

# SMD Aluminum Electrolytic Capacitors

## AEF Series



### FEATURES

- Endurance, 105°C, 6000 hours
- Designed for surface mounting on high density PC board
- RoHS Compliance



LEAD-FREE  
LEAD-FREE COMPATIBLE  
COMPONENT



RoHS  
COMPLIANT

### APPLICATIONS

- Industrial
- Consumer electronics
- Lighting
- DC/DC converters

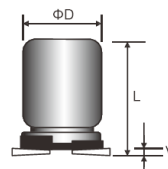
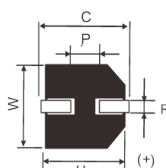
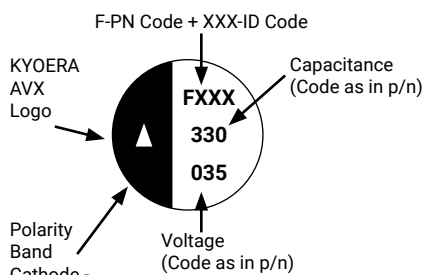
### HOW TO ORDER

|                                                                                                                                               |          |           |             |            |          |            |          |          |                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|-------------|------------|----------|------------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Type</b><br>Aluminum                                                                                                               | <b>A</b> | <b>EF</b> | <b>0608</b> | <b>330</b> | <b>M</b> | <b>035</b> | <b>R</b> | <b>-</b> | <b>Special</b><br>No Code = std                                                                                                                                                                                                  |
| <b>Series Type</b>                                                                                                                            |          |           |             |            |          |            |          |          | <b>Packaging</b><br>R = Pure Tin<br>13" Reel (D ≥ 12.50mm)<br>15" Reel (D ≤ 10.00mm)                                                                                                                                             |
| <b>Case Size</b><br>See table below                                                                                                           |          |           |             |            |          |            |          |          | <b>Rated DC Voltage</b><br>006 = 6.3Vdc    080 = 80Vdc<br>010 = 10Vdc    100 = 100Vdc<br>016 = 16Vdc    160 = 160Vdc<br>025 = 25Vdc    200 = 200Vdc<br>035 = 35Vdc    250 = 250Vdc<br>050 = 50Vdc    400 = 400Vdc<br>063 = 63Vdc |
| <b>Capacitance Code</b><br>µF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) |          |           |             |            |          |            |          |          |                                                                                                                                                                                                                                  |
| <b>Tolerance</b><br>M = ±20%                                                                                                                  |          |           |             |            |          |            |          |          |                                                                                                                                                                                                                                  |

### CASE DIMENSIONS millimeters (inches)

| Code | D±0.50<br>(0.020) | L±0.50<br>(0.020) | W±0.20<br>(0.008) | H±0.20<br>(0.008) | C±0.20<br>(0.008) | R                           | P±0.30<br>(0.012) | V max        | Typical<br>Weight (g) |
|------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------------------|-------------------|--------------|-----------------------|
| 0608 | 6.30 (0.248)      | 8.00 (0.315)      | 6.60 (0.260)      | 6.60 (0.260)      | 7.30 (0.287)      | 0.50 - 0.80 (0.020 - 0.031) | 2.00 (0.080)      | 0.30 (0.012) | 0.41                  |
| 0610 | 6.30 (0.248)      | 10.50 (0.413)     | 6.60 (0.260)      | 6.60 (0.260)      | 7.30 (0.287)      | 0.50 - 0.80 (0.020 - 0.031) | 2.00 (0.080)      | 0.30 (0.012) | 0.90                  |
| 0810 | 8.00 (0.315)      | 10.50 (0.413)     | 8.30 (0.327)      | 8.30 (0.327)      | 9.00 (0.354)      | 0.70 - 1.10 (0.028 - 0.043) | 3.20 (0.126)      | 0.30 (0.012) | 0.90                  |
| 0812 | 8.00 (0.315)      | 12.50 (0.492)     | 8.30 (0.327)      | 8.30 (0.327)      | 9.00 (0.354)      | 0.70 - 1.10 (0.028 - 0.043) | 3.20 (0.126)      | 0.30 (0.012) | 0.90                  |
| 0813 | 8.00 (0.315)      | 13.50 (0.531)     | 8.30 (0.327)      | 8.30 (0.327)      | 9.00 (0.354)      | 0.70 - 1.10 (0.028 - 0.043) | 3.20 (0.126)      | 0.30 (0.012) | 0.90                  |
| 1010 | 10.00 (0.394)     | 10.50 (0.413)     | 10.30 (0.406)     | 10.30 (0.406)     | 11.00 (0.433)     | 0.70 - 1.10 (0.028 - 0.043) | 4.50 (0.177)      | 0.30 (0.012) | 1.40                  |
| 1012 | 10.00 (0.394)     | 12.50 (0.492)     | 10.30 (0.406)     | 10.30 (0.406)     | 11.00 (0.433)     | 0.70 - 1.10 (0.028 - 0.043) | 4.50 (0.177)      | 0.30 (0.012) | 1.58                  |
| 1013 | 10.00 (0.394)     | 13.50 (0.531)     | 10.30 (0.406)     | 10.30 (0.406)     | 11.00 (0.433)     | 0.70 - 1.10 (0.028 - 0.043) | 4.50 (0.177)      | 0.30 (0.012) | 1.63                  |
| 1016 | 10.00 (0.394)     | 16.50 (0.650)     | 10.30 (0.406)     | 10.30 (0.406)     | 11.00 (0.433)     | 0.70 - 1.10 (0.028 - 0.043) | 4.50 (0.177)      | 0.30 (0.012) | 2.00                  |
| 1213 | 12.50 (0.492)     | 13.50 (0.531)     | 13.00 (0.512)     | 13.00 (0.512)     | 13.70 (0.539)     | 1.10 - 1.40 (0.043 - 0.055) | 4.50 (0.177)      | 0.40 (0.016) | 2.90                  |
| 1216 | 12.50 (0.492)     | 16.00 (0.630)     | 13.00 (0.512)     | 13.00 (0.512)     | 13.70 (0.539)     | 1.10 - 1.40 (0.043 - 0.055) | 4.50 (0.177)      | 0.40 (0.016) | 3.20                  |

### MARKING



# SMD Aluminum Electrolytic Capacitors

## AEF Series

### TECHNICAL SPECIFICATIONS

|                                    |                                                             |                                                              |                                   |
|------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------|-----------------------------------|
| <b>Category Temperature Range:</b> | -55°C to +105°C (6.3 - 100V), -40°C to + 105°C (160 - 400V) |                                                              |                                   |
| <b>Capacitance Range:</b>          | At 25°C, 120Hz                                              | 2.2μF to 470μF                                               |                                   |
| <b>Capacitance Tolerance:</b>      | At 25°C, 120Hz                                              | ±20%                                                         |                                   |
| <b>Dissipation Factor (%):</b>     | Measurement Frequency: 120Hz at 25°C                        | Please see the Ratings and Part Number Reference Table below |                                   |
| <b>Leakage Current:</b>            | Rated voltage at 25°C*                                      | 6.3 - 100V                                                   | 160 - 400V                        |
|                                    |                                                             | $I \leq 0.03CV$ or 4μA, whichever is greater (2min)          | $I \leq 0.04CV + 100\mu A$ (1min) |

\* Note: In the case of an anomalous reading, re-measure the leakage current after following voltage treatment:  
Voltage treatment: DC rated voltage to be applied to the capacitors for 120 minutes at 105°C.

### CAPACITANCE AND RATED VOLTAGE RANGE (FIGURES DENOTES CASE SIZE)

| Capacitance |      | Rated Voltage DC (V <sub>R</sub> ) |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------|------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| μF          | Code | 6.3V                               | 10V  | 16V  | 25V  | 35V  | 50V  | 63V  | 80V  | 100V | 160V | 200V | 250V | 400V |
| 2.2         | 2R2  |                                    |      |      |      |      |      |      |      |      |      |      |      | 0610 |
| 3.3         | 3R3  |                                    |      |      |      |      |      |      |      |      |      |      |      | 0810 |
| 4.7         | 4R7  |                                    |      |      |      |      |      |      |      |      |      |      | 0810 | 0812 |
| 5.6         | 5R6  |                                    |      |      |      |      |      |      |      |      |      |      |      | 0812 |
| 6.8         | 6R8  |                                    |      |      |      |      |      |      |      |      |      |      |      | 1013 |
| 10          | 100  |                                    |      |      |      | 0608 |      |      | 0608 | 0608 | 1010 | 0810 | 0812 | 1013 |
| 15          | 150  |                                    |      |      |      |      |      |      |      |      | 0812 | 0813 |      | 1016 |
| 22          | 220  |                                    |      |      |      | 0608 | 0608 | 0608 | 0810 | 0810 |      |      | 1016 |      |
| 33          | 330  |                                    |      |      |      | 0608 |      | 0810 | 0810 | 1010 | 1013 |      |      |      |
| 47          | 470  |                                    |      |      | 0608 | 0608 | 0810 | 0810 | 1010 | 1010 | 1016 |      |      |      |
| 100         | 101  | 0608                               |      | 0608 | 0608 | 0810 | 1010 | 1010 | 1012 | 1213 |      |      |      |      |
| 150         | 151  |                                    | 0608 |      |      |      |      |      |      |      |      |      |      |      |
| 220         | 221  | 0608                               | 0810 | 0810 | 0810 | 1010 | 1213 | 1213 | 1216 |      |      |      |      |      |
| 330         | 331  | 0810                               | 1010 | 0812 | 1010 |      | 1216 |      |      |      |      |      |      |      |
| 470         | 471  | 0810                               | 1010 | 1010 |      |      |      |      |      |      |      |      |      |      |

Released ratings

### RATINGS & PART NUMBER REFERENCE

| Part No.        | Case Size | Capacitance (μF) | Rated Voltage (V) | DCL Max. (μA) | DF Max. (%) | ESR Max. @100kHz (Ω) | 100kHz RMS Current (mA) |
|-----------------|-----------|------------------|-------------------|---------------|-------------|----------------------|-------------------------|
| 6.3 Volt        |           |                  |                   |               |             |                      |                         |
| AEF0608101M006R | 0608      | 100              | 6.3               | 18            | 32          | 0.75                 | 145                     |
| AEF0608221M006R | 0608      | 220              | 6.3               | 39.6          | 32          | 0.75                 | 180                     |
| AEF0810331M006R | 0810      | 330              | 6.3               | 59.4          | 32          | 0.36                 | 280                     |
| AEF0810471M006R | 0810      | 470              | 6.3               | 84.6          | 32          | 0.36                 | 360                     |
| 10 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608151M010R | 0608      | 150              | 10                | 45            | 28          | 0.75                 | 105                     |
| AEF0810221M010R | 0810      | 220              | 10                | 66            | 28          | 0.36                 | 280                     |
| AEF1010331M010R | 1010      | 330              | 10                | 99            | 28          | 0.23                 | 400                     |
| AEF1010471M010R | 1010      | 470              | 10                | 141           | 28          | 0.23                 | 545                     |
| 16 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608101M016R | 0608      | 100              | 16                | 48            | 26          | 0.75                 | 145                     |
| AEF0810221M016R | 0810      | 220              | 16                | 105.6         | 26          | 0.36                 | 475                     |
| AEF0812331M016R | 0812      | 330              | 16                | 158.4         | 26          | 0.36                 | 510                     |
| AEF1010471M016R | 1010      | 470              | 16                | 225.6         | 26          | 0.23                 | 720                     |
| 25 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608470M025R | 0608      | 47               | 25                | 35.3          | 16          | 0.75                 | 165                     |
| AEF0608101M025R | 0608      | 100              | 25                | 75            | 16          | 0.75                 | 175                     |
| AEF0810221M025R | 0810      | 220              | 25                | 165           | 16          | 0.36                 | 535                     |
| AEF1010331M025R | 1010      | 330              | 25                | 247.5         | 16          | 0.23                 | 750                     |
| 35 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608100M035R | 0608      | 10               | 35                | 10.5          | 14          | 0.75                 | 145                     |
| AEF0608220M035R | 0608      | 22               | 35                | 23.1          | 14          | 0.75                 | 160                     |
| AEF0608330M035R | 0608      | 33               | 35                | 34.7          | 14          | 0.75                 | 175                     |
| AEF0608470M035R | 0608      | 47               | 35                | 49.4          | 14          | 0.75                 | 190                     |

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

# SMD Aluminum Electrolytic Capacitors

## AEF Series



### RATINGS & PART NUMBER REFERENCE

| Part No.        | Case Size | Capacitance (μF) | Rated Voltage (V) | DCL Max. (μA) | DF Max. (%) | ESR Max. @100kHz (Ω) | 100kHz RMS Current (mA) |
|-----------------|-----------|------------------|-------------------|---------------|-------------|----------------------|-------------------------|
| AEF0810101M035R | 0810      | 100              | 35                | 105           | 14          | 0.36                 | 560                     |
| AEF1010221M035R | 1010      | 220              | 35                | 231           | 14          | 0.23                 | 800                     |
| 50 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608220M050R | 0608      | 22               | 50                | 33            | 14          | 1.5                  | 145                     |
| AEF0810470M050R | 0810      | 47               | 50                | 70.5          | 14          | 0.57                 | 520                     |
| AEF1010101M050R | 1010      | 100              | 50                | 150           | 14          | 0.4                  | 680                     |
| AEF1213221M050R | 1213      | 220              | 50                | 330           | 14          | 0.18                 | 875                     |
| AEF1216331M050R | 1216      | 330              | 50                | 495           | 14          | 0.17                 | 1020                    |
| 63 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608220M063R | 0608      | 22               | 63                | 41.6          | 12          | 4.6                  | 140                     |
| AEF0810330M063R | 0810      | 33               | 63                | 62.4          | 12          | 1.36                 | 320                     |
| AEF0810470M063R | 0810      | 47               | 63                | 88.8          | 12          | 1.36                 | 380                     |
| AEF1010101M063R | 1010      | 100              | 63                | 189           | 12          | 0.73                 | 530                     |
| AEF1213221M063R | 1213      | 220              | 63                | 415.8         | 12          | 0.3                  | 840                     |
| 80 Volt         |           |                  |                   |               |             |                      |                         |
| AEF0608100M080R | 0608      | 10               | 80                | 24            | 12          | 5.2                  | 130                     |
| AEF0810220M080R | 0810      | 22               | 80                | 52.8          | 12          | 2.2                  | 360                     |
| AEF0810330M080R | 0810      | 33               | 80                | 79.2          | 12          | 2.2                  | 410                     |
| AEF1010470M080R | 1010      | 47               | 80                | 112.8         | 12          | 1.4                  | 490                     |
| AEF1012101M080R | 1012      | 100              | 80                | 240           | 12          | 1.4                  | 530                     |
| AEF1216221M080R | 1216      | 220              | 80                | 528           | 12          | 0.49                 | 1020                    |
| 100 Volt        |           |                  |                   |               |             |                      |                         |
| AEF0608100M100R | 0608      | 10               | 100               | 30            | 10          | 5.5                  | 140                     |
| AEF0810220M100R | 0810      | 22               | 100               | 66            | 10          | 2.7                  | 320                     |
| AEF1010330M100R | 1010      | 33               | 100               | 99            | 10          | 1.8                  | 360                     |
| AEF1010470M100R | 1010      | 47               | 100               | 141           | 10          | 1.8                  | 540                     |
| AEF1213101M100R | 1213      | 100              | 100               | 300           | 10          | 0.68                 | 550                     |
| 160 Volt        |           |                  |                   |               |             |                      |                         |
| AEF1010100M160R | 1010      | 10               | 160               | 164           | 20          | 16                   | 176                     |
| AEF0812150M160R | 0812      | 15               | 160               | 196           | 20          | 14                   | 204                     |
| AEF1013330M160R | 1013      | 33               | 160               | 311.2         | 20          | 9                    | 340                     |
| AEF1016470M160R | 1016      | 47               | 160               | 400.8         | 20          | 8                    | 420                     |
| 200 Volt        |           |                  |                   |               |             |                      |                         |
| AEF0810100M200R | 0810      | 10               | 200               | 180           | 20          | 16                   | 170                     |
| AEF0813150M200R | 0813      | 15               | 200               | 220           | 20          | 14                   | 210                     |
| 250 Volt        |           |                  |                   |               |             |                      |                         |
| AEF0810470M250R | 0810      | 4.7              | 250               | 147           | 20          | 30                   | 90                      |
| AEF0812100M250R | 0812      | 10               | 250               | 200           | 20          | 16                   | 150                     |
| AEF1016220M250R | 1016      | 22               | 250               | 320           | 20          | 12                   | 312                     |
| 400 Volt        |           |                  |                   |               |             |                      |                         |
| AEF06102R2M400R | 0610      | 2.2              | 400               | 135.2         | 24          | 35                   | 48                      |
| AEF08103R3M400R | 0810      | 3.3              | 400               | 152.8         | 24          | 32                   | 72                      |
| AEF08124R7M400R | 0812      | 4.7              | 400               | 175.2         | 24          | 26                   | 100                     |
| AEF08125R6M400R | 0812      | 5.6              | 400               | 189.6         | 24          | 24                   | 108                     |
| AEF10136R8M400R | 1013      | 6.8              | 400               | 208.8         | 24          | 22                   | 140                     |
| AEF1013100M400R | 1013      | 10               | 400               | 260           | 24          | 18                   | 194                     |
| AEF1016150M400R | 1016      | 15               | 400               | 340           | 24          | 16                   | 235                     |

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

# SMD Aluminum Electrolytic Capacitors

## AEF Series



### FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

| Rated Voltage (Vdc) | 120 - 1K(Hz) | 1K - 10K(Hz) | 10K - 100K(Hz) | 100K(Hz) |
|---------------------|--------------|--------------|----------------|----------|
| 6.3 - 400           | 0.50         | 0.80         | 0.90           | 1.00     |

Internal heating produced by ripple current will reduce the lifetime of capacitors, at a rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use the rms ripple current should be minimized.

### QUALIFICATION TABLE

| Test                                                      | AEF series (Temperature Range -55°C to +105°C (6.3-100V), -40°C to +105°C (160-400V))                                                               |                   |                                      |    |    |    |                                      |           |     |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------|----|----|----|--------------------------------------|-----------|-----|
|                                                           | Condition                                                                                                                                           | Characteristics   |                                      |    |    |    |                                      |           |     |
| Low Temperature Characteristics<br>(Max. Impedance Ratio) | At 120Hz                                                                                                                                            | Rated Voltage (V) | 6.3                                  | 10 | 16 | 25 | 35 - 100                             | 160 - 250 | 400 |
|                                                           |                                                                                                                                                     | Z(-25°C)/Z(+20°C) | 4                                    | 3  | 2  | 2  | 2                                    | 6         | 6   |
|                                                           |                                                                                                                                                     | Z(-40°C)/Z(+20°C) | 10                                   | 8  | 6  | 4  | 3                                    | 10        | 18  |
| Endurance                                                 | The specifications shall be met when the capacitors are restored to 20°C after rated voltage is applied for 6,000 hours at 105°C.                   | Rated Voltage (V) | 6.3 - 100                            |    |    |    | 160 - 400                            |           |     |
|                                                           |                                                                                                                                                     | ΔC/C              | ≤±30% of the initial limit           |    |    |    | ≤±20% of the initial limit           |           |     |
|                                                           |                                                                                                                                                     | DF                | ≤300% of the initial specified limit |    |    |    | ≤200% of the initial specified limit |           |     |
|                                                           |                                                                                                                                                     | DCL               | ≤the initial specified limit         |    |    |    | ≤the initial specified limit         |           |     |
| Shelf Life                                                | The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1,000 hours. | Rated Voltage (V) | 6.3 - 100                            |    |    |    | 160 - 400                            |           |     |
|                                                           |                                                                                                                                                     | ΔC/C              | ≤±30% of the initial limit           |    |    |    | ≤±20% of the initial limit           |           |     |
|                                                           |                                                                                                                                                     | DF                | ≤300% of the initial specified limit |    |    |    | ≤200% of the initial specified limit |           |     |
|                                                           |                                                                                                                                                     | DCL               | ≤200% of the initial specified limit |    |    |    | ≤200% of the initial specified limit |           |     |

### REFLOW

| Diameter (mm)               | Φ6.3                          | Φ8           | Φ10          | Φ12.5                         |
|-----------------------------|-------------------------------|--------------|--------------|-------------------------------|
| Peak Temperature            | 260°C, 5 sec. max.            |              |              |                               |
| Preheat Temperature         | 100°C to 200°C, 180 sec. max. |              |              | 100°C to 180°C, 150 sec. max. |
| Duration at 200°C or higher | 90 sec. max.                  | 90 sec. max. | 60 sec. max. | 60 sec. max.                  |
| Duration at 230°C or higher | 40 sec. max.                  | 30 sec. max. | 30 sec. max. | 30 sec. max.                  |
| Reflow Number               | Twice* or less                |              |              |                               |

\*if twice then need to be at least 2hrs between reflows

### STORAGE

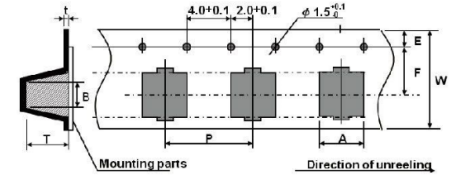
- It is recommended to keep capacitors between the ambient temperatures of 5°C to 35°C (if between 35°C to 85°C, it should be less than three months) and the relative humidity of 75% or below.
- Confirm that the environment does not have any of the following conditions:
  - Damp conditions such as water, saltwater spray, or oil spray or fumes. High humidity or humidity condensation situations.
  - In an atmosphere filled with toxic gasses (such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonia, etc.).
  - Being exposed to direct sunlight, ozone, ultraviolet ray, or radiation.
  - Being exposed to acidic or alkaline solutions.
  - Under severe conditions where vibration and / or mechanical shock exceed the applicable ranges of the specification.
- Storage time:
  - Before unseal: within 2 years after delivery

# SMD Aluminum Electrolytic Capacitors

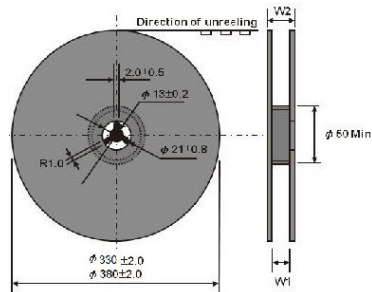
## AEF Series

### PACKAGE TAPE DIMENSIONS units (mm)

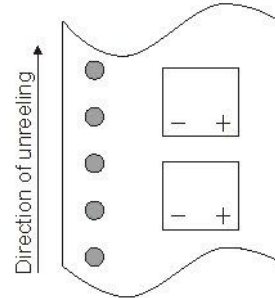
| Size Code | A0±0.20 | B0±0.20 | W±0.30 | F±0.10 | E±0.10 | P±0.10 | t±0.10 | T±0.20      |
|-----------|---------|---------|--------|--------|--------|--------|--------|-------------|
| 0608      | 7.0     | 7.0     | 16.0   | 7.5    | 1.75   | 12.0   | 0.4    | 8.0         |
| 0610      | 7.0     | 7.0     | 16.0   | 7.5    | 1.75   | 12.0   | 0.4    | 11.0        |
| 0810      | 8.7     | 8.7     | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 11.0        |
| 0812      | 8.7     | 8.7     | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 13.0        |
| 0813      | 8.7     | 8.7     | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 14.0        |
| 1010      | 10.7    | 10.7    | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 11.0        |
| 1012      | 10.7    | 10.7    | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 13.0 - 13.5 |
| 1013      | 10.7    | 10.7    | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 15.0        |
| 1016      | 10.7    | 10.7    | 24.0   | 11.5   | 1.75   | 16.0   | 0.4    | 17.5        |
| 1213      | 13.4    | 13.4    | 32.0   | 14.2   | 1.75   | 24.0   | 0.4    | 14.5        |
| 1216      | 13.4    | 13.4    | 32.0   | 14.2   | 1.75   | 24.0   | 0.4    | 16.5        |



### REEL



### POLARITY



### DIMENSIONS units (mm)

| Size Code | W1±1.00 | W2±1.00 | Qty./Reel | Reel size (inch) |
|-----------|---------|---------|-----------|------------------|
| 0608      | 18.0    | 22.0    | 1000      | 15               |
| 0610      | 18.0    | 22.0    | 1000      | 15               |
| 0810      | 18.0    | 22.0    | 550       | 15               |
| 0812      | 26.0    | 31.0    | 550       | 15               |
| 0813      | 26.0    | 31.0    | 550       | 15               |
| 1010      | 26.0    | 31.0    | 550       | 15               |
| 1012      | 26.0    | 31.0    | 500       | 15               |
| 1013      | 26.0    | 31.0    | 450       | 15               |
| 1016      | 26.0    | 31.0    | 350       | 15               |
| 1213      | 34.0    | 39.0    | 200       | 13               |
| 1216      | 34.0    | 39.0    | 150       | 13               |

### RECOMMENDED LAND PATTERN DIMENSION OF PCB

| Size Code | A (mm) | B (mm) | C (mm) |
|-----------|--------|--------|--------|
| 0608      | 1.9    | 3.5    | 1.6    |
| 0610      | 1.9    | 3.5    | 1.6    |
| 0810      | 3.1    | 4.2    | 2.2    |
| 0812      | 3.1    | 4.2    | 2.2    |
| 0813      | 3.1    | 4.2    | 2.2    |
| 1010      | 4.5    | 4.4    | 2.2    |
| 1012      | 4.5    | 4.4    | 2.2    |
| 1013      | 4.5    | 4.4    | 2.2    |
| 1016      | 4.5    | 4.4    | 2.2    |
| 1213      | 4.0    | 5.7    | 2.5    |
| 1216      | 4.0    | 5.7    | 2.5    |

