HITANO ENTERPRISE CORP ®

# ELV SERIES

- **SMD TYPE. Reflow Soldering is available.**
- **Life 2000 hours at 85℃**
- **Available For High Density Mounting**

## Characteristics

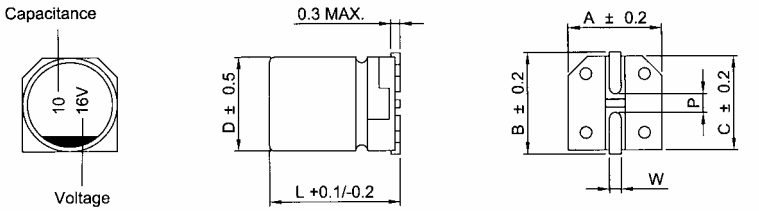
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage Range** | 4 to450 VDC | | | | | | | | | | | |
| **Capacitance Range** | 0.1 to 6800uF | | | | | | | | | | | |
| **Temperature Range** | -40 to +85℃ | | | | | | | | | | | |
| **Capacitance Tolerance** | +20% -20% (at 20℃, 120Hz) | | | | | | | | | | | |
| **Leakage Current** | SIZE A~F: I≤0.01CV or 3uA, whichever is greater 2 minutes after Rated Voltage applied<br>SIZE G~I(6.3V~100V): I≤0.03CV whichever is greater 1 minutes after Rated Voltage applied<br>SIZE G~I (160V~450V): I≤0.04CV +100Ua whichever is greater 1 minutes after Rated Voltage applied | | | | | | | | | | | |
| **Dissipation Factor ( tan δ )Max** (at 20℃, 120Hz) | Voltage (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160~250 | 400~450 |
| | SIZE A~C | 0.4 | 0.26 | 0.22 | 0.18 | 0.16 | 0.13 | 0.12 | - | - | - | - |
| | SIZE D~F | - | 0.35 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 | - | - |
| | SIZE G~I | - | 0.38 | 0.34 | 0.30 | 0.26 | 0.22 | 0.18 | 0.14 | 0.1 | 0.20 | 0.25 |

| **Stability at Low Temperature** (at 120Hz) | Voltage (V) | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160~250 | 400~450 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Z -25℃ /Z +20℃ | SIZE A~F | 7 | 4 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | - | - |
| | | SIZE G~I | | | 5 | 4 | 2 | 3 | 2 | 2 | 2 | 3 | 6 |
| | Z-40℃ /Z 20℃ | SIZE A~F | 17 | 17 | 10 | 4 | 3 | 2 | 2 | 3 | 4 | | |
| | | SIZE G~I | | | 12 | 10 | 5 | 4 | 3 | 3 | 3 | 6 | 10 |

| | | | |
|---|---|---|---|
| **Load Life** | After the rated voltage has been applied for 2000 hours at 85℃ | Capacitance change | Within ±25% of initial value |
| | | D.F. tanδ | 200% or less of initial specified value |
| | | Leakage current | Less than Initial specified value |
| **Shelf Life** | After storage for 1000 hours at 85℃, with no voltage applied and being stabilized at +20℃, Capacitor shall meet the limit specified in load life. | | |

## Diagram of dimensions

| SIZE | Dϕ | L | A | C | B | W | P |
|---|---|---|---|---|---|---|---|
| A | 4 | 5.5 | 4.3 | 4.3 | 5.1 | 0.5~0.8 | 1.0 |
| B | 5 | 5.5 | 5.3 | 5.3 | 5.9 | 0.5~0.8 | 1.4 |
| C | 6.3 | 5.5 | 6.6 | 6.6 | 7.2 | 0.5~0.8 | 2.0 |
| C8 | 6.3 | 7.7 | 6.6 | 6.6 | 7.2 | 0.5~0.8 | 2.0 |
| D | 8 | 6.5 | 8.3 | 8.3 | 9.0 | 0.5~0.8 | 2.2 |
| E | 8 | 10.5 | 8.3 | 8.3 | 9.0 | 0.8~1.1 | 3.1 |
| F | 10 | 10.5 | 10.3 | 10.3 | 11.0 | 0.8~1.1 | 4.5 |
| G | 12.5 | 13.5 | 12.8 | 12.8 | 14.4 | 1.1~1.4 | 4.6 |
| H | 12.5 | 16.0 | 12.8 | 12.8 | 14.4 | 1.1~1.4 | 4.6 |
| I | 16 | 16.5 | 16.3 | 16.3 | 17.6 | 1.8~12.2 | 6.0 |



## Case size & Maximum Ripple Current

mA rms 85℃ 120Hz

| Cap. \ WV | 4 | | 6.3 | | 10 | | 16 | | 25 | | 35 | | 50 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| uF | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | | | | | | | | | | | | | A | 1.0 |
| 0.22 | | | | | | | | | | | | | A | 2.0 |
| 0.33 | | | | | | | | | | | | | A | 2.8 |
| 0.47 | | | | | | | | | | | | | A | 4.0 |
| 1 | | | | | | | | | | | | | A | 8.4 |
| 2.2 | | | | | | | | | | | | | A | 13 |
| 3.3 | | | | | | | | | | | | | A | 17 |
| 4.7 | | | | | | | | | | | | | A | 20 |
| 10 | | | | | A | 20 | A | 23 | A | 27 | A, B | 22/29 | B, C | 30/33 |
| 22 | | | A | 28 | A | 33 | A, B | 30/39 | B, C | 38/58 | B, C | 39/60 | C, D | 45/80 |
| 33 | A | 28 | A | 37 | A | 41 | B | 44 | B, C | 46/65 | C | 58 | C8, D | 59/155 |
| 47 | A | 33 | A , B | 40/46 | B | 47 | B, C | 52/58 | C | 60 | C, D | 70/155 | C8, D | 105/140 |
| 100 | B | 56 | B, C | 47/71 | B, C | 54/76 | C | 86 | C8,D | 124/160 | C8, D | 132/175 | E, F | 181/195 |
| 220 | C | 96 | C, D | 143/160 | C8, D | 173/250 | C8, D | 162/280 | E | 250 | E, F | 246/265 | F | 320 |
| 330 | C8, D | 145/152 | C8, D | 188/190 | E | 330 | E | 330 | E,F | 305 | F | 360 | G | 600 |
| 470 | C8, D | 200/220 | E | 265 | E | 290 | E, F | 275/330 | F | 375 | G | 600 | I | 740 |
| 1000 | E | 344 | E, F | 372/400 | F | 415 | G | 820 | G | 820 | I | 1100 | | |
| 2200 | | | G | 890 | H | 960 | I | 1500 | I | 1450 | | | | |
| 3300 | | | H | 1000 | I | 1300 | I | 1500 | | | | | | |
| 4700 | | | I | 1400 | I | 1300 | | | | | | | | |
| 6800 | | | I | 1700 | | | | | | | | | | |

| Cap. \ WV | 63 | | 100 | | 160 | | 200 | | 250 | | 400 | | 450 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| uF | Size | Ripple | Size | Ripple | Size | Ripple | | | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | A | 1.3 | | | | | | | | | | | | |
| 0.22 | A | 3 | | | | | | | | | | | | |
| 0.33 | A | 4 | | | | | | | | | | | | |
| 0.47 | A | 5 | | | | | | | | | | | | |
| 1 | A | 8 | | | | | | | | | | | | |
| 2.2 | A | 12 | | | | | | | | | | | | |
| 3.3 | B | 17 | | | | | | | | | | | | |
| 4.7 | B | 20 | | | | | | | | | G | 120 | G | 120 |
| 10 | C | 32 | E | 90 | | | | | G | 150 | G | 120 | H | 130 |
| 22 | C8 | 60 | E | 90 | | | G | 240 | G | 150 | I | 140 | I | 140 |
| 33 | C8 | 60 | F | 120 | G | 240 | H | 310 | H | 240 | I | 140 | | |
| 47 | E | 130 | F | 120 | H | 370 | I | 340 | I | 340 | | | | |
| 68 | F | 170 | G | 380 | I | 500 | I | 340 | | | | | | |
| 100 | G | 380 | G | 380 | | | | | | | | | | |
| 220 | G | 580 | I | 500 | | | | | | | | | | |
| 330 | H | 720 | | | | | | | | | | | | |
| 470 | I | 950 | | | | | | | | | | | | |