

# Type AFK -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Low Impedance and Long-Life for Filtering, Bypassing and Power Supply Decoupling



Type AFK Capacitors are the best and by a wide margin. With 40% to 60% lower impedance, 30% to 50% smaller case size and more than twice the life compared to low-ESR type AFC, the Type AFK also excels at cold performance down to -55 °C. In addition, this terrific low-impedance performance, approaching low-ESR tantalum capacitors, is at a significant cost savings compared to tantalum. The vertical cylindrical cases facilitate automatic mounting and reflow soldering into the same footprint of like-rated tantalum capacitors except without the need for voltage derating.

#### Highlights

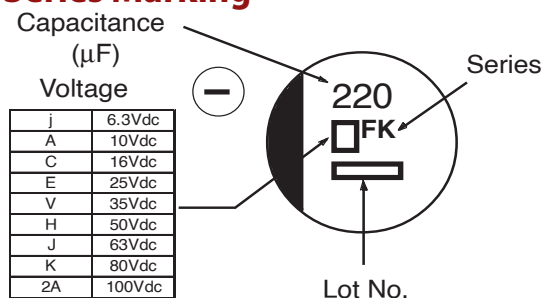
- +105 °C, Up to 5000 Hour Load Life
- Capacitance Range: 3.3 μF to 6800 μF
- Voltage Range: 6.3 Vdc to 100 Vdc
- AEC-Q200 Compliant

#### Specifications

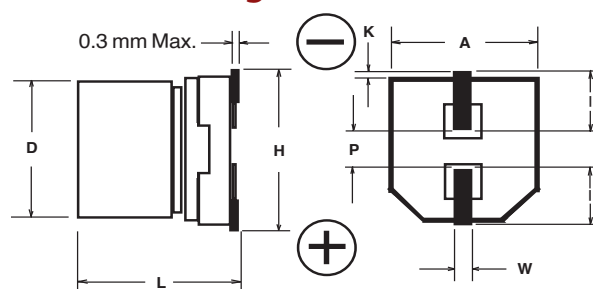
| Capacitance Range                      | 1.0 μF to 1500 μF   |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
|--|---|-----------|----------|--------|---------|--------|---------|------|------|------|------|------|------|------|------|-----|------|------|------|
| Capacitance Tolerance                  | ±20% @ 120 Hz and +20 °C  |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Rated Voltage                          | 6.3, 10, 16, 25, 35, 50, 63, 80 & 100 Vdc   |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Operating Temperature Range            | -55 °C to +105 °C   |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Leakage Current                        | I = 0.01 CV or 3 (μA) whichever is greater after 2 minutes  |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Dissipation Factor                     | <table border="1"> <tr> <th>6.3V</th> <th>10V</th> <th>16V</th> <th>25V</th> <th>35V</th> <th>50V</th> <th>63V</th> <th>80V</th> <th>100V</th> </tr> <tr> <td>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.1</td> <td>0.08</td> <td>0.08</td> <td>0.07</td> </tr> </table> <p>Add 0.02 per 1000 μF for values greater than 1000 μF</p> | 6.3V      | 10V      | 16V    | 25V     | 35V    | 50V     | 63V  | 80V  | 100V | 0.26 | 0.19 | 0.16 | 0.14 | 0.12 | 0.1 | 0.08 | 0.08 | 0.07 |
| 6.3V                                   | 10V   | 16V       | 25V      | 35V    | 50V     | 63V    | 80V     | 100V |      |      |      |      |      |      |      |     |      |      |      |
| 0.26                                   | 0.19  | 0.16      | 0.14     | 0.12   | 0.1     | 0.08   | 0.08    | 0.07 |      |      |      |      |      |      |      |     |      |      |      |
| Ripple Current Multipliers (Frequency) | <table border="1"> <tr> <th>Frequency</th> <th>50/60 Hz</th> <th>120 Hz</th> <th>1 kHz</th> <th>10 kHz</th> <th>100 kHz</th> </tr> <tr> <td></td> <td>0.70</td> <td>0.75</td> <td>0.90</td> <td>0.95</td> <td>1.00</td> </tr> </table>  | Frequency | 50/60 Hz | 120 Hz | 1 kHz   | 10 kHz | 100 kHz |      | 0.70 | 0.75 | 0.90 | 0.95 | 1.00 |      |      |     |      |      |      |
| Frequency                              | 50/60 Hz  | 120 Hz    | 1 kHz    | 10 kHz | 100 kHz |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
|  | 0.70  | 0.75      | 0.90     | 0.95   | 1.00    |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Load Life                              | 2000 h @ 105 °C, 4.0 — 10.0 mm dia.<br>5000 h @ 105 °C, 12.5 — 18.0 mm dia.<br>Δ Capacitance ±30%<br>DF: ≤ 200% of limit<br>DCL: ≤ 100% of limit  |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |
| Shelf Life                             | 1000 h @ 105 °C<br>Δ Capacitance ±30%<br>DF: ≤ 200% of limit<br>DCL: ≤ 100% of limit  |           |          |        |         |        |         |      |      |      |      |      |      |      |      |     |      |      |      |

#### Regulatory Information

#### AFK Series Marking



#### Outline Drawing



#### Case Dimensions

| Case Code | D ± 0.5 | L          | A ± 0.2 | H (max) | I (ref) | W          | P (ref) | K (mm)           |
|-----------|---------|------------|---------|---------|---------|------------|---------|------------------|
| B         | 4.0     | 5.8 ± 0.3  | 4.3     | 5.5     | 1.8     | 0.65 ± 0.1 | 1.0     | 0.35 +0.15/-0.20 |
| C         | 5.0     | 5.8 ± 0.3  | 5.3     | 6.5     | 2.2     | 0.65 ± 0.1 | 1.5     | 0.35 +0.15/-0.20 |
| D         | 6.3     | 5.8 ± 0.3  | 6.6     | 7.8     | 2.6     | 0.65 ± 0.1 | 1.8     | 0.35 +0.15/-0.20 |
| X         | 6.3     | 7.7 ± 0.3  | 6.6     | 7.8     | 2.6     | 0.65 ± 0.1 | 1.8     | 0.35 +0.15/-0.20 |
| E         | 8.0     | 6.2 ± 0.3  | 8.3     | 9.5     | 3.4     | 0.65 ± 0.1 | 2.2     | 0.35 +0.15/-0.20 |
| F         | 8.0     | 10.2 ± 0.3 | 8.3     | 10.0    | 3.4     | 0.90 ± 0.2 | 3.1     | 0.70 ± 0.20      |
| G         | 10.0    | 10.2 ± 0.3 | 10.3    | 12.0    | 3.5     | 0.90 ± 0.2 | 4.6     | 0.70 ± 0.20      |
| H         | 12.5    | 13.5 ± 0.5 | 13.5    | 15.0    | 4.7     | 0.90 ± 0.3 | 4.4     | 0.70 ± 0.30      |
| P         | 16.0    | 16.5 ± 0.5 | 17.0    | 19.0    | 5.5     | 1.2 ± 0.3  | 6.7     | 0.70 ± 0.30      |
| R         | 18.0    | 16.5 ± 0.5 | 19.0    | 21.0    | 6.7     | 1.2 ± 0.3  | 6.7     | 0.70 ± 0.30      |

# Type AFK -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Ratings Table

| Cap (µF)                       | Catalog Part Number | Max. DCL 2 min (µA) | Max. Dissipation Factor @120 Hz/20 °C | Max. ESR @100 kHz/20 °C (Ω) | Impedance @ 100 kHz/20 °C (Ω) | Max. Ripple Current @ 100 kHz/105 °C (mA) | Case Code | Size D x L (mm) | Quantity per Reel |
|--------------------------------|---------------------|---------------------|---------------------------------------|-----------------------------|-------------------------------|---|-----------|-----------------|-------------------|
| <b>6.3 Vdc ( 8 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 22                             | AFK226M06B12T-F     | 3.0                 | 0.26                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 47                             | AFK476M06B12T-F     | 3.0                 | 0.26                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 47                             | AFK476M06C12T-F     | 3.0                 | 0.26                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 100                            | AFK107M06C12T-F     | 6.3                 | 0.26                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 100                            | AFK107M06D16T-F     | 6.3                 | 0.26                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 220                            | AFK227M06D16T-F     | 13.9                | 0.26                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 330                            | AFK337M06X16T-F     | 20.8                | 0.26                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 330                            | AFK337M06E16T-F     | 20.8                | 0.26                                  | 0.260                       | 0.260                         | 300                                       | E         | 8 x 6.2         | 1000              |
| 470                            | AFK477M06F24T-F     | 29.6                | 0.26                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 1000                           | AFK108M06F24T-F     | 63.0                | 0.26                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 1500                           | AFK158M06G24T-F     | 94.5                | 0.26                                  | 0.080                       | 0.080                         | 850                                       | G         | 10 x 10.2       | 500               |
| 3300                           | AFK338M06H32T-F     | 207.9               | 0.30                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 6800                           | AFK688M06P44T-F     | 428.4               | 0.36                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| <b>10 Vdc ( 13 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 22                             | AFK226M10B12T-F     | 3.0                 | 0.19                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 33                             | AFK336M10B12T-F     | 3.3                 | 0.19                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 33                             | AFK336M10C12T-F     | 3.3                 | 0.19                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 150                            | AFK157M10D16T-F     | 15.0                | 0.19                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 220                            | AFK227M10X16T-F     | 22.0                | 0.19                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 220                            | AFK227M10E16T-F     | 22.0                | 0.19                                  | 0.260                       | 0.260                         | 300                                       | E         | 8 x 6.2         | 1000              |
| 330                            | AFK337M10F24T-F     | 33.0                | 0.19                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 470                            | AFK477M10F24T-F     | 47.0                | 0.19                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 680                            | AFK687M10F24T-F     | 68.0                | 0.19                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 1000                           | AFK108M10G24T-F     | 100.0               | 0.19                                  | 0.080                       | 0.080                         | 850                                       | G         | 10 x 10.2       | 500               |
| 2200                           | AFK228M10H32T-F     | 220.0               | 0.21                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 4700                           | AFK478M10P44T-F     | 470.0               | 0.25                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| 6800                           | AFK688M10R44T-F     | 680.0               | 0.29                                  | 0.033                       | 0.033                         | 2060                                      | R         | 18 x 16.5       | 125               |
| <b>16 Vdc ( 20 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 10                             | AFK106M16B12T-F     | 3.0                 | 0.16                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 22                             | AFK226M16B12T-F     | 3.5                 | 0.16                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 22                             | AFK226M16C12T-F     | 3.5                 | 0.16                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 47                             | AFK476M16C12T-F     | 7.5                 | 0.16                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 47                             | AFK476M16D16T-F     | 7.5                 | 0.16                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 68                             | AFK686M16D16T-F     | 10.9                | 0.19                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 100                            | AFK107M16D16T-F     | 16.0                | 0.16                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 150                            | AFK157M16X16T-F     | 24.0                | 0.16                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 220                            | AFK227M16X16T-F     | 35.2                | 0.16                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 220                            | AFK227M16E16T-F     | 35.2                | 0.16                                  | 0.260                       | 0.260                         | 300                                       | E         | 8 x 6.2         | 1000              |
| 330                            | AFK337M16F24T-F     | 52.8                | 0.16                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 470                            | AFK477M16F24T-F     | 75.2                | 0.16                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 680                            | AFK687M16G24T-F     | 108.8               | 0.16                                  | 0.080                       | 0.080                         | 850                                       | G         | 10 x 10.2       | 500               |
| 1500                           | AFK158M16H32T-F     | 240.0               | 0.16                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 3300                           | AFK338M16P44T-F     | 528.0               | 0.20                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| 4700                           | AFK478M16R44T-F     | 752.0               | 0.22                                  | 0.033                       | 0.033                         | 2060                                      | R         | 18 x 16.5       | 125               |

# Type AFK -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

| Cap (µF)                       | Catalog Part Number | Max. DCL 2 min (µA) | Max. Dissipation Factor @120 Hz/20 °C | Max. ESR @100 kHz/20 °C (Ω) | Impedance @ 100 kHz/20 °C (Ω) | Max. Ripple Current @ 100 kHz/105 °C (mA) | Case Code | Size D x L (mm) | Quantity per Reel |
|--------------------------------|---------------------|---------------------|---------------------------------------|-----------------------------|-------------------------------|---|-----------|-----------------|-------------------|
| <b>25 Vdc ( 31 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 10                             | AFK106M25B12T-F     | 3.0                 | 0.14                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 22                             | AFK226M25C12T-F     | 5.5                 | 0.14                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 33                             | AFK336M25C12T-F     | 8.3                 | 0.14                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 33                             | AFK336M25D16T-F     | 8.3                 | 0.14                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 47                             | AFK476M25D16T-F     | 11.8                | 0.14                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 68                             | AFK686M25D16T-F     | 17.0                | 0.14                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 100                            | AFK107M25X16T-F     | 25.0                | 0.14                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 100                            | AFK107M25E16T-F     | 25.0                | 0.14                                  | 0.260                       | 0.260                         | 300                                       | E         | 8 x 6.2         | 1000              |
| 150                            | AFK157M25F24T-F     | 37.5                | 0.14                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 220                            | AFK227M25F24T-F     | 55.0                | 0.14                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 330                            | AFK337M25F24T-F     | 82.5                | 0.14                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 470                            | AFK477M25G24T-F     | 117.5               | 0.14                                  | 0.080                       | 0.080                         | 850                                       | G         | 10 x 10.2       | 500               |
| 1000                           | AFK108M25H32T-F     | 250.0               | 0.14                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 1500                           | AFK158M25P44T-F     | 375.0               | 0.14                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| 2200                           | AFK228M25P44T-F     | 550.0               | 0.16                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| 3300                           | AFK338M25R44T-F     | 825.0               | 0.18                                  | 0.033                       | 0.033                         | 2060                                      | R         | 18 x 16.5       | 125               |
| <b>35 Vdc ( 44 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 4.7                            | AFK475M35B12T-F     | 3.0                 | 0.12                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 10                             | AFK106M35B12T-F     | 3.5                 | 0.12                                  | 1.350                       | 1.350                         | 90  | B         | 4 x 5.8         | 2000              |
| 10                             | AFK106M35C12T-F     | 3.5                 | 0.12                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 22                             | AFK226M35C12T-F     | 7.7                 | 0.12                                  | 0.700                       | 0.700                         | 160                                       | C         | 5 x 5.8         | 1000              |
| 33                             | AFK336M35D16T-F     | 11.6                | 0.12                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 47                             | AFK476M35D16T-F     | 16.5                | 0.12                                  | 0.360                       | 0.360                         | 240                                       | D         | 6.3 x 5.8       | 1000              |
| 68                             | AFK686M35X16T-F     | 23.8                | 0.12                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 100                            | AFK107M35X16T-F     | 35.0                | 0.12                                  | 0.340                       | 0.340                         | 280                                       | X         | 6.3 x 7.7       | 900               |
| 100                            | AFK107M35F24T-F     | 35.0                | 0.12                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 150                            | AFK157M35F24T-F     | 52.5                | 0.12                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 220                            | AFK227M35F24T-F     | 77.0                | 0.12                                  | 0.160                       | 0.160                         | 600                                       | F         | 8 x 10.2        | 500               |
| 330                            | AFK337M35G24T-F     | 115.5               | 0.12                                  | 0.080                       | 0.080                         | 850                                       | G         | 10 x 10.2       | 500               |
| 470                            | AFK477M35H32T-F     | 164.5               | 0.12                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 680                            | AFK687M35H32T-F     | 238.0               | 0.12                                  | 0.060                       | 0.060                         | 1100                                      | H         | 12.5 x 13.5     | 200               |
| 1000                           | AFK108M35P44T-F     | 350.0               | 0.12                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| 1500                           | AFK158M35P44T-F     | 525.0               | 0.12                                  | 0.035                       | 0.035                         | 1800                                      | P         | 16 x 16.5       | 125               |
| <b>50 Vdc ( 63 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 4.7                            | AFK475M50B12T-F     | 3.0                 | 0.10                                  | 2.900                       | 2.900                         | 60  | B         | 4 x 5.8         | 2000              |
| 10                             | AFK106M50C12T-F     | 5.0                 | 0.10                                  | 1.520                       | 1.520                         | 85  | C         | 5 x 5.8         | 1000              |
| 10                             | AFK106M50D16T-F     | 5.0                 | 0.10                                  | 0.880                       | 0.880                         | 165                                       | D         | 6.3 x 5.8       | 1000              |
| 22                             | AFK226M50D16T-F     | 11.0                | 0.10                                  | 0.880                       | 0.880                         | 165                                       | D         | 6.3 x 5.8       | 1000              |
| 33                             | AFK336M50X16T-F     | 16.5                | 0.10                                  | 0.680                       | 0.680                         | 195                                       | X         | 6.3 x 7.7       | 900               |
| 33                             | AFK336M50E16T-F     | 16.5                | 0.10                                  | 0.680                       | 0.680                         | 195                                       | E         | 8 x 6.2         | 1000              |
| 47                             | AFK476M50X16T-F     | 23.5                | 0.10                                  | 0.680                       | 0.680                         | 195                                       | X         | 6.3 x 7.7       | 900               |
| 47                             | AFK476M50E16T-F     | 23.5                | 0.10                                  | 0.680                       | 0.680                         | 195                                       | E         | 8 x 6.2         | 1000              |
| 100                            | AFK107M50F24T-F     | 50.0                | 0.10                                  | 0.340                       | 0.340                         | 350                                       | F         | 8 x 10.2        | 500               |

# Type AFK -55 °C to 105 °C

## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

| Cap (µF)                         | Catalog Part Number | Max. DCL 2 min (µA) | Max. Dissipation Factor @120 Hz/20 °C | Max. ESR @100 kHz/20 °C (Ω) | Impedance @ 100 kHz/20 °C (Ω) | Max. Ripple Current @ 100 kHz/105 °C (mA) | Case Code | Size D x L (mm) | Quantity per Reel |
|----------------------------------|---------------------|---------------------|---------------------------------------|-----------------------------|-------------------------------|---|-----------|-----------------|-------------------|
| <b>50 Vdc ( 63 Vdc Surge )</b>   |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 150                              | AFK157M50G24T-F     | 75.0                | 0.10                                  | 0.180                       | 0.180                         | 670                                       | G         | 10 x 10.2       | 500               |
| 220                              | AFK227M50G24T-F     | 110.0               | 0.10                                  | 0.180                       | 0.180                         | 670                                       | G         | 10 x 10.2       | 500               |
| 330                              | AFK337M50H32T-F     | 165.0               | 0.10                                  | 0.120                       | 0.120                         | 900                                       | H         | 12.5 x 13.5     | 200               |
| 390                              | AFK397M50H32T-F     | 195.0               | 0.10                                  | 0.120                       | 0.120                         | 900                                       | H         | 12.5 x 13.6     | 200               |
| 470                              | AFK477M50P44T-F     | 235.0               | 0.10                                  | 0.073                       | 0.073                         | 1610                                      | P         | 16 x 16.5       | 125               |
| 560                              | AFK567M50P44T-F     | 280.0               | 0.10                                  | 0.073                       | 0.073                         | 1610                                      | P         | 16 x 16.5       | 125               |
| 680                              | AFK687M50P44T-F     | 340.0               | 0.10                                  | 0.073                       | 0.073                         | 1610                                      | P         | 16 x 16.5       | 125               |
| 1000                             | AFK108M50P44T-F     | 500.0               | 0.10                                  | 0.073                       | 0.073                         | 1610                                      | P         | 16 x 16.5       | 125               |
| <b>63 Vdc ( 75 Vdc Surge )</b>   |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 4.7                              | AFK475M63C12T-F     | 3.0                 | 0.08                                  | 3.000                       | 3.000                         | 50  | C         | 5 x 5.8         | 1000              |
| 10                               | AFK106M63D16T-F     | 6.3                 | 0.08                                  | 1.500                       | 1.500                         | 80  | D         | 6.3 x 5.8       | 1000              |
| 22                               | AFK226M63X16T-F     | 13.9                | 0.08                                  | 1.200                       | 1.200                         | 120                                       | X         | 6.3 x 7.7       | 900               |
| 22                               | AFK226M63E16T-F     | 13.9                | 0.08                                  | 1.200                       | 1.200                         | 120                                       | E         | 8 x 6.2         | 1000              |
| 33                               | AFK336M63F24T-F     | 20.8                | 0.08                                  | 0.650                       | 0.650                         | 250                                       | F         | 8 x 10.2        | 500               |
| 47                               | AFK476M63F24T-F     | 29.6                | 0.08                                  | 0.650                       | 0.650                         | 250                                       | F         | 8 x 10.2        | 500               |
| 68                               | AFK686M63G24T-F     | 42.8                | 0.08                                  | 0.350                       | 0.350                         | 400                                       | G         | 10 x 10.2       | 500               |
| 100                              | AFK107M63G24T-F     | 63.0                | 0.08                                  | 0.350                       | 0.350                         | 400                                       | G         | 10 x 10.2       | 500               |
| 150                              | AFK157M63H32T-F     | 94.5                | 0.08                                  | 0.160                       | 0.160                         | 800                                       | H         | 12.5 x 13.5     | 200               |
| 220                              | AFK227M63H32T-F     | 138.6               | 0.08                                  | 0.160                       | 0.160                         | 800                                       | H         | 12.5 x 13.5     | 200               |
| 470                              | AFK477M63P44T-F     | 296.1               | 0.08                                  | 0.082                       | 0.082                         | 1410                                      | P         | 16 x 16.5       | 125               |
| 680                              | AFK687M63R44T-F     | 428.4               | 0.08                                  | 0.080                       | 0.080                         | 1690                                      | R         | 18 x 16.5       | 125               |
| <b>80 Vdc ( 100 Vdc Surge )</b>  |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 3.3                              | AFK335M80C12T-F     | 3.0                 | 0.08                                  | 5.00                        | 5.00                          | 25  | C         | 5 x 5.8         | 1000              |
| 4.7                              | AFK475M80D16T-F     | 3.8                 | 0.08                                  | 3.00                        | 3.00                          | 40  | D         | 6.3 x 5.8       | 1000              |
| 10.0                             | AFK106M80X16T-F     | 8.0                 | 0.08                                  | 2.40                        | 2.40                          | 60  | X         | 6.3 x 7.7       | 900               |
| 10.0                             | AFK106M80E16T-F     | 8.0                 | 0.08                                  | 2.40                        | 2.40                          | 60  | E         | 8 x 6.2         | 1000              |
| 22.0                             | AFK226M80F24T-F     | 17.6                | 0.08                                  | 1.30                        | 1.30                          | 130                                       | F         | 8 x 10.2        | 500               |
| 33.0                             | AFK336M80F24T-F     | 26.4                | 0.08                                  | 1.30                        | 1.30                          | 130                                       | F         | 8 x 10.2        | 500               |
| 47.0                             | AFK476M80G24T-F     | 37.6                | 0.08                                  | 0.70                        | 0.70                          | 200                                       | G         | 10 x 10.2       | 500               |
| 68.0                             | AFK686M80H32T-F     | 54.4                | 0.08                                  | 0.32                        | 0.32                          | 500                                       | H         | 12.5 x 13.5     | 200               |
| 100.0                            | AFK107M80H32T-F     | 80.0                | 0.08                                  | 0.32                        | 0.32                          | 500                                       | H         | 12.5 x 13.5     | 200               |
| 150.0                            | AFK157M80H32T-F     | 120.0               | 0.08                                  | 0.32                        | 0.32                          | 500                                       | H         | 12.5 x 13.5     | 200               |
| 330.0                            | AFK337M80P44T-F     | 264.0               | 0.08                                  | 0.17                        | 0.17                          | 793                                       | P         | 16 x 16.5       | 125               |
| 470.0                            | AFK477M80R44T-F     | 376.0               | 0.08                                  | 0.15                        | 0.15                          | 917                                       | R         | 18 x 16.5       | 125               |
| <b>100 Vdc ( 125 Vdc Surge )</b> |                     |                     |                                       |                             |                               |   |           |                 |                   |
| 22.0                             | AFK226M2AF24T-F     | 22.0                | 0.07                                  | 1.30                        | 1.30                          | 130                                       | F         | 8 x 10.2        | 500               |
| 33.0                             | AFK336M2AG24T-F     | 33.0                | 0.07                                  | 0.70                        | 0.70                          | 200                                       | G         | 10 x 10.2       | 500               |
| 47.0                             | AFK476M2AH32T-F     | 47.0                | 0.07                                  | 0.32                        | 0.32                          | 500                                       | H         | 12.5 x 13.5     | 200               |
| 68.0                             | AFK686M2AH32T-F     | 68.0                | 0.07                                  | 0.32                        | 0.32                          | 500                                       | H         | 12.5 x 13.5     | 200               |
| 100.0                            | AFK107M2AP44T-F     | 100.0               | 0.07                                  | 0.17                        | 0.17                          | 793                                       | P         | 16 x 16.5       | 125               |
| 150.0                            | AFK157M2AP44T-F     | 150.0               | 0.07                                  | 0.17                        | 0.17                          | 793                                       | P         | 16 x 16.5       | 125               |
| 220.0                            | AFK227M2AR44T-F     | 220.0               | 0.07                                  | 0.15                        | 0.15                          | 917                                       | R         | 18 x 16.5       | 125               |
| 330.0                            | AFK337M2AR44T-F     | 330.0               | 0.07                                  | 0.15                        | 0.15                          | 917                                       | R         | 18 x 16.5       | 125               |

# Type AFK -55 °C to 105 °C

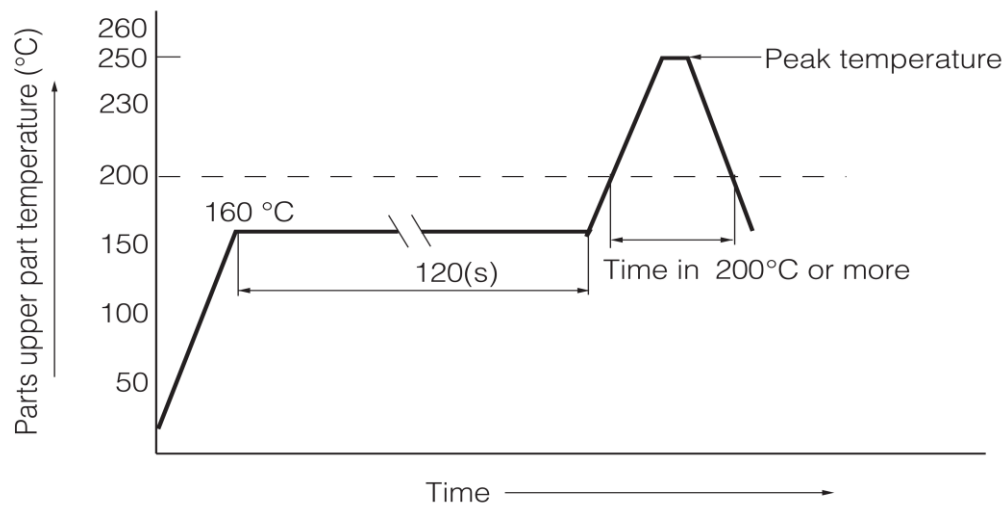
## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Part Numbering System

| AFK            | 106             | M                     | 16           | B            | 12T               | -F             |
|----------------|-----------------|-----------------------|--------------|--------------|-------------------|----------------|
| Type           | Capacitance     | Capacitance Tolerance | Voltage Code | Case Code    | Packaging Code    | RoHS Compliant |
| 105 = 1.0 μF   | 106 = 10.0 μF   | M = ±20%              | 06 = 6.3 Vdc | 35 = 35 Vdc  | 12 = Carrier tape |                |
| 107 = 100.0 μF | 108 = 1000.0 μF |                       | 10 = 10 Vdc  | 50 = 50 Vdc  | Width (mm)        |                |
|                |                 |                       | 16 = 16 Vdc  | 63 = 63 Vdc  | T = Tape & Reel   |                |
|                |                 |                       | 25 = 25 Vdc  | 80 = 80 Vdc  | B = Bulk          |                |
|                |                 |                       |              | 2A = 100 Vdc |                   |                |

### Reflow Solder

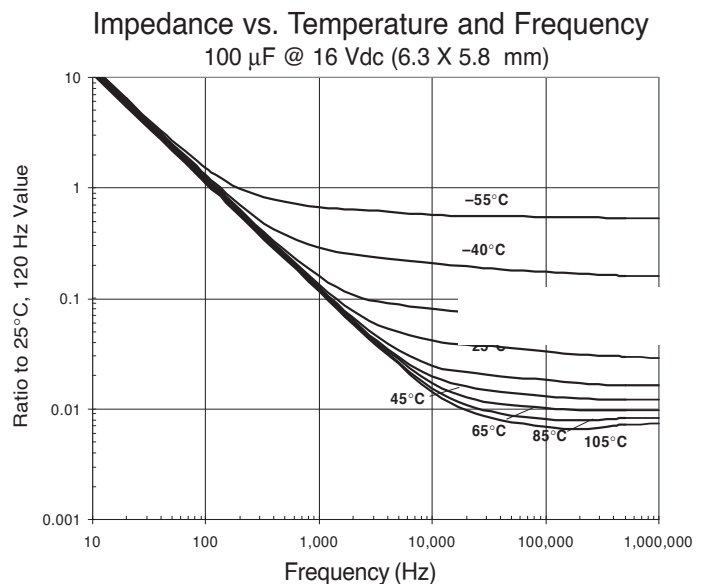
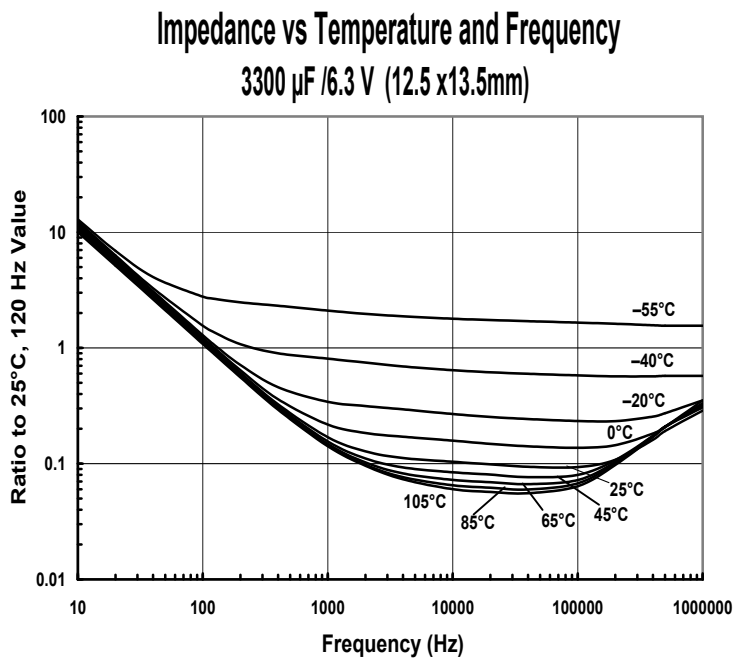
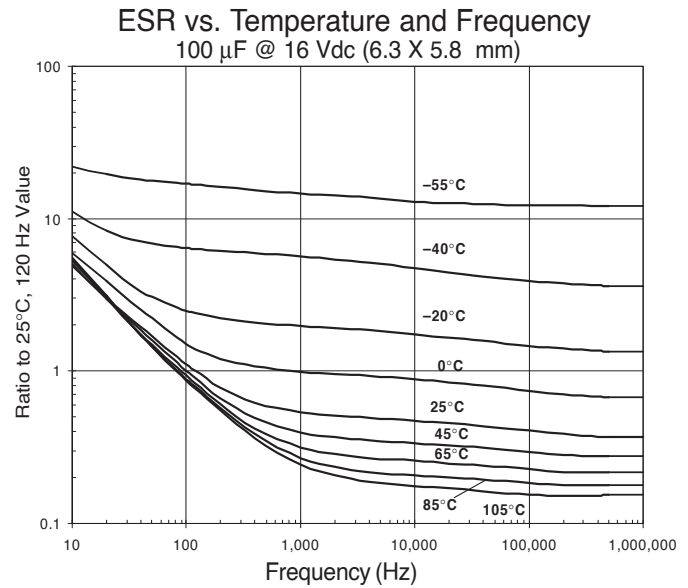
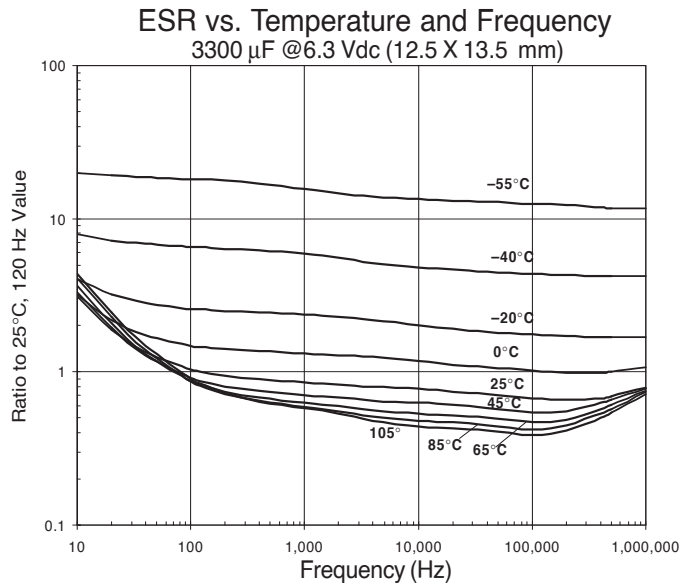
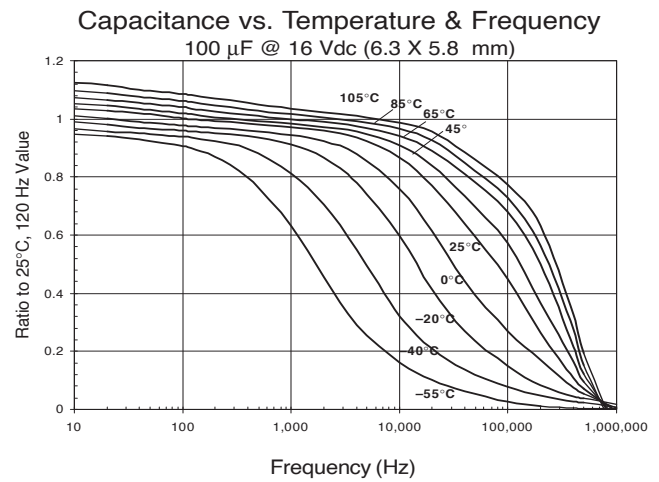
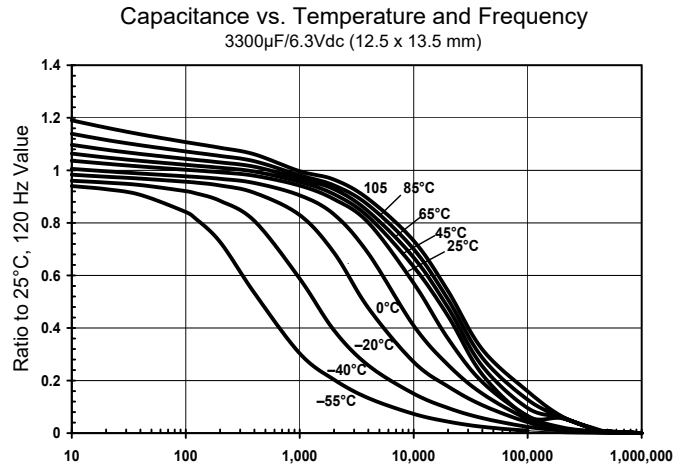
| Diameter          | 4 - 6.3mm | 8 - 10mm | 12.5 - 18mm |
|-------------------|-----------|----------|-------------|
| Peak Temperature  | 250°C     | 235°C    | 230°C       |
| Duration at Peak  | 5s        | 5s       | 5s          |
| Time ≥200°C       | 60s       | 60s      | 20s         |
| Number of Reflows | 1         | 1        | 1           |



# Type AFK -55 °C to 105 °C

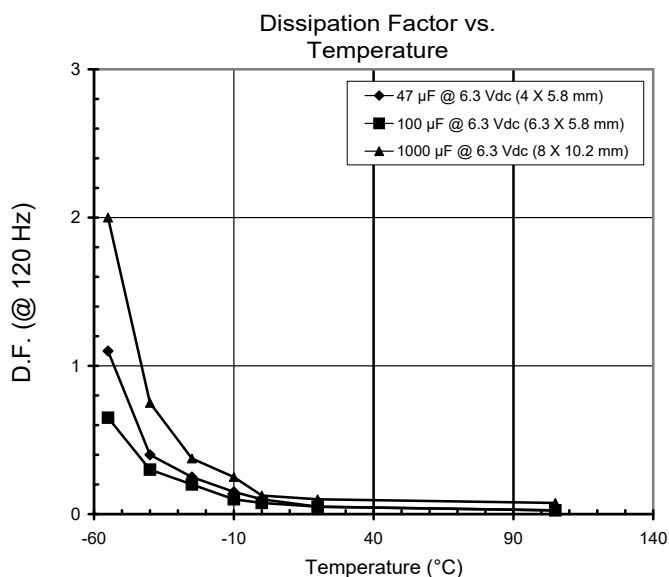
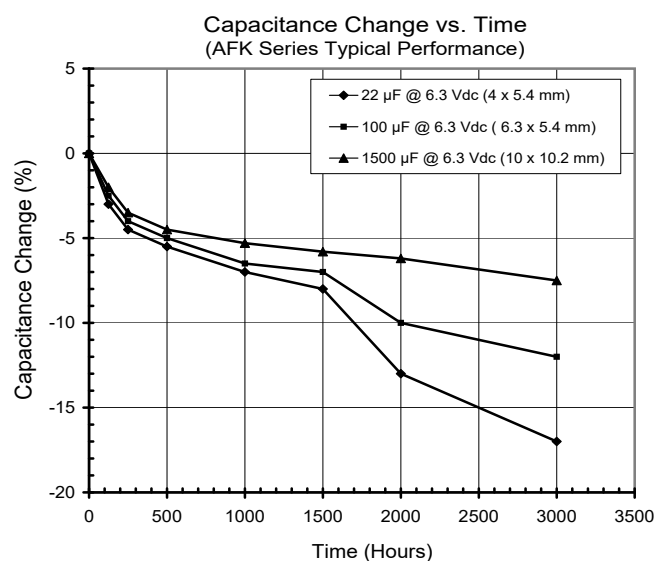
## SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., 105 °C

### Typical Performance Curves



# Type AFK $-55\text{ }^{\circ}\text{C}$ to $105\text{ }^{\circ}\text{C}$ SMT Aluminum Electrolytic Capacitors - Lowest E.S.R., $105\text{ }^{\circ}\text{C}$

## Typical Performance Curves



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