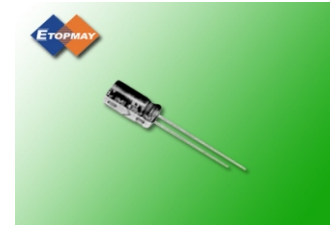




TMCE04 2000Hours Aluminum Electrolytic Capacitors 105°C

Features

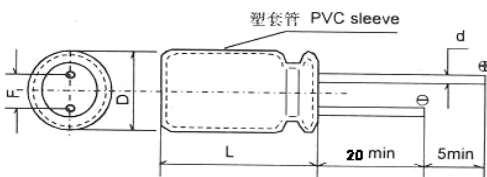
- Load life of 1,000 hours(for capacitors of case dia. 8mm or less) or 2,000 hours(for case dia. 10mm or more)at 105°C.
- Wide operating temperature range.
- Suitable to use for industrial equipment.
- Case Size larger than 5mm diameter has safety vents.



Specifications

| Item | Characteristics | | | | | | | | | | |
|--|---|--|------|------|------|---------------------------------------|---------|---------|------|---------|---------|
| Operating temperature range | -40~+105°C(for 6.3V to 250V) -25~+105°C(for 350V to 450V) | | | | | | | | | | |
| Rated voltage range | 6.3~450V | | | | | | | | | | |
| Capacitance range | 0.1-15,000 μ F | | | | | | | | | | |
| Capacitance tolerance (at 20°C, 120Hz) | ±20%(M) | | | | | | | | | | |
| Leakage current(I) (at 20°C) | After 2 minute application of rated voltage. I ≤ 0.01CV or 3 μ A, whichever is greater (for 6.3v to 100v). | After 2 minute application of rated voltage. I ≤ 0.02CV ± 20 μ A (for 160v to 450v). | | | | | | | | | |
| Dissipation factor(Tan δ) (at 20°C, 120Hz) | Where C: Nominal capacitance in μ F, V: Rated voltage in V. | | | | | | | | | | |
| | W.V.(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160-250 | 350-450 |
| | Tan δ (max.) | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.15 | 0.20 |
| Low temperature characteristics (at 120Hz) | For capacitance of more than 1,000 μ F, add 0.02 for every increase of 1,000 μ F. | | | | | | | | | | |
| | W.V.(v) | | | 6.3 | 10 | 16~100 | 160~250 | 350~450 | | | |
| | impedance ratio ZT/Z+20°C(max) | Z-25°C/Z+20°C | | 4 | 3 | 2 | 4 | 6 | | | |
| Load life | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage has been applied for 2,000 hours (1,000 hours for case dia, 8 mm or less) at 105°C | | | | | | | | | | |
| | Capacitance change | | | | | ≤ 20% of the initial value | | | | | |
| | tan δ | | | | | ≤ 200% of the initial specified value | | | | | |
| Shelf life | The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 105°C for 500 hours without voltage applied | | | | | | | | | | |
| | Capacitance change | | | | | ≤ 20% of the initial value | | | | | |
| | tan δ | | | | | ≤ 150% of the initial specified value | | | | | |
| Others | Satisfies characteristic W of JIS C5141 | | | | | | | | | | |

Dimensions



| | | | | | | | | | | | | | | |
|----------|-------|-----|-----|-----|-------|-----|-----|----|----|------|----|----|----|----|
| D ± 0.5 | 5 | 6.3 | 8 | 10 | 13 | 16 | 18 | 22 | | | | | | |
| L | ± 1.0 | | | | ± 2.0 | | | | | | | | | |
| | 11 | 11 | 12 | 12 | 16 | 20 | 20 | 25 | 25 | 30 | 35 | 35 | 40 | 35 |
| F ± 0.5 | 2.0 | 2.5 | 3.5 | 5.0 | | | 7.5 | | | 10.0 | | | | |
| d ± 0.05 | 0.5 | | 0.6 | | | 0.8 | | | | | | | | |

Ripple Current Multipliers

Frequency multiplying factor

| W.V.(v) | Cap.(μ F) | Freq(Hz) | | | | |
|---------|--------------|----------|------|------|------|-------|
| | | 50 | 120 | 300 | 1k | ≥ 10k |
| 6.3~100 | 0.1~47 | 0.75 | 1.00 | 1.35 | 1.57 | 2.00 |
| | 100~470 | 0.80 | 1.00 | 1.23 | 1.34 | 1.50 |
| | 1,000~15,000 | 0.85 | 1.00 | 1.10 | 1.13 | 1.15 |
| 160~450 | 0.47~470 | 0.80 | 1.00 | 1.25 | 1.40 | 1.60 |

Temperature multiplying factor

| | | | |
|-----------------|------|------|------|
| Temperature(°C) | 70 | 85 | 105 |
| Factor | 1.78 | 1.40 | 1.00 |



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Case Size DxL(mm) and Maximun Ripple current(mA/at85°C,120Hz)

| W.V.(v) Cap.(μ F) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 0.1 | | | | | | 5×11 1.3 | | 5×11 2.6 | | | | | | |
| 0.22 | | | | | | 5×11 2.6 | | 5×11 5.8 | | | | | | |
| 0.33 | | | | | | 5×11 4.3 | | 5×11 8.7 | | | | | | |
| 0.47 | | | | | | 5×11 6.2 | | 5×11 11 | 5×11 8.2 | 5×11 6.2 | 5×11 8.2 | 8×12 8.6 | 8×12 8.6 | 8×12 8.6 |
| 1 | | | | | | 5×11 13 | | 5×11 16 | 5×11 12 | 5×11 12 | 6.3×11 14 | 8×12 13 | 8×12 13 | 8×12 13 |
| 2.2 | | | | | | 5×11 22 | | 5×11 24 | 6.3×11 20 | 6.3×11 20 | 6.3×11 20 | 8×12 19 | 10×12 20 | 10×12 20 |
| 3.3 | | | | | | 5×11 27 | | 5×11 30 | 6.3×11 25 | 6.3×11 25 | 8×12 26 | 10×12 24 | 10×16 28 | 10×16 28 |
| 4.7 | | | | 5×11 27 | 5×11 29 | 5×11 32 | 5×11 34 | 5×11 36 | 8×12 32 | 8×12 32 | 10×12 34 | 10×16 33 | 10×16 33 | 10×26 33 |
| 10 | | | 5×11 37 | 5×11 39 | 5×11 42 | 5×11 47 | 5×11 49 | 6.3×11 59 | 10×12 49 | 10×12 49 | 10×16 55 | 10×20 53 | 10×20 53 | 13×20 61 |
| 22 | | 5×11 49 | 5×11 55 | 5×11 58 | 5×11 63 | 5×11 69 | 6.3×11 83 | 8×12 94 | 10×16 82 | 10×20 91 | 10×20 91 | 13×20 91 | 13×25 100 | 16×25 113 |
| 33 | 5×11 55 | 5×11 60 | 5×11 67 | 5×11 71 | 5×11 77 | 6.3×11 96 | 6.3×11 101 | 10×12 122 | 10×20 111 | 13×20 128 | 13×20 128 | 16×25 138 | 16×25 138 | 16×30 140 |
| 47 | 5×11 65 | 5×11 71 | 5×11 80 | 5×11 85 | 6.3×11 105 | 6.3×11 115 | 8×12 129 | 10×16 164 | 13×20 153 | 13×20 153 | 13×25 169 | 16×30 176 | 16×35 191 | 16×35 191 |
| 100 | 5×11 95 | 5×11 74 | 6.3×11 93 | 6.3×11 100 | 8×12 129 | 8×12 141 | 10×12 169 | 10×20 223 | 16×25 234 | 16×25 234 | 16×30 254 | 18×40 266 | 22×35 281 | 22×40 353 |
| 220 | 5×11 141 | 6.3×11 176 | 6.3×11 196 | 8×12 224 | 10×12 257 | 10×16 318 | 10×20 370 | 13×25 501 | 18×35 509 | 18×40 540 | 22×35 570 | | | |
| 330 | 6.3×11 196 | 6.3×11 215 | 8×12 256 | 10×12 291 | 10×16 356 | 10×20 430 | 13×20 525 | 16×25 690 | 22×35 698 | 22×35 698 | | | | |
| 470 | 6.3×11 234 | 8×12 273 | 8×12 306 | 10×12 348 | 10×16 424 | 13×20 594 | 13×25 690 | 16×30 891 | 22×40 883 | | | | | |
| 1,000 | 8×12 364 | 10×12 424 | 10×16 536 | 10×20 632 | 13×20 791 | 13×25 955 | 16×30 1,225 | 22×35 1,664 | | | | | | |
| 2,200 | 10×16 624 | 10×20 748 | 13×20 958 | 13×25 1,120 | 16×25 1,346 | 16×35 1,686 | 22×35 2,104 | | | | | | | |
| 3,300 | 10×20 812 | 13×20 1,016 | 13×25 1,227 | 16×25 1,454 | 16×35 1,788 | 22×35 2,284 | 22×40 2,513 | | | | | | | |
| 4,700 | 13×20 1,067 | 13×25 1,230 | 16×25 1,535 | 16×35 1,863 | 18×40 2,219 | 22×40 2,622 | | | | | | | | |
| 6,800 | 13×25 1,331 | 16×25 1,590 | 16×35 1,976 | 18×40 2,327 | 22×40 2,712 | | | | | | | | | |
| 10,000 | 16×25 1,657 | 18×30 1,888 | 18×40 2,289 | 22×40 2,788 | | | | | | | | | | |
| 15,000 | 16×35 2,115 | 18×35 2,350 | 22×40 2,747 | | | | | | | | | | | |

Note:10×12 can also be 8×15 as per customer's request.