

## Alchip™-MZS Series

- Downsizing and Lower ESR, 2,000 hours at 105°C
- Rated voltage range : 25 & 35V, Nominal capacitance range : 330 to 1,000μF
- Solvent resistant type
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information



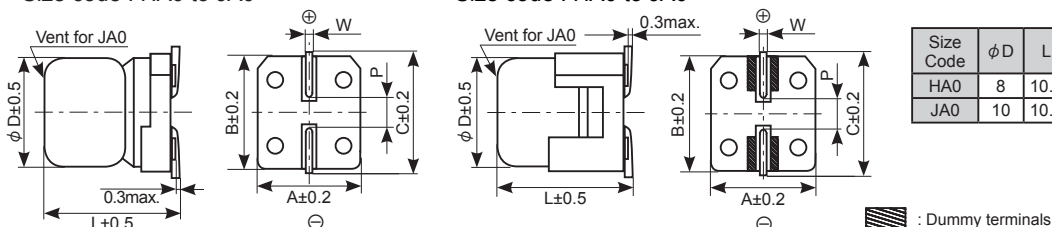
## ◆ SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                         |                                       |      |                   |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------|-------------------|
| Category                                               | -55 to +105°C                                                                                                                                                                                                                                                                           |                                       |      |                   |
| Temperature Range                                      |                                                                                                                                                                                                                                                                                         |                                       |      |                   |
| Rated Voltage Range                                    | 25 & 35V <sub>dc</sub>                                                                                                                                                                                                                                                                  |                                       |      |                   |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C , 120Hz)                                                                                                                                                                                                                                                              |                                       |      |                   |
| Leakage Current                                        | I=0.01CV or 3μA, which is greater.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)                                                                                                                               |                                       |      |                   |
| Dissipation Factor (tan δ)                             | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 25V                                   | 35V  | (at 20°C , 120Hz) |
|                                                        | tan δ (Max.)                                                                                                                                                                                                                                                                            | 0.14                                  | 0.12 |                   |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 25V                                   | 35V  | (at 120Hz)        |
|                                                        | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 2                                     | 2    |                   |
|                                                        | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 3                                     | 3    |                   |
|                                                        | Z(-55°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 3                                     | 3    |                   |
| Endurance                                              | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 105°C.                                                                                                                                   |                                       |      |                   |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                      | ≤ ±30% of the initial value           |      |                   |
|                                                        | D.F. (tan δ)                                                                                                                                                                                                                                                                            | ≤ 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 exposing them for 1,000 hours at 105°C 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)                                                                                                                                                                                                                                                                            | ≤ 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°C.                 |                                       |      |                   |
|                                                        | Rated voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 25V                                   | 35V  |                   |
|                                                        | Surge voltage (V <sub>dc</sub> )                                                                                                                                                                                                                                                        | 29V                                   | 40V  |                   |
|                                                        |                                                                                                                                                                                                                                                                                         |                                       |      |                   |
|                                                        | Appearance                                                                                                                                                                                                                                                                              | No significant damage                 |      |                   |
|                                                        | Capacitance change                                                                                                                                                                                                                                                                      | ≤ ±20% of the initial value           |      |                   |
|                                                        | D.F. (tan δ)                                                                                                                                                                                                                                                                            | ≤ 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]

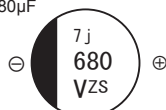
- Terminal Code : A
- Size code : HA0 to JA0

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



## ◆ MARKING

EX) 35V680μF



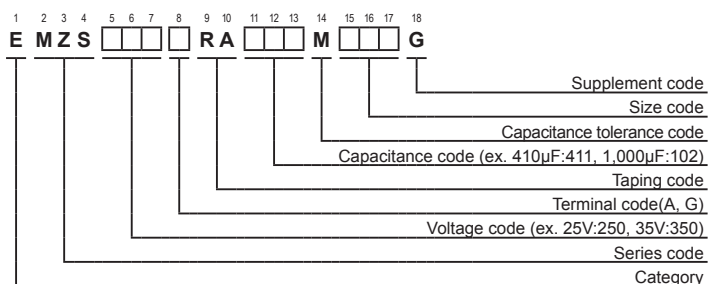
- Rated voltage symbol

| Rated voltage (V <sub>dc</sub> ) | 25 | 35 |
|----------------------------------|----|----|
| Symbol                           | 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™-M<sup>Z</sup>S Series

## ◆ PART NUMBERING SYSTEM



## ◆ STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Size code | tan δ | ESR<br>(Ω max. /20°C, 100kHz) | Rated ripple current<br>(mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|--------------------------|-------------|-----------|-------|-------------------------------|------------------------------------------------------------|--------------------|
| 25                       | 470         | HA0       | 0.14  | 0.08                          | 850                                                        | EMZS250□RA471MHA0G |
|                          | 560         | HA0       | 0.14  | 0.08                          | 850                                                        | EMZS250□RA561MHA0G |
|                          | 820         | JA0       | 0.14  | 0.06                          | 1,190                                                      | EMZS250□RA821MJA0G |
|                          | 1,000       | JA0       | 0.14  | 0.06                          | 1,190                                                      | EMZS250□RA102MJA0G |
| 35                       | 330         | HA0       | 0.12  | 0.08                          | 850                                                        | EMZS350□RA331MHA0G |
|                          | 410         | HA0       | 0.12  | 0.08                          | 850                                                        | EMZS350□RA411MHA0G |
|                          | 470         | HA0       | 0.12  | 0.08                          | 850                                                        | EMZS350□RA471MHA0G |
|                          | 560         | JA0       | 0.12  | 0.06                          | 1,190                                                      | EMZS350□RA561MJA0G |
|                          | 680         | JA0       | 0.12  | 0.06                          | 1,190                                                      | EMZS350□RA681MJA0G |

□ :Enter the appropriate terminal code.

## ◆ RATED RIPPLE CURRENT MULTIPLIERS

## ●Frequency Multipliers

| Capacitance (μF) \ Frequency (Hz) | 120  | 1k   | 10k  | 100k |
|-----------------------------------|------|------|------|------|
| 330 to 560                        | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 to 1,000                      | 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.

# Mouser Electronics

Authorized Distributor

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[United Chemi-Con \(UCC\):](#)

[EMZS250ARA821MJA0G](#) [EMZS350ARA411MHA0G](#) [EMZS350ARA561MJA0G](#) [EMZS250ARA471MHA0G](#)  
[EMZS350ARA471MHA0G](#) [EMZS250ARA102MJA0G](#) [EMZS250ARA561MHA0G](#) [EMZS350ARA681MJA0G](#)  
[EMZS350ARA331MHA0G](#)

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