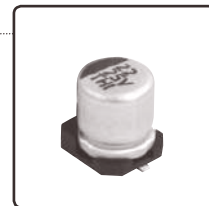


## FEATURES

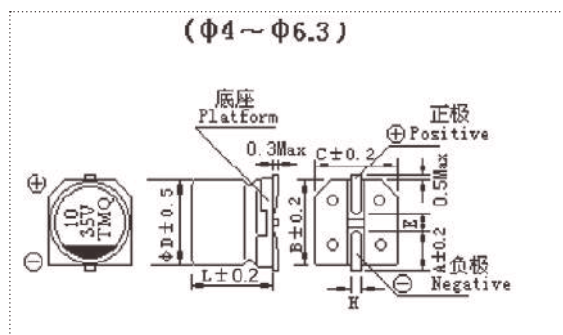
- Operating over wide temperature range
- Reflow soldering is available
- Available for high density surface mounting
- High stability and reliability



## SPECIFICATIONS

| Item                            | Performance Characteristics                                                                                                                                                                                                                                                                          |                            |      |      |                                                         |      |      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------|------|---------------------------------------------------------|------|------|
| Operating Temperature Range     | -55 to +105°C                                                                                                                                                                                                                                                                                        |                            |      |      |                                                         |      |      |
| Rated Working Voltage Range     | 6.3 to 50V                                                                                                                                                                                                                                                                                           |                            |      |      |                                                         |      |      |
| Nominal Capacitance Range       | 0.1 to 220μF                                                                                                                                                                                                                                                                                         |                            |      |      |                                                         |      |      |
| Capacitance Tolerance           | ±20% at 120Hz, +20°C                                                                                                                                                                                                                                                                                 |                            |      |      |                                                         |      |      |
| Leakage Current                 | I ≤0.01CV or 3(μA)<br>whichever is greater measure after 2 minutes application of rated working voltage at +20°C                                                                                                                                                                                     |                            |      |      |                                                         |      |      |
| tan δ (120Hz, +20°C)            | Working Voltage (V)                                                                                                                                                                                                                                                                                  | 6.3                        | 10   | 16   | 25                                                      | 35   | 50   |
|                                 | tanδ                                                                                                                                                                                                                                                                                                 | 0.26                       | 0.20 | 0.16 | 0.14                                                    | 0.12 | 0.12 |
| Low Temperature Characteristics | Impedance ratio max. at 120Hz                                                                                                                                                                                                                                                                        |                            |      |      |                                                         |      |      |
|                                 | Working Voltage (V)                                                                                                                                                                                                                                                                                  | 6.3                        | 10   | 16   | 25                                                      | 35   | 50   |
|                                 | Z-25°C / Z+20°C                                                                                                                                                                                                                                                                                      | 4                          | 3    | 2    | 2                                                       | 2    | 2    |
|                                 | Z-40°C / Z+20°C                                                                                                                                                                                                                                                                                      | 8                          | 6    | 4    | 4                                                       | 3    | 3    |
| High Temperature Loading        | Test time                                                                                                                                                                                                                                                                                            | : 1,000 hours              |      |      | Post test requirements at +20°C                         |      |      |
|                                 | Test temperature                                                                                                                                                                                                                                                                                     | : +105°C                   |      |      | Leakage current : ≤Initial specified value              |      |      |
|                                 | Test conditions                                                                                                                                                                                                                                                                                      | : Rated DC working voltage |      |      | Cap. change : within ±20% of the initial measured value |      |      |
|                                 |                                                                                                                                                                                                                                                                                                      |                            |      |      | tan δ : ≤200% of the initial specified value            |      |      |
| Shelf Life                      | At +105°C no voltage applied after 1,000 hours and then being stabilized at +20°C the capacitors shall meet the following limits<br>Leakage current : ≤200% of the initial specified value<br>Cap. change : within ±20% of the initial measured value<br>tanδ : ≤200% of the initial specified value |                            |      |      |                                                         |      |      |
| Industrial Standard             | JIS C – 5101-4 (IEC 60384-4)                                                                                                                                                                                                                                                                         |                            |      |      |                                                         |      |      |

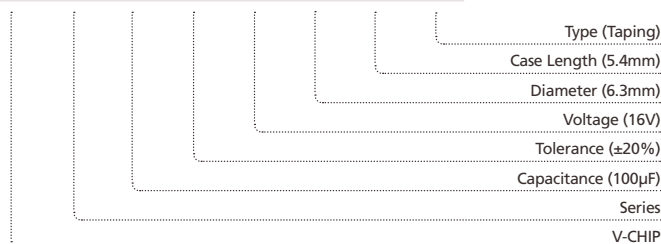
## DIMENSIONS & MARKING



| Size | Φ4 x 5.4  | Φ5 x 5.4 | Φ6.3 x 5.4 |
|------|-----------|----------|------------|
| A    | 1.8       | 2.1      | 2.4        |
| B    | 4.3       | 5.3      | 6.6        |
| C    | 4.3       | 5.3      | 6.6        |
| E    | 1.0       | 1.3      | 2.2        |
| L    | 5.4       | 5.4      | 5.4        |
| H    | 0.5 ~ 0.9 |          |            |

## PART NUMBER SYSTEM (EXAMPLE: 16V 100μF)

| 1 | 23 | 456 | 7 | 89 | 10 | 1112 | 1314 |
|---|----|-----|---|----|----|------|------|
| V | T1 | 107 | M | 1C | E  | 54   | TR   |



+105°C, Surface Mount Type, General Purpose, 1,000 Hours (貼片普通品)

## STANDARD RATINGS

| Voltage (Code) |      | 6.3V (0J) |                | 10V (1A)  |                | 16V (1C)  |                | 25V (1E)  |                |
|----------------|------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|
| Cap. (μF)      | Code | Case Size | Ripple Current | Case Size | Ripple Current | Case Size | Ripple Current | Case Size | Ripple Current |
| 4.7            | 475  |           |                |           |                | 4 x 5.4   | 12             | 4 x 5.4   | 13             |
| 10             | 106  |           |                |           |                | 4 x 5.4   | 20             | 4 x 5.4   | 14             |
|                |      |           |                |           |                |           |                | 5 x 5.4   | 20             |
| 22             | 226  | 4 x 5.4   | 20             | 4 x 5.4   | 21             | 4 x 5.4   | 22             | 5 x 5.4   | 25             |
|                |      |           |                | 5 x 5.4   | 27             | 5 x 5.4   | 31             | 6.3 x 5.4 | 36             |
| 33             | 336  | 4 x 5.4   | 22             | 4 x 5.4   | 23             | 5 x 5.4   | 28             | 5 x 5.4   | 29             |
|                |      | 5 x 5.4   | 27             | 5 x 5.4   | 34             | 6.3 x 5.4 | 40             | 6.3 x 5.4 | 44             |
| 47             | 476  | 4 x 5.4   | 25             | 5 x 5.4   | 30             | 5 x 5.4   | 31             | 6.3 x 5.4 | 48             |
|                |      | 5 x 5.4   | 37             | 6.3 x 5.4 | 41             | 6.3 x 5.4 | 56             |           |                |
| 100            | 107  | 5 x 5.4   | 39             | 6.3 x 5.4 | 53             | 6.3 x 5.4 | 75             |           |                |
|                |      | 6.3 x 5.4 | 57             |           |                |           |                |           |                |
| 220            | 227  | 6.3 x 5.4 | 67             |           |                |           |                |           |                |

Maximum Allowable Ripple Current (mA rms) at 105°C 120Hz

Case Size ΦD x L (mm)

| Voltage (Code) |      | 35V (1V)  |                | 50V (1H)  |                |
|----------------|------|-----------|----------------|-----------|----------------|
| Cap. (μF)      | Code | Case Size | Ripple Current | Case Size | Ripple Current |
| 0.1            | 104  |           |                | 4 x 5.4   | 1.0            |
| 0.22           | 224  |           |                | 4 x 5.4   | 2.0            |
| 0.33           | 334  |           |                | 4 x 5.4   | 3.0            |
| 0.47           | 474  |           |                | 4 x 5.4   | 4.0            |
| 1              | 105  |           |                | 4 x 5.4   | 8.0            |
| 2.2            | 225  |           |                | 4 x 5.4   | 11             |
| 3.3            | 335  |           |                | 4 x 5.4   | 13             |
| 4.7            | 475  | 4 x 5.4   | 14             | 5 x 5.4   | 18             |
| 10             | 106  | 5 x 5.4   | 24             | 6.3 x 5.4 | 28             |
| 22             | 226  | 5 x 5.4   | 27             | 6.3 x 5.4 | 42             |
|                |      | 6.3 x 5.4 | 40             |           |                |
| 33             | 336  | 6.3 x 5.4 | 50             |           |                |

Maximum Allowable Ripple Current (mArms) at 105°C 120Hz

Case Size ΦD x L (mm)

Specifications are subject to change without notice. Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.