

# Alchip™-MLA Series

- Low impedance, long life
- Rated voltage 6.3 to 50V, Capacitance 10 to 1,000μF
- Case size φ5×5.8L to φ10×10L
- Suitable for applications requiring long life and low impedance such as equipment in continuous operation, industrial applications, etc.
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

MVY → Longer life

MLA

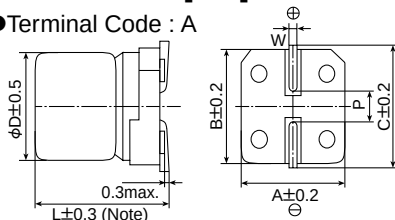


## SPECIFICATIONS

| Items                                                        | Characteristics                                                                                                                                                                                                                                                                         |                                      |      |      |      |      |      |               |      |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|---------------|------|
| Category                                                     | -40 to +105°C                                                                                                                                                                                                                                                                           |                                      |      |      |      |      |      |               |      |
| Temperature Range                                            |                                                                                                                                                                                                                                                                                         |                                      |      |      |      |      |      |               |      |
| Rated Voltage Range                                          | 6.3 to 50V <sub>dc</sub>                                                                                                                                                                                                                                                                |                                      |      |      |      |      |      |               |      |
| Capacitance Tolerance                                        | ±20%(M) (20°C, 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°C after 2 minutes)                                                                                                                            |                                      |      |      |      |      |      |               |      |
| Dissipation Factor<br>(tanδ)                                 | Rated voltage(V <sub>dc</sub> )                                                                                                                                                                                                                                                         | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V  | (20°C, 120Hz) |      |
|                                                              | tanδ (Max.)                                                                                                                                                                                                                                                                             | E61 to F61                           | 0.28 | 0.24 | 0.22 | 0.16 | 0.13 |               | 0.12 |
|                                                              |                                                                                                                                                                                                                                                                                         | F80                                  | 0.32 | 0.27 | 0.24 | 0.16 | 0.13 |               | 0.12 |
|                                                              |                                                                                                                                                                                                                                                                                         | HA0 to JA0                           | 0.28 | 0.24 | 0.22 | 0.16 | 0.13 |               | 0.12 |
| Low Temperature<br>Characteristics<br>(Max. impedance Ratio) | Rated voltage(V <sub>dc</sub> )                                                                                                                                                                                                                                                         | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V  | (120Hz)       |      |
|                                                              | Z(-25°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 4                                    | 3    | 2    | 2    | 2    | 2    |               |      |
|                                                              | Z(-40°C)/Z(+20°C)                                                                                                                                                                                                                                                                       | 10                                   | 7    | 5    | 3    | 3    | 3    |               |      |
| Endurance                                                    | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 3,000 hours at 105°C.                                                                                                                                   |                                      |      |      |      |      |      |               |      |
|                                                              | Capacitance change                                                                                                                                                                                                                                                                      | ≤±30% of the initial value           |      |      |      |      |      |               |      |
|                                                              | D.F. (tanδ)                                                                                                                                                                                                                                                                             | ≤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°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. (tanδ)                                                                                                                                                                                                                                                                             | ≤300% of the initial specified value |      |      |      |      |      |               |      |
|                                                              | Leakage current                                                                                                                                                                                                                                                                         | ≤The initial specified value         |      |      |      |      |      |               |      |

## DIMENSIONS [mm]

- Terminal Code : A



Note : L±0.5 for HA0 and JA0

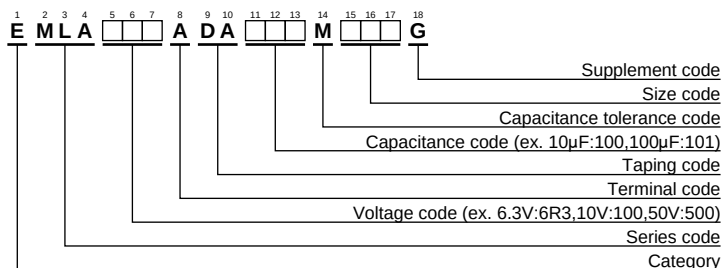
| Size code | D   | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| E61       | 5   | 5.8  | 5.3  | 5.3  | 5.9  | 0.5 to 0.8 | 1.4 |
| F61       | 6.3 | 5.8  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| F80       | 6.3 | 7.7  | 6.6  | 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) 16V100μF



## PART NUMBERING SYSTEM



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

- Rated voltage symbol

| Rated voltage (V <sub>dc</sub> ) | Symbol |
|----------------------------------|--------|
| 6.3                              | j      |
| 10                               | A      |
| 16                               | C      |
| 25                               | E      |
| 35                               | V      |
| 50                               | H      |

## ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Size code | tanδ | Impedance (Ω <sub>max</sub> /20°C, 100kHz) | Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz) | Part No.           | WV (Vdc) | Cap (μF) | Size code | tanδ | Impedance (Ω <sub>max</sub> /20°C, 100kHz) | Rated ripple current (mA <sub>rms</sub> /105°C, 100kHz) | Part No.           |
|----------|----------|-----------|------|--------------------------------------------|---------------------------------------------------------|--------------------|----------|----------|-----------|------|--------------------------------------------|---------------------------------------------------------|--------------------|
| 6.3      | 47       | E61       | 0.28 | 1.30                                       | 95                                                      | EMLA6R3ADA470ME61G | 25       | 33       | F61       | 0.16 | 0.70                                       | 140                                                     | EMLA250ADA330MF61G |
|          | 100      | F61       | 0.28 | 0.70                                       | 140                                                     | EMLA6R3ADA101MF61G |          | 47       | F61       | 0.16 | 0.70                                       | 140                                                     | EMLA250ADA470MF61G |
|          | 150      | F61       | 0.28 | 0.70                                       | 140                                                     | EMLA6R3ADA151MF61G |          | 47       | F80       | 0.16 | 0.70                                       | 230                                                     | EMLA250ADA470MF80G |
|          | 220      | F80       | 0.32 | 0.70                                       | 230                                                     | EMLA6R3ADA221MF80G |          | 100      | F80       | 0.16 | 0.70                                       | 230                                                     | EMLA250ADA101MF80G |
|          | 330      | F80       | 0.32 | 0.70                                       | 230                                                     | EMLA6R3ADA331MF80G |          | 100      | HA0       | 0.16 | 0.16                                       | 600                                                     | EMLA250ADA101MHA0G |
|          | 330      | HA0       | 0.28 | 0.16                                       | 600                                                     | EMLA6R3ADA331MHA0G |          | 150      | HA0       | 0.16 | 0.16                                       | 600                                                     | EMLA250ADA151MHA0G |
|          | 470      | HA0       | 0.28 | 0.16                                       | 600                                                     | EMLA6R3ADA471MHA0G |          | 220      | HA0       | 0.16 | 0.16                                       | 600                                                     | EMLA250ADA221MHA0G |
|          | 1,000    | JA0       | 0.28 | 0.08                                       | 850                                                     | EMLA6R3ADA102MJA0G |          | 330      | HA0       | 0.16 | 0.16                                       | 600                                                     | EMLA250ADA331MHA0G |
| 10       | 33       | E61       | 0.24 | 1.30                                       | 95                                                      | EMLA100ADA330ME61G | 35       | 330      | JA0       | 0.16 | 0.08                                       | 850                                                     | EMLA250ADA331MJA0G |
|          | 47       | F61       | 0.24 | 0.70                                       | 140                                                     | EMLA100ADA470MF61G |          | 470      | JA0       | 0.16 | 0.08                                       | 850                                                     | EMLA250ADA471MJA0G |
|          | 100      | F61       | 0.24 | 0.70                                       | 140                                                     | EMLA100ADA101MF61G |          | 10       | E61       | 0.13 | 1.30                                       | 95                                                      | EMLA350ADA100ME61G |
|          | 150      | F61       | 0.24 | 0.70                                       | 140                                                     | EMLA100ADA151MF61G |          | 22       | F61       | 0.13 | 0.70                                       | 140                                                     | EMLA350ADA220MF61G |
|          | 220      | F80       | 0.27 | 0.70                                       | 230                                                     | EMLA100ADA221MF80G |          | 33       | F61       | 0.13 | 0.70                                       | 140                                                     | EMLA350ADA330MF61G |
|          | 220      | HA0       | 0.24 | 0.16                                       | 600                                                     | EMLA100ADA221MHA0G |          | 33       | F80       | 0.13 | 0.70                                       | 230                                                     | EMLA350ADA330MF80G |
|          | 330      | HA0       | 0.24 | 0.16                                       | 600                                                     | EMLA100ADA331MHA0G |          | 47       | F80       | 0.13 | 0.70                                       | 230                                                     | EMLA350ADA470MF80G |
|          | 470      | HA0       | 0.24 | 0.16                                       | 600                                                     | EMLA100ADA471MHA0G |          | 100      | F80       | 0.13 | 0.70                                       | 230                                                     | EMLA350ADA101MF80G |
| 16       | 22       | E61       | 0.22 | 1.30                                       | 95                                                      | EMLA160ADA220ME61G | 50       | 100      | HA0       | 0.13 | 0.16                                       | 600                                                     | EMLA350ADA101MHA0G |
|          | 33       | F61       | 0.22 | 0.70                                       | 140                                                     | EMLA160ADA330MF61G |          | 150      | HA0       | 0.13 | 0.16                                       | 600                                                     | EMLA350ADA151MHA0G |
|          | 47       | F61       | 0.22 | 0.70                                       | 140                                                     | EMLA160ADA470MF61G |          | 220      | HA0       | 0.13 | 0.16                                       | 600                                                     | EMLA350ADA221MHA0G |
|          | 100      | F61       | 0.22 | 0.70                                       | 140                                                     | EMLA160ADA101MF61G |          | 220      | JA0       | 0.13 | 0.08                                       | 850                                                     | EMLA350ADA221MJA0G |
|          | 100      | F80       | 0.24 | 0.70                                       | 230                                                     | EMLA160ADA101MF80G |          | 330      | JA0       | 0.13 | 0.08                                       | 850                                                     | EMLA350ADA331MJA0G |
|          | 150      | F80       | 0.24 | 0.70                                       | 230                                                     | EMLA160ADA151MF80G |          | 10       | F61       | 0.12 | 2.00                                       | 70                                                      | EMLA500ADA100MF61G |
|          | 220      | F80       | 0.24 | 0.70                                       | 230                                                     | EMLA160ADA221MF80G |          | 22       | F61       | 0.12 | 2.00                                       | 70                                                      | EMLA500ADA220MF61G |
|          | 220      | HA0       | 0.22 | 0.16                                       | 600                                                     | EMLA160ADA221MHA0G |          | 33       | F80       | 0.12 | 1.60                                       | 100                                                     | EMLA500ADA330MF80G |
|          | 330      | HA0       | 0.22 | 0.16                                       | 600                                                     | EMLA160ADA331MHA0G |          | 47       | F80       | 0.12 | 1.60                                       | 100                                                     | EMLA500ADA470MF80G |
|          | 470      | HA0       | 0.22 | 0.16                                       | 600                                                     | EMLA160ADA471MHA0G |          | 47       | HA0       | 0.12 | 0.34                                       | 350                                                     | EMLA500ADA470MHA0G |
| 25       | 470      | JA0       | 0.22 | 0.08                                       | 850                                                     | EMLA160ADA471MJA0G |          | 100      | HA0       | 0.12 | 0.34                                       | 350                                                     | EMLA500ADA101MHA0G |
|          | 10       | E61       | 0.16 | 1.30                                       | 95                                                      | EMLA250ADA100ME61G |          | 100      | JA0       | 0.12 | 0.18                                       | 670                                                     | EMLA500ADA101MJA0G |
|          | 22       | E61       | 0.16 | 1.30                                       | 95                                                      | EMLA250ADA220ME61G |          | 150      | JA0       | 0.12 | 0.18                                       | 670                                                     | EMLA500ADA151MJA0G |
|          | 22       | F61       | 0.16 | 0.70                                       | 140                                                     | EMLA250ADA220MF61G |          | 220      | JA0       | 0.12 | 0.18                                       | 670                                                     | EMLA500ADA221MJA0G |

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