

- Three kinds of terminal are available for your use.
- Withstanding 2000 hours application of high ripple current at 85°C.

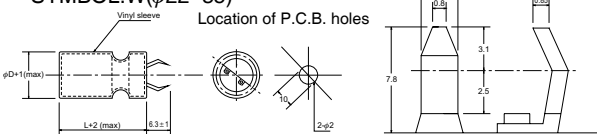


● SPECIFICATION

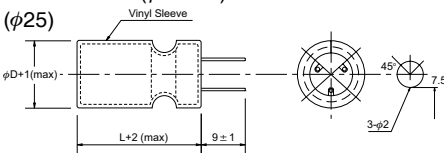
| Item | Characteristic | | | | | | | | | | | | | |
|---|---|--------------|-----------------------------------|------|------|---------|--------------|------|---------|---------|---------|-----|-----|-----|
| Operation Temperature Range | -40 ~ +85°C | | | | | | -25 ~ +85°C | | | | | | | |
| Rated Working Voltage | 10 ~ 100VDC | | | | | | 160 ~ 450VDC | | | | | | | |
| Capacitance Tolerance (120Hz 20°C) | ±20%(M) | | | | | | | | | | | | | |
| Leakage Current (20°C) | I ≤ 0.03CV or 3 (mA) *Whichever is smaller after 5 minutes I : Leakage Current(μA) C : Rated Capacitance(μF) V : Working Voltage(V) | | | | | | | | | | | | | |
| Surge Voltage (20°C) | W.V. | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
| | S.V. | 13 | 20 | 32 | 44 | 63 | 79 | 125 | 200 | 250 | 300 | 400 | 450 | 500 |
| Dissipation Factor (tan δ) (120Hz 20°C) | Rated Voltage (V) | | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160~250 | 350~450 | | | |
| | tan δ | CV ≤ 100,000 | 0.50 | 0.40 | 0.35 | 0.25 | 0.25 | 0.25 | 0.20 | 0.20 | 0.25 | | | |
| | | CV > 100,000 | 0.60 | 0.50 | 0.45 | 0.35 | 0.30 | 0.30 | 0.25 | 0.20 | 0.25 | | | |
| Low Temperature Stability | Impedance ratio at 120Hz | | | | | | | | | | | | | |
| | Rated Voltage (V) | | 10~100 | | | 160~250 | | | 350~450 | | | | | |
| | -25°C / +20°C | | 4 | | | 6 | | | 8 | | | | | |
| | -40°C / +20°C | | 15 | | | — | | | — | | | | | |
| Load Life | After 2000 hours application of W.V. at +85°C, the capacitor shall meet the following limits. | | | | | | | | | | | | | |
| | Capacitance Change | | ≤ ±20% of initial value | | | | | | | | | | | |
| | Dissipation Factor | | ≤ 150% of initial specified value | | | | | | | | | | | |
| | Leakage current | | ≤ initial specified value | | | | | | | | | | | |
| Shelf Life | At +85°C no voltage application after 1000 hours, the capacitor shall meet the limits for load life characteristics. (with voltage treatment) | | | | | | | | | | | | | |

● TERMINAL TYPE

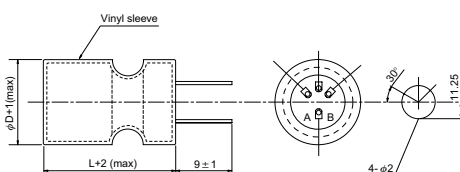
▲ P.C.B. TERMINAL (SNAP IN) SYMBOL:W(φ22~35)



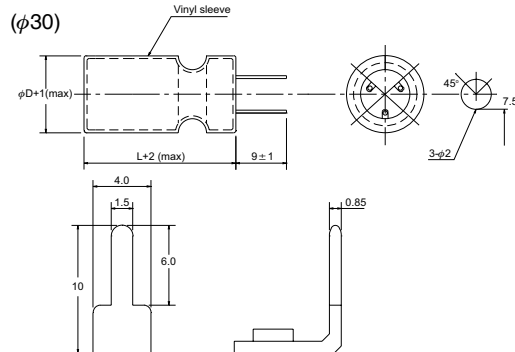
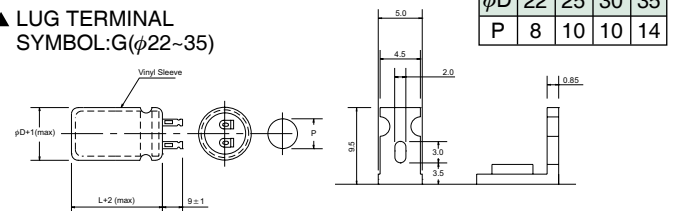
▲ P.C.B. TERMINAL SYMBOL:V(φ25~35)



(φ35) A.B. blank terminals



▲ LUG TERMINAL SYMBOL:G(φ22~35)



● RIPPLE CURRENT COEFFICIENTS

| Temperature(°C) | 45 | 60 | 70 | 85 |
|-----------------|------|------|------|------|
| Multiplier | 1.55 | 1.30 | 1.20 | 1.00 |

| Frequency(Hz) | 60 | 120 | 1k | 10k | 100k |
|---------------|------------|------|------|------|------|
| W.V. | Multiplier | | | | |
| 10~35V | 0.90 | 1.00 | 1.05 | 1.10 | 1.10 |
| 50~100V | 0.90 | 1.00 | 1.15 | 1.20 | 1.20 |
| 160~250V | 0.80 | 1.00 | 1.35 | 1.45 | 1.50 |
| 350~450V | 0.90 | 1.00 | 1.30 | 1.40 | 1.45 |

● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)
Max ripple current : A(rms) 85°C 120Hz

| μF | V(Code) Code Item | 10 (1A) | | 16 (1C) | | 25 (1E) | | 35 (1V) | |
|-------|----------------------|---------|------|---------|-------|---------|------|---------|------|
| | | DxL | R.C. | DxL | R.C. | DxL | R.C. | DxL | R.C. |
| 3300 | 332 | | | | | 22x25 | 2.03 | 22x25 | 2.04 |
| | | | | | | 25x25 | 2.09 | 25x25 | 2.10 |
| 4700 | 472 | | | 22x25 | 1.81 | 22x30 | 2.43 | 22x30 | 2.41 |
| | | | | 25x25 | 2.21 | 25x25 | 2.31 | 30x25 | 2.44 |
| 6800 | 682 | | | 22x25 | 2.40 | 22x35 | 2.87 | 22x40 | 2.98 |
| | | | | 25x25 | 2.47 | 30x25 | 2.72 | 30x30 | 2.86 |
| 8200 | 822 | 22x25 | 2.39 | 22x30 | 2.70 | 22x40 | 3.16 | 22x45 | 3.25 |
| | | 25x25 | 2.46 | 30x25 | 2.73 | 30x30 | 3.03 | 35x30 | 3.42 |
| 10000 | 103 | 22x30 | 2.69 | 22x35 | 3.00 | 22x45 | 3.45 | 25x45 | 3.41 |
| | | 25x25 | 2.57 | 30x25 | 2.84 | 30x30 | 3.14 | 35x30 | 3.51 |
| 12000 | 123 | 22x30 | 2.81 | 22x40 | 3.30 | 22x50 | 3.74 | 25x50 | 3.68 |
| | | 30x25 | 2.84 | 30x30 | 3.16 | 35x30 | 3.75 | 35x35 | 3.84 |
| 15000 | 153 | 22x35 | 3.14 | 22x45 | 3.62 | 25x45 | 3.78 | 30x45 | 4.08 |
| | | 30x25 | 2.97 | 35x25 | 3.55 | 35x30 | 3.89 | 35x40 | 4.47 |
| 22000 | 223 | 22x45 | 3.79 | 25x45 | 4.25 | 30x50 | 4.94 | 35x45 | 5.68 |
| | | 30x30 | 3.45 | 35x30 | 4.37 | 35x40 | 5.17 | | |
| 33000 | 333 | 25x45 | 4.99 | 30x45 | 5.48 | 35x50 | 6.95 | 35x70 | 8.42 |
| | | 35x30 | 4.89 | 35x40 | 6.01 | | | | |
| 47000 | 473 | 30x45 | 5.97 | 35x45 | 7.53 | 35x60 | 8.97 | | |
| | | 35x40 | 6.54 | | | | | | |
| 68000 | 683 | 35x50 | 8.64 | 35x60 | 10.24 | | | | |

| μF | V(Code) Code Item | 50 (1H) | | 63 (1J) | | 100 (2A) | |
|-------|----------------------|---------|------|---------|------|----------|------|
| | | DxL | R.C. | DxL | R.C. | DxL | R.C. |
| 820 | 821 | | | | | 22x30 | 1.55 |
| | | | | | | 25x25 | 1.54 |
| 1000 | 102 | | | 22x25 | 1.42 | 22x30 | 1.71 |
| | | | | 25x25 | 1.46 | 30x25 | 2.20 |
| 1500 | 152 | | | 22x25 | 1.74 | 22x40 | 2.38 |
| | | | | 30x25 | 1.81 | 35x30 | 2.54 |
| 2200 | 222 | 22x25 | 1.92 | 22x30 | 2.08 | 25x45 | 2.77 |
| | | 25x25 | 1.98 | 30x25 | 2.10 | 35x30 | 2.85 |
| 3300 | 332 | 22x35 | 2.51 | 22x45 | 2.81 | 30x45 | 3.27 |
| | | 30x25 | 2.38 | 35x25 | 2.76 | 35x35 | 3.39 |
| 4700 | 472 | 22x40 | 2.89 | 25x45 | 3.11 | 35x45 | 4.01 |
| | | 35x25 | 2.99 | 35x30 | 3.20 | | |
| 6800 | 682 | 25x45 | 3.37 | 30x45 | 3.54 | 35x60 | 4.85 |
| | | 35x30 | 3.46 | 35x35 | 3.68 | | |
| 8200 | 822 | 25x50 | 3.62 | 30x50 | 3.81 | 35x70 | 5.30 |
| | | 35x35 | 3.79 | 35x40 | 3.99 | | |
| 10000 | 103 | 30x45 | 3.72 | 35x50 | 4.48 | 35x70 | 5.49 |
| | | 35x35 | 3.86 | | | | |
| 12000 | 123 | 35x45 | 4.53 | 35x60 | 5.13 | | |
| 15000 | 153 | 35x50 | 5.30 | | | | |

● CASE SIZE & MAX RIPPLE CURRENT

Case size : D x L (mm)
 Max ripple current : A(rms) 85°C 120Hz

| μF | V(Code) | | 160 (2C) | | 200 (2D) | | 250 (2E) | |
|------|---------|------|----------|------|----------|------|----------|------|
| | Code | Item | DxL | R.C. | DxL | R.C. | DxL | R.C. |
| 220 | | 221 | | | 22x25 | 0.97 | 22x30 | 1.14 |
| | | | | | 25x25 | 1.00 | 25x25 | 1.09 |
| 330 | | 331 | 22x25 | 1.11 | 22x30 | 1.29 | 22x40 | 1.58 |
| | | | 25x25 | 1.14 | 25x25 | 1.23 | 30x25 | 1.42 |
| 470 | | 471 | 22x35 | 1.53 | 22x40 | 1.74 | 22x50 | 2.09 |
| | | | 30x25 | 1.45 | 30x25 | 1.55 | 30x35 | 1.93 |
| 560 | | 561 | 22x35 | 1.67 | 22x45 | 2.00 | 25x45 | 2.29 |
| | | | 30x25 | 1.58 | 30x30 | 1.82 | 35x30 | 2.22 |
| 680 | | 681 | 22x40 | 1.95 | 25x40 | 2.14 | 30x40 | 2.46 |
| | | | 30x30 | 1.87 | 30x35 | 2.14 | 35x35 | 2.68 |
| 820 | | 821 | 22x50 | 2.36 | 25x50 | 2.59 | 30x45 | 2.83 |
| | | | 30x30 | 2.05 | 35x30 | 2.55 | 35x40 | 3.11 |
| 1000 | | 102 | 25x45 | 2.55 | 30x45 | 2.87 | 35x45 | 3.60 |
| | | | 35x30 | 2.62 | 35x35 | 2.99 | | |
| 1500 | | 152 | 30x45 | 3.28 | 35x50 | 4.24 | | |
| | | | | | | | | |

| μF | V(Code) | | 350 (2V) | | 400 (2G) | | 450 (2W) | |
|-----|---------|------|----------|------|----------|------|----------|------|
| | Code | Item | DxL | R.C. | DxL | R.C. | DxL | R.C. |
| 47 | | 470 | | | 22x25 | 0.43 | 22x25 | 0.36 |
| | | | | | 25x25 | 0.45 | 25x25 | 0.37 |
| 100 | | 101 | 22x30 | 0.66 | 22x30 | 0.68 | 22x35 | 0.61 |
| | | | 25x25 | 0.63 | 25x25 | 0.65 | 25x30 | 0.59 |
| 150 | | 151 | 22x35 | 0.86 | 22x40 | 0.95 | 22x50 | 0.88 |
| | | | 30x25 | 0.82 | 30x25 | 0.85 | 30x30 | 0.76 |
| 220 | | 221 | 22x45 | 1.17 | 22x50 | 1.27 | 25x50 | 1.08 |
| | | | 30x30 | 1.06 | 25x40 | 1.17 | 35x35 | 1.13 |
| 330 | | 331 | 25x50 | 1.53 | 30x45 | 1.59 | 35x45 | 1.53 |
| | | | 35x35 | 1.60 | 35x35 | 1.65 | | |
| 470 | | 471 | 30x50 | 1.92 | 35x45 | 2.19 | | |
| | | | 35x40 | 2.01 | | | | |
| 560 | | 561 | 35x45 | 2.31 | | | | |
| | | | | | | | | |