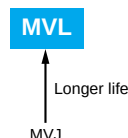


# Alchip™-MVL Series

- Endurance : 3,000 to 5,000 hours at 105°C
- Suitable for applications requiring long life such as continuously operating equipment, industrial applications, etc
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

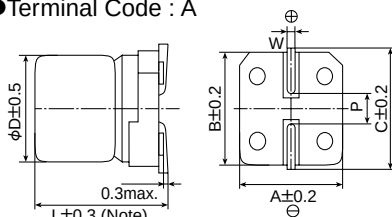


## ◆SPECIFICATIONS

| Items                                                  | Characteristics                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |      |  |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------|------|------|------|------|--|
| Category                                               |                                                                                                                                                                                                                                                                                       |                                      |      |      |      |      |      |  |
| Temperature Range                                      | -40 to +105℃                                                                                                                                                                                                                                                                          |                                      |      |      |      |      |      |  |
| Rated Voltage Range                                    | 6.3 to 50V <sub>dc</sub>                                                                                                                                                                                                                                                              |                                      |      |      |      |      |      |  |
| Capacitance Tolerance                                  | ±20%(M) (at 20℃,120Hz)                                                                                                                                                                                                                                                                |                                      |      |      |      |      |      |  |
| Leakage Current                                        | I=0.03CV or 4μA, 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  | 50V  |  |
|                                                        | Max. tanδ                                                                                                                                                                                                                                                                             | 0.28                                 | 0.24 | 0.20 | 0.16 | 0.13 | 0.12 |  |
| Low Temperature Characteristics (Max. impedance Ratio) | Rated voltage(V <sub>dc</sub> )                                                                                                                                                                                                                                                       | 6.3V                                 | 10V  | 16V  | 25V  | 35V  | 50V  |  |
|                                                        | Z(-25℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 4                                    | 3    | 2    | 2    | 2    | 2    |  |
|                                                        | Z(-40℃)/Z(+20℃)                                                                                                                                                                                                                                                                       | 10                                   | 7    | 5    | 3    | 3    | 3    |  |
| Endurance                                              | After the capacitors are subjected to the rated DC voltage for 3,000 hours (HA0 & JA0 sizes 5,000 hours) at 105℃, the following specifications shall be satisfied when the capacitors are restored to 20℃.                                                                            |                                      |      |      |      |      |      |  |
|                                                        | 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℃ 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)                                                                                                                                                                                                                                                                           | ≤300% of the initial specified value |      |      |      |      |      |  |
|                                                        | Leakage current                                                                                                                                                                                                                                                                       | ≤The initial specified value         |      |      |      |      |      |  |

## ◆DIMENSIONS [mm]

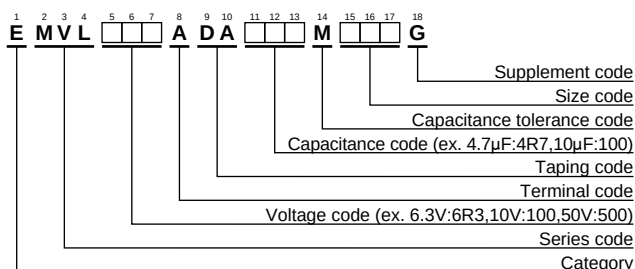
- Terminal Code : A



Note : L±0.5 for HA0 and JA0

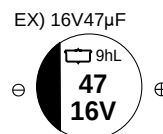
| Size code | D   | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| D60       | 4   | 5.7  | 4.3  | 4.3  | 5.1  | 0.5 to 0.8 | 1.0 |
| E60       | 5   | 5.7  | 5.3  | 5.3  | 5.9  | 0.5 to 0.8 | 1.4 |
| F60       | 6.3 | 5.7  | 6.6  | 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 |

## ◆PART NUMBERING SYSTEM



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

## ◆MARKING



## ◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|-----------------------|----------|-----------|------|-------------------------------------------------------|--------------------|
| 6.3                   | 22       | D60       | 0.28 | 22                                                    | EMVL6R3ADA220MD60G |
|                       | 47       | E60       | 0.28 | 36                                                    | EMVL6R3ADA470ME60G |
|                       | 100      | F60       | 0.28 | 60                                                    | EMVL6R3ADA101MF60G |
|                       | 220      | F80       | 0.28 | 101                                                   | EMVL6R3ADA221MF80G |
|                       | 330      | HA0       | 0.28 | 160                                                   | EMVL6R3ADA331MHA0G |
|                       | 1,000    | JA0       | 0.28 | 313                                                   | EMVL6R3ADA102MJA0G |
| 10                    | 33       | E60       | 0.24 | 35                                                    | EMVL100ADA330ME60G |
|                       | 220      | HA0       | 0.24 | 141                                                   | EMVL100ADA221MHA0G |
| 16                    | 10       | D60       | 0.20 | 18                                                    | EMVL160ADA100MD60G |
|                       | 22       | E60       | 0.20 | 30                                                    | EMVL160ADA220ME60G |
|                       | 47       | F60       | 0.20 | 50                                                    | EMVL160ADA470MF60G |
|                       | 100      | F80       | 0.20 | 81                                                    | EMVL160ADA101MF80G |
|                       | 470      | JA0       | 0.20 | 254                                                   | EMVL160ADA471MJA0G |
| 25                    | 33       | F60       | 0.16 | 48                                                    | EMVL250ADA330MF60G |
|                       | 47       | F80       | 0.16 | 63                                                    | EMVL250ADA470MF80G |
|                       | 100      | HA0       | 0.16 | 116                                                   | EMVL250ADA101MHA0G |
|                       | 330      | JA0       | 0.16 | 238                                                   | EMVL250ADA331MJA0G |

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | tanδ | Rated ripple current (mA <sub>rms</sub> /105°C,120Hz) | Part No.           |
|-----------------------|----------|-----------|------|-------------------------------------------------------|--------------------|
| 35                    | 4.7      | D60       | 0.13 | 15                                                    | EMVL350ADA4R7MD60G |
|                       | 10       | E60       | 0.13 | 25                                                    | EMVL350ADA100ME60G |
|                       | 22       | F60       | 0.13 | 42                                                    | EMVL350ADA220MF60G |
|                       | 33       | F80       | 0.13 | 57                                                    | EMVL350ADA330MF80G |
|                       | 220      | JA0       | 0.13 | 216                                                   | EMVL350ADA221MJA0G |
| 50                    | 1.0      | D60       | 0.12 | 6.2                                                   | EMVL500ADA1R0MD60G |
|                       | 2.2      | D60       | 0.12 | 11                                                    | EMVL500ADA2R2MD60G |
|                       | 3.3      | D60       | 0.12 | 14                                                    | EMVL500ADA3R3MD60G |
|                       | 4.7      | E60       | 0.12 | 19                                                    | EMVL500ADA4R7ME60G |
|                       | 10       | F60       | 0.12 | 30                                                    | EMVL500ADA100MF60G |
|                       | 22       | F80       | 0.12 | 49                                                    | EMVL500ADA220MF80G |
|                       | 33       | HA0       | 0.12 | 77                                                    | EMVL500ADA330MHA0G |
|                       | 47       | HA0       | 0.12 | 92                                                    | EMVL500ADA470MHA0G |
|                       | 100      | JA0       | 0.12 | 151                                                   | EMVL500ADA101MJA0G |

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

## United Chemi-Con (UCC):

|                                           |                                           |                                           |                                           |
|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| <a href="#"><u>EMVL250ADA330MF60G</u></a> | <a href="#"><u>EMVL160ADA100MD60G</u></a> | <a href="#"><u>EMVL500ADA470MHA0G</u></a> | <a href="#"><u>EMVL350ADA220MF60G</u></a> |
| <a href="#"><u>EMVL250ADA331MJA0G</u></a> | <a href="#"><u>EMVL500ADA330MHA0G</u></a> | <a href="#"><u>EMVL100ADA221MHA0G</u></a> | <a href="#"><u>EMVL6R3ADA221MF80G</u></a> |
| <a href="#"><u>EMVL500ADA100MF60G</u></a> | <a href="#"><u>EMVL250ADA470MF80G</u></a> | <a href="#"><u>EMVL500ADA220MF80G</u></a> | <a href="#"><u>EMVL500ADA4R7ME60G</u></a> |
| <a href="#"><u>EMVL350ADA221MJA0G</u></a> | <a href="#"><u>EMVL500ADA101MJA0G</u></a> | <a href="#"><u>EMVL160ADA101MF80G</u></a> | <a href="#"><u>EMVL160ADA470MF60G</u></a> |
| <a href="#"><u>EMVL350ADA100ME60G</u></a> | <a href="#"><u>EMVL500ADA3R3MD60G</u></a> | <a href="#"><u>EMVL6R3ADA220MD60G</u></a> | <a href="#"><u>EMVL250ADA101MHA0G</u></a> |
| <a href="#"><u>EMVL350ADA4R7MD60G</u></a> | <a href="#"><u>EMVL160ADA471MJA0G</u></a> | <a href="#"><u>EMVL6R3ADA102MJA0G</u></a> | <a href="#"><u>EMVL100ADA330ME60G</u></a> |
| <a href="#"><u>EMVL500ADA1R0MD60G</u></a> | <a href="#"><u>EMVL160ADA220ME60G</u></a> | <a href="#"><u>EMVL350ADA330MF80G</u></a> | <a href="#"><u>EMVL500ADA2R2MD60G</u></a> |
| <a href="#"><u>EMVL6R3ADA470ME60G</u></a> | <a href="#"><u>EMVL6R3ADA101MF60G</u></a> | <a href="#"><u>EMVL6R3ADA331MHA0G</u></a> |                                           |