

# MVK Series

● 105°C 1,000~ 2,000Hrs assured

- Vertical SMD type
- Wide Temperature range
- For CD/DVD-ROM, Navigation, LCD MT/TV
- Ecological capacitors are also available.

Solvent-proof



MV

MVK

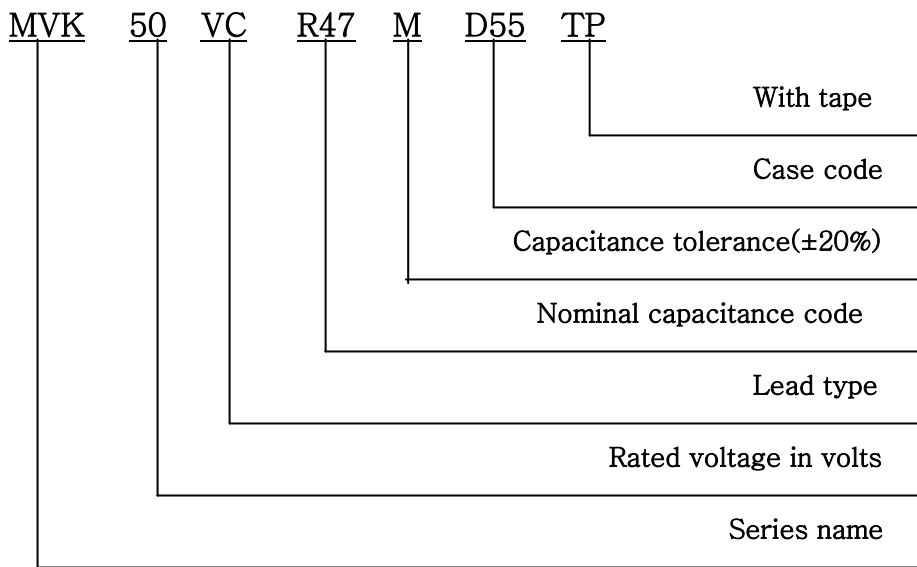
Wide Temp

## SPECIFICATIONS

| Item  | Characteristics  |  |      |      |      |      |         |         |   |  |
|---|--|--|------|------|------|------|---------|---------|---|--|
| Rated Voltage Range                                   | 6.3 ~ 450V <sub>DC</sub>   |  |      |      |      |      |         |         |   |  |
| Operating Temperature Range                           | -40 ~ +105°C   |  |      |      |      |      |         |         |   |  |
| Capacitance Tolerance                                 | ±20% (M) (at 20°C, 120Hz)  |  |      |      |      |      |         |         |   |  |
| Leakage Current                                       | Rated Voltage(V <sub>DC</sub> )  | 6.3~100  |      |      |      |      |         |         | 160~450                                   |  |
|   | Max. Leakage current(μA)   | 0.01CV (μA) or 3μA, whichever is greater.<br>(at 20 °C, 2 minutes) |      |      |      |      |         |         | 0.04CV + 100(μA)<br>(at 20 °C, 1 minutes) |  |
|   | Where, C: Nominal capacitor(μF), V: Rated voltage (V <sub>DC</sub> )   |  |      |      |      |      |         |         |   |  |
| Dissipation Factor<br>Tanδ (Max.)                     | Rated Voltage(V <sub>DC</sub> )  | 6.3  | 10   | 16   | 25   | 35   | 50~100  | 160~250 | 400~450                                   |  |
|   | ∅ 4~ ∅ 6.3   | 0.30   | 0.24 | 0.20 | 0.16 | 0.14 | 0.12    | -       | -   |  |
|   | ∅ 8~ ∅ 12.5  | 0.40   | 0.30 | 0.26 | 0.16 | 0.14 | 0.12    | 0.15    | 0.20                                      |  |
| (at 20°C, at 120Hz)                                   |  |  |      |      |      |      |         |         |   |  |
| Temperature Characteristics<br>(Max. Impedance ratio) | Rated Voltage(V <sub>DC</sub> )  | 6.3  | 10   | 16   | 25   | 35   | 500~100 | 160~250 | 400~450                                   |  |
|   | Z(-25°C)/Z(20°C)   | 4  | 3    | 2    | 2    | 2    | 3       | 3       | 6   |  |
|   | Z(-40°C)/Z(20°C)   | 10   | 8    | 6    | 4    | 3    | 4       | 6       | 10  |  |
| (at 120Hz)  |  |  |      |      |      |      |         |         |   |  |
| Load Life   | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with the following conditions.<br>∅ 4~ ∅ 6.3 : 105°C, 1,000hours. ∅ 8 & ∅ 12.5 : 105°C, 2,000hours<br>Capacitance change<br>∅ 4~ ∅ 6.3 ≤± 30% of the initial value<br>∅ 8~ ∅ 12.5 ≤± 20% of the initial value<br>Tanδ<br>∅ 4~ ∅ 6.3 ≤ 300% of the initial specified value<br>∅ 8~ ∅ 10 ≤ 200% of the initial specified value<br>Leakage current ≤ The initial specified value |  |      |      |      |      |         |         |   |  |

|            |  |
|------------|--|
| Shelf Life | <p>The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for the specified time at 105°C without voltage applied..</p> <p>The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and Not more than 48 hours before the measurement.</p> <p>Ø 4~ Ø 6.3 : 105°C, 500 hours.    Ø 8 &amp; Ø 12.5 : 105°C, 1,000 hours</p> <p>Capacitance change</p> <p>Ø 4~ Ø 6.3 ≤ ± 25% of the initial value</p> <p>Ø 8~ Ø 12.5 ≤ ± 20% of the initial value</p> <p>Tanδ ≤ 200% of the initial specified value</p> <p>Leakage current ≤ The initial specified value</p> |
| Others     | Satisfied characteristics W of KS C 6421   |

## PART NUMBERING SYSTEM

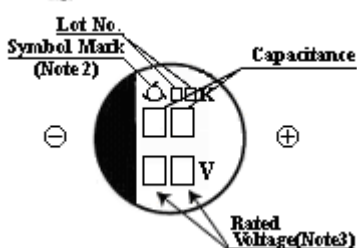


| Capacitance | Code |
|-------------|------|
| 0.1 μF      | R1   |
| 0.47 μF     | R47  |
| 1.0 μF      | 1    |
| 4.7 μF      | 4R7  |
| 10 μF       | 10   |
| 100 μF      | 100  |

## DIMENSIONS OF MKV Series (Type :VC)

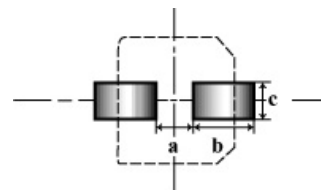
### DIMENSIONS

### Marking

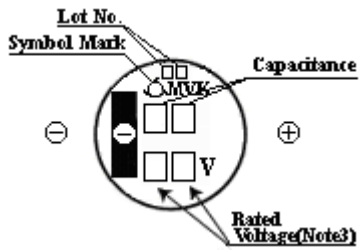


< B55 ~ J10 >

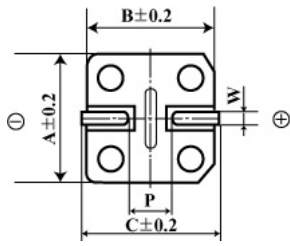
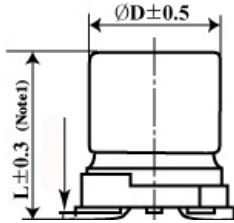
### Recommended solder land on PC board



**Sold land on PC board**



< K14 >



Note 1 : L + 0.5 for 8 x 6.3 (H63), 8 x 10 (H10), 10 x 10 (J10)

Note 2 : 4 x 5.2 (D55), 5 x 5.2 (E55) is excluded symbol mark

Note 3 : 6.3WV is marked by 6V.

| Case code | $\varnothing D$ | L    | A    | B    | C    | W       | P   | a   | b   | c   |
|-----------|-----------------|------|------|------|------|---------|-----|-----|-----|-----|
| D55       | 4               | 5.2  | 4.3  | 4.3  | 5.1  | 0.5-0.8 | 1.0 | 1.0 | 2.6 | 1.6 |
| E55       | 5               | 5.2  | 5.3  | 5.3  | 5.9  | 0.5-0.8 | 1.4 | 1.4 | 3.0 | 1.6 |
| F55       | 6.3             | 5.2  | 6.6  | 6.6  | 7.2  | 0.5-0.8 | 1.9 | 1.9 | 3.5 | 1.6 |
| F60       | 6.3             | 5.7  | 6.6  | 6.6  | 7.2  | 0.5-0.8 | 1.9 | 1.9 | 3.5 | 1.6 |
| H63       | 8               | 6.3  | 8.3  | 8.3  | 9.0  | 0.5-0.8 | 2.3 | 2.3 | 4.5 | 1.6 |
| H10       | 8               | 10.0 | 8.3  | 8.3  | 9.0  | 0.7-1.1 | 3.1 | 3.1 | 4.2 | 2.2 |
| J10       | 10              | 10.0 | 10.3 | 10.3 | 11.0 | 0.7-1.1 | 4.5 | 4.5 | 4.4 | 2.2 |
| K14       | 12.5            | 13.5 | 13.0 | 13.0 | 13.7 | 1.0-1.3 | 4.5 | 4.2 | 4.0 | 2.5 |

## RATINGS OF MVK Series

| $\mu F$ | $V_{DC}$ | 6.3(0J) |  | 10(1A) |  | 16(1C) |    |
|---------|----------|---------|--|--------|--|--------|----|
|         |          |         |  |        |  |        |    |
| 0.1     |          |         |  |        |  |        |    |
| 0.22    |          |         |  |        |  |        |    |
| 0.33    |          |         |  |        |  |        |    |
| 0.47    |          |         |  |        |  |        |    |
| 1       |          |         |  |        |  |        |    |
| 2.2     |          |         |  |        |  |        |    |
| 3.3     |          |         |  |        |  |        |    |
| 4.7     |          |         |  |        |  |        |    |
| 10      |          |         |  |        |  | D55    | 16 |

|       |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 22    | D55 |     | 21  | E55 |     | 30  | E55 |     | 30  |     |
| 33    | E55 |     | 36  | E55 |     | 34  | F55 |     | 45  |     |
| 47    | E55 |     | 36  | F55 |     | 48  | F55 |     | 48  |     |
| 100   | F55 | F60 | 56  | F60 | H63 | 90  | F60 | H10 | 110 | 180 |
| 220   | H63 |     | 150 | H63 |     | 150 | H10 |     | 275 |     |
| 330   | H10 |     | 290 | 135 | J10 | 450 | J10 |     | 450 |     |
| 470   | J10 |     | 460 | J10 |     | 460 | J10 |     | 460 |     |
| 1,000 | J10 |     | 520 | J10 |     | 540 | K14 |     | 550 |     |
| 1,500 | J10 |     | 550 | K14 |     | 620 |     |     |     |     |
| 2,200 | K14 |     | 680 |     |     |     |     |     |     |     |

| $\mu\text{F}$ \diagdown $V_{\text{DC}}$ | 25(1E) |     |     |     | 35(1V) |     | 50(1H) |     |     |     |
|---|--------|-----|-----|-----|--------|-----|--------|-----|-----|-----|
| 0.1                                     |        |     |     |     |        |     | D55    |     | 1.3 |     |
| 0.22                                    |        |     |     |     |        |     | D55    |     | 2.6 |     |
| 0.33                                    |        |     |     |     |        |     | D55    |     | 3.2 |     |
| 0.47                                    |        |     |     |     |        |     | D55    |     | 3.8 |     |
| 1                                       |        |     |     |     |        |     | D55    |     | 5.6 |     |
| 2.2                                     |        |     |     |     |        |     | D55    |     | 10  |     |
| 3.3                                     |        |     |     |     |        |     | D55    |     | 14  |     |
| 4.7                                     |        |     |     |     | D55    | 15  | E55    |     | 19  |     |
| 10                                      | E55    |     | 25  | E55 |        | 25  | F55    |     | 29  |     |
| 22                                      | F55    |     | 40  | F55 |        | 40  | H63    |     | 70  |     |
| 33                                      | F55    |     | 45  | H63 |        | 80  | H10    |     | 140 |     |
| 47                                      | F60    | H63 | 52  | 80  | H63    |     | 140    | H10 |     | 170 |
| 100                                     | H63    | H10 | 135 | 180 | H10    |     | 250    | J10 |     | 310 |
| 220                                     | J10    |     | 375 | J10 |        | 375 | K14    |     | 420 |     |
| 330                                     | J10    |     | 450 | K14 |        | 480 | K14    |     | 500 |     |
| 470                                     | J10    |     | 460 | K14 |        | 520 | ↑      |     | ↑   |     |
| 1,000                                   | K14    |     | 550 |     |        |     |        |     |     |     |
| 1,500                                   |        |     |     |     |        |     |        |     |     |     |



|       |  |  |  |  |  |  |
|-------|--|--|--|--|--|--|
| 2,200 |  |  |  |  |  |  |
|-------|--|--|--|--|--|--|

Case Code \_\_\_\_\_

Rated ripple Current (mArms/105°C, 120Hz) \_\_\_\_\_

| $\mu\text{F}$ \ V <sub>DC</sub> | 160(2C) |    | 200(2D) |    | 250(2E) |    | 400(2G)                                   |     | 450(2W) |     |
|---------------------------------|---------|----|---------|----|---------|----|---|-----|---------|-----|
|                                 | 3.3     |    |         |    |         |    |   | K14 | 40      | K14 |
| 4.7                             |         |    |         |    | K14     | 65 |   |     |         |     |
| 10                              | J10     | 45 | K14     | 80 | ↑       | ↑  |   |     |         |     |
| 22                              | K14     | 85 | K14     | 85 |         |    | Rated ripple Current (mArms/105°C, 120Hz) |     |         |     |
| 33                              | K14     | 95 |         |    |         |    | Case code                                 |     |         |     |