

# MK series

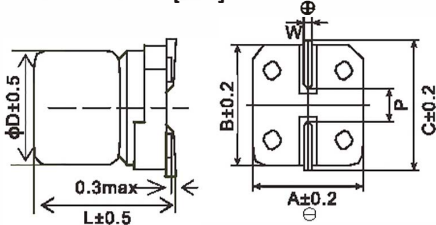
- Endurance: +105°C 2,000 ~ 3,000 hours
- Designed for surface mounting on high density PC board
- RoHS Compliant



## SPECIFICATIONS

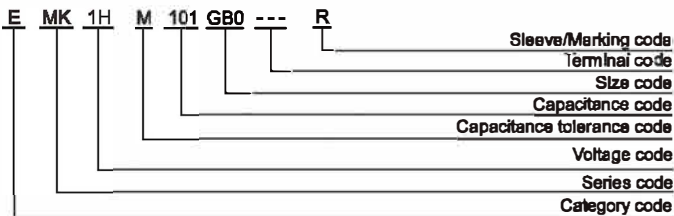
| Items  | Characteristics  |  |      |      |      |      |                               |      |      |      |         |         |                  |
|--|--|--|------|------|------|------|-------------------------------|------|------|------|---------|---------|------------------|
| Category Temperature Range   | -40~+105°C(8.3~450V <sub>dc</sub> )  |  |      |      |      |      |                               |      |      |      |         |         |                  |
| Rated Voltage Range  | 6.3~450V <sub>dc</sub>   |  |      |      |      |      |                               |      |      |      |         |         |                  |
| Capacitance Tolerance  | ±20%(M) (at 20°C, 120Hz)   |  |      |      |      |      |                               |      |      |      |         |         |                  |
| Leakage Current  | 6.3~100V <sub>dc</sub>   |  |      |      |      |      | 160~450V <sub>dc</sub>        |      |      |      |         |         | (at 20°C)        |
|  | I ≤ 0.01CV or 3μA, whichever is greater. (2 minutes)   |  |      |      |      |      | I ≤ 0.04CV + 100μA (1 minute) |      |      |      |         |         |                  |
| Where, I: Max. leakage current (μA), C: Nominal capacitance (μF), V: Rated voltage (V) |  |  |      |      |      |      |                               |      |      |      |         |         | (at 20°C)        |
| Dissipation Factor (tanδ)  | Rated Voltage(V <sub>dc</sub> )  | 6.3  | 10   | 16   | 25   | 35   | 50                            | 63   | 80   | 100  | 160~250 | 400~450 | (at 20°C, 120Hz) |
|  | tanδ (max.)  | D80~E80  | 0.30 | 0.24 | 0.20 | 0.16 | 0.14                          | 0.12 | 0.12 | 0.12 | 0.12    | -       |                  |
|  |  |  |      |      |      |      |                               |      |      |      |         |         | (at 20°C, 120Hz) |
|  |  |  |      |      |      |      |                               |      |      |      |         |         |                  |
| Low Temperature Characteristics (Max. Impedance Ratio)                                 | Rated Voltage(V <sub>dc</sub> )  | 6.3  | 10   | 16   | 25   | 35   | 50                            | 63   | 80   | 100  | 160~250 | 400~450 | (at 120Hz)       |
|  | Z(-25°C)/Z(+20°C)  | 4  | 3    | 2    | 2    | 2    | 2                             | 2    | 2    | 2    | 6       | 6       |                  |
|  | Z(-40°C)/Z(+20°C)  | 10   | 8    | 6    | 4    | 3    | 3                             | 3    | 3    | 3    | 10      | 18      |                  |
| Endurance  | The specifications listed below shall be met when the capacitors are restored to 20°C after rated voltage is applied for a specified period of time at 105°C.                            |  |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Load Life  | 2,000 hours( 160~450V <sub>dc</sub> : 3,000 hours) |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Capacitance Change   | ≤±20% of the initial value                         |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Dissipation Factor (tanδ)  | ≤200% of the initial specified value               |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Leakage Current  | ≤The initial specified value                       |      |      |      |      |                               |      |      |      |         |         |                  |
| 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 (6.3~100V <sub>dc</sub> : 500 hours). |  |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Capacitance Change   | ≤±20% of the initial value                         |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Dissipation Factor (tanδ)  | ≤200% of the initial specified value               |      |      |      |      |                               |      |      |      |         |         |                  |
|  | Leakage Current  | ≤200% of the initial specified value               |      |      |      |      |                               |      |      |      |         |         |                  |

## DIMENSIONS[mm]



| Size code | D    | L    | A    | B    | C    | W       | P   |
|-----------|------|------|------|------|------|---------|-----|
| D80       | 5    | 7.7  | 5.3  | 5.3  | 5.9  | 0.5~0.8 | 1.4 |
| E80       | 8.3  | 7.7  | 8.6  | 8.8  | 7.2  | 0.5~0.8 | 1.9 |
| E80       | 8.3  | 10.5 | 8.8  | 8.6  | 7.2  | 0.5~0.8 | 1.9 |
| F80       | 8    | 10.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.1 |
| F80       | 8    | 12.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.1 |
| F80       | 8    | 13.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.1 |
| F80       | 8    | 15.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.1 |
| G80       | 10   | 10.5 | 10.3 | 10.3 | 11.0 | 0.7~1.1 | 4.5 |
| G80       | 10   | 12.5 | 10.3 | 10.3 | 11.0 | 0.7~1.1 | 4.5 |
| G80       | 10   | 13.5 | 10.3 | 10.3 | 11.0 | 0.7~1.1 | 4.5 |
| G80       | 10   | 16.5 | 10.3 | 10.3 | 11.0 | 0.7~1.1 | 4.5 |
| W80       | 12.5 | 13.5 | 13.0 | 13.0 | 13.7 | 1.0~1.3 | 4.5 |
| W80       | 12.5 | 16.0 | 13.0 | 13.0 | 13.7 | 1.0~1.3 | 4.5 |
| W80       | 12.5 | 21.0 | 13.0 | 13.0 | 13.7 | 1.0~1.3 | 4.5 |
| L80       | 16   | 16.5 | 17.0 | 17.0 | 18.0 | 1.0~1.3 | 6.5 |
| L80       | 16   | 21.5 | 17.0 | 17.0 | 18.0 | 1.0~1.3 | 6.5 |
| M80       | 18   | 18.5 | 19.0 | 19.0 | 20.0 | 1.0~1.3 | 8.5 |
| M80       | 18   | 21.5 | 19.0 | 19.0 | 20.0 | 1.0~1.3 | 8.5 |

## PART NUMBERING SYSTEM



## RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

| Rated voltage(V <sub>dc</sub> ) | 120  | 1k   | 10k  | 100k |
|---------------------------------|------|------|------|------|
| 6.3~450                         | 0.50 | 0.80 | 0.90 | 1.00 |

Surface Mount Type

# MK series

■ STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | tanδ | Rated ripple current (mArms/105°C,100kHz) |
|-----------------------|----------|-----------|------|---|
| 6.3(0J)               | 100      | D80       | 0.30 | 105                                       |
|                       | 220      | E80       | 0.30 | 160                                       |
|                       | 330      | FB0       | 0.40 | 340                                       |
|                       | 1000     | GB0       | 0.40 | 860                                       |
| 10(1A)                | 33       | D80       | 0.24 | 105                                       |
|                       | 100      | E80       | 0.24 | 175                                       |
|                       | 220      | E80       | 0.24 | 180                                       |
|                       | 330      | FB0       | 0.30 | 340                                       |
|                       | 470      | FB0       | 0.30 | 360                                       |
| 16(1C)                | 820      | GB0       | 0.30 | 860                                       |
|                       | 47       | D80       | 0.20 | 105                                       |
|                       | 100      | E80       | 0.20 | 175                                       |
|                       | 150      | E80       | 0.20 | 190                                       |
|                       | 220      | FB0       | 0.26 | 500                                       |
| 25(1E)                | 330      | FB0       | 0.26 | 545                                       |
|                       | 470      | GB0       | 0.26 | 800                                       |
|                       | 33       | D80       | 0.16 | 105                                       |
|                       | 47       | E80       | 0.16 | 180                                       |
|                       | 100      | E80       | 0.16 | 205                                       |
| 35(1V)                | 220      | FB0       | 0.16 | 550                                       |
|                       | 330      | GB0       | 0.16 | 780                                       |
|                       | 470      | GD0       | 0.16 | 875                                       |
|                       | 10       | D80       | 0.14 | 105                                       |
|                       | 22       | D80       | 0.14 | 110                                       |
| 50(1H)                | 47       | E80       | 0.14 | 210                                       |
|                       | 100      | FB0       | 0.14 | 575                                       |
|                       | 220      | GB0       | 0.14 | 835                                       |
|                       | 330      | GD0       | 0.14 | 900                                       |
|                       | 10       | D80       | 0.12 | 90  |
| 63(1J)                | 22       | E80       | 0.12 | 175                                       |
|                       | 33       | E80       | 0.12 | 180                                       |
|                       | 47       | FB0       | 0.12 | 540                                       |
|                       | 100      | GB0       | 0.12 | 700                                       |
|                       | 220      | WE0       | 0.12 | 900                                       |
| 80(1B)                | 330      | WG5       | 0.12 | 1180                                      |
|                       | 10       | D80       | 0.12 | 85  |
|                       | 22       | E80       | 0.12 | 150                                       |
|                       | 33       | FB0       | 0.12 | 375                                       |
|                       | 47       | FB0       | 0.12 | 450                                       |
| 100(1K)               | 100      | GB0       | 0.12 | 575                                       |
|                       | 220      | WE0       | 0.12 | 890                                       |
|                       | 10       | E80       | 0.12 | 140                                       |
|                       | 22       | FB0       | 0.12 | 375                                       |
|                       | 33       | FB0       | 0.12 | 450                                       |
| 160(2C)               | 47       | GB0       | 0.12 | 575                                       |
|                       | 100      | GD0       | 0.12 | 600                                       |
|                       | 150      | WE0       | 0.12 | 800                                       |
|                       | 220      | WG5       | 0.12 | 960                                       |
|                       | 4.7      | D80       | 0.12 | 70  |
| 200(2D)               | 10       | E80       | 0.12 | 135                                       |
|                       | 22       | FB0       | 0.12 | 345                                       |
|                       | 33       | GB0       | 0.12 | 560                                       |
|                       | 47       | GB0       | 0.12 | 575                                       |
|                       | 100      | WE0       | 0.12 | 680                                       |

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | tanδ | Rated ripple current (mArms/105°C,100kHz) |
|-----------------------|----------|-----------|------|---|
| 160(2C)               | 10       | GB0       | 0.15 | 90  |
|                       | 15       | GB0       | 0.15 | 136                                       |
|                       | 22       | GE0       | 0.15 | 180                                       |
|                       | 33       | WE0       | 0.15 | 200                                       |
|                       |          | GH0       | 0.15 | 240                                       |
|                       | 47       | WE0       | 0.15 | 310                                       |
|                       |          | WG5       | 0.15 | 420                                       |
|                       | 68       | LH0       | 0.15 | 520                                       |
|                       |          | LN0       | 0.15 | 660                                       |
|                       |          | MH0       | 0.15 | 660                                       |
| 100                   | LN0      | 0.15      | 780  |   |
|                       | MN0      | 0.15      | 780  |   |
| 200(2D)               | 10       | GB0       | 0.15 | 120                                       |
|                       | 15       | GB0       | 0.15 | 164                                       |
|                       | 22       | GE0       | 0.15 | 200                                       |
|                       | 33       | WG5       | 0.15 | 236                                       |
|                       |          | GH0       | 0.15 | 260                                       |
|                       | 47       | WG5       | 0.15 | 300                                       |
|                       |          | WM5       | 0.15 | 440                                       |
|                       | 68       | LN0       | 0.15 | 556                                       |
| 250(2E)               | 68       | LN0       | 0.15 | 680                                       |
|                       | 2.2      | EB0       | 0.15 | 56  |
|                       | 3.3      | EB0       | 0.15 | 68  |
|                       | 4.7      | FB0       | 0.15 | 96  |
|                       |          | GB0       | 0.15 | 104                                       |
|                       | 10       | WE0       | 0.15 | 184                                       |
|                       | 22       | LH0       | 0.15 | 364                                       |
| 33                    | LN0      | 0.15      | 470  |   |
| 400(2G)               | 47       | MH0       | 0.15 | 470                                       |
|                       | 47       | MN0       | 0.15 | 580                                       |
|                       | 1        | E80       | 0.20 | 28  |
|                       | 1.5      | EB0       | 0.20 | 36  |
|                       | 2.2      | EB0       | 0.20 | 44  |
|                       |          | FB0       | 0.20 | 52  |
|                       | 3.3      | FB0       | 0.20 | 64  |
|                       |          | GB0       | 0.20 | 72  |
|                       | 3.9      | FE0       | 0.20 | 72  |
|                       |          | GB0       | 0.20 | 76  |
|                       |          | FB0       | 0.20 | 78  |
|                       | 4.7      | FD0       | 0.20 | 80  |
|                       |          | GB0       | 0.20 | 84  |
| 5.6                   | FD0      | 0.20      | 96   |   |
| 6.8                   | FE0      | 0.20      | 108  |   |
| 8.2                   | FG0      | 0.20      | 130  |   |
| 10                    | GH0      | 0.20      | 156  |   |
|                       | LH0      | 0.20      | 176  |   |
| 15                    | WG5      | 0.20      | 184  |   |
|                       | LH0      | 0.20      | 210  |   |
| 22                    | LN0      | 0.20      | 260  |   |
| 33                    | MN0      | 0.20      | 280  |   |
| 450(2W)               | 2.2      | GB0       | 0.20 | 50  |
|                       | 3.3      | WE0       | 0.20 | 80  |
|                       | 4.7      | WE0       | 0.20 | 96  |
|                       | 10       | LH0       | 0.20 | 170                                       |
|                       | 15       | LN0       | 0.20 | 200                                       |
|                       | 22       | LN0       | 0.20 | 240                                       |

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Aluminium Electrolytic Capacitors - SMD category](#):*

*Click to view products by [Aihua manufacturer](#):*

Other Similar products are found below :

[EEV-FK1E332W](#) [ULV2H1R8MNL1GS](#) [MAL214099813E3](#) [CA025M4R70REB-0405](#) [HUB1800-S](#) [RYK-50V101MG5TT-FL](#)  
[107AXZ016MQ5](#) [RVJ-50V101MH10U-R](#) [EMVH101GRA221MMN0S](#) [MAL214097402E3](#) [MAL215375471E3](#) [MAL224699909E3](#)  
[MAL224699813E3](#) [MAL215099818E3](#) [AEH1213221M050R](#) [AEH1010331M025R](#) [AEA1010102M016R](#) [AEH1012471M016R](#)  
[MAL213967339E3](#) [ZSC00AF2211EARL](#) [VB1E100MB054000CE0](#) [VD4.7UF400V90RV0094](#) [FZ470UF25V90RV0113](#) [ATB106M050D058](#)  
[ATB476M050F065](#) [ATB476M035E058](#) [ATB107M016E058](#) [ATB107M035E077](#) [EMHL250ARA221MHA0G](#) [ATB477M016F102](#)  
[EMK1EM331FB0D00R](#) [EMF1CM221FB0D00R](#) [EMF1CM331FB0D00R](#) [EMF1CM471FB0D00R](#) [EMK1JM101GB0D00R](#)  
[EMK1AM102GB0D00R](#) [EMK1HM221GB0D00R](#) [DV221M6R3E055ETR](#) [DV221M025E077ETR](#) [RV331M025F105ETR](#)  
[HV100M035B055ETR](#) [VD1C100MB054000CE0](#) [VD2A100ME077000CE0](#) [RVT1A101M0505](#) [VP1C221M0605](#) [GVZ1H101M0607](#)  
[CK1E100M0405](#) [RVT1H331M1010](#) [RVT1H330M0806](#) [VP1E470M0505](#)