

# Alchip™-MHJ Series

- Endurance : 2,000 to 3,000 hours at 125°C
- Rated voltage range : 10 to 35V
- Nominal capacitance range : 47 to 470μF
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.



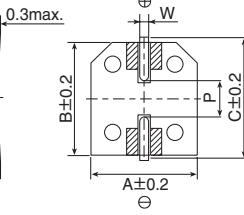
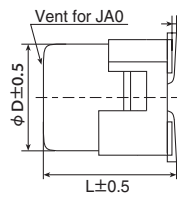
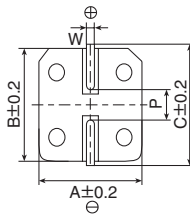
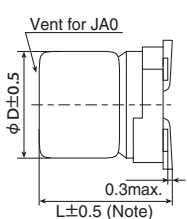
## ◆ SPECIFICATIONS

| Items   | Characteristics   |                                       |      |           |      |
|---|---|---------------------------------------|------|-----------|------|
| <b>Category</b>   | -40 to +125°C   |                                       |      |           |      |
| <b>Temperature Range</b>                                      | -40 to +125°C   |                                       |      |           |      |
| <b>Rated Voltage Range</b>                                    | 10 to 35V <sub>dc</sub>   |                                       |      |           |      |
| <b>Capacitance Tolerance</b>                                  | ±20%(M) (at 20°C, 120Hz)  |                                       |      |           |      |
| <b>Leakage Current</b>  | I=0.01CV<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)   |                                       |      |           |      |
| <b>Dissipation Factor (tan δ)</b>                             | Rated voltage(V <sub>dc</sub> )   | 10V                                   | 16V  | 25V 35V   |      |
|   | tan δ (Max.)  | 0.30                                  | 0.23 | 0.18 0.16 |      |
| <b>Low Temperature Characteristics (Max. impedance Ratio)</b> | Rated voltage(V <sub>dc</sub> )   | 10V                                   | 16V  | 25V 35V   |      |
|   | Z(-25°C)/Z(+20°C)   | 3                                     | 2    | 2 2       |      |
|   | Z(-40°C)/Z(+20°C)   | 4                                     | 3    | 3 3       |      |
| <b>Endurance</b>  | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 3,000 hours (2,000 hours for F80 size) at 125°C.  |                                       |      |           |      |
|   | Capacitance change  | ≤ ±30% of the initial value           |      |           |      |
|   | D.F. (tan δ)  | ≤ 300% of the initial specified value |      |           |      |
|   | Leakage current   | ≤ The initial specified value         |      |           |      |
|   | ESR after 2,000 hours (Ω max./100kHz)   |                                       | F80  | HA0       | JA0  |
|   |   | 20°C                                  | 3.5  | 0.60      | 0.40 |
| -40°C   | 40  | 4.5                                   | 3.5  |           |      |
| <b>Shelf Life</b>   | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 125°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)  | ≤ 300% of the initial specified value |      |           |      |
|   | Leakage current   | ≤ The initial specified value         |      |           |      |

## ◆ DIMENSIONS [mm]

- Terminal Code : A
- Size code : F80 to JA0

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

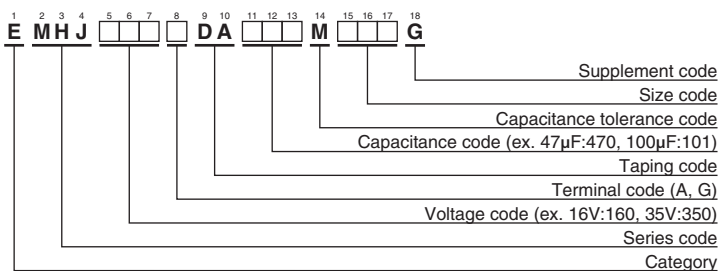


Note : L±0.3 for F80

▨ : Dummy terminals

| Size code | φD  | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| 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 |

## ◆ PART NUMBERING SYSTEM



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

## ◆ MARKING

EX) 16V100μF



- Rated voltage symbol

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

Alchip™-MHJ Series

◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Size code | ESR (Ω max./100kHz) |       | Rated ripple current<br>(mA <sub>rms</sub> /125°C, 100kHz) | Part No.           |
|--------------------------|-------------|-----------|---------------------|-------|--|--------------------|
|                          |             |           | 20°C                | -40°C |  |                    |
| 10                       | 220         | HA0       | 0.15                | 3.0   | 350  | EMHJ100□DA221MHA0G |
|                          | 330         | HA0       | 0.15                | 3.0   | 350  | EMHJ100□DA331MHA0G |
|                          | 330         | JA0       | 0.12                | 2.0   | 550  | EMHJ100□DA331MJA0G |
|                          | 470         | JA0       | 0.12                | 2.0   | 550  | EMHJ100□DA471MJA0G |
| 16                       | 100         | F80       | 0.45                | 5.0   | 220  | EMHJ160ADA101MF80G |
|                          | 100         | HA0       | 0.15                | 3.0   | 350  | EMHJ160□DA101MHA0G |
|                          | 220         | HA0       | 0.15                | 3.0   | 350  | EMHJ160□DA221MHA0G |
|                          | 330         | JA0       | 0.12                | 2.0   | 550  | EMHJ160□DA331MJA0G |
|                          | 470         | JA0       | 0.12                | 2.0   | 550  | EMHJ160□DA471MJA0G |
| 25                       | 100         | HA0       | 0.15                | 3.0   | 350  | EMHJ250□DA101MHA0G |
|                          | 220         | JA0       | 0.12                | 2.0   | 550  | EMHJ250□DA221MJA0G |
|                          | 330         | JA0       | 0.12                | 2.0   | 550  | EMHJ250□DA331MJA0G |
| 35                       | 47          | F80       | 0.45                | 5.0   | 220  | EMHJ350ADA470MF80G |
|                          | 47          | HA0       | 0.15                | 3.0   | 350  | EMHJ350□DA470MHA0G |
|                          | 100         | HA0       | 0.15                | 3.0   | 350  | EMHJ350□DA101MHA0G |
|                          | 220         | JA0       | 0.12                | 2.0   | 550  | EMHJ350□DA221MJA0G |

□ : Enter the appropriate terminal code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|---------------|------|------|------|------|
| 47 to 100       |               | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 to 470      |               | 0.50 | 0.85 | 0.94 | 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.