

| Case Code | DIAMETER D |        | LENGTH L |        | Typical Weight (grams) |
|-----------|------------|--------|----------|--------|------------------------|
|           | mm         | inches | mm       | inches |                        |
| H01       | 22         | 0.87   | 25       | 0.98   | 16                     |
| H02       | 22         | 0.87   | 30       | 1.18   | 19                     |
| H03       | 22         | 0.87   | 35       | 1.38   | 22                     |
| H04       | 22         | 0.87   | 40       | 1.57   | 24                     |
| H45       | 22         | 0.87   | 45       | 1.77   | 28                     |
| H05       | 22         | 0.87   | 50       | 1.97   | 31                     |
| J01       | 25         | 0.98   | 25       | 0.98   | 20                     |
| J02       | 25         | 0.98   | 30       | 1.18   | 24                     |
| J03       | 25         | 0.98   | 35       | 1.38   | 27                     |
| J04       | 25         | 0.98   | 40       | 1.57   | 31                     |
| J45       | 25         | 0.98   | 45       | 1.77   | 35                     |
| J05       | 25         | 0.98   | 50       | 1.97   | 38                     |

| Case Code | DIAMETER D |        | LENGTH L |        | Typical Weight (grams) |
|-----------|------------|--------|----------|--------|------------------------|
|           | mm         | inches | mm       | inches |                        |
| K01       | 30         | 1.18   | 25       | 0.98   | 30                     |
| K02       | 30         | 1.18   | 30       | 1.18   | 35                     |
| K03       | 30         | 1.18   | 35       | 1.38   | 40                     |
| K04       | 30         | 1.18   | 40       | 1.57   | 44                     |
| K45       | 30         | 1.18   | 45       | 1.77   | 49                     |
| K05       | 30         | 1.18   | 50       | 1.97   | 53                     |
| A01       | 35         | 1.38   | 25       | 0.98   | 42                     |
| A02       | 35         | 1.38   | 30       | 1.18   | 48                     |
| A03       | 35         | 1.38   | 35       | 1.38   | 54                     |
| A04       | 35         | 1.38   | 40       | 1.57   | 60                     |
| A45       | 35         | 1.38   | 45       | 1.77   | 67                     |
| A05       | 35         | 1.38   | 50       | 1.97   | 74                     |

## Part Numbering System

381EL

Type

821

Capacitance

390 = 39 μF  
122 = 1200 μF

M

Tolerance

M = ±20%

200

Rated Voltage

Vdc

K04

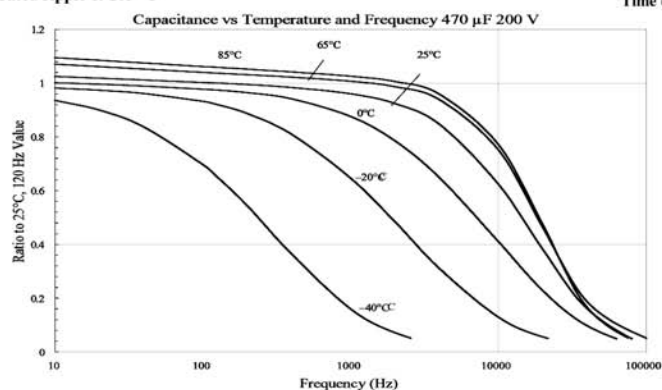
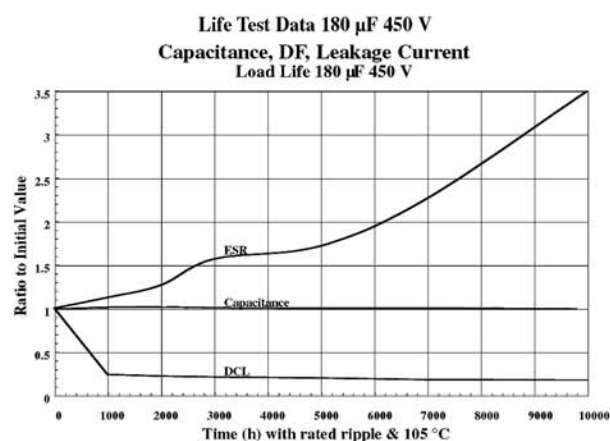
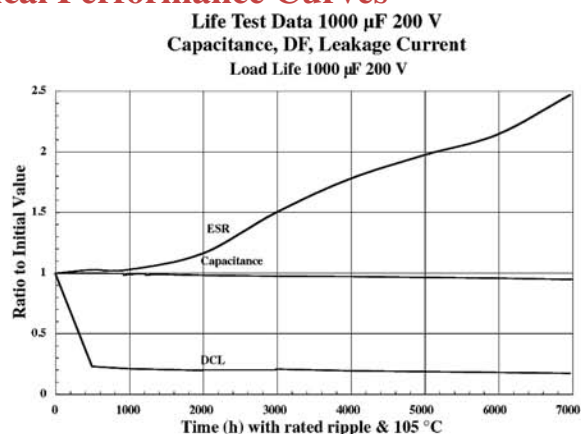
Case Code

2

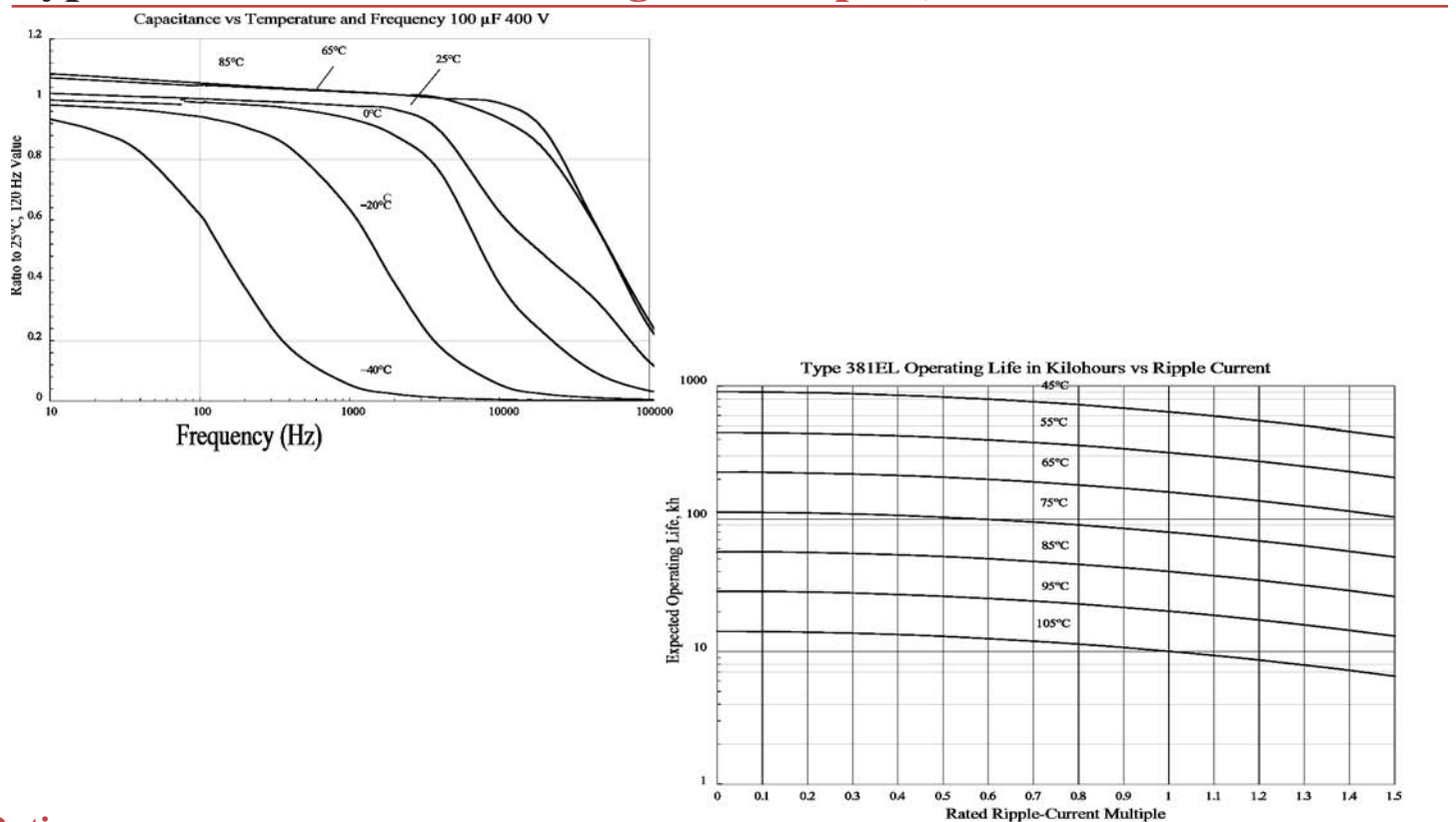
Insulation

2=PVC

## Typical Performance Curves



# Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum



## Ratings

| Cap.<br>( $\mu$ F)      | Catalog<br>Part Number | DF Max<br>120Hz | ESR Max<br>@ 25° C<br>120 Hz 20 kHz<br>( $\Omega$ ) ( $\Omega$ ) | Ripple Amps<br>@ 105 °C<br>120 Hz 20 kHz<br>(A) (A) | Nominal<br>Size<br>D x L<br>(mm) |
|-------------------------|------------------------|-----------------|------------------------------------------------------------------|-----------------------------------------------------|----------------------------------|
| 160 Vdc (200 Vdc Surge) |                        |                 |                                                                  |                                                     |                                  |
| 270                     | 381EL271M160H012       | 0.12            | 0.66 0.30                                                        | 1.10 1.54                                           | 22 x 25                          |
| 330                     | 381EL331M160H022       | 0.12            | 0.54 0.24                                                        | 1.20 1.68                                           | 22 x 30                          |
| 390                     | 381EL391M160H022       | 0.12            | 0.45 0.20                                                        | 1.30 1.82                                           | 22 x 30                          |
| 390                     | 381EL391M160J012       | 0.12            | 0.45 0.20                                                        | 1.30 1.82                                           | 25 x 25                          |
| 470                     | 381EL471M160H032       | 0.12            | 0.38 0.17                                                        | 1.40 1.96                                           | 22 x 35                          |
| 470                     | 381EL471M160J022       | 0.12            | 0.38 0.17                                                        | 1.40 1.96                                           | 25 x 30                          |
| 560                     | 381EL561M160H042       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 22 x 40                          |
| 560                     | 381EL561M160J022       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 25 x 30                          |
| 560                     | 381EL561M160K012       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 30 x 25                          |
| 680                     | 381EL681M160H452       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 22 x 45                          |
| 680                     | 381EL681M160J032       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 25 x 35                          |
| 680                     | 381EL681M160K022       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 30 x 30                          |
| 820                     | 381EL821M160J042       | 0.12            | 0.22 0.10                                                        | 2.00 2.80                                           | 25 x 40                          |
| 820                     | 381EL821M160K022       | 0.12            | 0.22 0.10                                                        | 2.00 2.80                                           | 30 x 30                          |
| 1000                    | 381EL102M160J452       | 0.12            | 0.18 0.08                                                        | 2.20 3.08                                           | 25 x 45                          |
| 1000                    | 381EL102M160K032       | 0.12            | 0.18 0.08                                                        | 2.20 3.08                                           | 30 x 35                          |
| 1200                    | 381EL122M160J052       | 0.13            | 0.16 0.08                                                        | 2.30 3.22                                           | 25 x 50                          |
| 1200                    | 381EL122M160K042       | 0.13            | 0.16 0.08                                                        | 2.30 3.22                                           | 30 x 40                          |
| 1200                    | 381EL122M160A032       | 0.13            | 0.16 0.08                                                        | 2.30 3.22                                           | 35 x 35                          |
| 1500                    | 381EL152M160K452       | 0.13            | 0.13 0.06                                                        | 2.50 3.50                                           | 30 x 45                          |
| 1500                    | 381EL152M160A032       | 0.13            | 0.13 0.06                                                        | 2.50 3.50                                           | 35 x 35                          |
| 1800                    | 381EL182M160K052       | 0.14            | 0.12 0.06                                                        | 2.70 3.78                                           | 30 x 50                          |
| 1800                    | 381EL182M160A042       | 0.14            | 0.12 0.06                                                        | 2.70 3.78                                           | 35 x 40                          |
| 2200                    | 381EL222M160A052       | 0.14            | 0.09 0.06                                                        | 2.90 4.06                                           | 35 x 50                          |

| Cap.<br>( $\mu$ F)      | Catalog<br>Part Number | DF Max<br>120Hz | ESR Max<br>@ 25° C<br>120 Hz 20 kHz<br>( $\Omega$ ) ( $\Omega$ ) | Ripple Amps<br>@ 105 °C<br>120 Hz 20 kHz<br>(A) (A) | Nominal<br>Size<br>D x L<br>(mm) |
|-------------------------|------------------------|-----------------|------------------------------------------------------------------|-----------------------------------------------------|----------------------------------|
| 180 Vdc (225 Vdc Surge) |                        |                 |                                                                  |                                                     |                                  |
| 220                     | 381EL221M180H012       | 0.12            | 0.80 0.36                                                        | 1.00 1.40                                           | 22 x 25                          |
| 270                     | 381EL271M180H012       | 0.12            | 0.66 0.30                                                        | 1.10 1.54                                           | 22 x 25                          |
| 330                     | 381EL331M180H022       | 0.12            | 0.54 0.24                                                        | 1.20 1.68                                           | 22 x 30                          |
| 330                     | 381EL331M180J012       | 0.12            | 0.54 0.24                                                        | 1.20 1.68                                           | 25 x 25                          |
| 390                     | 381EL391M180H022       | 0.12            | 0.45 0.20                                                        | 1.30 1.82                                           | 22 x 30                          |
| 390                     | 381EL391M180J012       | 0.12            | 0.45 0.20                                                        | 1.30 1.82                                           | 25 x 25                          |
| 470                     | 381EL471M180H032       | 0.12            | 0.38 0.17                                                        | 1.40 1.96                                           | 22 x 35                          |
| 470                     | 381EL471M180J022       | 0.12            | 0.38 0.17                                                        | 1.40 1.96                                           | 25 x 30                          |
| 470                     | 381EL471M180K012       | 0.12            | 0.38 0.17                                                        | 1.40 1.96                                           | 30 x 25                          |
| 560                     | 381EL561M180H042       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 22 x 40                          |
| 560                     | 381EL561M180J032       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 25 x 35                          |
| 560                     | 381EL561M180K012       | 0.12            | 0.32 0.14                                                        | 1.50 2.10                                           | 30 x 25                          |
| 680                     | 381EL681M180H052       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 22 x 50                          |
| 680                     | 381EL681M180J042       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 25 x 40                          |
| 680                     | 381EL681M180K022       | 0.12            | 0.26 0.12                                                        | 1.70 2.38                                           | 30 x 30                          |
| 820                     | 381EL821M180J452       | 0.12            | 0.22 0.10                                                        | 2.00 2.80                                           | 25 x 45                          |
| 820                     | 381EL821M180K032       | 0.13            | 0.23 0.11                                                        | 2.00 2.80                                           | 30 x 35                          |
| 820                     | 381EL821M180A022       | 0.13            | 0.23 0.11                                                        | 2.00 2.80                                           | 35 x 30                          |
| 1000                    | 381EL102M180K042       | 0.13            | 0.19 0.10                                                        | 2.20 3.08                                           | 30 x 40                          |
| 1000                    | 381EL102M180A022       | 0.13            | 0.19 0.10                                                        | 2.20 3.08                                           | 35 x 30                          |
| 1200                    | 381EL122M180K452       | 0.13            | 0.16 0.08                                                        | 2.30 3.22                                           | 30 x 45                          |
| 1200                    | 381EL122M180A032       | 0.14            | 0.17 0.09                                                        | 2.30 3.22                                           | 35 x 35                          |
| 1500                    | 381EL152M180K052       | 0.14            | 0.14 0.07                                                        | 2.50 3.50                                           | 30 x 50                          |
| 1500                    | 381EL152M180A042       | 0.14            | 0.14 0.07                                                        | 2.50 3.50                                           | 35 x 40                          |

# Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

| Cap.<br>(µF)            | Catalog<br>Part Number | DF Max<br>120Hz | ESR Max<br>@ 25° C |               | Ripple Amps<br>@ 105 °C |               | Nominal<br>Size |
|-------------------------|------------------------|-----------------|--------------------|---------------|-------------------------|---------------|-----------------|
|                         |                        |                 | 120 Hz<br>(Ω)      | 20 kHz<br>(Ω) | 120 Hz<br>(A)           | 20 kHz<br>(A) | D x L<br>(mm)   |
| 2200                    | 381EL222M180A052       | 0.14            | 0.094              | 0.067         | 2.9                     | 4.06          | 35 x 50         |
| 200 Vdc (250 Vdc Surge) |                        |                 |                    |               |                         |               |                 |
| 220                     | 381EL221M200H012       | 0.12            | 0.80               | 0.36          | 1.00                    | 1.40          | 22 x 25         |
| 270                     | 381EL271M200H022       | 0.12            | 0.66               | 0.30          | 1.10                    | 1.54          | 22 x 30         |
| 270                     | 381EL271M200J012       | 0.12            | 0.66               | 0.30          | 1.10                    | 1.54          | 25 x 25         |
| 330                     | 381EL331M200H022       | 0.12            | 0.54               | 0.24          | 1.20                    | 1.68          | 22 x 30         |
| 330                     | 381EL331M200J012       | 0.12            | 0.54               | 0.24          | 1.20                    | 1.68          | 25 x 25         |
| 390                     | 381EL391M200H032       | 0.12            | 0.45               | 0.20          | 1.30                    | 1.82          | 22 x 35         |
| 390                     | 381EL391M200J022       | 0.12            | 0.45               | 0.20          | 1.30                    | 1.82          | 25 x 30         |
| 390                     | 381EL391M200K012       | 0.12            | 0.45               | 0.20          | 1.30                    | 1.82          | 30 x 25         |
| 470                     | 381EL471M200H042       | 0.12            | 0.38               | 0.17          | 1.40                    | 1.96          | 22 x 40         |
| 470                     | 381EL471M200J032       | 0.12            | 0.38               | 0.17          | 1.40                    | 1.96          | 25 x 35         |
| 470                     | 381EL471M200K022       | 0.12            | 0.38               | 0.17          | 1.40                    | 1.96          | 30 x 30         |
| 560                     | 381EL561M200H452       | 0.12            | 0.32               | 0.14          | 1.50                    | 2.10          | 22 x 45         |
| 560                     | 381EL561M200J032       | 0.12            | 0.32               | 0.14          | 1.50                    | 2.10          | 25 x 35         |
| 560                     | 381EL561M200K022       | 0.12            | 0.32               | 0.14          | 1.50                    | 2.10          | 30 x 30         |
| 680                     | 381EL681M200J042       | 0.12            | 0.26               | 0.12          | 1.70                    | 2.38          | 25 x 40         |
| 680                     | 381EL681M200K032       | 0.12            | 0.26               | 0.12          | 1.70                    | 2.38          | 30 x 35         |
| 820                     | 381EL821M200J052       | 0.12            | 0.22               | 0.10          | 2.00                    | 2.80          | 25 x 50         |
| 820                     | 381EL821M200K042       | 0.12            | 0.22               | 0.10          | 2.00                    | 2.80          | 30 x 40         |
| 820                     | 381EL821M200A022       | 0.12            | 0.22               | 0.10          | 2.00                    | 2.80          | 35 x 30         |
| 1000                    | 381EL102M200K452       | 0.12            | 0.18               | 0.09          | 2.20                    | 3.08          | 30 x 45         |
| 1000                    | 381EL102M200A032       | 0.12            | 0.18               | 0.09          | 2.20                    | 3.08          | 35 x 35         |
| 1200                    | 381EL122M200K052       | 0.13            | 0.16               | 0.08          | 2.30                    | 3.22          | 30 x 50         |
| 1200                    | 381EL122M200A042       | 0.13            | 0.16               | 0.08          | 2.30                    | 3.22          | 35 x 40         |
| 1500                    | 381EL152M200A052       | 0.13            | 0.13               | 0.06          | 2.50                    | 3.50          | 35 x 50         |
| 250 Vdc (300 Vdc Surge) |                        |                 |                    |               |                         |               |                 |
| 180                     | 381EL181M250H022       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 22 x 30         |
| 180                     | 381EL181M250J012       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 25 x 25         |
| 220                     | 381EL221M250H022       | 0.1             | 0.67               | 0.34          | 1.00                    | 1.40          | 22 x 30         |
| 220                     | 381EL221M250J012       | 0.1             | 0.67               | 0.34          | 1.00                    | 1.40          | 25 x 25         |
| 270                     | 381EL271M250H032       | 0.1             | 0.55               | 0.27          | 1.10                    | 1.54          | 22 x 35         |
| 270                     | 381EL271M250J022       | 0.1             | 0.55               | 0.27          | 1.10                    | 1.54          | 25 x 30         |
| 270                     | 381EL271M250K012       | 0.1             | 0.55               | 0.27          | 1.10                    | 1.54          | 30 x 25         |
| 330                     | 381EL331M250H042       | 0.1             | 0.45               | 0.22          | 1.20                    | 1.68          | 22 x 40         |
| 330                     | 381EL331M250J032       | 0.1             | 0.45               | 0.22          | 1.20                    | 1.68          | 25 x 35         |
| 330                     | 381EL331M250K012       | 0.1             | 0.45               | 0.22          | 1.20                    | 1.68          | 30 x 25         |
| 390                     | 381EL391M250H452       | 0.1             | 0.38               | 0.19          | 1.30                    | 1.82          | 22 x 45         |
| 390                     | 381EL391M250J032       | 0.1             | 0.38               | 0.19          | 1.30                    | 1.82          | 25 x 35         |
| 390                     | 381EL391M250K022       | 0.1             | 0.38               | 0.19          | 1.30                    | 1.82          | 30 x 30         |
| 470                     | 381EL471M250J452       | 0.1             | 0.31               | 0.16          | 1.40                    | 1.96          | 25 x 45         |
| 470                     | 381EL471M250K032       | 0.1             | 0.31               | 0.16          | 1.40                    | 1.96          | 30 x 35         |
| 470                     | 381EL471M250A022       | 0.1             | 0.31               | 0.16          | 1.40                    | 1.96          | 35 x 30         |
| 560                     | 381EL561M250J052       | 0.1             | 0.26               | 0.13          | 1.50                    | 2.10          | 25 x 50         |
| 560                     | 381EL561M250K032       | 0.1             | 0.26               | 0.13          | 1.50                    | 2.10          | 30 x 35         |
| 560                     | 381EL561M250A022       | 0.1             | 0.26               | 0.13          | 1.50                    | 2.10          | 35 x 30         |

| Cap.<br>(µF)            | Catalog<br>Part Number | DF Max<br>120Hz | ESR Max<br>@ 25° C |               | Ripple Amps<br>@ 105 °C |               | Nominal<br>Size |
|-------------------------|------------------------|-----------------|--------------------|---------------|-------------------------|---------------|-----------------|
|                         |                        |                 | 120 Hz<br>(Ω)      | 20 kHz<br>(Ω) | 120 Hz<br>(A)           | 20 kHz<br>(A) | D x L<br>(mm)   |
| 680                     | 381EL681M250A032       | 0.1             | 0.22               | 0.12          | 1.70                    | 2.38          | 35 x 35         |
| 820                     | 381EL821M250K052       | 0.1             | 0.18               | 0.10          | 2.00                    | 2.80          | 30 x 50         |
| 820                     | 381EL821M250A042       | 0.1             | 0.18               | 0.10          | 2.00                    | 2.80          | 35 x 40         |
| 1000                    | 381EL102M250A452       | 0.12            | 0.18               | 0.10          | 2.20                    | 3.08          | 35 x 45         |
| 1200                    | 381EL122M250A052       | 0.12            | 0.15               | 0.09          | 2.30                    | 3.22          | 35 x 50         |
| 315 Vdc (365 Vdc Surge) |                        |                 |                    |               |                         |               |                 |
| 82                      | 381EL820M315H012       | 0.1             | 1.80               | 0.90          | 0.64                    | 0.90          | 22 x 25         |
| 100                     | 381EL101M315H022       | 0.1             | 1.47               | 0.74          | 0.69                    | 0.97          | 22 x 30         |
| 120                     | 381EL121M315H022       | 0.1             | 1.23               | 0.61          | 0.75                    | 1.05          | 22 x 30         |
| 120                     | 381EL121M315J012       | 0.1             | 1.23               | 0.61          | 0.75                    | 1.05          | 25 x 25         |
| 150                     | 381EL151M315H032       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 22 x 35         |
| 150                     | 381EL151M315J022       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 25 x 30         |
| 150                     | 381EL151M315K012       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 30 x 25         |
| 180                     | 381EL181M315H042       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 22 x 40         |
| 180                     | 381EL181M315J032       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 25 x 35         |
| 180                     | 381EL181M315K012       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 30 x 25         |
| 220                     | 381EL221M315H452       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 22 x 45         |
| 220                     | 381EL221M315J042       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 25 x 40         |
| 220                     | 381EL221M315K022       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 30 x 30         |
| 270                     | 381EL271M315J452       | 0.11            | 0.60               | 0.30          | 1.10                    | 1.54          | 25 x 45         |
| 270                     | 381EL271M315K032       | 0.11            | 0.60               | 0.30          | 1.10                    | 1.54          | 30 x 35         |
| 270                     | 381EL271M315A022       | 0.11            | 0.60               | 0.30          | 1.10                    | 1.54          | 35 x 30         |
| 330                     | 381EL331M315J052       | 0.11            | 0.49               | 0.25          | 1.20                    | 1.68          | 25 x 50         |
| 330                     | 381EL331M315K042       | 0.11            | 0.49               | 0.25          | 1.20                    | 1.68          | 30 x 40         |
| 330                     | 381EL331M315A022       | 0.11            | 0.49               | 0.25          | 1.20                    | 1.68          | 35 x 30         |
| 390                     | 381EL391M315K452       | 0.12            | 0.45               | 0.23          | 1.30                    | 1.82          | 30 x 45         |
| 390                     | 381EL391M315A032       | 0.12            | 0.45               | 0.23          | 1.30                    | 1.82          | 35 x 35         |
| 470                     | 381EL471M315K052       | 0.12            | 0.38               | 0.19          | 1.40                    | 1.96          | 30 x 50         |
| 470                     | 381EL471M315A042       | 0.12            | 0.38               | 0.19          | 1.40                    | 1.96          | 35 x 40         |
| 560                     | 381EL561M315A452       | 0.12            | 0.32               | 0.16          | 1.50                    | 2.10          | 35 x 45         |
| 680                     | 381EL681M315A052       | 0.12            | 0.26               | 0.14          | 1.70                    | 2.38          | 35 x 50         |
| 350 Vdc (400 Vdc Surge) |                        |                 |                    |               |                         |               |                 |
| 82                      | 381EL820M350H012       | 0.1             | 1.80               | 0.90          | 0.64                    | 0.90          | 22 x 25         |
| 100                     | 381EL101M350H022       | 0.1             | 1.47               | 0.74          | 0.69                    | 0.97          | 22 x 30         |
| 100                     | 381EL101M350J012       | 0.1             | 1.47               | 0.74          | 0.69                    | 0.97          | 25 x 25         |
| 120                     | 381EL121M350H032       | 0.1             | 1.23               | 0.61          | 0.75                    | 1.05          | 22 x 35         |
| 120                     | 381EL121M350J022       | 0.1             | 1.23               | 0.61          | 0.75                    | 1.05          | 25 x 30         |
| 150                     | 381EL151M350H042       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 22 x 40         |
| 150                     | 381EL151M350J022       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 25 x 30         |
| 150                     | 381EL151M350K012       | 0.1             | 0.98               | 0.49          | 0.82                    | 1.15          | 30 x 25         |
| 180                     | 381EL181M350H452       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 22 x 45         |
| 180                     | 381EL181M350J032       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 25 x 35         |
| 180                     | 381EL181M350K022       | 0.1             | 0.82               | 0.41          | 0.90                    | 1.26          | 30 x 30         |
| 220                     | 381EL221M350H052       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 22 x 50         |
| 220                     | 381EL221M350J042       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 25 x 40         |
| 220                     | 381EL221M350K022       | 0.11            | 0.74               | 0.37          | 1.00                    | 1.40          | 30 x 30         |

# Type 381EL 105 °C Ultra-Long Life Snap-In, Aluminum

| Cap.<br>(µF)            | Catalog<br>Part Number | DF<br>Max<br>120Hz | ESR Max<br>@ 25° C |               | Ripple Amps<br>@ 105 °C |               | Nominal<br>Size<br>D x L<br>(mm) |
|-------------------------|------------------------|--------------------|--------------------|---------------|-------------------------|---------------|----------------------------------|
|                         |                        |                    | 120 Hz<br>(Ω)      | 20 kHz<br>(Ω) | 120 Hz<br>(A)           | 20 kHz<br>(A) |                                  |
| 270                     | 381EL271M350J052       | 0.11               | 0.60               | 0.30          | 1.10                    | 1.54          | 25 x 50                          |
| 270                     | 381EL271M350K032       | 0.11               | 0.60               | 0.30          | 1.10                    | 1.54          | 30 x 35                          |
| 270                     | 381EL271M350A022       | 0.11               | 0.60               | 0.30          | 1.10                    | 1.54          | 35 x 30                          |
| 330                     | 381EL331M350K452       | 0.11               | 0.49               | 0.25          | 1.20                    | 1.68          | 30 x 45                          |
| 330                     | 381EL331M350A032       | 0.11               | 0.49               | 0.25          | 1.20                    | 1.68          | 35 x 35                          |
| 390                     | 381EL391M350K052       | 0.12               | 0.45               | 0.23          | 1.30                    | 1.82          | 30 x 50                          |
| 390                     | 381EL391M350A042       | 0.12               | 0.45               | 0.23          | 1.30                    | 1.82          | 35 x 40                          |
| 470                     | 381EL471M350A042       | 0.12               | 0.38               | 0.19          | 1.40                    | 1.96          | 35 x 40                          |
| 560                     | 381EL561M350A052       | 0.12               | 0.32               | 0.16          | 1.50                    | 2.10          | 35 x 50                          |
| 400 Vdc (450 Vdc Surge) |                        |                    |                    |               |                         |               |                                  |
| 56                      | 381EL560M400H012       | 0.1                | 2.63               | 0.92          | 0.51                    | 0.71          | 22 x 25                          |
| 68                      | 381EL680M400H022       | 0.1                | 2.17               | 0.76          | 0.56                    | 0.78          | 22 x 30                          |
| 68                      | 381EL680M400J012       | 0.1                | 2.17               | 0.76          | 0.56                    | 0.78          | 25 x 25                          |
| 82                      | 381EL820M400H032       | 0.1                | 1.80               | 0.63          | 0.64                    | 0.90          | 22 x 35                          |
| 82                      | 381EL820M400J012       | 0.1                | 1.80               | 0.63          | 0.64                    | 0.90          | 25 x 25                          |
| 100                     | 381EL101M400H032       | 0.1                | 1.47               | 0.52          | 0.69                    | 0.97          | 22 x 35                          |
| 100                     | 381EL101M400J022       | 0.1                | 1.47               | 0.52          | 0.69                    | 0.97          | 25 x 30                          |
| 120                     | 381EL121M400H042       | 0.1                | 1.23               | 0.43          | 0.75                    | 1.05          | 22 x 40                          |
| 120                     | 381EL121M400J032       | 0.1                | 1.23               | 0.43          | 0.75                    | 1.05          | 25 x 35                          |
| 120                     | 381EL121M400K012       | 0.1                | 1.23               | 0.43          | 0.75                    | 1.05          | 30 x 25                          |
| 150                     | 381EL151M400H052       | 0.1                | 0.98               | 0.34          | 0.82                    | 1.15          | 22 x 50                          |
| 150                     | 381EL151M400J042       | 0.1                | 0.98               | 0.34          | 0.82                    | 1.15          | 25 x 40                          |
| 150                     | 381EL151M400K022       | 0.1                | 0.98               | 0.34          | 0.82                    | 1.15          | 30 x 30                          |
| 180                     | 381EL181M400J452       | 0.1                | 0.82               | 0.29          | 0.90                    | 1.26          | 25 x 45                          |
| 180                     | 381EL181M400K032       | 0.1                | 0.82               | 0.29          | 0.90                    | 1.26          | 30 x 35                          |
| 180                     | 381EL181M400A022       | 0.1                | 0.82               | 0.29          | 0.90                    | 1.26          | 35 x 25                          |
| 220                     | 381EL221M400J052       | 0.1                | 0.67               | 0.23          | 1.00                    | 1.40          | 25 x 50                          |
| 220                     | 381EL221M400K042       | 0.1                | 0.67               | 0.23          | 1.00                    | 1.40          | 30 x 40                          |
| 220                     | 381EL221M400A022       | 0.1                | 0.67               | 0.23          | 1.00                    | 1.40          | 35 x 30                          |
| 270                     | 381EL271M400K452       | 0.1                | 0.55               | 0.19          | 1.10                    | 1.54          | 30 x 45                          |

| Cap.<br>(µF)            | Catalog<br>Part Number | DF<br>Max<br>120Hz | ESR Max<br>@ 25° C |               | Ripple Amps<br>@ 105 °C |               | Nominal<br>Size<br>D x L<br>(mm) |
|-------------------------|------------------------|--------------------|--------------------|---------------|-------------------------|---------------|----------------------------------|
|                         |                        |                    | 120 Hz<br>(Ω)      | 20 kHz<br>(Ω) | 120 Hz<br>(A)           | 20 kHz<br>(A) |                                  |
| 270                     | 381EL271M400A032       | 0.1                | 0.546              | 0.191         | 1.1                     | 1.54          | 35 x 35                          |
| 330                     | 381EL331M400K052       | 0.1                | 0.447              | 0.179         | 1.2                     | 1.68          | 30 x 50                          |
| 330                     | 381EL331M400A042       | 0.1                | 0.447              | 0.179         | 1.2                     | 1.68          | 35 x 40                          |
| 390                     | 381EL391M400A452       | 0.1                | 0.378              | 0.151         | 1.3                     | 1.82          | 35 x 45                          |
| 470                     | 381EL471M400A052       | 0.1                | 0.314              | 0.125         | 1.4                     | 1.96          | 35 x 50                          |
| 450 Vdc (500 Vdc Surge) |                        |                    |                    |               |                         |               |                                  |
| 39                      | 381EL390M450H012       | 0.1                | 3.78               | 1.32          | 0.37                    | 0.52          | 22 x 25                          |
| 47                      | 381EL470M450H022       | 0.1                | 3.14               | 1.10          | 0.40                    | 0.56          | 22 x 30                          |
| 56                      | 381EL560M450H032       | 0.1                | 2.63               | 0.92          | 0.47                    | 0.66          | 22 x 35                          |
| 56                      | 381EL560M450J012       | 0.1                | 2.63               | 0.92          | 0.47                    | 0.66          | 25 x 25                          |
| 68                      | 381EL680M450H042       | 0.1                | 2.17               | 0.76          | 0.53                    | 0.74          | 22 x 40                          |
| 68                      | 381EL680M450J022       | 0.1                | 2.17               | 0.76          | 0.53                    | 0.74          | 25 x 30                          |
| 82                      | 381EL820M450H452       | 0.1                | 1.80               | 0.63          | 0.56                    | 0.78          | 22 x 45                          |
| 82                      | 381EL820M450J032       | 0.1                | 1.80               | 0.63          | 0.56                    | 0.78          | 25 x 35                          |
| 82                      | 381EL820M450K012       | 0.1                | 1.80               | 0.63          | 0.56                    | 0.78          | 30 x 25                          |
| 100                     | 381EL101M450H052       | 0.1                | 1.47               | 0.52          | 0.64                    | 0.90          | 22 x 50                          |
| 100                     | 381EL101M450J042       | 0.1                | 1.47               | 0.52          | 0.64                    | 0.90          | 25 x 40                          |
| 100                     | 381EL101M450K022       | 0.1                | 1.47               | 0.52          | 0.64                    | 0.90          | 30 x 30                          |
| 120                     | 381EL121M450J452       | 0.1                | 1.23               | 0.43          | 0.72                    | 1.01          | 25 x 45                          |
| 120                     | 381EL121M450K022       | 0.1                | 1.23               | 0.43          | 0.72                    | 1.01          | 30 x 30                          |
| 150                     | 381EL151M450J052       | 0.1                | 0.98               | 0.34          | 0.79                    | 1.11          | 25 x 50                          |
| 150                     | 381EL151M450K042       | 0.1                | 0.98               | 0.34          | 0.79                    | 1.11          | 30 x 40                          |
| 150                     | 381EL151M450A022       | 0.1                | 0.98               | 0.34          | 0.79                    | 1.11          | 35 x 30                          |
| 180                     | 381EL181M450K452       | 0.1                | 0.82               | 0.29          | 0.87                    | 1.22          | 30 x 45                          |
| 180                     | 381EL181M450A032       | 0.1                | 0.82               | 0.29          | 0.87                    | 1.22          | 35 x 35                          |
| 220                     | 381EL221M450K052       | 0.1                | 0.67               | 0.23          | 1.00                    | 1.40          | 30 x 50                          |
| 220                     | 381EL221M450A042       | 0.1                | 0.67               | 0.23          | 1.00                    | 1.40          | 35 x 40                          |
| 270                     | 381EL271M450A452       | 0.1                | 0.55               | 0.19          | 1.19                    | 1.67          | 35 x 45                          |
| 330                     | 381EL331M450A052       | 0.1                | 0.45               | 0.16          | 1.38                    | 1.93          | 35 x 50                          |