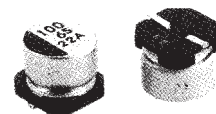


FEATURES

- 85°C, 2000 hours assured
- Surface mount
- RoHS Compliant

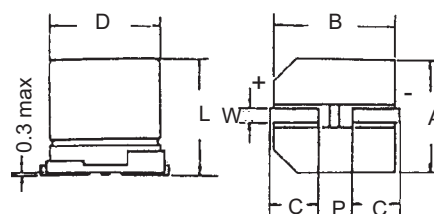


SPECIFICATIONS

| Item | Performance | | | | | | | | | | |
|---|--|-----------------------------------|------|------|--------|------|-----------------------------------|------|------|----|-----|
| Operating Temp. Range | -40°C ~ + 85°C | | | | | | | | | | |
| Capacitance Tolerance | ± 20% (120Hz, 20°C) | | | | | | | | | | |
| Leakage Current (at 20°C) | I = 0.01CV or 3µA (whichever is greater) after 2 minutes, where C = rated capacitance in µF V = rated DC working voltage | | | | | | | | | | |
| Dissipation Factor Tan δ at 120 Hz, 20°C | Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | |
| | Tan δ (max) | 0.28 | 0.24 | 0.2 | 0.14 | 0.12 | 0.10 | 0.10 | 0.10 | | |
| Low Temperature Characteristics (at 120Hz) | Rated Voltage | | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
| | Impedance Ratio Maximum | Z(-25°C) / Z(+20°C) | | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | Z(-40°C) / Z(+20°C) | | 8 | 5 | 4 | 3 | 3 | 3 | 3 | 3 |
| Life Test | Test Time | Load Life | | | | | Shelf Life | | | | |
| | | 2000 Hrs | | | | | 1000 Hrs | | | | |
| | Capacitance Change | ≤ ± 20% | | | | | ≤ ± 20% | | | | |
| | Dissipation Factor | Less than 200% of specified value | | | | | Less than 200% of specified value | | | | |
| | Leakage Current | Within specified value | | | | | Within specified value | | | | |
| Ripple Current & Frequency Multipliers | VDC(V) \ Freq. (Hz) | 50 | 120 | 1K | 10K up | | | | | | |
| | Under 16 | 0.80 | 1.00 | 1.15 | 1.25 | | | | | | |
| | 25 ~ 35 | 0.80 | 1.00 | 1.25 | 1.40 | | | | | | |
| | 50 ~ 63 | 0.80 | 1.00 | 1.35 | 1.50 | | | | | | |
| | 100 | 0.70 | 1.00 | 1.35 | 1.50 | | | | | | |
| Standards | JISC 5101-1,-18 | | | | | | | | | | |

PAD SPACING AND DIAMETER

| φ D | L±0.2 | A±0.2 | B±0.2 | C±0.2 | W±0.2 | P±0.2 |
|-----|-----------|-------|-------|-------|------------|-------|
| 8 | 6.5 ± 0.3 | 8.4 | 8.4 | 3.4 | 0.5 to 0.8 | 2.3 |
| 8 | 10 ± 0.5 | 8.4 | 8.4 | 3.0 | 0.7 to 1.1 | 3.1 |
| 10 | 10 ± 0.5 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 |



PART NUMBER EXAMPLE VE 221 M 1C TR 080 100

DIMENSION & PERMISSIBLE RIPPLE CURRENT

| μF | Contents | 4V (0G) | | 6.3V (0J) | | 10V (1A) | | 16V (1C) | | 25V (1E) | |
|------|----------|-----------|-----|-----------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|
| | | ΦD x L | mA | ΦD x L | mA | ΦD x L | mA | ΦD x L | mA | ΦD x L | mA |
| 4.7 | 47 | | | | | | | | | 4 x 5.3 | 19 |
| 10 | 100 | | | | | 4 x 5.3 | 23 | 3 or 4 x 5.3 | 26 (14) | 5 x 5.3 | 32 |
| 22 | 220 | 3 x 5.3 | 14 | 4 x 5.3 | 23 | 5 x 5.3 | 39 | 4 x 5.3 | 30 | 6.3 x 5.3 | 35 |
| | | | | | | | | 5 x 5.3 | 44 | | |
| 33 | 330 | 4 x 5.3 | 31 | 4 x 5.3 | 31 | 4 x 5.3 | 33 | 6.3 x 5.3 | 63 | 5 x 5.3 | 54 |
| | | | | | | 5 x 5.3 | 48 | | | 6.3 x 5.3 | 67 |
| 47 | 470 | 4 x 5.3 | 34 | 4 x 5.3 | 37 | 6.3 x 5.3 | 67 | 5 x 5.3 | 52 | 6.3 x 5.3 | 75 |
| | | | | 5 x 5.3 | 50 | | | 6.3 x 5.3 | 75 | *8 x 6.5 | 155 (98) |
| 68 | 680 | 5 x 5.3 | 54 | 6.3 x 5.3 | 89 | 5 x 5.3 | 63 | 6.3 x 5.3 | 98 | 6.3 x 5.3 | 103 |
| | | | | | | 6.3 x 5.3 | 98 | | | *8 x 6.5 | 155 (109) |
| 100 | 101 | 5 x 5.3 | 58 | 5 x 5.3 | 63 | 5 x 5.3 | 65 | 6.3 x 5.3 | 110 | 6.3 x 7.7 | 124 |
| | | 6.3 x 5.3 | 89 | 6.3 x 5.3 | 98 | 6.3 x 5.3 | 110 | *8 x 6.5 | 155 (108) | 8 x 6.5 | 155 |
| | | | | | | *8 x 6.5 | 155 (108) | | | | |
| 220 | 221 | 6.3 x 5.3 | 110 | 6.3 x 5.3 | 110 | 6.3 x 7.7 | 124 | *8 x 10 | 252 (124) | 8 x 10 | 252 |
| | | | | *8 x 6.5 | 155 (123) | 8 x 6.5 | 155 | | | | |
| 330 | 331 | | | *8 x 6.5 | 155 (139) | 8 x 10 | 252 | 8 x 10 | 252 | 10 x 10 | 458 |
| 470 | 471 | | | 8 x 10 | 252 | 10 x 10 | 458 | 10 x 10 | 458 | | |
| 1000 | 102 | | | 10 x 10 | 458 | 10 x 10 | 458 | | | | |
| 1500 | 152 | | | 10 x 10.3 | 458 | | | | | | |

| μF | Contents | 35V (1V) | | 50V (1H) | | 63V (1J) | | 100V (2A) | |
|------|----------|-----------|-----------|-----------|----------|----------|-----|-----------|-----|
| | | ΦD x L | mA | ΦD x L | mA | ΦD x L | mA | ΦD x L | mA |
| 0.1 | 0R1 | | | 4 x 5.3 | 3 | | | | |
| 0.22 | R22 | | | 4 x 5.3 | 5 | | | | |
| 0.33 | R33 | | | 4 x 5.3 | 6 | | | | |
| 0.47 | R47 | | | 4 x 5.3 | 7 | | | | |
| 1 | 10 | | | 4 x 5.3 | 10 | | | | |
| 2.2 | 2R2 | | | 4 x 5.3 | 15 | | | | |
| 3.3 | 3R3 | 3 x 5.3 | 8 | 4 x 5.3 | 19 | | | | |
| 4.7 | 4R7 | 4 x 5.3 | 20 | 4 x 5.3 | 20 | | | | |
| | | | | 5 x 5.3 | 26 | | | | |
| 10 | 100 | 4 x 5.3 | 27 | 5 x 5.3 | 34 | 8 x 6.5 | 75 | 8 x 10 | 94 |
| | | 5 x 5.3 | 34 | 6.3 x 5.3 | 44 | | | | |
| 22 | 220 | 5 x 5.3 | 47 | 6.3 x 5.3 | 59 | 8 x 10 | 139 | 10 x 10 | 189 |
| | | 6.3 x 5.3 | 59 | *8 x 6.5 | 155 (65) | | | | |
| 33 | 330 | 6.3 x 5.3 | 67 | 6.3 x 7.7 | 82 | 8 x 10 | 139 | 10 x 10 | 189 |
| | | *8 x 6.5 | 155 (185) | 8 x 6.5 | 155 | | | | |
| 47 | 470 | *8 x 6.5 | 155 (98) | 6.3 x 7.7 | 98 | 10 x 10 | 226 | | |
| | | | | 8 x 10 | 252 | | | | |
| 68 | 680 | 6.3 x 7.7 | 109 | 8 x 10 | 252 | 10 x 10 | 226 | | |
| | | 8 x 6.5 | 155 | | | | | | |
| 100 | 101 | *8 x 10 | 252 | 8 x 10 | 252 | 10 x 10 | 226 | | |
| | | | | 10 x 10 | 458 | | | | |
| 220 | 221 | 10 x 10 | 458 | 10 x 10.3 | 458 | | | | |

* 6.3 x 7.7 is available and () is ripple current