

RG series

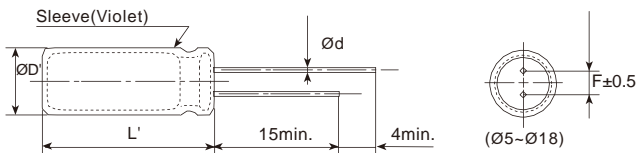
- “GBL” system, high reliability
- Low impedance and high ripple current
- Endurance +105°C 2,000 ~ 8,000 hours
- RoHS Compliant



SPECIFICATIONS

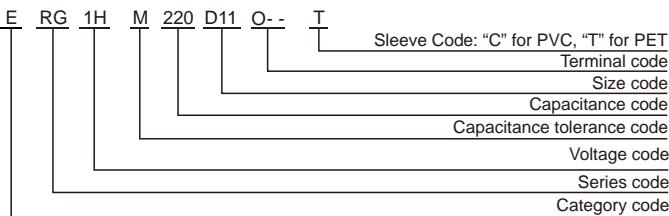
| Items | Characteristics | | | | | | | | |
|--|--|-------------------------------------|------|------|------|------|-------|---------|-------------------|
| Category Temperature Range | -55~+105°C | | | | | | | | |
| Rated Voltage Range | 6.3~63 V _{dc} | | | | | | | | |
| Capacitance Tolerance | ±20%(M) (at 20°C, 120Hz) | | | | | | | | |
| Leakage Current | I 0.01CV or 3μA, whichever is greater. Where, I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V) (at 20°C after 2 minutes) | | | | | | | | |
| Dissipation Factor (tan δ) | Rated Voltage(V _{dc}) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | |
| | tan δ (max.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | |
| | When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz) | | | | | | | | |
| Low Temperature Characteristics (Max. Impedance Ratio) | Rated Voltage(V _{dc}) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | |
| | Z(-25°C)/Z(+20°C) | 4 | 3 | | | 2 | | | |
| | Z(-55°C)/Z(+20°C) | 8 | 6 | 4 | | 3 | | | |
| Endurance | The following specifications shall be met when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for a specified period of time at 105°C, the peak voltage shall not exceed the rated voltage. | | | | | | | | |
| | Capacitance Change | ±25% of the initial value | | | | | | Dia. | Load life (hours) |
| | D.F. (tan δ) | 200% of the initial specified value | | | | | | ØD=6.3 | 2,000 |
| | Leakage Current | The initial specified value | | | | | | ØD=8 | 3,000 |
| | | | | | | | ØD=10 | 5,000 | |
| Shelf Life | The following specifications shall be satisfied when the capacitors are restored to 20 °C after leaving them under no load at 105°C for 1,000 hours. | | | | | | | | |
| | Capacitance Change | ±25% of the initial value | | | | | | ØD=12.5 | 7,000 |
| | D.F. (tan δ) | 200% of the initial specified value | | | | | | ØD=16 | 8,000 |
| | Leakage Current | 200% of the initial specified value | | | | | | | |

DIMENSIONS[mm]



| ØD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
|-----|------------|-----|-----|-----|------|-----|-----|
| Ød | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| ØD' | ØD+0.5max. | | | | | | |
| L' | L+2max. | | | | | | |

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

| Freq.(Hz) | 120 | 1k | 10k | 100k |
|----------------|------|------|------|------|
| Cap.<220 | 0.40 | 0.75 | 0.90 | 1.00 |
| 220 Cap.<680 | 0.50 | 0.85 | 0.94 | 1.00 |
| 680 Cap.<2200 | 0.60 | 0.87 | 0.95 | 1.00 |
| 2200 Cap.<4700 | 0.75 | 0.90 | 0.95 | 1.00 |
| Cap. 4700 | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

RG series

■ STANDARD RATINGS

| WV (Vdc) | Cap (µF) | Size DxL(mm) | tan | Impedance (max/20°C, 100kHz) | Rated ripple current (mA _{RMS} /105°C, 100kHz) | Part Number |
|----------|----------|--------------|-------|------------------------------|---|----------------|
| 6.3(0J) | 100 | 5x11 | 0.22 | 0.65 | 155 | ERG0JM101D11OT |
| | 220 | 6.3x11 | 0.22 | 0.40 | 255 | ERG0JM221E11OT |
| | 330 | 6.3x11 | 0.22 | 0.25 | 290 | ERG0JM331E11OT |
| | 470 | 8x11 | 0.22 | 0.18 | 400 | ERG0JM471F11OT |
| | 560 | 8x11 | 0.22 | 0.17 | 460 | ERG0JM561F11OT |
| | 680 | 8x11 | 0.22 | 0.13 | 550 | ERG0JM681F11OT |
| | 820 | 8x16 | 0.22 | 0.095 | 730 | ERG0JM821F16OT |
| | 1000 | 8x16 | 0.22 | 0.09 | 730 | ERG0JM102F16OT |
| | 1200 | 8x20 | 0.22 | 0.08 | 810 | ERG0JM122F20OT |
| | 1500 | 10x20 | 0.22 | 0.052 | 1220 | ERG0JM152G20OT |
| | 2200 | 10x20 | 0.24 | 0.045 | 1440 | ERG0JM222G20OT |
| | 2700 | 10x30 | 0.24 | 0.037 | 1690 | ERG0JM272G30OT |
| | 3300 | 12.5x20 | 0.26 | 0.038 | 1660 | ERG0JM332W20OT |
| | 3900 | 12.5x25 | 0.26 | 0.03 | 1950 | ERG0JM392W25OT |
| | 4700 | 12.5x30 | 0.28 | 0.025 | 2310 | ERG0JM472W30OT |
| | 5600 | 12.5x35 | 0.30 | 0.022 | 2510 | ERG0JM562W35OT |
| | 6800 | 12.5x40 | 0.32 | 0.017 | 2870 | ERG0JM682W40OT |
| | 8200 | 16x30 | 0.36 | 0.019 | 3010 | ERG0JM822L30OT |
| 10000 | 16x35 | 0.40 | 0.017 | 3150 | ERG0JM103L35OT | |
| 10(1A) | 100 | 5x11 | 0.19 | 0.58 | 175 | ERG1AM101D11OT |
| | 220 | 6.3x11 | 0.19 | 0.25 | 290 | ERG1AM221E11OT |
| | 330 | 8x11 | 0.19 | 0.21 | 410 | ERG1AM331F11OT |
| | 470 | 8x11 | 0.19 | 0.13 | 555 | ERG1AM471F11OT |
| | 560 | 8x16 | 0.19 | 0.12 | 675 | ERG1AM561F16OT |
| | 680 | 8x16 | 0.19 | 0.09 | 730 | ERG1AM681F16OT |
| | 820 | 8x20 | 0.19 | 0.085 | 875 | ERG1AM821F20OT |
| | 1000 | 10x16 | 0.19 | 0.068 | 1050 | ERG1AM102G16OT |
| | 1200 | 10x20 | 0.19 | 0.052 | 1220 | ERG1AM122G20OT |
| | 1500 | 10x20 | 0.19 | 0.045 | 1440 | ERG1AM152G20OT |
| | 2200 | 12.5x20 | 0.21 | 0.038 | 1660 | ERG1AM222W20OT |
| | 2700 | 12.5x25 | 0.21 | 0.034 | 1945 | ERG1AM272W25OT |
| | 3300 | 12.5x25 | 0.23 | 0.03 | 1950 | ERG1AM332W25OT |
| | 3900 | 12.5x30 | 0.23 | 0.025 | 2310 | ERG1AM392W30OT |
| | 4700 | 12.5x35 | 0.25 | 0.022 | 2510 | ERG1AM472W35OT |
| | 5600 | 12.5x40 | 0.27 | 0.017 | 2870 | ERG1AM562W40OT |
| | 6800 | 16x30 | 0.29 | 0.019 | 3010 | ERG1AM682L30OT |
| | 8200 | 16x35 | 0.33 | 0.017 | 3150 | ERG1AM822L35OT |
| 10000 | 16x40 | 0.37 | 0.015 | 3710 | ERG1AM103L40OT | |
| 16(1C) | 47 | 5x11 | 0.16 | 0.80 | 120 | ERG1CM470D11OT |
| | 68 | 6.3x11 | 0.16 | 0.56 | 220 | ERG1CM680E11OT |
| | 100 | 6.3x11 | 0.16 | 0.52 | 255 | ERG1CM101E11OT |
| | 150 | 8x11 | 0.16 | 0.21 | 350 | ERG1CM151F11OT |
| | 220 | 8x11 | 0.16 | 0.20 | 405 | ERG1CM221F11OT |
| | 330 | 8x11 | 0.16 | 0.13 | 555 | ERG1CM331F11OT |
| | 470 | 8x16 | 0.16 | 0.09 | 730 | ERG1CM471F16OT |
| | 560 | 8x20 | 0.16 | 0.085 | 810 | ERG1CM561F20OT |
| | 680 | 8x20 | 0.16 | 0.069 | 1050 | ERG1CM681F20OT |
| | 820 | 10x20 | 0.16 | 0.058 | 1220 | ERG1CM821G20OT |
| | 1000 | 10x20 | 0.16 | 0.052 | 1220 | ERG1CM102G20OT |
| | 1200 | 10x25 | 0.16 | 0.045 | 1440 | ERG1CM122G25OT |
| | 1500 | 12.5x20 | 0.16 | 0.038 | 1660 | ERG1CM152W20OT |
| | 2200 | 12.5x25 | 0.18 | 0.03 | 1950 | ERG1CM222W25OT |
| | 2700 | 12.5x30 | 0.18 | 0.025 | 2310 | ERG1CM272W30OT |
| | 3300 | 12.5x35 | 0.20 | 0.022 | 2510 | ERG1CM332W35OT |
| | 3900 | 12.5x40 | 0.20 | 0.017 | 2870 | ERG1CM392W40OT |
| | 4700 | 16x30 | 0.22 | 0.019 | 3010 | ERG1CM472L30OT |
| 5600 | 16x35 | 0.24 | 0.017 | 3150 | ERG1CM562L35OT | |
| 6800 | 16x40 | 0.26 | 0.015 | 3710 | ERG1CM682L40OT | |
| 25(1E) | 47 | 5x11 | 0.14 | 0.58 | 175 | ERG1EM470D11OT |
| | 68 | 6.3x11 | 0.14 | 0.36 | 230 | ERG1EM680E11OT |
| | 100 | 6.3x11 | 0.14 | 0.35 | 290 | ERG1EM101E11OT |
| | 150 | 8x11 | 0.14 | 0.20 | 405 | ERG1EM151F11OT |
| | 220 | 8x12 | 0.14 | 0.19 | 555 | ERG1EM221F12OT |
| | 330 | 8x16 | 0.14 | 0.12 | 730 | ERG1EM331F16OT |
| | 470 | 10x16 | 0.14 | 0.08 | 1050 | ERG1EM471G16OT |
| | 560 | 10x20 | 0.14 | 0.058 | 1220 | ERG1EM561G20OT |
| | 680 | 10x20 | 0.14 | 0.052 | 1220 | ERG1EM681G20OT |
| | 820 | 10x25 | 0.14 | 0.045 | 1440 | ERG1EM821G25OT |
| | 1000 | 12.5x20 | 0.14 | 0.038 | 1660 | ERG1EM102W20OT |
| | 1200 | 12.5x25 | 0.14 | 0.034 | 1936 | ERG1EM122W25OT |
| | 1500 | 12.5x25 | 0.14 | 0.03 | 1950 | ERG1EM152W25OT |

| WV (Vdc) | Cap (µF) | Size DxL(mm) | tan | Impedance (max/20°C, 100kHz) | Rated ripple current (mA _{RMS} /105°C, 100kHz) | Part Number |
|----------|----------|--------------|-------|------------------------------|---|----------------|
| 25(1E) | 2200 | 12.5x35 | 0.16 | 0.022 | 2510 | ERG1EM222W35OT |
| | 2700 | 12.5x40 | 0.16 | 0.017 | 2870 | ERG1EM272W40OT |
| | 3300 | 16x30 | 0.18 | 0.019 | 3010 | ERG1EM332L30OT |
| | 3900 | 16x35 | 0.18 | 0.017 | 3150 | ERG1EM392L35OT |
| | 4700 | 16x40 | 0.20 | 0.015 | 3710 | ERG1EM472L40OT |
| | 35(1V) | 10 | 5x11 | 0.12 | 1.50 | 100 |
| 22 | | 5x11 | 0.12 | 0.75 | 160 | ERG1VM220D11OT |
| 33 | | 5x11 | 0.12 | 0.58 | 210 | ERG1VM330D11OT |
| 47 | | 6.3x11 | 0.12 | 0.49 | 215 | ERG1VM470E11OT |
| 68 | | 8x11 | 0.12 | 0.21 | 350 | ERG1VM680F11OT |
| 100 | | 8x11 | 0.12 | 0.20 | 405 | ERG1VM101F11OT |
| 150 | | 8x12 | 0.12 | 0.13 | 555 | ERG1VM151F12OT |
| 220 | | 8x16 | 0.12 | 0.09 | 730 | ERG1VM221F16OT |
| 330 | | 10x16 | 0.12 | 0.08 | 1050 | ERG1VM331G16OT |
| 470 | | 10x20 | 0.12 | 0.065 | 1220 | ERG1VM471G20OT |
| 560 | | 10x25 | 0.12 | 0.045 | 1440 | ERG1VM561G25OT |
| 680 | | 10x30 | 0.12 | 0.037 | 1690 | ERG1VM681G30OT |
| 820 | | 12.5x25 | 0.12 | 0.035 | 1938 | ERG1VM821W25OT |
| 1000 | | 12.5x25 | 0.12 | 0.03 | 1950 | ERG1VM102W25OT |
| 1200 | | 12.5x30 | 0.12 | 0.025 | 2310 | ERG1VM122W30OT |
| 1500 | | 12.5x35 | 0.12 | 0.022 | 2510 | ERG1VM152W35OT |
| 2200 | | 16x30 | 0.14 | 0.019 | 3010 | ERG1VM222L30OT |
| 2700 | | 16x35 | 0.14 | 0.017 | 3150 | ERG1VM272L35OT |
| 3300 | 16x40 | 0.16 | 0.015 | 3710 | ERG1VM332L40OT | |
| 3900 | 18x40 | 0.16 | 0.015 | 3800 | ERG1VM392M40OT | |
| 50(1H) | 10 | 5x11 | 0.10 | 2.0 | 105 | ERG1HM100D11OT |
| | 22 | 5x11 | 0.10 | 1.10 | 155 | ERG1HM220D11OT |
| | 33 | 6.3x11 | 0.10 | 0.48 | 215 | ERG1HM330E11OT |
| | 47 | 6.3x11 | 0.10 | 0.40 | 220 | ERG1HM470E11OT |
| | 68 | 8x11 | 0.10 | 0.35 | 355 | ERG1HM680F11OT |
| | 100 | 8x12 | 0.10 | 0.23 | 485 | ERG1HM101F12OT |
| | 150 | 8x16 | 0.10 | 0.16 | 635 | ERG1HM151F16OT |
| | 220 | 10x16 | 0.10 | 0.088 | 1050 | ERG1HM221G16OT |
| | 330 | 10x25 | 0.10 | 0.073 | 1250 | ERG1HM331G25OT |
| | 470 | 12.5x20 | 0.10 | 0.059 | 1480 | ERG1HM471W20OT |
| | 560 | 12.5x25 | 0.10 | 0.044 | 1840 | ERG1HM561W25OT |
| | 680 | 12.5x30 | 0.10 | 0.039 | 2220 | ERG1HM681W30OT |
| | 820 | 12.5x35 | 0.10 | 0.033 | 2290 | ERG1HM821W35OT |
| | 1000 | 16x25 | 0.10 | 0.034 | 2240 | ERG1HM102L25OT |
| | 1200 | 16x30 | 0.10 | 0.028 | 2700 | ERG1HM122L30OT |
| | 1500 | 16x35 | 0.10 | 0.025 | 2800 | ERG1HM152L35OT |
| | 2200 | 18x35 | 0.12 | 0.023 | 3100 | ERG1HM222M35OT |
| | 2700 | 18x40 | 0.12 | 0.02 | 3400 | ERG1HM272M40OT |
| 63(1J) | 12 | 5x11 | 0.08 | 1.9 | 145 | ERG1JM120D11OT |
| | 22 | 6.3x11 | 0.08 | 1.0 | 240 | ERG1JM220E11OT |
| | 39 | 6.3x14 | 0.08 | 0.61 | 330 | ERG1JM390E14OT |
| | 68 | 8x12 | 0.08 | 0.34 | 405 | ERG1JM680F12OT |
| | 100 | 8x16 | 0.08 | 0.27 | 535 | ERG1JM101F16OT |
| | 100 | 10x12.5 | 0.08 | 0.255 | 540 | ERG1JM101G1BOT |
| | 120 | 10x16 | 0.08 | 0.19 | 600 | ERG1JM121G16OT |
| | 150 | 8x20 | 0.08 | 0.21 | 690 | ERG1JM151F20OT |
| | 180 | 10x20 | 0.08 | 0.145 | 890 | ERG1JM181G20OT |
| | 220 | 10x25 | 0.08 | 0.13 | 1050 | ERG1JM221G25OT |
| | 330 | 10x30 | 0.08 | 0.09 | 1300 | ERG1JM331G30OT |
| | 330 | 12.5x20 | 0.08 | 0.085 | 1290 | ERG1JM331W20OT |
| | 390 | 12.5x25 | 0.08 | 0.07 | 1720 | ERG1JM391W25OT |
| | 470 | 12.5x30 | 0.08 | 0.055 | 2090 | ERG1JM471W30OT |
| | 470 | 16x20 | 0.08 | 0.059 | 1770 | ERG1JM471L20OT |
| | 680 | 12.5x35 | 0.08 | 0.047 | 2270 | ERG1JM681W35OT |
| | 680 | 16x25 | 0.08 | 0.05 | 2160 | ERG1JM681L25OT |
| | 820 | 18x20 | 0.08 | 0.055 | 2290 | ERG1JM681M20OT |
| 820 | 12.5x40 | 0.08 | 0.042 | 2560 | ERG1JM821W40OT | |
| 820 | 16x30 | 0.08 | 0.043 | 2670 | ERG1JM821L30OT | |
| 820 | 18x25 | 0.08 | 0.043 | 2590 | ERG1JM821M25OT | |
| 1000 | 16x35 | 0.08 | 0.036 | 2770 | ERG1JM102L35OT | |
| 1200 | 16x40 | 0.08 | 0.03 | 2850 | ERG1JM122L40OT | |
| 1200 | 18x30 | 0.08 | 0.032 | 2950 | ERG1JM122M30OT | |
| 1500 | 18x35 | 0.08 | 0.03 | 3100 | ERG1JM152M35OT | |
| 1800 | 18x40 | 0.08 | 0.025 | 3210 | ERG1JM182M40OT | |