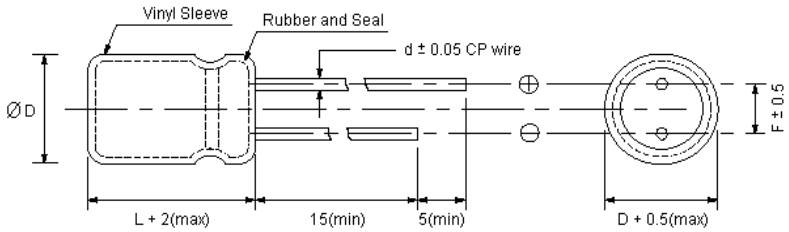
# TRANSCEND ELECTROLYTIC CO., LTD.
# TRANSCEND ELECTROLYTIC (SHENZHEN) CO., LTD.

## *RoHS Compliant* ALUMINIUM ELECTROLYTIC CAPACITOR — SM Series

### ■ FEATURES

- ◆ Miniaturized low profile with 9mm to 25mm height
- ◆ Load life of 2000 hours at 85°C


### ■ OUTLINE




mm

| D | 5 | 6.3 | 8 | 10 | 13 | 16 | 18 |
|---|---|---|---|---|---|---|---|
| F | 2.0 | 2.5 | 3.5 | 5.0 | | 7.5 | |
| d | 0.5 | | | 0.6 | | 0.8 | |

### ■ SPECIFICATIONS

| Items | Characteristics | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Capacitance Tolerance (120Hz, 25°C)** | ± 20% (M) | | | | | | | | | | | | |
| **Rated Working Voltage Range** | 6.3 ~ 250Vdc | | | | | | | 350 ~ 450Vdc | | | | | |
| **Operation Temperature** | -40°C ~ +85°C | | | | | | | -25°C ~ +85°C | | | | | |
| **Leakage Current (25°C)** | (After 2 minutes applying the DC working voltage) | | | | | | | (After 1 minute applying the DC working voltage) | | | | | |
| | I ≤ 0.01CV or 3 (*u*A) | | | | | | | I ≤ 0.04CV + 100 (*u*A) | | | | | |
| | ◆ I : Leakage Current (*u*A) ◆ C : Rated Capacitance (*u*F) ◆ V : Working Voltage (V) | | | | | | | | | | | | |
| **Surge Voltage (25°C)** | **W.V.** | **6.3** | **10** | **16** | **25** | **35** | **50** | **160** | **200** | **250** | **350** | **400** | **450** |
| | **S.V.** | 8 | 13 | 20 | 32 | 44 | 63 | 200 | 250 | 300 | 400 | 450 | 500 |
| **Dissipation Factor (120Hz, 25°C)** | **W.V.** | **6.3** | **10** | **16** | **25** | **35** | **50** | **160** | **200** | **250** | **350** | **400** | **450** |
| | **tan δ** | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.15 | 0.15 | 0.15 | 0.20 | 0.24 | 0.24 |
| | ◆ For capacitance exceeding 1000 *u*F, add 0.02 per increment of 1000 *u*F | | | | | | | | | | | | |
| **Temperature Characteristics** | **W.V.** | **6.3** | **10** | **16** | **25** | **35** | **50** | **160** | **200** | **250** | **350** | **400** | **450** |
| | **- 25°C / + 25°C** | 5 | 4 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 6 | 6 | 6 |
| | **- 40°C / + 25°C** | 12 | 10 | 8 | 5 | 4 | 3 | 6 | 6 | 6 | - | - | - |
| | ◆ Impedance ratio at 120Hz | | | | | | | | | | | | |
| **Load Test** | After 2000 hours application of WV at +85°C, the capacitor shall meet the following limits: (1000 hours for 8ϕ and smaller) | | | | | | | | | | | | |
| | **Capacitance Change** | ≤ ± 20% of initial value | | | | | | | | | | | |
| | **tan δ** | ≤ 200% of initial specified value | | | | | | | | | | | |
| | **Leakage Current** | ≤ initial specified value | | | | | | | | | | | |
| **Shelf Test** | After 1000 hours, no voltage applied at +85°C, the capacitor shall meet the following limits: | | | | | | | | | | | | |
| | **Capacitance Change** | ≤ ± 20% of initial value | | | | | | | | | | | |
| | **tan δ** | ≤ 200% of initial specified value | | | | | | | | | | | |
| | **Leakage Current** | ≤ 200% of initial specified value | | | | | | | | | | | |

# RoHS Compliant ALUMINIUM ELECTROLYTIC CAPACITOR SM Series

## ■ DIMENSIONS

D x L (mm)

| WV / uF | 6.3 | 10 | 16 | 25 | 35 | 50 | 160 | 200 | 250 | 350 | 400 | 450 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | ] | 5 x 9 | | | | | | |
| 2.2 | | | | | ] | 5 x 9 | | | | | 8 x 9 | 10 x 9 |
| 3.3 | | | | | ] | 5 x 9 | | | | 8 x 9 | 10 x 9 | 10 x 9 |
| 4.7 | | | | | ] | 5 x 9 | 8 x 9 | 8 x 9 | 8 x 9 | 10 x 9 | 10 x 9 | |
| 10 | | | | | ] | 5 x 9 | 10 x 9 | 10 x 9 | 10 x 9 | 13 x 13 | 13 x 13 | 16 x 16 |
| 22 | | | | | ] | 5 x 9 | | | 13 x 16 | 13 x 16 | 13 x 16 | 16 x 20 |
| 33 | | | | | 5 x 9 | 6.3 x 9 | 13 x 16 | 13 x 16 | 16 x 16 | 16 x 20 | 16 x 20 | 18 x 20 |
| 47 | | | ] | 5 x 9 | ] | 6.3 x 9 | 13 x 16 | 16 x 16 | 16 x 20 | 18 x 20 | 18 x 20 | 18 x 25 |
| 100 | ] | 5 x 9 | ] | 6.3 x 9 | 8 x 9 | 10 x 9 | 16 x 20 | 16 x 20 | 18 x 20 | | | |
| 220 | 5 x 9 | 6.3 x 9 | 8 x 9 | ] | 10 x 9 | | 18 x 25 | | | | | |
| 330 | 6.3 x 9 | ] | 8 x 9 | 10 x 9 | | 13 x 13 | | | | | | |
| 470 | ] | 8 x 9 | 10 x 9 | ] | 13 x 13 | 16 x 16 | | | | | | |
| 1000 | 10 x 9 | 10 x 9 | 13 x 13 | 13 x 16 | 16 x 16 | 18 x 20 | | | | | | |
| 2200 | ] | 13 x 16 | 16 x 16 | 18 x 16 | 18 x 20 | | | | | | | |
| 3300 | ] | 16 x 16 | 18 x 16 | 18 x 20 | | | | | | | | |
| 4700 | 16 x 16 | 18 x 16 | 18 x 20 | 18 x 25 | | | | | | | | |
| 6800 | 18 x 16 | 18 x 20 | 18 x 25 | | | | | | | | | |
| 10000 | 18 x 20 | 18 x 25 | | | | | | | | | | |

## ■ PERMISSIBLE RIPPLE CURRENT

mA (rms) at 120Hz 85°C

| WV / uF | 6.3 | 10 | 16 | 25 | 35 | 50 | 160 | 200 | 250 | 350 | 400 | 450 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | ] | 13 | | | | | | |
| 2.2 | | | | | ] | 26 | | | | | 34 | 35 |
| 3.3 | | | | | ] | 31 | | | | 35 | 38 | 37 |
| 4.7 | | | | | ] | 37 | 49 | 49 | 49 | 47 | 47 | |
| 10 | | | | | ] | 63 | 83 | 83 | 83 | 98 | 98 | 74 |
| 22 | | | | | ] | 84 | | | 154 | 148 | 148 | 168 |
| 33 | | | | | 89 | 107 | 175 | 175 | 228 | 235 | 235 | 226 |
| 47 | | | ] | 100 | ] | 128 | 220 | 255 | 275 | 310 | 310 | 250 |
| 100 | ] | 126 | ] | 163 | 209 | 233 | 395 | 402 | 420 | | | |
| 220 | 190 | 207 | 276 | ] | 318 | | 602 | | | | | |
| 330 | 235 | ] | 337 | 361 | | 498 | | | | | | |
| 470 | ] | 366 | 390 | ] | 556 | 708 | | | | | | |
| 1000 | 479 | 520 | 679 | 788 | 960 | 1102 | | | | | | |
| 2200 | ] | 922 | 1102 | 1292 | 1482 | | | | | | | |
| 3300 | ] | 1245 | 1387 | 1634 | | | | | | | | |
| 4700 | 1340 | 1482 | 1682 | 1967 | | | | | | | | |
| 6800 | 1577 | 1777 | 1996 | | | | | | | | | |
| 10000 | 1920 | 2252 | | | | | | | | | | |