

# Alchip™-MZK Series

- Endurance : 5,000 hours at 105°C
- Low impedance
- Rated voltage range : 6.3 to 35V
- Nominal capacitance range : 10 to 150μF
- Suitable for low profile products
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

MVY → Longer life → **MZK**  
P4-18

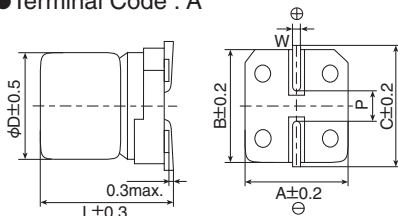


## ◆SPECIFICATIONS

| Items                                                        | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |                |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|----------------|
| Category                                                     | -25 to +105℃                                                                                                                                                                                                                                                                          |                                      |      |      |      |      |                |
| Temperature Range                                            |                                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |                |
| Rated Voltage Range                                          | 6.3 to 35V <sub>dc</sub>                                                                                                                                                                                                                                                              |                                      |      |      |      |      |                |
| Capacitance Tolerance                                        | ±20%(M) (at 20℃,120Hz)                                                                                                                                                                                                                                                                |                                      |      |      |      |      |                |
| Leakage Current                                              | I=0.01CV or 3μA, whichever is greater<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20℃, after 2 minutes)                                                                                                                          |                                      |      |      |      |      |                |
| Dissipation Factor<br>(tan δ )                               | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | (at 20℃,120Hz) |
|                                                              | tan δ (Max.)                                                                                                                                                                                                                                                                          | 0.32                                 | 0.28 | 0.26 | 0.16 | 0.14 |                |
| Low Temperature<br>Characteristics<br>(Max. Impedance Ratio) | Rated voltage(V <sub>dc</sub> )                                                                                                                                                                                                                                                       | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | (at 120Hz)     |
|                                                              | Z(-10℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 4                                    | 3    | 2    | 2    | 2    |                |
| Endurance                                                    | The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 5,000 hours at 105℃.                                                                                                                                   |                                      |      |      |      |      |                |
|                                                              | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±30% of the initial value          |      |      |      |      |                |
|                                                              | D.F. (tan δ )                                                                                                                                                                                                                                                                         | ≤300% 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℃ after exposing them for 1,000 hours at 105℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. |                                      |      |      |      |      |                |
|                                                              | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±30% of the initial value          |      |      |      |      |                |
|                                                              | D.F. (tan δ )                                                                                                                                                                                                                                                                         | ≤300% of the initial specified value |      |      |      |      |                |
|                                                              | Leakage current                                                                                                                                                                                                                                                                       | ≤ The initial specified value        |      |      |      |      |                |

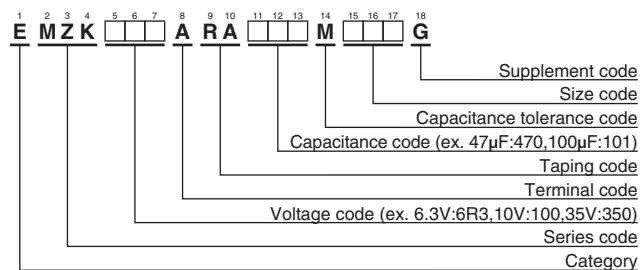
## ◆DIMENSIONS [mm]

- Terminal Code : A



| Size code | D   | L   | A   | B   | C   | W          | P   |
|-----------|-----|-----|-----|-----|-----|------------|-----|
| E61       | 5   | 5.8 | 5.3 | 5.3 | 5.9 | 0.5 to 0.8 | 1.4 |
| F61       | 6.3 | 5.8 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |

## ◆PART NUMBERING SYSTEM



Please refer to "Product code guide (surface mount type)"

## ◆MARKING

EX) 35V47μF



- Rated voltage symbol

| Rated voltage (V <sub>dc</sub> ) | 6.3 | 10 | 16 | 25 | 35 |
|----------------------------------|-----|----|----|----|----|
| Symbol                           | j   | A  | C  | E  | V  |

◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Size code | Impedance<br>(Ω max./20°C, 100kHz) | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|--------------------------|-------------|-----------|------------------------------------|------------------------------------------------------------|--------------------|
| 6.3                      | 100         | E61       | 2.2                                | 95                                                         | EMZK6R3ARA101ME61G |
| 10                       | 150         | F61       | 1.1                                | 140                                                        | EMZK100ARA151MF61G |
| 16                       | 33          | E61       | 2.2                                | 95                                                         | EMZK160ARA330ME61G |
|                          | 47          | E61       | 2.2                                | 95                                                         | EMZK160ARA470ME61G |
|                          | 100         | F61       | 1.1                                | 140                                                        | EMZK160ARA101MF61G |
| 25                       | 68          | F61       | 1.1                                | 140                                                        | EMZK250ARA680MF61G |
| 35                       | 10          | E61       | 2.2                                | 95                                                         | EMZK350ARA100ME61G |
|                          | 10          | F61       | 1.1                                | 140                                                        | EMZK350ARA100MF61G |
|                          | 22          | E61       | 2.2                                | 95                                                         | EMZK350ARA220ME61G |
|                          | 22          | F61       | 1.1                                | 140                                                        | EMZK350ARA220MF61G |
|                          | 33          | F61       | 1.1                                | 140                                                        | EMZK350ARA330MF61G |
|                          | 47          | F61       | 1.1                                | 140                                                        | EMZK350ARA470MF61G |

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency(Hz)            | 120  | 1k   | 10k  | 100k |
|--------------------------|------|------|------|------|
| 6.3 to 35V <sub>dc</sub> | 0.40 | 0.75 | 0.90 | 1.00 |

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.