

# Alchip™-MZJ Series

- Lower ESR, 2,000 hours at 105°C
- Rated voltage range : 6.3 to 35V
- Nominal capacitance range : 10 to 1,800μF
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS Compliant

MZJ

↑ Lower ESR  
MZA P74



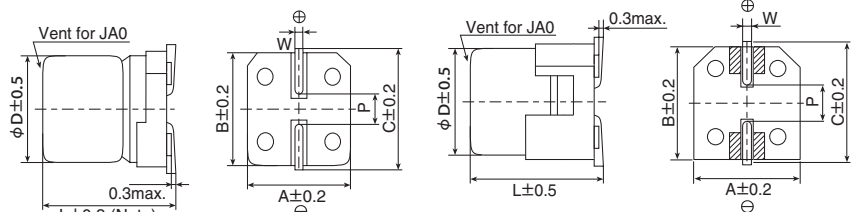
## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |                 |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|-----------------|
| Category Temperature Range                             | -55 to +105℃                                                                                                                                                                                                                                                                          |                                      |      |      |      |      |                 |
| 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 (tanδ)                              | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | (at 20℃, 120Hz) |
|                                                        | tanδ(Max.)                                                                                                                                                                                                                                                                            | 0.26                                 | 0.19 | 0.16 | 0.14 | 0.12 |                 |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | (at 120Hz)      |
|                                                        | Z(-25℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 2                                    | 2    | 2    | 2    | 2    |                 |
|                                                        | Z(-40℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 3                                    | 3    | 3    | 3    | 3    |                 |
|                                                        | Z(-55℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 4                                    | 4    | 4    | 3    | 3    |                 |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2,000 hours at 105℃.                                                                                                                                   |                                      |      |      |      |      |                 |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±30% of the initial value          |      |      |      |      |                 |
|                                                        | D.F. (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℃ 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. (tanδ)                                                                                                                                                                                                                                                                           | ≤200% of the initial specified value |      |      |      |      |                 |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |      |      |      |                 |
| Surge Voltage Test                                     | The capacitors shall be subjected to 1,000 cycles each consisting of charging with the specified surge voltage for 30±5 seconds through a protective resistor (as required for RC=0.1±0.05sec) and open-circuiting for 5.5 minutes at a room temperature of 15 to 35℃.                |                                      |      |      |      |      |                 |
|                                                        | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 6.3V                                 | 10V  | 16V  | 25V  | 35V  |                 |
|                                                        | Surge voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                      | 7.2V                                 | 12V  | 18V  | 29V  | 40V  |                 |
|                                                        |                                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |                 |
|                                                        | Appearance                                                                                                                                                                                                                                                                            | No significant damage                |      |      |      |      |                 |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value          |      |      |      |      |                 |
|                                                        | D.F. (tanδ)                                                                                                                                                                                                                                                                           | ≤200% of the initial specified value |      |      |      |      |                 |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |      |      |      |                 |
|                                                        | (Caution)                                                                                                                                                                                                                                                                             |                                      |      |      |      |      |                 |
|                                                        | Surge Voltage Test intends to evaluate capacitors in durability of an exceptional excessive voltage under specific conditions.It does not imply long-term use at all.                                                                                                                 |                                      |      |      |      |      |                 |

### ◆ DIMENSIONS [mm]

- Terminal Code : A
- Size code : D61 to JA0

- Terminal Code : G(Vibration resistant structure)
- Size code : HA0 and JA0



Note :  $L \pm 0.5$  for HA0 and JA0

 : Dummy terminals

| Size code | D   | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| D61       | 4   | 5.8  | 4.3  | 4.3  | 5.1  | 0.5 to 0.8 | 1.0 |
| 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 |
| F80       | 6.3 | 7.7  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| HA0       | 8   | 10.0 | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| JA0       | 10  | 10.0 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

**◆ MARKING**

EX) 35V10 $\mu$ F



- Rated voltage symbol

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

Applying voltage over the rated voltages causes the capacitors to have short lifetime. Besides, applying voltage over the specified surge voltages may cause to have short circuit failure. A protection circuit should be used if applied voltage will exceed the rated voltages.

Alchip™-MZJ Series

◆PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

| WV(Vdc) | Cap(μF) | Size code | tan δ | ESR<br>(Ω max/20°C, 100kHz) | Rated ripple current<br>(mA rms/105°C, 100kHz) | Part No.           |
|---------|---------|-----------|-------|-----------------------------|------------------------------------------------|--------------------|
| 6.3     | 47      | D61       | 0.26  | 0.85                        | 160                                            | EMZJ6R3ADA470MD61G |
|         | 100     | E61       | 0.26  | 0.36                        | 240                                            | EMZJ6R3ADA101ME61G |
|         | 220     | F61       | 0.26  | 0.26                        | 300                                            | EMZJ6R3ADA221MF61G |
|         | 330     | F80       | 0.26  | 0.16                        | 600                                            | EMZJ6R3ADA331MF80G |
|         | 1,000   | HA0       | 0.26  | 0.08                        | 850                                            | EMZJ6R3ADA102MHA0G |
|         | 1,500   | JA0       | 0.26  | 0.06                        | 1,190                                          | EMZJ6R3ADA152MJA0G |
|         | 1,800   | JA0       | 0.26  | 0.06                        | 1,190                                          | EMZJ6R3ADA182MJA0G |
| 10      | 33      | D61       | 0.19  | 0.85                        | 160                                            | EMZJ100ADA330MD61G |
|         | 150     | F61       | 0.19  | 0.26                        | 300                                            | EMZJ100ADA151MF61G |
|         | 680     | HA0       | 0.19  | 0.08                        | 850                                            | EMZJ100ADA681MHA0G |
|         | 1,000   | JA0       | 0.19  | 0.06                        | 1,190                                          | EMZJ100ADA102MJA0G |
|         | 1,200   | JA0       | 0.19  | 0.06                        | 1,190                                          | EMZJ100ADA122MJA0G |
| 16      | 22      | D61       | 0.16  | 0.85                        | 160                                            | EMZJ160ADA220MD61G |
|         | 47      | E61       | 0.16  | 0.36                        | 240                                            | EMZJ160ADA470ME61G |
|         | 100     | F61       | 0.16  | 0.26                        | 300                                            | EMZJ160ADA101MF61G |
|         | 150     | F80       | 0.16  | 0.16                        | 600                                            | EMZJ160ADA151MF80G |
|         | 220     | F80       | 0.16  | 0.16                        | 600                                            | EMZJ160ADA221MF80G |
|         | 470     | HA0       | 0.16  | 0.08                        | 850                                            | EMZJ160ADA471MHA0G |
|         | 680     | JA0       | 0.16  | 0.06                        | 1,190                                          | EMZJ160ADA681MJA0G |
|         | 820     | JA0       | 0.16  | 0.06                        | 1,190                                          | EMZJ160ADA821MJA0G |
| 25      | 10      | D61       | 0.14  | 0.85                        | 160                                            | EMZJ250ADA100MD61G |
|         | 22      | E61       | 0.14  | 0.36                        | 240                                            | EMZJ250ADA220ME61G |
|         | 33      | E61       | 0.14  | 0.36                        | 240                                            | EMZJ250ADA330ME61G |
|         | 33      | F61       | 0.14  | 0.26                        | 300                                            | EMZJ250ADA330MF61G |
|         | 47      | F61       | 0.14  | 0.26                        | 300                                            | EMZJ250ADA470MF61G |
|         | 68      | F61       | 0.14  | 0.26                        | 300                                            | EMZJ250ADA680MF61G |
|         | 100     | F80       | 0.14  | 0.16                        | 600                                            | EMZJ250ADA101MF80G |
|         | 330     | HA0       | 0.14  | 0.08                        | 850                                            | EMZJ250ADA331MHA0G |
|         | 470     | JA0       | 0.14  | 0.06                        | 1,190                                          | EMZJ250ADA471MJA0G |
|         | 560     | JA0       | 0.14  | 0.06                        | 1,190                                          | EMZJ250ADA561MJA0G |
| 35      | 10      | D61       | 0.12  | 0.85                        | 160                                            | EMZJ350ADA100MD61G |
|         | 22      | E61       | 0.12  | 0.36                        | 240                                            | EMZJ350ADA220ME61G |
|         | 33      | F61       | 0.12  | 0.26                        | 300                                            | EMZJ350ADA330MF61G |
|         | 47      | F61       | 0.12  | 0.26                        | 300                                            | EMZJ350ADA470MF61G |
|         | 68      | F61       | 0.12  | 0.26                        | 300                                            | EMZJ350ADA680MF61G |
|         | 100     | F80       | 0.12  | 0.16                        | 600                                            | EMZJ350ADA101MF80G |
|         | 100     | HA0       | 0.12  | 0.08                        | 850                                            | EMZJ350ADA101MHA0G |
|         | 150     | HA0       | 0.12  | 0.08                        | 850                                            | EMZJ350ADA151MHA0G |
|         | 220     | HA0       | 0.12  | 0.08                        | 850                                            | EMZJ350ADA221MHA0G |
|         | 330     | JA0       | 0.12  | 0.06                        | 1,190                                          | EMZJ350ADA331MJA0G |
|         | 390     | JA0       | 0.12  | 0.06                        | 1,190                                          | EMZJ350ADA391MJA0G |

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Frequency(Hz)   | 120  | 1k   | 10k  | 100k |
|-----------------|------|------|------|------|
| Capacitance(μF) |      |      |      |      |
| 10 to 150       | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 560      | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,800    | 0.60 | 0.87 | 0.95 | 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.



**Стандарт  
Электрон  
Связь**

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