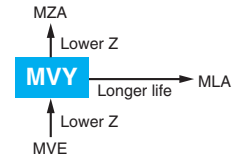


Alchip™-MVY Series *Upgrade!*

- Endurance : 1,000 to 5,000 hours at 105°C
- Low impedance
- For digital equipment, especially DC-DC converters
- Solvent resistant type except 80 & 100V_{dc} (see PRECAUTIONS AND GUIDELINES)
- Vibration resistant structure
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

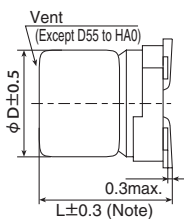


SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | |
|---|---|---|------|------|------|------|--------------------------------------|------|-----|------|---|---|
| Category | -55 to +105°C (6.3 to 63V _{dc}) -40 to +105°C (80 & 100V _{dc}) | | | | | | | | | | | |
| Temperature Range | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 100V _{dc} | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | | | | | | | | | | | |
| Leakage Current | I=0.01CV or 3μA, 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 | 63V | 80V | 100V | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz) | |
| | tan δ (Max.) | D55 to F80 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | — | — | | — |
| | | HA0 & JA0 | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | — | — | | — |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated voltage (V _{dc}) | 6.3V | 10V | 16V | 25V | 35V | 50V | 63V | 80V | 100V | (at 120Hz) | |
| | Z(-40°C)/Z(+20°C) | D55 to JA0 | 3 | 2 | 2 | 2 | 2 | 2 | — | — | | — |
| | | KE0 to MN0 | 10 | 8 | 6 | 4 | 3 | 3 | 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 specified time at 105°C. | | | | | | | | | | | |
| | Time | D55 to F80 : 1,000 hours HA0 & JA0 : 2,000 hours KE0 to MN0 : 5,000 hours | | | | | | | | | | |
| | Rated voltage | 6.3V _{dc} (D55 to JA0) | | | | | 6.3 to 100V _{dc} | | | | | |
| | Capacitance change | ≤ ±30% of the initial value | | | | | ≤ ±20% of the initial value | | | | | |
| | D.F. (tan δ) | ≤300% of the initial specified value | | | | | ≤200% of the initial specified value | | | | | |
| | Leakage current | ≤The initial specified value | | | | | ≤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. | | | | | | | | | | | |
| | Rated voltage | 6.3V _{dc} (D55 to JA0) | | | | | 6.3 to 100V _{dc} | | | | | |
| | Capacitance change | ≤ ±30% of the initial value | | | | | ≤ ±20% of the initial value | | | | | |
| | D.F. (tan δ) | ≤300% of the initial specified value | | | | | ≤200% of the initial specified value | | | | | |
| | Leakage current | ≤The initial specified value | | | | | ≤The initial specified value | | | | | |

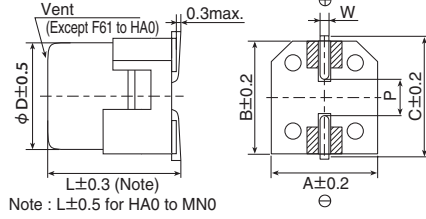
DIMENSIONS [mm]

- Terminal Code : A
- Size code : D55 to MN0



Note : L±0.5 for HA0 to MN0

- Terminal Code : G (Vibration resistant structure)
- Size code : F61 to MN0

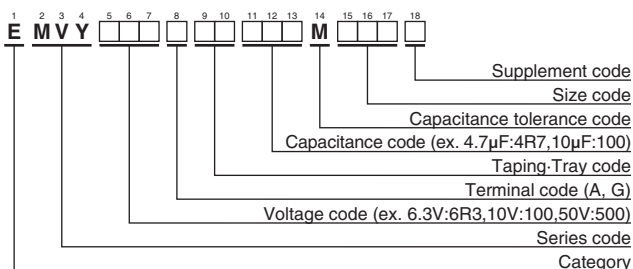


Note : L±0.5 for HA0 to MN0

▨ : Dummy terminals

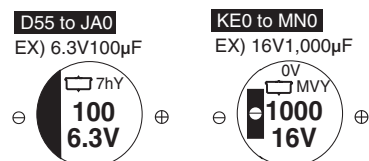
| Size code | D | L | A | B | C | W | P |
|-----------|------|------|------|------|------|------------|-----|
| D55 | 4 | 5.2 | 4.3 | 4.3 | 5.1 | 0.5 to 0.8 | 1.0 |
| E55 | 5 | 5.2 | 5.3 | 5.3 | 5.9 | 0.5 to 0.8 | 1.4 |
| F55 | 6.3 | 5.2 | 6.6 | 6.6 | 7.2 | 0.5 to 0.8 | 1.9 |
| F61 | 6.3 | 5.8 | 6.6 | 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 |
| KE0 | 12.5 | 13.5 | 13.0 | 13.0 | 13.7 | 1.0 to 1.3 | 4.2 |
| KG5 | 12.5 | 16.0 | 13.0 | 13.0 | 13.7 | 1.0 to 1.3 | 4.2 |
| LH0 | 16 | 16.5 | 17.0 | 17.0 | 18.0 | 1.0 to 1.3 | 6.5 |
| LN0 | 16 | 21.5 | 17.0 | 17.0 | 18.0 | 1.0 to 1.3 | 6.5 |
| MH0 | 18 | 16.5 | 19.0 | 19.0 | 20.0 | 1.0 to 1.3 | 6.5 |
| MN0 | 18 | 21.5 | 19.0 | 19.0 | 20.0 | 1.0 to 1.3 | 6.5 |

PART NUMBERING SYSTEM



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

MARKING



◆ **STANDARD RATINGS**

□ is not solvent resistant (80/100V_{dc}).

| WV (V _{dc}) | Cap (μF) | Size code | Impedance (Ω max./20°C, 100kHz) | Rated ripple current (mA _{rms} /105°C, 100kHz) | Part No. | WV (V _{dc}) | Cap (μF) | Size code | Impedance (Ω max./20°C, 100kHz) | Rated ripple current (mA _{rms} /105°C, 100kHz) | Part No. | | |
|-----------------------|----------|-----------|---------------------------------|---|--------------------|-----------------------|--------------------|--------------------|---------------------------------|---|--------------------|--------------------|--------------------|
| 6.3 | 22 | D55 | 3.0 | 60 | EMVY6R3ARA220MD55G | 25 | 330 | HA0 | 0.30 | 450 | EMVY250□RA331MHA0G | | |
| | 33 | E55 | 1.8 | 95 | EMVY6R3ARA330ME55G | | 470 | JA0 | 0.15 | 670 | EMVY250□RA471MJA0G | | |
| | 47 | E55 | 1.8 | 95 | EMVY6R3ARA470ME55G | | 1,000 | LH0 | 0.054 | 1,260 | EMVY250□RA102MLH0S | | |
| | 100 | F55 | 1.0 | 140 | EMVY6R3ARA101MF55G | | 1,000 | MH0 | 0.054 | 1,350 | EMVY250□RA102MMH0S | | |
| | 220 | F55 | 1.0 | 140 | EMVY6R3ARA221MF55G | | 2,200 | LN0 | 0.038 | 1,630 | EMVY250□RA222MLN0S | | |
| | 330 | F80 | 0.34 | 280 | EMVY6R3□RA331MF80G | | 2,200 | MN0 | 0.038 | 1,750 | EMVY250□RA222MMN0S | | |
| | 470 | HA0 | 0.30 | 450 | EMVY6R3□RA471MHA0G | | 3,300 | MN0 | 0.038 | 1,750 | EMVY250□RA332MMN0S | | |
| | 680 | HA0 | 0.30 | 450 | EMVY6R3□RA681MHA0G | | 35 | 4.7 | D55 | 3.0 | 60 | EMVY350ARA4R7MD55G | |
| | 1,000 | HA0 | 0.30 | 450 | EMVY6R3□RA102MHA0G | | | 10 | E55 | 1.8 | 95 | EMVY350ARA100ME55G | |
| | 1,500 | JA0 | 0.15 | 670 | EMVY6R3□RA152MJA0G | | | 22 | F55 | 1.0 | 140 | EMVY350ARA220MF55G | |
| | 2,200 | KE0 | 0.070 | 820 | EMVY6R3□RA222MKE0S | | | 33 | F55 | 1.0 | 140 | EMVY350ARA330MF55G | |
| | 2,200 | LH0 | 0.054 | 1,260 | EMVY6R3□RA222MLH0S | | | 47 | F55 | 1.0 | 140 | EMVY350ARA470MF55G | |
| | 3,300 | KG5 | 0.060 | 950 | EMVY6R3□RA332MKG5S | | | 47 | F61 | 1.0 | 140 | EMVY350□RA470MF61G | |
| | 3,300 | MH0 | 0.054 | 1,350 | EMVY6R3□RA332MMH0S | | | 68 | F80 | 0.34 | 280 | EMVY350□RA680MF80G | |
| | 4,700 | LN0 | 0.038 | 1,630 | EMVY6R3□RA472MLN0S | | | 100 | HA0 | 0.30 | 450 | EMVY350□RA101MHA0G | |
| | 4,700 | MH0 | 0.054 | 1,350 | EMVY6R3□RA472MMH0S | | | 220 | HA0 | 0.30 | 450 | EMVY350□RA221MHA0G | |
| | 6,800 | LN0 | 0.038 | 1,630 | EMVY6R3□RA682MLN0S | | | 330 | JA0 | 0.15 | 670 | EMVY350□RA331MJA0G | |
| | 6,800 | MN0 | 0.038 | 1,750 | EMVY6R3□RA682MMN0S | | | 470 | KE0 | 0.070 | 820 | EMVY350□RA471MKE0S | |
| 8,200 | MN0 | 0.038 | 1,750 | EMVY6R3□RA822MMN0S | 470 | LH0 | | 0.054 | 1,260 | EMVY350□RA471MLH0S | | | |
| 10 | 22 | E55 | 1.8 | 95 | EMVY100ARA220ME55G | 1,000 | | LH0 | 0.054 | 1,260 | EMVY350□RA102MLH0S | | |
| | 33 | E55 | 1.8 | 95 | EMVY100ARA330ME55G | 1,000 | | MH0 | 0.054 | 1,350 | EMVY350□RA102MMH0S | | |
| | 47 | F55 | 1.0 | 140 | EMVY100ARA470MF55G | 2,200 | | MN0 | 0.038 | 1,750 | EMVY350□RA222MMN0S | | |
| | 100 | F55 | 1.0 | 140 | EMVY100ARA101MF55G | 50 | | 1.0 | D55 | 5.0 | 30 | EMVY500ARA1R0MD55G | |
| | 220 | F80 | 0.34 | 280 | EMVY100□RA221MF80G | | | 2.2 | D55 | 5.0 | 30 | EMVY500ARA2R2MD55G | |
| | 330 | HA0 | 0.30 | 450 | EMVY100□RA331MHA0G | | | 3.3 | D55 | 5.0 | 30 | EMVY500ARA3R3MD55G | |
| | 470 | HA0 | 0.30 | 450 | EMVY100□RA471MHA0G | | 4.7 | E55 | 3.0 | 50 | EMVY500ARA4R7ME55G | | |
| | 680 | JA0 | 0.15 | 670 | EMVY100□RA681MJA0G | | 10 | F55 | 2.0 | 70 | EMVY500ARA100MF55G | | |
| | 1,000 | JA0 | 0.15 | 670 | EMVY100□RA102MJA0G | | 22 | F55 | 2.0 | 70 | EMVY500ARA220MF55G | | |
| | 2,200 | KG5 | 0.060 | 950 | EMVY100□RA222MKG5S | | 33 | F80 | 0.60 | 170 | EMVY500□RA330MF80G | | |
| | 2,200 | LH0 | 0.054 | 1,260 | EMVY100□RA222MLH0S | | 47 | F80 | 0.60 | 170 | EMVY500□RA470MF80G | | |
| | 3,300 | LH0 | 0.054 | 1,260 | EMVY100□RA332MLH0S | | 68 | HA0 | 0.60 | 300 | EMVY500□RA680MHA0G | | |
| | 3,300 | MH0 | 0.054 | 1,350 | EMVY100□RA332MMH0S | | 100 | HA0 | 0.60 | 300 | EMVY500□RA101MHA0G | | |
| | 4,700 | LN0 | 0.038 | 1,630 | EMVY100□RA472MLN0S | | 220 | JA0 | 0.30 | 500 | EMVY500□RA221MJA0G | | |
| | 4,700 | MN0 | 0.038 | 1,750 | EMVY100□RA472MMN0S | | 330 | KE0 | 0.11 | 650 | EMVY500□RA331MKE0S | | |
| | 6,800 | MN0 | 0.038 | 1,750 | EMVY100□RA682MMN0S | | 330 | LH0 | 0.087 | 900 | EMVY500□RA331MLH0S | | |
| | 16 | 10 | D55 | 3.0 | 60 | | EMVY160ARA100MD55G | 470 | LH0 | 0.087 | 900 | EMVY500□RA471MLH0S | |
| | | 22 | E55 | 1.8 | 95 | | EMVY160ARA220ME55G | 470 | MH0 | 0.087 | 1,060 | EMVY500□RA471MMH0S | |
| 33 | | F55 | 1.0 | 140 | EMVY160ARA330MF55G | | 1,000 | MN0 | 0.050 | 1,520 | EMVY500□RA102MMN0S | | |
| 47 | | F55 | 1.0 | 140 | EMVY160ARA470MF55G | | 63 | 68 | KE0 | 0.19 | 500 | EMVY630□RA680MKE0S | |
| 100 | | F55 | 1.0 | 140 | EMVY160ARA101MF55G | | | 100 | KE0 | 0.19 | 500 | EMVY630□RA101MKE0S | |
| 220 | | F80 | 0.34 | 280 | EMVY160□RA221MF80G | 220 | | KE0 | 0.19 | 500 | EMVY630□RA221MKE0S | | |
| 330 | | HA0 | 0.30 | 450 | EMVY160□RA331MHA0G | 220 | | LH0 | 0.12 | 845 | EMVY630□RA221MLH0S | | |
| 470 | | HA0 | 0.30 | 450 | EMVY160□RA471MHA0G | 330 | | LH0 | 0.12 | 845 | EMVY630□RA331MLH0S | | |
| 680 | | JA0 | 0.15 | 670 | EMVY160□RA681MJA0G | 330 | | MH0 | 0.12 | 905 | EMVY630□RA331MMH0S | | |
| 1,000 | | KE0 | 0.070 | 820 | EMVY160□RA102MKE0S | 470 | | LN0 | 0.085 | 1,100 | EMVY630□RA471MLN0S | | |
| 1,000 | | LH0 | 0.054 | 1,260 | EMVY160□RA102MLH0S | 470 | | MH0 | 0.12 | 905 | EMVY630□RA471MMH0S | | |
| 2,200 | | LH0 | 0.054 | 1,260 | EMVY160□RA222MLH0S | 80 | | 100 | KE0 | 0.33 | 450 | EMVY800□RA101MKE0S | |
| 2,200 | | MH0 | 0.054 | 1,350 | EMVY160□RA222MMH0S | | | 220 | KG5 | 0.26 | 550 | EMVY800□RA221MKG5S | |
| 3,300 | | LN0 | 0.038 | 1,630 | EMVY160□RA332MLN0S | | | 330 | LN0 | 0.16 | 900 | EMVY800□RA331MLN0S | |
| 3,300 | | MH0 | 0.054 | 1,350 | EMVY160□RA332MMH0S | | | 330 | MH0 | 0.24 | 700 | EMVY800□RA331MMH0S | |
| 4,700 | | MN0 | 0.038 | 1,750 | EMVY160□RA472MMN0S | | | 470 | MN0 | 0.16 | 950 | EMVY800□RA471MMN0S | |
| 25 | | 10 | E55 | 1.8 | 95 | | | EMVY250ARA100ME55G | 100 | 47 | KE0 | 0.33 | 450 |
| | | 22 | F55 | 1.0 | 140 | EMVY250ARA220MF55G | | 68 | | KE0 | 0.33 | 450 | EMVY101□RA680MKE0S |
| | 33 | F55 | 1.0 | 140 | EMVY250ARA330MF55G | 100 | | KE0 | | 0.33 | 450 | EMVY101□RA101MKE0S | |
| | 47 | F55 | 1.0 | 140 | EMVY250ARA470MF55G | 100 | | LH0 | | 0.24 | 650 | EMVY101□RA101MLH0S | |
| | 100 | F80 | 0.34 | 280 | EMVY250□RA101MF80G | 220 | | LN0 | | 0.16 | 900 | EMVY101□RA221MLN0S | |
| | 220 | HA0 | 0.30 | 450 | EMVY250□RA221MHA0G | 220 | MH0 | 0.24 | | 700 | EMVY101□RA221MMH0S | | |
| | | | | | | 330 | MN0 | 0.16 | | 950 | EMVY101□RA331MMN0S | | |

□ : Enter the appropriate terminal code.

◆ **RATED RIPPLE CURRENT MULTIPLIERS**

● Frequency Multipliers

| Size code | Capacitance(μF) | Frequency(Hz) | | | |
|------------|-----------------|---------------|------|------|------|
| | | 120 | 1k | 10k | 100k |
| D55 to JA0 | 1.0 to 4.7 | 0.35 | 0.70 | 0.90 | 1.00 |
| | 10 to 100 | 0.40 | 0.75 | 0.90 | 1.00 |
| | 220 to 470 | 0.50 | 0.85 | 0.94 | 1.00 |
| | 680 to 1,500 | 0.60 | 0.87 | 0.95 | 1.00 |
| KE0 to MN0 | 47 to 100 | 0.40 | 0.75 | 0.90 | 1.00 |
| | 220 to 470 | 0.50 | 0.85 | 0.94 | 1.00 |
| | 1,000 | 0.60 | 0.87 | 0.95 | 1.00 |
| | 2,200 to 3,300 | 0.75 | 0.90 | 0.95 | 1.00 |
| | 4,700 to 8,200 | 0.85 | 0.95 | 0.98 | 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.