

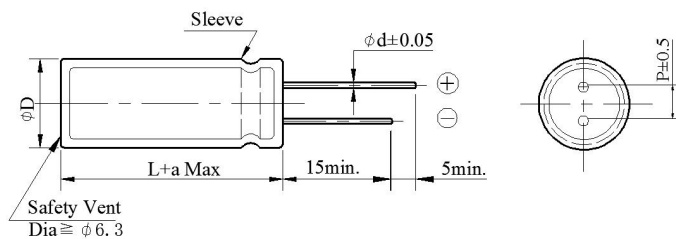
RD Series

- Low impedance and High ripple current.
- Load life 3,000 to 5,000 hours at 105°C.

◆ SPECIFICATIONS

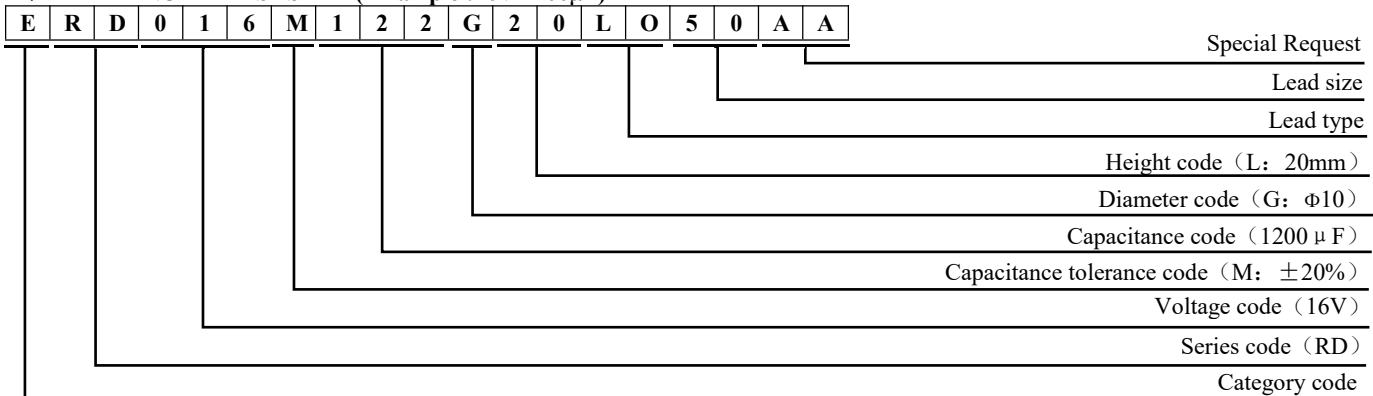
| Item | Performance Characteristics | | | | | | | | | | |
|--|---|-------------------------------|------|------|------|------|------|------|------|------------|-------------------|
| Category Temperature Range | -40~ +105°C | | | | | | | | | | |
| Working Voltage Range | 6.3 ~ 100Vdc | | | | | | | | | | |
| Capacitance Range | 1.0 ~ 10,00μF | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 20°C and 120Hz) | | | | | | | | | | |
| Dissipation Factor (tan δ) (at 25°C, 120Hz) | Rated Voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | |
| | tan δ (Max) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | | |
| The above values should be increased by 0.02 for every additional 1000μF | | | | | | | | | | | |
| Leakage Current | I ≤ 0.01CV or 3μA whichever is greater | | | | | | | | | | |
| | I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V) Apply rated voltage the rated voltage for 2 minutes. | | | | | | | | | | |
| Low Temperature Characteristics Impedance Ratio(MAX) | Rated Voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | (at 120Hz) | |
| | Z(-25°C)/Z(+25°C) | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| | Z(-40°C)/Z(+25°C) | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 3,000~5,000 hours at 105°C. | | | | | | | | | | |
| | Capacitance change | ≒ ±20% of the initial value | | | | | | | | Size | Life time (hours) |
| | Dissipation factor(tan δ) | ≒ 200% of the specified value | | | | | | | | ≒ 6.3Φ | 3,000 |
| | Leakage current | ≒ specified value | | | | | | | | 8Φ~10Φ | 4,000 |
| Shelf Life | The following requirements shall be satisfied when the capacitor are restored to 20°C after the rated voltage applied for 1,000 hours at 105°C without voltage applied. | | | | | | | | | | |
| | Capacitance change | ≒ ±20% of the initial value | | | | | | | | ≒ 13Φ | 5,000 |
| | Dissipation factor(tan δ) | ≒ 200% of the specified value | | | | | | | | | |
| | Leakage current | ≒ 200% of the specified value | | | | | | | | | |
| Others | Conforms to JIS-C-5101-4 (1998) and IEC 60384-4 | | | | | | | | | | |

◆ DIMENSIONS(mm)



| ΦD | 5 | 6.3 | 8 | 10 | 12.5/13 | 16 | 18 |
|----|------------------------------------|-----|---------|-----|---------|-----|-----|
| ΦD | ΦD ± 0.5 Max | | | | | | |
| Φd | 0.5 | 0.5 | 0.5/0.6 | 0.6 | 0.6 | 0.8 | 0.8 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| a | < 20 L ± 1.5Max ≥ 20 L ± 2.0Max | | | | | | |

◆ PART NUMBER SYSTEM(Example :16V 1200μF)



RD Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 100kHz.

| WV(V) | Nominal capacitance (uF) | Case size ΦD×L (mm) | Impedance (Ωmax/100kHz) 25°C | Max. Rated Ripple current @105°C/100kHz (mA rms) | WV(V) | Nominal capacitance (uF) | Case size ΦD×L (mm) | Impedance (Ωmax/100kHz) 25°C | Max. Rated Ripple current @105°C/100kHz (mA rms) |
|-------|--------------------------|---------------------|------------------------------|--|-------|--------------------------|---------------------|------------------------------|--|
| 6.3 | 100 | 5×11 | 0.650 | 135 | 10 | 100 | 5×11 | 0.580 | 180 |
| | 220 | 6.3×11 | 0.400 | 235 | | 220 | 5×11 | 0.380 | 245 |
| | 330 | 6.3×11 | 0.260 | 320 | | 330 | 8×12 | 0.140 | 470 |
| | 470 | 8×12 | 0.180 | 404 | | 470 | 6.3×12 | 0.170 | 496 |
| | 560 | 8×12 | 0.170 | 450 | | 470 | 8×12 | 0.120 | 560 |
| | 680 | 8×12 | 0.150 | 600 | | 680 | 8×12 | 0.100 | 623 |
| | 820 | 8×12 | 0.120 | 750 | | 1000 | 8×12 | 0.080 | 810 |
| | 1000 | 8×12 | 0.095 | 833 | | 1000 | 8×14 | 0.070 | 878 |
| | 1200 | 8×20 | 0.072 | 990 | | 1200 | 10×20 | 0.046 | 1100 |
| | 1500 | 10×20 | 0.065 | 1330 | | 1500 | 10×20 | 0.045 | 1140 |
| | 2200 | 10×20 | 0.062 | 1380 | | 2200 | 13×20 | 0.035 | 1600 |
| | 2700 | 10×30 | 0.055 | 1810 | | 2700 | 13×25 | 0.034 | 1645 |
| | 3300 | 13×20 | 0.060 | 1850 | | 3300 | 13×25 | 0.027 | 1830 |
| | 3900 | 13×25 | 0.058 | 2130 | | 3900 | 13×30 | 0.024 | 2250 |
| | 4700 | 13×25 | 0.055 | 2280 | | 4700 | 13×35 | 0.020 | 2280 |
| | 5600 | 12.5×25 | 0.050 | 2430 | | 5600 | 13×40 | 0.017 | 3050 |
| | 6800 | 13×40 | 0.038 | 3050 | | 6800 | 16×32 | 0.017 | 3050 |
| | 8200 | 16×32 | 0.032 | 3050 | | 8200 | 16×35 | 0.015 | 3110 |
| 10000 | 16×36 | 0.028 | 3510 | 10000 | 16×40 | 0.013 | 3580 | | |
| 16 | 47 | 5×11 | 0.800 | 90 | 25 | 47 | 5×11 | 0.580 | 190 |
| | 68 | 6.3×11 | 0.560 | 120 | | 68 | 6.3×11 | 0.360 | 210 |
| | 100 | 6.3×11 | 0.520 | 205 | | 100 | 6.3×11 | 0.250 | 220 |
| | 150 | 8×12 | 0.210 | 300 | | 150 | 8×12 | 0.200 | 385 |
| | 220 | 6.3×11 | 0.260 | 346 | | 220 | 6.3×12 | 0.220 | 410 |
| | 330 | 8×12 | 0.130 | 600 | | 220 | 8×12 | 0.180 | 450 |
| | 470 | 8×12 | 0.110 | 717 | | 330 | 8×12 | 0.150 | 570 |
| | 680 | 8×16 | 0.080 | 800 | | 330 | 8×14 | 0.110 | 620 |
| | 820 | 8×16 | 0.078 | 840 | | 470 | 8×14 | 0.110 | 680 |
| | 1000 | 8×16 | 0.068 | 922 | | 470 | 8×16 | 0.105 | 848 |
| | 1500 | 8×16 | 0.065 | 1108 | | 560 | 8×16 | 0.100 | 848 |
| | 1500 | 8×20 | 0.058 | 1238 | | 680 | 8×14 | 0.110 | 760 |
| | 1500 | 10×16 | 0.058 | 1238 | | 680 | 8×16 | 0.080 | 960 |
| | 2200 | 10×20 | 0.055 | 1680 | | 1000 | 8×16 | 0.072 | 1000 |
| | 3300 | 13×20 | 0.048 | 1993 | | 1500 | 13×16 | 0.068 | 1880 |
| | 4700 | 13×25 | 0.040 | 2430 | | 1800 | 13×20 | 0.065 | 1880 |
| | 5600 | 13×30 | 0.038 | 2630 | | 2200 | 13×20 | 0.065 | 2150 |
| | 6800 | 16×30 | 0.035 | 3200 | | 3300 | 13×25 | 0.055 | 2430 |
| 10000 | 22×30 | 0.030 | 3660 | 4700 | 16×26 | 0.035 | 3140 | | |

RD Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 100kHz.

| WV(V) | Nominal capacitance (uF) | Case size ΦD×L (mm) | Impedance (Ω _{max} /100kHz) 25°C | Max. Rated Ripple current @105°C/100kHz (mA rms) | WV(V) | Nominal capacitance (uF) | Case size ΦD×L (mm) | Impedance (Ω _{max} /100kHz) 25°C | Max. Rated Ripple current @105°C/100kHz (mA rms) |
|-------|--------------------------|---------------------|---|--|-------|--------------------------|---------------------|---|--|
| 35 | 10 | 5×11 | 1.500 | 90 | 50 | 1 | 5×11 | 5.000 | 80 |
| | 22 | 5×11 | 0.750 | 140 | | 4.7 | 5×11 | 2.700 | 110 |
| | 33 | 5×11 | 0.580 | 180 | | 6.8 | 5×11 | 2.500 | 120 |
| | 47 | 6.3×11 | 0.600 | 250 | | 10 | 5×11 | 2.000 | 145 |
| | 68 | 6.3×11 | 0.600 | 270 | | 15 | 5×11 | 1.900 | 140 |
| | 100 | 6.3×11 | 0.450 | 310 | | 22 | 5×11 | 1.800 | 170 |
| | 100 | 8×12 | 0.280 | 515 | | 47 | 6.3×11 | 0.600 | 250 |
| | 150 | 6.3×12 | 0.330 | 480 | | 68 | 8×12 | 0.450 | 330 |
| | 220 | 8×12 | 0.130 | 640 | | 100 | 8×12 | 0.250 | 555 |
| | 330 | 8×16 | 0.110 | 768 | | 220 | 8×16 | 0.150 | 840 |
| | 470 | 8×16 | 0.100 | 844 | | 330 | 10×20 | 0.125 | 1290 |
| | 680 | 8×20 | 0.090 | 980 | | 470 | 10×20 | 0.110 | 1500 |
| | 1000 | 13×20 | 0.080 | 1675 | | 470 | 13×15 | 0.120 | 1440 |
| | 1500 | 13×20 | 0.065 | 1780 | | 560 | 13×20 | 0.082 | 1810 |
| | 2200 | 16×26 | 0.042 | 2830 | | 680 | 13×20 | 0.075 | 1950 |
| | 3300 | 13×40 | 0.038 | 3500 | | 820 | 13×20 | 0.070 | 2100 |
| | 4700 | 18×35 | 0.035 | 3866 | | 1000 | 10×40 | 0.065 | 1780 |
| 5600 | 18×35 | 0.030 | 3980 | 1000 | 13×25 | 0.065 | 2300 | | |
| | | | | | 1500 | 13×35 | 0.050 | 2835 | |
| | | | | | 2200 | 16×32 | 0.048 | 3563 | |
| | | | | | 3300 | 18×35 | 0.035 | 3662 | |
| 63 | 10 | 5×11 | 2.000 | 135 | 100 | 1 | 5×11 | 5.00 | 79 |
| | 22 | 6.3×11 | 1.850 | 184 | | 2.2 | 5×11 | 4.00 | 89 |
| | 33 | 6.3×11 | 1.200 | 244 | | 3.3 | 5×11 | 3.20 | 95 |
| | 47 | 8×12 | 1.000 | 306 | | 4.7 | 5×11 | 2.80 | 110 |
| | 68 | 8×12 | 0.610 | 390 | | 10 | 5×11 | 2.00 | 152 |
| | 100 | 6.3×15 | 0.540 | 485 | | 22 | 8×12 | 0.66 | 286 |
| | 100 | 8×12 | 0.540 | 440 | | 33 | 10×13 | 0.50 | 385 |
| | 120 | 8×16 | 0.340 | 568 | | 47 | 8×12 | 0.52 | 405 |
| | 150 | 8×16 | 0.300 | 610 | | 100 | 10×16 | 0.25 | 700 |
| | 180 | 8×16 | 0.300 | 640 | | 150 | 10×20 | 0.150 | 945 |
| | 220 | 8×16 | 0.270 | 690 | | 220 | 13×20 | 0.095 | 1200 |
| | 330 | 13×15 | 0.182 | 880 | | 330 | 13×25 | 0.090 | 1535 |
| | 470 | 13×17 | 0.175 | 1258 | | 330 | 16×26 | 0.085 | 1600 |
| | 470 | 13×20 | 0.100 | 1368 | | 470 | 16×26 | 0.080 | 1720 |
| | 560 | 13×20 | 0.098 | 1486 | | 560 | 13×30 | 0.072 | 1850 |
| | 680 | 13×25 | 0.080 | 1805 | | 680 | 16×30 | 0.060 | 2050 |
| | 820 | 13×25 | 0.078 | 1980 | | 680 | 16×36 | 0.055 | 2200 |
| 1000 | 16×26 | 0.058 | 2350 | 1000 | 18×35 | 0.040 | 2700 | | |
| 2200 | 18×35 | 0.040 | 3435 | 1000 | 18×40 | 0.040 | 2830 | | |
| 3300 | 18×45 | 0.035 | 4380 | | | | | | |
| 3300 | 22×35 | 0.032 | 4280 | | | | | | |

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

| Vdc | Cap(uF) | Frequency (Hz) | | | | |
|----------|--------------|----------------|------|------|------|------|
| | | 60 | 120 | 1K | 10K | 100K |
| 6.3~ 100 | 1.0 ~33 | 0.45 | 0.55 | 0.75 | 0.90 | 1.00 |
| | 47 ~ 330 | 0.60 | 0.70 | 0.85 | 0.95 | 1.00 |
| | 470 ~ 1000 | 0.65 | 0.75 | 0.90 | 0.98 | 1.00 |
| | 1200 ~ 10000 | 0.75 | 0.80 | 0.95 | 1.00 | 1.00 |