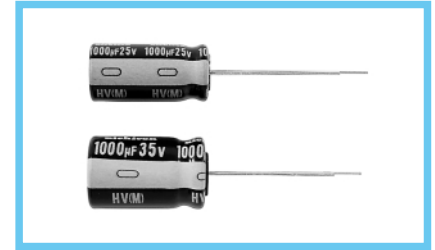
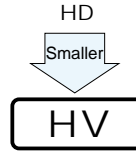


HV High Ripple Low Impedance series



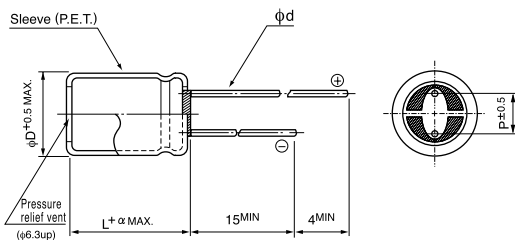
- Lower impedance at high frequency range.
- Smaller case size and high ripple current.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

| Item | Performance Characteristics | | | | | | |
|---|---|--|------|------|------|------|------------|
| Category Temperature Range | -40 ~ +105°C | | | | | | |
| Rated Voltage Range | 6.3 ~ 35V | | | | | | |
| Rated Capacitance Range | 47 ~ 8200µF | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | |
| Leakage Current | After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (µA), whichever is greater. | | | | | | |
| tan δ | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 120Hz 20°C |
| | tan δ (MAX.) | 0.21 | 0.18 | 0.15 | 0.13 | 0.11 | |
| For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. | | | | | | | |
| Stability at Low Temperature | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 120Hz |
| | Impedance ratio ZT / Z20 (MAX.) | Z-25°C / Z+20°C | 2 | 2 | 2 | 2 | |
| | | Z-40°C / Z+20°C | 3 | 3 | 3 | 3 | 3 |
| Endurance | After an application of D.C. bias voltage plus the rated ripple current for 6000 hours (φD ≤ 6.3 : 5000 hours) at 105°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristic requirements listed below. | | | | | | |
| | Capacitance change | Within ± 25% of initial value (6.3V 10V : ± 30%) | | | | | |
| | tan δ | 200% or less of initial specified value | | | | | |
| | Leakage current | Initial specified value or less | | | | | |
| Marking | Printed with white color letter on black sleeve. | | | | | | |

Radial Lead Type



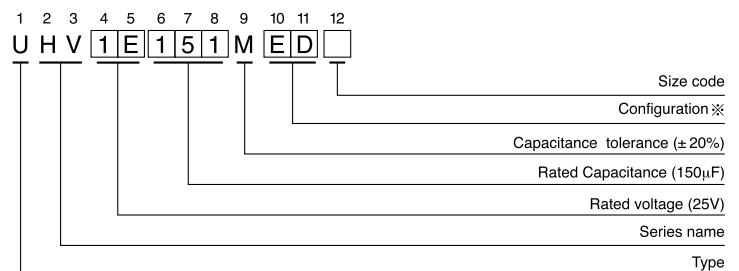
| | | |
|---|----------|-----|
| α | (L < 20) | 1.5 |
| | (L ≥ 20) | 2.0 |

| | (mm) | | | | | |
|----|------|-----|-----|-----|------------------|-----|
| φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 |
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 [※] | 0.8 |

※In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

- Please refer to page 21 about the end seal configuration.

Type numbering system (Example : 25V 150µF)



※ Configuration

| φ D | Pb-free leadwire Pb-free PET sleeve |
|-----------|--|
| 5 | DD |
| 6.3 | ED |
| 8 · 10 | PD |
| 12.5 · 16 | HD |

Please refer to page 21, 22, 23 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.

- Dimension table in next page.

HV series

Standard ratings

| V (Code) Cap.(μF) Item Code | | 6.3 (0J) | | | | 10 (1A) | | | | 16 (1C) | | | |
|--------------------------------|-----|------------------------------|--------------------|----------------|---|------------------------------|--------------------|----------------|---|------------------------------|--------------------|----------------|---|
| | | Case size φ D × L (mm) | Impedance (Ω) MAX. | | Rated ripple (mArms) 105°C / 100kHz | Case size φ D × L (mm) | Impedance (Ω) MAX. | | Rated ripple (mArms) 105°C / 100kHz | Case size φ D × L (mm) | Impedance (Ω) MAX. | | Rated ripple (mArms) 105°C / 100kHz |
| | | | 20°C / 100kHz | -10°C / 100kHz | | | 20°C / 100kHz | -10°C / 100kHz | | | 20°C / 100kHz | -10°C / 100kHz | |
| 100 | 101 | | | | | | | | | 5 × 11 | 0.23 | 0.76 | 360 |
| 150 | 151 | | | | 5 × 11 | 0.23 | 0.76 | 360 | 6.3 × 11 | 0.10 | 0.33 | 450 | |
| 220 | 221 | 5 × 11 | 0.23 | 0.76 | 360 | 6.3 × 11 | 0.10 | 0.33 | 450 | 6.3 × 11 | 0.10 | 0.33 | 550 |
| 330 | 331 | 6.3 × 11 | 0.10 | 0.33 | 460 | 6.3 × 11 | 0.10 | 0.33 | 550 | 8 × 11.5 | 0.059 | 0.181 | 830 |
| 470 | 471 | 6.3 × 11 | 0.10 | 0.33 | 550 | 8 × 11.5 | 0.059 | 0.181 | 820 | 8 × 11.5 | 0.059 | 0.181 | 990 |
| 680 | 681 | 8 × 11.5 | 0.059 | 0.181 | 900 | 8 × 11.5 | 0.059 | 0.181 | 990 | 10 × 12.5 | 0.043 | 0.133 | 1360 |
| | | | | | | | | | | ▲ 8 × 15 | 0.046 | 0.143 | 1330 |
| 820 | 821 | 8 × 11.5 | 0.059 | 0.181 | 990 | 10 × 12.5 | 0.043 | 0.133 | 1250 | 10 × 16 | 0.030 | 0.095 | 1650 |
| 1000 | 102 | 10 × 12.5 | 0.043 | 0.133 | 1250 | 10 × 12.5 | 0.043 | 0.133 | 1360 | 10 × 16 | 0.030 | 0.095 | 1815 |
| | | | | | | ▲ 8 × 15 | 0.046 | 0.143 | 1330 | ▲ 8 × 20 | 0.031 | 0.105 | 1550 |
| 1200 | 122 | 10 × 12.5 | 0.043 | 0.133 | 1360 | 10 × 16 | 0.030 | 0.095 | 1650 | 10 × 20 | 0.019 | 0.057 | 1930 |
| | | ▲ 8 × 15 | 0.046 | 0.143 | 1330 | | | | | | | | |
| 1500 | 152 | 8 × 20 | 0.031 | 0.105 | 1550 | 10 × 16 | 0.030 | 0.095 | 1815 | 10 × 20 | 0.019 | 0.057 | 2160 |
| | | | | | | ▲ 8 × 20 | 0.031 | 0.105 | 1550 | | | | |
| 1800 | 182 | 10 × 16 | 0.030 | 0.095 | 1815 | 10 × 20 | 0.019 | 0.057 | 2160 | 10 × 25 | 0.017 | 0.051 | 2475 |
| 2200 | 222 | 10 × 20 | 0.019 | 0.057 | 2160 | 10 × 25 | 0.017 | 0.051 | 2475 | 12.5 × 20 | 0.016 | 0.041 | 2725 |
| 2700 | 272 | 10 × 25 | 0.017 | 0.051 | 2475 | 12.5 × 20 | 0.016 | 0.041 | 2450 | 12.5 × 25 | 0.014 | 0.036 | 3190 |
| 3300 | 332 | 12.5 × 20 | 0.016 | 0.041 | 2500 | 12.5 × 20 | 0.016 | 0.041 | 2725 | 12.5 × 31.5 | 0.012 | 0.031 | 3795 |
| | | | | | | | | | | ▲ 16 × 20 | 0.014 | 0.036 | 3575 |
| 3900 | 392 | 12.5 × 20 | 0.016 | 0.041 | 2725 | 12.5 × 25 | 0.014 | 0.036 | 3190 | 12.5 × 35.5 | 0.011 | 0.029 | 3925 |
| 4700 | 472 | 12.5 × 25 | 0.014 | 0.036 | 3190 | 12.5 × 31.5 | 0.012 | 0.031 | 3795 | 16 × 25 | 0.012 | 0.033 | 3990 |
| | | | | | | ▲ 16 × 20 | 0.014 | 0.036 | 3575 | | | | |
| 5600 | 562 | 12.5 × 31.5 | 0.012 | 0.031 | 3795 | 12.5 × 35.5 | 0.011 | 0.029 | 3925 | | | | |
| 6800 | 682 | 12.5 × 35.5 | 0.011 | 0.029 | 3925 | 16 × 25 | 0.012 | 0.033 | 3990 | | | | |
| | | ▲ 16 × 20 | 0.014 | 0.036 | 3575 | | | | | | | | |
| 8200 | 822 | 16 × 25 | 0.012 | 0.033 | 3990 | | | | | | | | |

| V (Code) Cap.(μF) Item Code | | 25 (1E) | | | | 35 (1V) | | | |
|--------------------------------|-----|------------------------------|--------------------|----------------|---|------------------------------|--------------------|----------------|---|
| | | Case size φ D × L (mm) | Impedance (Ω) MAX. | | Rated ripple (mArms) 105°C / 100kHz | Case size φ D × L (mm) | Impedance (Ω) MAX. | | Rated ripple (mArms) 105°C / 100kHz |
| | | | 20°C / 100kHz | -10°C / 100kHz | | | 20°C / 100kHz | -10°C / 100kHz | |
| 47 | 470 | | | | 5 × 11 | 0.23 | 0.76 | 360 | |
| 68 | 680 | 5 × 11 | 0.23 | 0.76 | 360 | 6.3 × 11 | 0.10 | 0.33 | 450 |
| 100 | 101 | 6.3 × 11 | 0.10 | 0.33 | 450 | 6.3 × 11 | 0.10 | 0.33 | 550 |
| 150 | 151 | 6.3 × 11 | 0.10 | 0.33 | 550 | 8 × 11.5 | 0.059 | 0.181 | 820 |
| 220 | 221 | 8 × 11.5 | 0.059 | 0.181 | 810 | 8 × 11.5 | 0.059 | 0.181 | 990 |
| 270 | 271 | 8 × 11.5 | 0.059 | 0.181 | 900 | 8 × 15 | 0.046 | 0.143 | 1330 |
| 330 | 331 | 8 × 11.5 | 0.059 | 0.181 | 990 | 10 × 12.5 | 0.043 | 0.133 | 1360 |
| 390 | 391 | 8 × 15 | 0.046 | 0.143 | 1330 | 8 × 20 | 0.031 | 0.105 | 1550 |
| 470 | 471 | 10 × 12.5 | 0.043 | 0.133 | 1360 | 10 × 16 | 0.030 | 0.095 | 1815 |
| 560 | 561 | 8 × 20 | 0.031 | 0.105 | 1550 | 10 × 20 | 0.019 | 0.057 | 2160 |
| 680 | 681 | 10 × 16 | 0.030 | 0.095 | 1815 | 10 × 25 | 0.017 | 0.051 | 2475 |
| 820 | 821 | 10 × 20 | 0.019 | 0.057 | 2160 | 12.5 × 20 | 0.016 | 0.041 | 2725 |
| 1000 | 102 | 10 × 25 | 0.017 | 0.051 | 2475 | 12.5 × 20 | 0.016 | 0.041 | 2920 |
| 1200 | 122 | 12.5 × 20 | 0.016 | 0.041 | 2180 | 12.5 × 25 | 0.014 | 0.036 | 3190 |
| 1500 | 152 | 12.5 × 20 | 0.016 | 0.041 | 2725 | 12.5 × 31.5 | 0.012 | 0.031 | 3795 |
| | | | | | | ▲ 16 × 20 | 0.014 | 0.036 | 3575 |
| 1800 | 182 | 12.5 × 25 | 0.014 | 0.036 | 3190 | 12.5 × 35.5 | 0.011 | 0.029 | 3925 |
| 2200 | 222 | 12.5 × 31.5 | 0.012 | 0.031 | 3795 | 16 × 25 | 0.012 | 0.033 | 3990 |
| | | ▲ 16 × 20 | 0.014 | 0.036 | 3575 | | | | |
| 2700 | 272 | 12.5 × 35.5 | 0.011 | 0.029 | 3925 | | | | |
| 3300 | 332 | 16 × 25 | 0.012 | 0.033 | 3990 | | | | |

▲ : In this case, 6 will be put at 12th digit of type numbering system.

Frequency coefficient of rated ripple current

| Cap.(μF) | Frequency | | | |
|-------------|-----------|------|-------|--------|
| | 120Hz | 1kHz | 10kHz | 100kHz |
| 47 ~ 150 | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 ~ 560 | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 ~ 1800 | 0.60 | 0.87 | 0.95 | 1.00 |
| 2200 ~ 3900 | 0.75 | 0.90 | 0.95 | 1.00 |
| 4700 ~ 8200 | 0.85 | 0.95 | 0.98 | 1.00 |