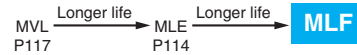


Alchip™-MLF Series

- Endurance : 10,000 hours at 105°C
- Rated voltage range : 6.3 to 50V
- Nominal capacitance range : 1.0 to 1,000μF
- Suitable for long life and low profile products
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

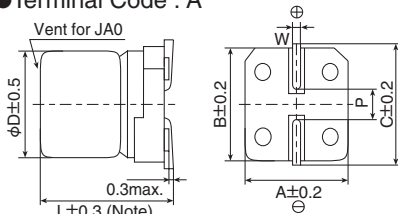


◆ SPECIFICATIONS

| Items | Characteristics | | | | | | |
|---|---|--------------------------------------|------|------|------|------|------|
| Category | -25 to +105°C | | | | | | |
| Temperature Range | -25 to +105°C | | | | | | |
| Rated Voltage Range | 6.3 to 50V _{dc} | | | | | | |
| Capacitance Tolerance | ±20%(M) (at 20°C, 120Hz) | | | | | | |
| Leakage Current | I=0.03CV or 4μA, whichever is greater 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 _{dc}) | 6.3V | 10V | 16V | 25V | 35V | 50V |
| | tan δ (Max.) | 0.32 | 0.28 | 0.26 | 0.16 | 0.14 | 0.14 |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage(V _{dc}) | 6.3V | 10V | 16V | 25V | 35V | 50V |
| | Z(-10°C)/Z(+20°C) | 4 | 3 | 2 | 2 | 2 | 2 |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 10,000 hours at 105°C. | | | | | | |
| | 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°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) | ≤300% of the initial specified value | | | | | |
| | Leakage current | ≤The initial specified value | | | | | |

◆ DIMENSIONS [mm]

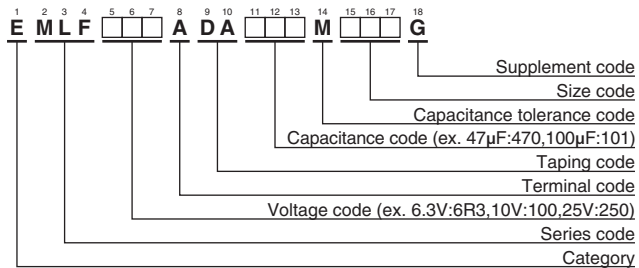
● Terminal Code : A



Note : L±0.5 for HA0 and JA0

| Size code | D | L | A | B | C | W | P |
|-----------|-----|------|------|------|------|------------|-----|
| D73 | 4 | 7.0 | 4.3 | 4.3 | 5.1 | 0.5 to 0.8 | 1.0 |
| E73 | 5 | 7.0 | 5.3 | 5.3 | 5.9 | 0.5 to 0.8 | 1.4 |
| F73 | 6.3 | 7.0 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| F90 | 6.3 | 8.7 | 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) 16V47μF



● Rated voltage symbol

| Rated voltage (V _{dc}) | 6.3 | 10 | 16 | 25 | 35 | 50 |
|----------------------------------|-----|----|----|----|----|----|
| Symbol | j | A | C | E | V | H |

Alchip™-**MLF** Series

◆ **STANDARD RATINGS**

| WV (V _{ac}) | Cap (μF) | Size code | Rated ripple current (mA _{rms} /105°C, 120Hz) | Part No. | WV (V _{ac}) | Cap (μF) | Size code | Rated ripple current (mA _{rms} /105°C, 120Hz) | Part No. |
|-----------------------|----------|-----------|--|--------------------|-----------------------|----------|-----------|--|--------------------|
| 6.3 | 22 | D73 | 22 | EMLF6R3ADA220MD73G | 35 | 1.0 | D73 | 6.2 | EMLF350ADA1R0MD73G |
| | 47 | E73 | 36 | EMLF6R3ADA470ME73G | | 2.2 | D73 | 11 | EMLF350ADA2R2MD73G |
| | 100 | F73 | 60 | EMLF6R3ADA101MF73G | | 3.3 | D73 | 14 | EMLF350ADA3R3MD73G |
| | 220 | F90 | 101 | EMLF6R3ADA221MF90G | | 4.7 | D73 | 15 | EMLF350ADA4R7MD73G |
| | 330 | HA0 | 160 | EMLF6R3ADA331MHA0G | | 4.7 | E73 | 19 | EMLF350ADA4R7ME73G |
| 1,000 | JA0 | 313 | EMLF6R3ADA102MJA0G | 10 | | E73 | 25 | EMLF350ADA100ME73G | |
| 10 | 33 | E73 | 35 | EMLF100ADA330ME73G | | 10 | F73 | 30 | EMLF350ADA100MF73G |
| | 220 | HA0 | 141 | EMLF100ADA221MHA0G | | 22 | F73 | 42 | EMLF350ADA220MF73G |
| 16 | 10 | D73 | 18 | EMLF160ADA100MD73G | | 22 | F90 | 49 | EMLF350ADA220MF90G |
| | 22 | E73 | 30 | EMLF160ADA220ME73G | | 33 | F90 | 57 | EMLF350ADA330MF90G |
| | 47 | F73 | 50 | EMLF160ADA470MF73G | 220 | JA0 | 216 | EMLF350ADA221MJA0G | |
| | 100 | F90 | 81 | EMLF160ADA101MF90G | 33 | HA0 | 77 | EMLF500ADA330MHA0G | |
| | 470 | JA0 | 254 | EMLF160ADA471MJA0G | 47 | HA0 | 92 | EMLF500ADA470MHA0G | |
| 25 | 33 | F73 | 48 | EMLF250ADA330MF73G | 100 | JA0 | 151 | EMLF500ADA101MJA0G | |
| | 47 | F90 | 63 | EMLF250ADA470MF90G | | | | | |
| | 100 | HA0 | 116 | EMLF250ADA101MHA0G | | | | | |

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | 120 | 1k | 10k | 100k |
|-----------------|---------------|------|------|------|------|
| 1.0 | | 1.00 | 1.50 | 1.75 | 1.80 |
| 2.2 to 10 | | 1.00 | 1.30 | 1.40 | 1.50 |
| 22 to 1,000 | | 1.00 | 1.05 | 1.08 | 1.08 |

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.