

## Type 381LQ 105 °C Compact, High Ripple, Snap-In Aluminum

### Higher Capacitance per Case Size



Type 381LQ is on average 23% smaller and more than 5 mm shorter than Type 381LX. This is achieved with a new can closure method that permits installing capacitor elements into smaller cans. Approaching the robust capability of the 381L the new 381LQ enables you to shrink equipment size and retain the original performance.

### Highlights

- More capacitance per case
- Compares to the 381L

### Specifications

| Temperature Range               | -40 °C to + 105 °C ≤ 315 Vdc<br>-25 °C to + 105 °C ≥ 350 Vdc  |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
|---------------------------------|---|-------|--------|---------|--------|-------------|--------|--|------|------|------|------|------|---------|-------|-------|--------|---------|-------|-------------|--------------|------|------|------|------|------|------|---------------|------|------|------|------|------|------|
| Rated Voltage Range             | 10 Vdc to 450 Vdc   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Capacitance Range               | 100 µF to 100,000 µF  |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Capacitance Tolerance           | ± 20%   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Leakage Current                 | ≤ 3 $\sqrt{CV}$ µA, 4 mA max, 5 minutes   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Ripple Current Multipliers      | <p>Ambient Temperature</p> <table border="1"> <thead> <tr> <th></th> <th>45 °C</th> <th>60 °C</th> <th>70 °C</th> <th>85 °C</th> <th>105 °C</th> </tr> </thead> <tbody> <tr> <td></td> <td>2.35</td> <td>2.20</td> <td>2.00</td> <td>1.70</td> <td>1.00</td> </tr> </tbody> </table> <p>Frequency</p> <table border="1"> <thead> <tr> <th rowspan="2">Voltage</th> <th>50 Hz</th> <th>60 Hz</th> <th>120 Hz</th> <th>500 kHz</th> <th>1 kHz</th> <th>10 kHz &amp; Up</th> </tr> </thead> <tbody> <tr> <td>10 - 100 WVV</td> <td>0.93</td> <td>0.95</td> <td>1.00</td> <td>1.05</td> <td>1.08</td> <td>1.15</td> </tr> <tr> <td>160 - 450 WVV</td> <td>0.75</td> <td>0.80</td> <td>1.00</td> <td>1.20</td> <td>1.25</td> <td>1.40</td> </tr> </tbody> </table> |       | 45 °C  | 60 °C   | 70 °C  | 85 °C       | 105 °C |  | 2.35 | 2.20 | 2.00 | 1.70 | 1.00 | Voltage | 50 Hz | 60 Hz | 120 Hz | 500 kHz | 1 kHz | 10 kHz & Up | 10 - 100 WVV | 0.93 | 0.95 | 1.00 | 1.05 | 1.08 | 1.15 | 160 - 450 WVV | 0.75 | 0.80 | 1.00 | 1.20 | 1.25 | 1.40 |
|                                 | 45 °C   | 60 °C | 70 °C  | 85 °C   | 105 °C |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
|                                 | 2.35  | 2.20  | 2.00   | 1.70    | 1.00   |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Voltage                         | 50 Hz   | 60 Hz | 120 Hz | 500 kHz | 1 kHz  | 10 kHz & Up |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
|                                 | 10 - 100 WVV  | 0.93  | 0.95   | 1.00    | 1.05   | 1.08        | 1.15   |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| 160 - 450 WVV                   | 0.75  | 0.80  | 1.00   | 1.20    | 1.25   | 1.40        |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Low Temperature Characteristics | Impedance ratio: $Z_{-20°C}/Z_{+25°C}$<br>≤ 10 (10 Vdc)<br>≤ 8 (16–50 Vdc)<br>≤ 4 (63–100 Vdc)<br>≤ 3 (150–450 Vdc)   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Endurance Life Test             | 2000 h at full load at 105 °C<br>Δ Capacitance ±20%<br>ESR 200% of limit<br>DCL 100% of limit   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Shelf Life Test                 | 1000 h at 105 °C<br>Δ Capacitance ±20%<br>ESR 200% of limit<br>DCL 100% of limit  |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| Vibration                       | 10 to 55 Hz, 0.06" and 10 g max, 2 h each plane   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |
| RoHS Compliant                  |   |       |        |         |        |             |        |  |      |      |      |      |      |         |       |       |        |         |       |             |              |      |      |      |      |      |      |               |      |      |      |      |      |      |

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## Higher Capacitance per Case Size

### Part Numbering System

|              |   |                 |  |            |                   |  |  |
|--------------|---|-----------------|--|------------|-------------------|--|--|
| <b>381LQ</b> | <b>821</b>  | <b>M</b>        | <b>400</b>                                   | <b>A05</b> | <b>2</b>          | <b>A</b>   | <b>+D</b>  |
| Type         | Cap   | Tolerance       | Voltage                                      | Case Code  | Insulating Sleeve | Pin Style  | Blank = no end disk if <250 V<br>D = end disk, any voltage |
| <b>381LQ</b> | <b>471 = 470 μF</b><br><b>332 = 3300 μF</b><br><b>103 = 10,000 μF</b> | <b>M = ±20%</b> | <b>160 = 160 Vdc</b><br><b>450 = 450 Vdc</b> |            | <b>2 = PVC</b>    | <b>Blank = 2 pins</b><br>snap-in 6.3 mm L<br><b>A = 2 pins snap-in</b><br>4.0 mm L |  |

### Outline Drawing



Note that for 200 volts and under the insulating end disc is optional - If one is needed add a (+D) to the end of the part numbering system.

### Insulated Case Dimensions

| Case Code | DIAMETER |        | LENGTH |        | 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 |        | LENGTH |        | 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                     |

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## Higher Capacitance per Case Size Ratings

| Cap.<br>(µF)                 | Catalog<br>Part Number | 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) |                                  |
| <b>10 Vdc (13 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 12000                        | 381LQ123M010H012       | 0.076              | 0.065       | 2.20                    | 2.53          | 22 x 25                          |
| 18000                        | 381LQ183M010H022       | 0.051              | 0.043       | 2.40                    | 2.76          | 22 x 30                          |
| 18000                        | 381LQ183M010H012       | 0.051              | 0.043       | 2.40                    | 2.76          | 25 x 25                          |
| 22000                        | 381LQ223M010H032       | 0.041              | 0.035       | 2.60                    | 2.99          | 22 x 35                          |
| 22000                        | 381LQ223M010J022       | 0.041              | 0.035       | 2.60                    | 2.99          | 25 x 30                          |
| 27000                        | 381LQ273M010H042       | 0.034              | 0.029       | 3.10                    | 3.57          | 22 x 40                          |
| 27000                        | 381LQ273M010J032       | 0.034              | 0.029       | 3.10                    | 3.57          | 25 x 35                          |
| 27000                        | 381LQ273M010K012       | 0.034              | 0.029       | 3.10                    | 3.57          | 30 x 25                          |
| 33000                        | 381LQ333M010H452       | 0.028              | 0.023       | 3.40                    | 3.91          | 22 x 45                          |
| 33000                        | 381LQ333M010J042       | 0.028              | 0.023       | 3.40                    | 3.91          | 25 x 40                          |
| 39000                        | 381LQ393M010J452       | 0.026              | 0.022       | 3.70                    | 4.26          | 25 x 45                          |
| 39000                        | 381LQ393M010K022       | 0.026              | 0.023       | 3.70                    | 4.26          | 30 x 30                          |
| 39000                        | 381LQ393M010A012       | 0.026              | 0.022       | 3.70                    | 4.26          | 35 x 25                          |
| 47000                        | 381LQ473M010J052       | 0.024              | 0.021       | 4.20                    | 4.83          | 25 x 50                          |
| 47000                        | 381LQ473M010K032       | 0.024              | 0.022       | 4.20                    | 4.83          | 30 x 35                          |
| 47000                        | 381LQ473M010A022       | 0.024              | 0.021       | 4.20                    | 4.83          | 35 x 30                          |
| 56000                        | 381LQ563M010K042       | 0.023              | 0.021       | 5.00                    | 5.75          | 30 x 40                          |
| 56000                        | 381LQ563M010A032       | 0.023              | 0.020       | 5.00                    | 5.75          | 35 x 35                          |
| 68000                        | 381LQ683M010K452       | 0.022              | 0.020       | 5.40                    | 6.21          | 30 x 45                          |
| 68000                        | 381LQ683M010A042       | 0.022              | 0.019       | 5.40                    | 6.21          | 35 x 40                          |
| 82000                        | 381LQ823M010A452       | 0.021              | 0.019       | 6.10                    | 7.02          | 35 x 45                          |
| 100000                       | 381LQ104M010A052       | 0.020              | 0.019       | 6.90                    | 7.94          | 35 x 50                          |
| <b>16 Vdc (20 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 10000                        | 381LQ103M016H012       | 0.075              | 0.063       | 2.60                    | 2.99          | 22 x 25                          |
| 12000                        | 381LQ123M016H022       | 0.062              | 0.053       | 2.90                    | 3.34          | 22 x 30                          |
| 12000                        | 381LQ123M016J012       | 0.062              | 0.053       | 2.90                    | 3.34          | 25 x 25                          |
| 15000                        | 381LQ153M016H032       | 0.050              | 0.042       | 3.20                    | 3.68          | 22 x 35                          |
| 18000                        | 381LQ183M016H042       | 0.041              | 0.035       | 3.50                    | 4.03          | 22 x 40                          |
| 18000                        | 381LQ183M016J022       | 0.041              | 0.035       | 3.50                    | 4.03          | 25 x 30                          |
| 22000                        | 381LQ223M016H452       | 0.034              | 0.029       | 3.80                    | 4.37          | 22 x 45                          |
| 22000                        | 381LQ223M016J032       | 0.034              | 0.029       | 3.80                    | 4.37          | 25 x 35                          |
| 22000                        | 381LQ223M016H012       | 0.034              | 0.029       | 3.80                    | 4.37          | 30 x 25                          |
| 27000                        | 381LQ273M016H052       | 0.028              | 0.023       | 4.20                    | 4.83          | 22 x 50                          |
| 27000                        | 381LQ273M016J042       | 0.028              | 0.023       | 4.20                    | 4.83          | 25 x 40                          |
| 27000                        | 381LQ273M016K022       | 0.028              | 0.023       | 4.20                    | 4.83          | 30 x 30                          |
| 27000                        | 381LQ273M016A012       | 0.028              | 0.023       | 4.20                    | 4.83          | 35 x 25                          |
| 33000                        | 381LQ333M016J452       | 0.023              | 0.019       | 4.70                    | 5.41          | 25 x 45                          |
| 33000                        | 381LQ333M016K032       | 0.023              | 0.019       | 4.70                    | 5.41          | 30 x 35                          |
| 33000                        | 381LQ333M016A022       | 0.023              | 0.020       | 4.70                    | 5.41          | 35 x 30                          |
| 39000                        | 381LQ393M016K042       | 0.022              | 0.018       | 5.10                    | 5.87          | 30 x 40                          |
| 39000                        | 381LQ393M016A032       | 0.022              | 0.020       | 5.10                    | 5.87          | 35 x 35                          |
| 47000                        | 381LQ473M016K452       | 0.016              | 0.014       | 5.50                    | 6.33          | 30 x 45                          |
| 47000                        | 381LQ473M016A042       | 0.021              | 0.019       | 5.50                    | 6.33          | 35 x 40                          |
| 56000                        | 381LQ563M016K052       | 0.020              | 0.018       | 6.00                    | 6.90          | 30 x 50                          |
| <b>25 Vdc (32 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 56000                        | 381LQ563M016A452       | 0.020              | 0.018       | 6.00                    | 6.90          | 35 x 45                          |
| 6800                         | 381LQ682M025H012       | 0.085              | 0.064       | 2.40                    | 2.76          | 22 x 25                          |
| 8200                         | 381LQ822M025H022       | 0.071              | 0.053       | 2.70                    | 3.11          | 22 x 30                          |
| 8200                         | 381LQ822M025J012       | 0.071              | 0.053       | 2.70                    | 3.11          | 25 x 25                          |
| 10000                        | 381LQ103M025H032       | 0.058              | 0.044       | 3.00                    | 3.45          | 22 x 35                          |
| 12000                        | 381LQ123M025H042       | 0.048              | 0.036       | 3.20                    | 3.68          | 22 x 40                          |
| 12000                        | 381LQ123M025J022       | 0.048              | 0.036       | 3.20                    | 3.68          | 25 x 30                          |
| 15000                        | 381LQ153M025H452       | 0.039              | 0.029       | 3.60                    | 4.14          | 22 x 45                          |
| 15000                        | 381LQ153M025J032       | 0.039              | 0.029       | 3.60                    | 4.14          | 25 x 35                          |
| 15000                        | 381LQ153M025K012       | 0.039              | 0.029       | 3.60                    | 4.14          | 30 x 25                          |
| 18000                        | 381LQ183M025H052       | 0.032              | 0.024       | 3.90                    | 4.49          | 22 x 50                          |
| 18000                        | 381LQ183M025J042       | 0.032              | 0.024       | 3.90                    | 4.49          | 25 x 40                          |
| 18000                        | 381LQ183M025K022       | 0.032              | 0.024       | 3.90                    | 4.49          | 30 x 30                          |
| 18000                        | 381LQ183M025A012       | 0.032              | 0.024       | 3.90                    | 4.49          | 35 x 25                          |
| 22000                        | 381LQ223M025J452       | 0.026              | 0.020       | 4.30                    | 4.95          | 25 x 45                          |
| 22000                        | 381LQ223M025K032       | 0.026              | 0.020       | 4.30                    | 4.95          | 30 x 35                          |
| 22000                        | 381LQ223M025A022       | 0.026              | 0.020       | 4.30                    | 4.95          | 35 x 30                          |
| 27000                        | 381LQ273M025K042       | 0.021              | 0.016       | 4.80                    | 5.52          | 30 x 40                          |
| 27000                        | 381LQ273M025A032       | 0.021              | 0.016       | 4.80                    | 5.52          | 35 x 35                          |
| 33000                        | 381LQ333M025K452       | 0.018              | 0.013       | 5.50                    | 6.33          | 30 x 45                          |
| 33000                        | 381LQ333M025A042       | 0.018              | 0.014       | 5.50                    | 6.33          | 35 x 40                          |
| 39000                        | 381LQ393M025K052       | 0.017              | 0.013       | 5.80                    | 6.67          | 30 x 50                          |
| 39000                        | 381LQ393M025A452       | 0.017              | 0.014       | 5.80                    | 6.67          | 35 x 45                          |
| 47000                        | 381LQ473M025A052       | 0.017              | 0.014       | 6.30                    | 7.25          | 35 x 50                          |
| <b>35 Vdc (44 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 4700                         | 381LQ472M035H012       | 0.106              | 0.079       | 2.20                    | 2.53          | 22 x 25                          |
| 5600                         | 381LQ562M035H022       | 0.089              | 0.067       | 2.40                    | 2.76          | 22 x 30                          |
| 5600                         | 381LQ562M035J012       | 0.089              | 0.067       | 2.40                    | 2.76          | 25 x 25                          |
| 6800                         | 381LQ682M035H032       | 0.073              | 0.055       | 2.60                    | 2.99          | 22 x 35                          |
| 8200                         | 381LQ822M035H042       | 0.061              | 0.045       | 2.90                    | 3.34          | 22 x 40                          |
| 8200                         | 381LQ822M035J022       | 0.061              | 0.045       | 2.90                    | 3.34          | 25 x 30                          |
| 10000                        | 381LQ103M035H452       | 0.050              | 0.037       | 3.20                    | 3.68          | 22 x 45                          |
| 10000                        | 381LQ103M035J032       | 0.050              | 0.037       | 3.20                    | 3.68          | 25 x 35                          |
| 10000                        | 381LQ103M035K012       | 0.050              | 0.037       | 3.20                    | 3.68          | 30 x 25                          |
| 12000                        | 381LQ123M035J042       | 0.041              | 0.031       | 3.50                    | 4.03          | 25 x 40                          |
| 12000                        | 381LQ123M035K022       | 0.041              | 0.031       | 3.50                    | 4.03          | 30 x 30                          |
| 12000                        | 381LQ123M035A012       | 0.041              | 0.031       | 3.50                    | 4.03          | 35 x 25                          |
| 15000                        | 381LQ153M035J452       | 0.033              | 0.025       | 3.90                    | 4.49          | 25 x 45                          |
| 15000                        | 381LQ153M035K032       | 0.033              | 0.025       | 3.90                    | 4.49          | 30 x 35                          |
| 15000                        | 381LQ153M035A022       | 0.033              | 0.025       | 3.90                    | 4.49          | 35 x 30                          |
| 18000                        | 381LQ183M035K042       | 0.028              | 0.021       | 4.30                    | 4.95          | 30 x 40                          |
| 18000                        | 381LQ183M035A032       | 0.028              | 0.021       | 4.30                    | 4.95          | 35 x 35                          |
| 22000                        | 381LQ223M035K452       | 0.023              | 0.017       | 5.00                    | 5.75          | 30 x 45                          |
| 22000                        | 381LQ223M035A042       | 0.023              | 0.017       | 5.00                    | 5.75          | 35 x 40                          |

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## Higher Capacitance per Case Size

| Cap.<br>(µF)                   | Catalog<br>Part Number | 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) |                                  |
| 27000                          | 381LQ273M035K052       | 0.018              | 0.014       | 5.30                    | 6.10          | 30 x 50                          |
| 27000                          | 381LQ273M035A452       | 0.018              | 0.014       | 5.30                    | 6.10          | 35 x 45                          |
| 33000                          | 381LQ333M035A052       | 0.015              | 0.012       | 5.90                    | 6.79          | 35 x 50                          |
| <b>50 Vdc (63 Vdc Surge)</b>   |                        |                    |             |                         |               |                                  |
| 2700                           | 381LQ272M050H012       | 0.154              | 0.115       | 1.80                    | 2.07          | 22 x 25                          |
| 3300                           | 381LQ332M050H022       | 0.126              | 0.094       | 2.00                    | 2.30          | 22 x 30                          |
| 3900                           | 381LQ392M050H032       | 0.106              | 0.080       | 2.20                    | 2.53          | 22 x 35                          |
| 3900                           | 381LQ392M050J012       | 0.106              | 0.080       | 2.20                    | 2.53          | 25 x 25                          |
| 4700                           | 381LQ472M050H042       | 0.088              | 0.066       | 2.50                    | 2.88          | 22 x 40                          |
| 4700                           | 381LQ472M050J022       | 0.088              | 0.066       | 2.50                    | 2.88          | 25 x 30                          |
| 5600                           | 381LQ562M050H452       | 0.074              | 0.056       | 2.80                    | 3.22          | 22 x 45                          |
| 5600                           | 381LQ562M050J032       | 0.074              | 0.056       | 2.80                    | 3.22          | 25 x 35                          |
| 4700                           | 381LQ472M050H042       | 0.088              | 0.066       | 2.50                    | 2.88          | 22 x 40                          |
| 4700                           | 381LQ472M050J022       | 0.088              | 0.066       | 2.50                    | 2.88          | 25 x 30                          |
| 5600                           | 381LQ562M050H452       | 0.074              | 0.056       | 2.80                    | 3.22          | 22 x 45                          |
| 5600                           | 381LQ562M050J032       | 0.074              | 0.056       | 2.80                    | 3.22          | 25 x 35                          |
| 5600                           | 381LQ562M050K012       | 0.074              | 0.056       | 2.80                    | 3.22          | 30 x 25                          |
| 6800                           | 381LQ682M050H052       | 0.061              | 0.046       | 3.30                    | 3.80          | 22 x 50                          |
| 6800                           | 381LQ682M050J042       | 0.061              | 0.046       | 3.30                    | 3.80          | 25 x 40                          |
| 6800                           | 381LQ682M050K022       | 0.061              | 0.046       | 3.30                    | 3.80          | 30 x 30                          |
| 6800                           | 381LQ682M050A012       | 0.061              | 0.046       | 3.30                    | 3.80          | 35 x 25                          |
| 8200                           | 381LQ822M050J452       | 0.051              | 0.038       | 3.60                    | 4.14          | 25 x 45                          |
| 8200                           | 381LQ822M050K032       | 0.051              | 0.038       | 3.60                    | 4.14          | 30 x 35                          |
| 10000                          | 381LQ103M050J052       | 0.041              | 0.031       | 4.00                    | 4.60          | 25 x 50                          |
| 10000                          | 381LQ103M050K042       | 0.041              | 0.031       | 4.00                    | 4.60          | 30 x 40                          |
| 10000                          | 381LQ103M050A022       | 0.041              | 0.031       | 4.00                    | 4.60          | 35 x 30                          |
| 12000                          | 381LQ123M050K452       | 0.035              | 0.026       | 4.50                    | 5.18          | 30 x 45                          |
| 12000                          | 381LQ123M050A032       | 0.035              | 0.028       | 4.50                    | 5.18          | 35 x 35                          |
| 15000                          | 381LQ153M050K052       | 0.028              | 0.021       | 4.80                    | 5.52          | 30 x 50                          |
| 15000                          | 381LQ153M050A042       | 0.028              | 0.022       | 4.80                    | 5.52          | 35 x 40                          |
| 18000                          | 381LQ183M050A452       | 0.023              | 0.018       | 5.60                    | 6.44          | 35 x 45                          |
| <b>63 Vdc (79 Vdc Surge)</b>   |                        |                    |             |                         |               |                                  |
| 2200                           | 381LQ222M063H012       | 0.151              | 0.113       | 2.00                    | 2.30          | 22 x 25                          |
| 2700                           | 381LQ272M063H022       | 0.123              | 0.092       | 2.20                    | 2.53          | 22 x 30                          |
| 2700                           | 381LQ272M063J012       | 0.123              | 0.092       | 2.20                    | 2.53          | 25 x 25                          |
| 3300                           | 381LQ332M063H032       | 0.100              | 0.075       | 2.50                    | 2.88          | 22 x 35                          |
| 3900                           | 381LQ392M063H042       | 0.085              | 0.064       | 2.70                    | 3.11          | 22 x 40                          |
| 3900                           | 381LQ392M063J022       | 0.085              | 0.064       | 2.70                    | 3.11          | 25 x 30                          |
| 3900                           | 381LQ392M063K012       | 0.085              | 0.064       | 2.70                    | 3.11          | 30 x 25                          |
| 4700                           | 381LQ472M063H452       | 0.071              | 0.053       | 3.00                    | 3.45          | 22 x 45                          |
| 4700                           | 381LQ472M063J032       | 0.071              | 0.053       | 3.00                    | 3.45          | 25 x 35                          |
| 5600                           | 381LQ562M063H052       | 0.059              | 0.044       | 3.30                    | 3.80          | 22 x 50                          |
| 5600                           | 381LQ562M063J042       | 0.059              | 0.044       | 3.30                    | 3.80          | 25 x 40                          |
| 5600                           | 381LQ562M063K022       | 0.059              | 0.044       | 3.30                    | 3.80          | 30 x 30                          |
| <b>80 Vdc (100 Vdc Surge)</b>  |                        |                    |             |                         |               |                                  |
| 1200                           | 381LQ122M080H012       | 0.235              | 0.176       | 1.50                    | 1.73          | 22 x 25                          |
| 1500                           | 381LQ152M080H022       | 0.188              | 0.141       | 1.70                    | 1.96          | 22 x 30                          |
| 1500                           | 381LQ152M080J012       | 0.188              | 0.141       | 1.70                    | 1.96          | 25 x 25                          |
| 1800                           | 381LQ182M080H032       | 0.157              | 0.117       | 1.80                    | 2.07          | 22 x 35                          |
| 2200                           | 381LQ222M080H042       | 0.128              | 0.096       | 2.10                    | 2.42          | 22 x 40                          |
| 2200                           | 381LQ222M080J022       | 0.128              | 0.096       | 2.10                    | 2.42          | 25 x 30                          |
| 2700                           | 381LQ272M080H452       | 0.104              | 0.078       | 2.40                    | 2.76          | 22 x 45                          |
| 2700                           | 381LQ272M080J032       | 0.104              | 0.078       | 2.40                    | 2.76          | 25 x 35                          |
| 2700                           | 381LQ272M080K012       | 0.104              | 0.078       | 2.40                    | 2.76          | 30 x 25                          |
| 3300                           | 381LQ332M080H052       | 0.085              | 0.064       | 2.60                    | 2.99          | 22 x 50                          |
| 3300                           | 381LQ332M080J042       | 0.085              | 0.064       | 2.60                    | 2.99          | 25 x 40                          |
| 3300                           | 381LQ332M080K022       | 0.085              | 0.064       | 2.60                    | 2.99          | 30 x 30                          |
| 3300                           | 381LQ332M080A012       | 0.085              | 0.064       | 2.60                    | 2.99          | 35 x 25                          |
| 3900                           | 381LQ392M080J452       | 0.072              | 0.054       | 3.00                    | 3.45          | 25 x 45                          |
| 3900                           | 381LQ392M080K032       | 0.072              | 0.054       | 3.00                    | 3.45          | 30 x 35                          |
| 4700                           | 381LQ472M080J052       | 0.060              | 0.045       | 3.30                    | 3.80          | 25 x 50                          |
| 4700                           | 381LQ472M080K042       | 0.060              | 0.045       | 3.30                    | 3.80          | 30 x 40                          |
| 4700                           | 381LQ472M080A022       | 0.060              | 0.045       | 3.30                    | 3.80          | 35 x 30                          |
| 5600                           | 381LQ562M080K452       | 0.050              | 0.038       | 3.70                    | 4.26          | 30 x 45                          |
| 5600                           | 381LQ562M080A032       | 0.050              | 0.038       | 3.70                    | 4.26          | 35 x 35                          |
| 6800                           | 381LQ682M080K052       | 0.041              | 0.031       | 3.90                    | 4.49          | 30 x 50                          |
| 6800                           | 381LQ682M080A042       | 0.041              | 0.032       | 3.90                    | 4.49          | 35 x 40                          |
| 8200                           | 381LQ822M080A452       | 0.034              | 0.027       | 4.50                    | 5.18          | 35 x 45                          |
| <b>100 Vdc (125 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 820                            | 381LQ821M100H012       | 0.303              | 0.197       | 1.40                    | 1.61          | 22 x 25                          |
| 1200                           | 381LQ122M100H022       | 0.207              | 0.135       | 1.80                    | 2.07          | 22 x 30                          |
| 1200                           | 381LQ122M100J012       | 0.207              | 0.135       | 1.80                    | 2.07          | 25 x 25                          |
| 1500                           | 381LQ152M100H032       | 0.166              | 0.108       | 2.10                    | 2.42          | 22 x 35                          |
| 1500                           | 381LQ152M100J022       | 0.166              | 0.108       | 2.10                    | 2.42          | 25 x 30                          |
| 1800                           | 381LQ182M100H042       | 0.138              | 0.090       | 2.30                    | 2.65          | 22 x 40                          |
| 1800                           | 381LQ182M100J032       | 0.138              | 0.090       | 2.30                    | 2.65          | 25 x 35                          |
| 1800                           | 381LQ182M100K012       | 0.138              | 0.090       | 2.30                    | 2.65          | 30 x 25                          |

# Type 381LQ 105 °C Compact, High Ripple, Snap-In Aluminum

## Higher Capacitance per Case Size

| Cap.<br>(µF)                   | Catalog<br>Part Number | 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) |                                  |
| <b>100 Vdc (125 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 2200                           | 381LQ222M100H452       | 0.113              | 0.073       | 2.60                    | 2.99          | 22 x 45                          |
| 2200                           | 381LQ222M100J042       | 0.113              | 0.073       | 2.60                    | 2.99          | 25 x 40                          |
| 2200                           | 381LQ222M100K022       | 0.113              | 0.073       | 2.60                    | 2.99          | 30 x 30                          |
| 2200                           | 381LQ222M100A012       | 0.113              | 0.073       | 2.60                    | 2.99          | 35 x 25                          |
| 2700                           | 381LQ272M100J452       | 0.092              | 0.060       | 2.90                    | 3.34          | 25 x 45                          |
| 2700                           | 381LQ272M100K032       | 0.092              | 0.060       | 2.90                    | 3.34          | 30 x 35                          |
| 3300                           | 381LQ332M100J052       | 0.075              | 0.049       | 3.20                    | 3.68          | 25 x 50                          |
| 3300                           | 381LQ332M100K042       | 0.075              | 0.049       | 3.20                    | 3.68          | 30 x 40                          |
| 3300                           | 381LQ332M100A022       | 0.075              | 0.049       | 3.20                    | 3.68          | 35 x 30                          |
| 3900                           | 381LQ392M100K452       | 0.064              | 0.043       | 3.60                    | 4.14          | 30 x 45                          |
| 3900                           | 381LQ392M100A032       | 0.064              | 0.043       | 3.60                    | 4.14          | 35 x 35                          |
| 4700                           | 381LQ472M100K052       | 0.053              | 0.038       | 3.80                    | 4.37          | 30 x 50                          |
| 4700                           | 381LQ472M100A042       | 0.053              | 0.037       | 3.80                    | 4.37          | 35 x 40                          |
| 5600                           | 381LQ562M100A452       | 0.044              | 0.031       | 4.20                    | 4.83          | 35 x 45                          |
| 6800                           | 381LQ682M100A052       | 0.037              | 0.027       | 4.70                    | 5.41          | 35 x 50                          |
| <b>160 Vdc (200 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 470                            | 381LQ471M160H012       | 0.423              | 0.190       | 1.40                    | 1.96          | 22 x 25                          |
| 560                            | 381LQ561M160H022       | 0.355              | 0.160       | 1.50                    | 2.10          | 22 x 30                          |
| 680                            | 381LQ681M160H022       | 0.293              | 0.132       | 1.70                    | 2.38          | 22 x 30                          |
| 680                            | 381LQ681M160J012       | 0.293              | 0.132       | 1.70                    | 2.38          | 25 x 25                          |
| 820                            | 381LQ821M160H032       | 0.243              | 0.109       | 2.00                    | 2.80          | 22 x 35                          |
| 820                            | 381LQ821M160J022       | 0.243              | 0.109       | 2.00                    | 2.80          | 25 x 30                          |
| 1000                           | 381LQ102M160H042       | 0.199              | 0.090       | 2.20                    | 3.08          | 22 x 40                          |
| 1000                           | 381LQ102M160J032       | 0.199              | 0.090       | 2.20                    | 3.08          | 25 x 35                          |
| 1000                           | 381LQ102M160K012       | 0.216              | 0.108       | 2.20                    | 3.08          | 30 x 25                          |
| 1200                           | 381LQ122M160H452       | 0.166              | 0.075       | 2.30                    | 3.22          | 22 x 45                          |
| 1200                           | 381LQ122M160J042       | 0.166              | 0.075       | 2.30                    | 3.22          | 25 x 40                          |
| 1200                           | 381LQ122M160K022       | 0.166              | 0.075       | 2.30                    | 3.22          | 30 x 30                          |
| 1200                           | 381LQ122M160A012       | 0.180              | 0.090       | 2.30                    | 3.22          | 35 x 25                          |
| 1500                           | 381LQ152M160J452       | 0.133              | 0.060       | 2.50                    | 3.50          | 25 x 45                          |
| 1500                           | 381LQ152M160K032       | 0.133              | 0.060       | 2.50                    | 3.50          | 30 x 35                          |
| 1500                           | 381LQ152M160A022       | 0.155              | 0.077       | 2.50                    | 3.50          | 35 x 30                          |
| 1800                           | 381LQ182M160J052       | 0.110              | 0.055       | 2.70                    | 3.78          | 25 x 50                          |
| 1800                           | 381LQ182M160K042       | 0.110              | 0.055       | 2.70                    | 3.78          | 30 x 40                          |
| 1800                           | 381LQ182M160A022       | 0.120              | 0.060       | 2.70                    | 3.78          | 35 x 30                          |
| 2200                           | 381LQ222M160K452       | 0.090              | 0.045       | 2.90                    | 4.06          | 30 x 45                          |
| 2200                           | 381LQ222M160A032       | 0.098              | 0.049       | 2.90                    | 4.06          | 35 x 35                          |
| 2700                           | 381LQ272M160K052       | 0.080              | 0.040       | 3.10                    | 4.34          | 30 x 50                          |
| 2700                           | 381LQ272M160A042       | 0.086              | 0.043       | 3.10                    | 4.34          | 35 x 40                          |
| 3300                           | 381LQ332M160A052       | 0.070              | 0.042       | 3.30                    | 4.62          | 35 x 50                          |
| <b>180 Vdc (225 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 560                            | 381LQ561M180H022       | 0.355              | 0.160       | 1.50                    | 2.10          | 22 x 30                          |
| 560                            | 381LQ561M180J012       | 0.355              | 0.160       | 1.50                    | 2.10          | 25 x 25                          |

| Cap.<br>(µF)                   | Catalog<br>Part Number | 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) |                                  |
| <b>180 Vdc (225 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 680                            | 381LQ681M180H032       | 0.293              | 0.132       | 1.70                    | 2.38          | 22 x 35                          |
| 680                            | 381LQ681M180J022       | 0.293              | 0.132       | 1.70                    | 2.38          | 25 x 30                          |
| 820                            | 381LQ821M180H042       | 0.243              | 0.109       | 2.00                    | 2.80          | 22 x 40                          |
| 820                            | 381LQ821M180J022       | 0.243              | 0.109       | 2.00                    | 2.80          | 25 x 30                          |
| 820                            | 381LQ821M180K012       | 0.243              | 0.109       | 2.00                    | 2.80          | 30 x 25                          |
| 1000                           | 381LQ102M180H452       | 0.199              | 0.090       | 2.20                    | 3.08          | 22 x 45                          |
| 1000                           | 381LQ102M180J042       | 0.199              | 0.090       | 2.20                    | 3.08          | 25 x 40                          |
| 1000                           | 381LQ102M180K022       | 0.199              | 0.090       | 2.20                    | 3.08          | 30 x 30                          |
| 1000                           | 381LQ102M180A012       | 0.216              | 0.097       | 2.20                    | 3.08          | 35 x 25                          |
| 1200                           | 381LQ122M180J452       | 0.166              | 0.075       | 2.30                    | 3.22          | 25 x 45                          |
| 1200                           | 381LQ122M180K032       | 0.166              | 0.075       | 2.30                    | 3.22          | 30 x 35                          |
| 1500                           | 381LQ152M180J052       | 0.133              | 0.060       | 2.50                    | 3.50          | 25 x 50                          |
| 1500                           | 381LQ152M180K042       | 0.133              | 0.060       | 2.50                    | 3.50          | 30 x 40                          |
| 1500                           | 381LQ152M180A022       | 0.155              | 0.077       | 2.50                    | 3.50          | 35 x 30                          |
| 1800                           | 381LQ182M180K452       | 0.110              | 0.050       | 2.70                    | 3.78          | 30 x 45                          |
| 1800                           | 381LQ182M180A032       | 0.129              | 0.064       | 2.70                    | 3.78          | 35 x 35                          |
| 2200                           | 381LQ222M180K052       | 0.090              | 0.041       | 2.90                    | 4.06          | 30 x 50                          |
| 2200                           | 381LQ222M180A042       | 0.098              | 0.049       | 2.90                    | 4.06          | 35 x 40                          |
| 2700                           | 381LQ272M180A052       | 0.086              | 0.043       | 3.10                    | 4.34          | 35 x 50                          |
| <b>200 Vdc (250 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 390                            | 381LQ391M200H012       | 0.510              | 0.230       | 1.31                    | 1.83          | 22 x 25                          |
| 470                            | 381LQ471M200H022       | 0.423              | 0.190       | 1.45                    | 2.03          | 22 x 30                          |
| 560                            | 381LQ561M200H022       | 0.355              | 0.160       | 1.67                    | 2.34          | 22 x 30                          |
| 680                            | 381LQ681M200H042       | 0.293              | 0.132       | 1.75                    | 2.45          | 22 x 40                          |
| 680                            | 381LQ681M200J022       | 0.293              | 0.132       | 1.75                    | 2.45          | 25 x 30                          |
| 820                            | 381LQ821M200H452       | 0.243              | 0.109       | 2.04                    | 2.86          | 22 x 45                          |
| 820                            | 381LQ821M200J032       | 0.243              | 0.109       | 2.04                    | 2.86          | 25 x 35                          |
| 820                            | 381LQ821M200K012       | 0.243              | 0.109       | 2.04                    | 2.86          | 30 x 25                          |
| 1000                           | 381LQ102M200H052       | 0.199              | 0.090       | 2.30                    | 3.22          | 22 x 50                          |
| 1000                           | 381LQ102M200J042       | 0.199              | 0.090       | 2.10                    | 2.90          | 25 x 40                          |
| 1000                           | 381LQ102M200J452       | 0.199              | 0.090       | 2.30                    | 3.22          | 25 x 45                          |
| 1000                           | 381LQ102M200K022       | 0.199              | 0.090       | 2.30                    | 3.22          | 30 x 30                          |
| 1000                           | 381LQ102M200A012       | 0.216              | 0.097       | 2.30                    | 3.22          | 35 x 25                          |
| 1200                           | 381LQ122M200J452       | 0.166              | 0.075       | 2.40                    | 3.30          | 25 x 45                          |
| 1200                           | 381LQ122M200J052       | 0.166              | 0.075       | 2.65                    | 3.71          | 25 x 50                          |
| 1200                           | 381LQ122M200K032       | 0.166              | 0.075       | 2.65                    | 3.71          | 30 x 35                          |
| 1200                           | 381LQ122M200A022       | 0.180              | 0.090       | 2.65                    | 3.71          | 35 x 30                          |
| 1500                           | 381LQ152M200K042       | 0.133              | 0.060       | 2.80                    | 3.92          | 30 x 40                          |
| 1500                           | 381LQ152M200A022       | 0.114              | 0.072       | 2.80                    | 3.92          | 35 x 30                          |
| 1800                           | 381LQ182M200K452       | 0.110              | 0.050       | 3.08                    | 4.31          | 30 x 45                          |
| 1800                           | 381LQ182M200A042       | 0.129              | 0.084       | 3.08                    | 4.31          | 35 x 40                          |
| 2200                           | 381LQ222M200K052       | 0.090              | 0.041       | 3.48                    | 4.87          | 30 x 50                          |
| 2200                           | 381LQ222M200A452       | 0.096              | 0.044       | 3.48                    | 4.87          | 35 x 45                          |

# Type 381LQ 105 °C Compact, High Ripple, Snap-In Aluminum

## Higher Capacitance per Case Size

| Cap.<br>(µF)                   | Catalog<br>Part Number | 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) |                                  |
| <b>250 Vdc (300 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 270                            | 381LQ271M250H012       | 0.614              | 0.276       | 1.10                    | 1.54          | 22 x 25                          |
| 330                            | 381LQ331M250H022       | 0.502              | 0.226       | 1.20                    | 1.68          | 22 x 30                          |
| 330                            | 381LQ331M250J012       | 0.502              | 0.226       | 1.20                    | 1.68          | 25 x 25                          |
| 390                            | 381LQ391M250H022       | 0.425              | 0.191       | 1.20                    | 1.70          | 22 x 30                          |
| 390                            | 381LQ391M250H032       | 0.425              | 0.191       | 1.30                    | 1.82          | 22 x 35                          |
| 390                            | 381LQ391M250J012       | 0.425              | 0.191       | 1.30                    | 1.82          | 25 x 25                          |
| 470                            | 381LQ471M250H032       | 0.353              | 0.159       | 1.30                    | 1.82          | 22 x 35                          |
| 470                            | 381LQ471M250H042       | 0.353              | 0.159       | 1.40                    | 1.96          | 22 x 40                          |
| 470                            | 381LQ471M250J022       | 0.353              | 0.159       | 1.40                    | 1.96          | 25 x 30                          |
| 470                            | 381LQ471M250K012       | 0.353              | 0.159       | 1.40                    | 1.96          | 30 x 25                          |
| 560                            | 381LQ561M250H042       | 0.296              | 0.133       | 1.40                    | 1.96          | 22 x 40                          |
| 560                            | 381LQ561M250H452       | 0.296              | 0.133       | 1.50                    | 2.10          | 22 x 45                          |
| 560                            | 381LQ561M250J032       | 0.296              | 0.133       | 1.50                    | 2.10          | 25 x 35                          |
| 560                            | 381LQ561M250K012       | 0.296              | 0.133       | 1.50                    | 2.10          | 30 x 25                          |
| 680                            | 381LQ681M250H452       | 0.244              | 0.110       | 1.50                    | 2.10          | 22 x 45                          |
| 680                            | 381LQ681M250H052       | 0.244              | 0.110       | 1.70                    | 2.38          | 22 x 50                          |
| 680                            | 381LQ681M250J042       | 0.244              | 0.110       | 1.70                    | 2.38          | 25 x 40                          |
| 680                            | 381LQ681M250K022       | 0.244              | 0.110       | 1.70                    | 2.38          | 30 x 30                          |
| 680                            | 381LQ681M250A012       | 0.244              | 0.110       | 1.70                    | 2.38          | 35 x 25                          |
| 820                            | 381LQ821M250J452       | 0.202              | 0.091       | 2.00                    | 2.80          | 25 x 45                          |
| 820                            | 381LQ821M250K032       | 0.202              | 0.091       | 2.00                    | 2.80          | 30 x 35                          |
| 820                            | 381LQ821M250A022       | 0.202              | 0.091       | 2.00                    | 2.80          | 35 x 30                          |
| 1000                           | 381LQ102M250J052       | 0.166              | 0.075       | 2.20                    | 3.08          | 25 x 50                          |
| 1000                           | 381LQ102M250K042       | 0.166              | 0.075       | 2.20                    | 3.08          | 30 x 40                          |
| 1000                           | 381LQ102M250A022       | 0.166              | 0.075       | 2.20                    | 3.08          | 35 x 30                          |
| 1200                           | 381LQ122M250K452       | 0.138              | 0.062       | 2.30                    | 3.22          | 30 x 45                          |
| 1200                           | 381LQ122M250A032       | 0.138              | 0.062       | 2.30                    | 3.22          | 35 x 35                          |
| 1500                           | 381LQ152M250A452       | 0.110              | 0.050       | 2.50                    | 3.50          | 35 x 45                          |
| 1800                           | 381LQ182M250A452       | 0.092              | 0.041       | 2.50                    | 3.50          | 35 x 45                          |
| 1800                           | 381LQ182M250A052       | 0.092              | 0.041       | 2.70                    | 3.78          | 35 x 50                          |
| <b>315 Vdc (365 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 150                            | 381LQ151M315H012       | 1.105              | 0.497       | 0.82                    | 1.15          | 22 x 25                          |
| 180                            | 381LQ181M315H022       | 0.921              | 0.414       | 0.90                    | 1.26          | 22 x 30                          |
| 220                            | 381LQ221M315H022       | 0.754              | 0.339       | 1.00                    | 1.40          | 22 x 30                          |
| 270                            | 381LQ271M315J022       | 0.614              | 0.276       | 1.10                    | 1.54          | 25 x 30                          |
| 330                            | 381LQ331M315H452       | 0.502              | 0.226       | 1.20                    | 1.68          | 22 x 45                          |
| 330                            | 381LQ331M315J032       | 0.502              | 0.226       | 1.20                    | 1.68          | 25 x 35                          |
| 330                            | 381LQ331M315K012       | 0.502              | 0.226       | 1.20                    | 1.68          | 30 x 25                          |
| 390                            | 381LQ391M315J042       | 0.425              | 0.191       | 1.30                    | 1.82          | 25 x 40                          |
| 390                            | 381LQ391M315K022       | 0.425              | 0.191       | 1.30                    | 1.82          | 30 x 30                          |
| 390                            | 381LQ391M315A012       | 0.425              | 0.191       | 1.30                    | 1.82          | 35 x 25                          |
| 470                            | 381LQ471M315J452       | 0.353              | 0.159       | 1.40                    | 1.96          | 25 x 45                          |
| 470                            | 381LQ471M315K032       | 0.353              | 0.159       | 1.40                    | 1.96          | 30 x 35                          |
| <b>350 Vdc (400 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 120                            | 381LQ121M350H012       | 1.382              | 0.622       | 0.75                    | 1.05          | 22 x 25                          |
| 150                            | 381LQ151M350H022       | 1.105              | 0.497       | 0.82                    | 1.15          | 22 x 30                          |
| 180                            | 381LQ181M350H022       | 0.921              | 0.414       | 0.90                    | 1.26          | 22 x 30                          |
| 180                            | 381LQ181M350J012       | 0.921              | 0.414       | 0.90                    | 1.26          | 25 x 25                          |
| 220                            | 381LQ221M350H032       | 0.754              | 0.339       | 1.00                    | 1.40          | 22 x 35                          |
| 220                            | 381LQ221M350J022       | 0.754              | 0.339       | 1.00                    | 1.40          | 25 x 30                          |
| 270                            | 381LQ271M350J032       | 0.614              | 0.276       | 1.10                    | 1.54          | 25 x 35                          |
| 270                            | 381LQ271M350K012       | 0.614              | 0.276       | 1.10                    | 1.54          | 30 x 25                          |
| 330                            | 381LQ331M350J042       | 0.502              | 0.226       | 1.20                    | 1.68          | 25 x 40                          |
| 330                            | 381LQ331M350K022       | 0.502              | 0.226       | 1.20                    | 1.68          | 30 x 30                          |
| 390                            | 381LQ391M350J452       | 0.425              | 0.191       | 1.30                    | 1.82          | 25 x 45                          |
| 390                            | 381LQ391M350K032       | 0.425              | 0.191       | 1.30                    | 1.82          | 30 x 35                          |
| 470                            | 381LQ471M350J052       | 0.353              | 0.159       | 1.40                    | 1.96          | 25 x 50                          |
| 470                            | 381LQ471M350A022       | 0.353              | 0.159       | 1.40                    | 1.96          | 35 x 30                          |
| 560                            | 381LQ561M350K452       | 0.296              | 0.133       | 1.50                    | 2.10          | 30 x 45                          |
| 560                            | 381LQ561M350A032       | 0.296              | 0.133       | 1.50                    | 2.10          | 35 x 35                          |
| 680                            | 381LQ681M350K052       | 0.244              | 0.110       | 1.70                    | 2.38          | 30 x 50                          |
| 680                            | 381LQ681M350A042       | 0.244              | 0.110       | 1.70                    | 2.38          | 35 x 40                          |
| 820                            | 381LQ821M350A452       | 0.202              | 0.091       | 1.90                    | 2.66          | 35 x 45                          |
| <b>400 Vdc (450 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 100                            | 381LQ101M400H012       | 1.824              | 0.821       | 0.70                    | 0.98          | 22 x 25                          |
| 120                            | 381LQ121M400H022       | 1.520              | 0.684       | 0.75                    | 1.05          | 22 x 30                          |
| 150                            | 381LQ151M400H022       | 1.216              | 0.547       | 0.88                    | 1.23          | 22 x 30                          |
| 180                            | 381LQ181M400H032       | 1.013              | 0.458       | 0.95                    | 1.33          | 22 x 35                          |
| 180                            | 381LQ181M400J022       | 1.013              | 0.458       | 0.95                    | 1.33          | 25 x 30                          |
| 220                            | 381LQ221M400H042       | 0.829              | 0.373       | 1.00                    | 1.40          | 22 x 45                          |
| 220                            | 381LQ221M400H452       | 0.829              | 0.373       | 1.10                    | 1.54          | 22 x 45                          |
| 220                            | 381LQ221M400J032       | 0.829              | 0.373       | 1.10                    | 1.54          | 25 x 35                          |
| 220                            | 381LQ221M400K012       | 0.829              | 0.373       | 1.10                    | 1.54          | 30 x 25                          |
| 270                            | 381LQ271M400H452       | 0.675              | 0.304       | 1.10                    | 1.54          | 22 x 45                          |
| 270                            | 381LQ271M400H052       | 0.675              | 0.304       | 1.22                    | 1.71          | 22 x 50                          |
| 270                            | 381LQ271M400J042       | 0.675              | 0.304       | 1.22                    | 1.71          | 25 x 40                          |
| 270                            | 381LQ271M400K022       | 0.675              | 0.304       | 1.22                    | 1.71          | 30 x 30                          |
| 270                            | 381LQ271M400A012       | 0.675              | 0.304       | 1.22                    | 1.71          | 35 x 25                          |
| 330                            | 381LQ331M400J452       | 0.553              | 0.249       | 1.44                    | 2.02          | 25 x 45                          |



# Type 381LQ 105 °C Compact, High Ripple, Snap-In Aluminum

## Higher Capacitance per Case Size

| Cap.<br>(µF)                   | Catalog<br>Part Number | 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) |                                  |
| <b>400 Vdc (450 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 330                            | 381LQ331M400K032       | 0.553              | 0.249       | 1.44                    | 2.02          | 30 x 35                          |
| 330                            | 381LQ331M400A022       | 0.553              | 0.249       | 1.44                    | 2.02          | 35 x 30                          |
| 390                            | 381LQ391M400J052       | 0.468              | 0.210       | 1.55                    | 2.17          | 25 x 50                          |
| 390                            | 381LQ391M400K032       | 0.468              | 0.210       | 1.40                    | 1.95          | 30 x 35                          |
| 390                            | 381LQ391M400K042       | 0.468              | 0.210       | 1.55                    | 2.17          | 30 x 40                          |
| 390                            | 381LQ391M400A022       | 0.468              | 0.210       | 1.55                    | 2.17          | 35 x 30                          |
| 470                            | 381LQ471M400K452       | 0.388              | 0.175       | 1.68                    | 2.35          | 30 x 45                          |
| 470                            | 381LQ471M400A032       | 0.388              | 0.175       | 1.68                    | 2.35          | 35 x 35                          |
| 560                            | 381LQ561M400K052       | 0.326              | 0.147       | 1.90                    | 2.66          | 30 x 50                          |
| 560                            | 381LQ561M400A042       | 0.326              | 0.147       | 1.90                    | 2.66          | 35 x 40                          |
| 680                            | 381LQ681M400A452       | 0.268              | 0.121       | 2.12                    | 2.97          | 35 x 45                          |
| 820                            | 381LQ821M400A052       | 0.200              | 0.090       | 2.30                    | 3.20          | 35 x 50                          |
| <b>420 Vdc (470 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 120                            | 381LQ121M420H022       | 1.520              | 0.684       | 0.75                    | 1.05          | 22 x 30                          |
| 120                            | 381LQ121M420J012       | 1.520              | 0.684       | 0.75                    | 1.05          | 25 x 25                          |
| 150                            | 381LQ151M420H032       | 1.220              | 0.550       | 0.85                    | 1.20          | 22 x 35                          |
| 180                            | 381LQ181M420H042       | 1.100              | 0.460       | 0.90                    | 1.30          | 22 x 40                          |
| 180                            | 381LQ181M420J022       | 1.100              | 0.460       | 0.90                    | 1.30          | 25 x 30                          |
| 220                            | 381LQ221M420H452       | 0.830              | 0.370       | 1.05                    | 1.50          | 22 x 45                          |
| 220                            | 381LQ221M420J032       | 0.830              | 0.370       | 1.05                    | 1.50          | 25 x 35                          |
| 220                            | 381LQ221M420K012       | 0.830              | 0.370       | 1.05                    | 1.50          | 30 x 25                          |
| 270                            | 381LQ271M420H052       | 0.675              | 0.305       | 1.20                    | 1.70          | 22 x 50                          |
| 270                            | 381LQ271M420J042       | 0.675              | 0.305       | 1.20                    | 1.70          | 25 x 40                          |
| 270                            | 381LQ271M420K022       | 0.675              | 0.305       | 1.20                    | 1.70          | 30 x 30                          |
| 270                            | 381LQ271M420A012       | 0.675              | 0.305       | 1.20                    | 1.70          | 35 x 25                          |
| 330                            | 381LQ331M420J052       | 0.550              | 0.250       | 1.40                    | 2.00          | 25 x 50                          |
| 330                            | 381LQ331M420K032       | 0.550              | 0.250       | 1.40                    | 2.00          | 30 x 35                          |
| 330                            | 381LQ331M420A032       | 0.550              | 0.250       | 1.40                    | 2.00          | 35 x 35                          |
| 390                            | 381LQ391M420K042       | 0.470              | 0.210       | 1.55                    | 2.15          | 30 x 40                          |
| 390                            | 381LQ391M420A032       | 0.470              | 0.210       | 1.55                    | 2.15          | 35 x 35                          |
| 470                            | 381LQ471M420K452       | 0.390              | 0.175       | 1.70                    | 2.40          | 30 x 45                          |
| 470                            | 381LQ471M420A032       | 0.390              | 0.175       | 1.70                    | 2.40          | 35 x 35                          |
| 560                            | 381LQ561M420K052       | 0.330              | 0.150       | 1.90                    | 2.65          | 30 x 50                          |
| <b>420 Vdc (470 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 560                            | 381LQ561M420A452       | 0.330              | 0.150       | 1.90                    | 2.65          | 35 x 45                          |
| 680                            | 381LQ681M420A052       | 0.270              | 0.120       | 2.10                    | 2.95          | 35 x 50                          |
| <b>450 Vdc (500 Vdc Surge)</b> |                        |                    |             |                         |               |                                  |
| 100                            | 381LQ101M450H022       | 1.824              | 0.821       | 0.64                    | 0.90          | 22 x 30                          |
| 100                            | 381LQ101M450J012       | 1.824              | 0.821       | 0.64                    | 0.90          | 25 x 25                          |
| 120                            | 381LQ121M450H032       | 1.520              | 0.684       | 0.72                    | 1.01          | 22 x 35                          |
| 120                            | 381LQ121M450J022       | 1.520              | 0.684       | 0.72                    | 1.01          | 25 x 30                          |
| 150                            | 381LQ151M450H042       | 1.216              | 0.547       | 0.79                    | 1.11          | 22 x 40                          |
| 150                            | 381LQ151M450J022       | 1.216              | 0.547       | 0.79                    | 1.11          | 25 x 30                          |
| 150                            | 381LQ151M450K012       | 1.216              | 0.547       | 0.79                    | 1.11          | 30 x 25                          |
| 180                            | 381LQ181M450H452       | 1.013              | 0.456       | 0.87                    | 1.22          | 22 x 45                          |
| 180                            | 381LQ181M450J032       | 1.013              | 0.456       | 0.80                    | 1.10          | 25 x 35                          |
| 180                            | 381LQ181M450J042       | 1.013              | 0.456       | 0.87                    | 1.22          | 25 x 40                          |
| 180                            | 381LQ181M450K022       | 1.013              | 0.456       | 0.87                    | 1.22          | 30 x 30                          |
| 220                            | 381LQ221M450H052       | 0.829              | 0.373       | 0.90                    | 1.25          | 22 x 50                          |
| 220                            | 381LQ221M450J452       | 0.829              | 0.373       | 1.00                    | 1.40          | 25 x 45                          |
| 220                            | 381LQ221M450K022       | 0.829              | 0.373       | 1.00                    | 1.40          | 30 x 30                          |
| 220                            | 381LQ221M450A012       | 0.829              | 0.373       | 1.00                    | 1.40          | 35 x 25                          |
| 270                            | 381LQ271M450J052       | 0.675              | 0.304       | 1.19                    | 1.67          | 25 x 50                          |
| 270                            | 381LQ271M450K032       | 0.675              | 0.304       | 1.10                    | 1.50          | 30 x 35                          |
| 270                            | 381LQ271M450K042       | 0.675              | 0.304       | 1.19                    | 1.67          | 30 x 40                          |
| 270                            | 381LQ271M450A022       | 0.675              | 0.304       | 1.19                    | 1.67          | 35 x 30                          |
| 330                            | 381LQ331M450K042       | 0.553              | 0.249       | 1.25                    | 1.75          | 30 x 40                          |
| 330                            | 381LQ331M450K452       | 0.553              | 0.249       | 1.38                    | 1.93          | 30 x 45                          |
| 330                            | 381LQ331M450A032       | 0.553              | 0.249       | 1.38                    | 1.93          | 35 x 35                          |
| 390                            | 381LQ391M450K452       | 0.468              | 0.210       | 1.40                    | 1.95          | 30 x 45                          |
| 390                            | 381LQ391M450A042       | 0.468              | 0.210       | 1.55                    | 2.17          | 35 x 40                          |
| 470                            | 381LQ471M450A452       | 0.388              | 0.175       | 1.74                    | 2.44          | 35 x 45                          |
| 560                            | 381LQ561M450A052       | 0.326              | 0.147       | 1.90                    | 2.66          | 35 x 50                          |
| 390                            | 381LQ391M450K052       | 0.680              | 0.210       | 1.55                    | 2.17          | 30 x 50                          |
| 390                            | 381LQ391M450A042       | 0.468              | 0.210       | 1.55                    | 2.17          | 35 x 40                          |
| 470                            | 381LQ471M450A452       | 0.388              | 0.175       | 1.74                    | 2.44          | 35 x 45                          |
| 560                            | 381LQ561M450A052       | 0.326              | 0.147       | 1.90                    | 2.66          | 35 x 50                          |

# Type 381LQ 105 °C Compact, High Ripple, Snap-In Aluminum

Higher Capacitance per Case Size

## Typical Performance Curves





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