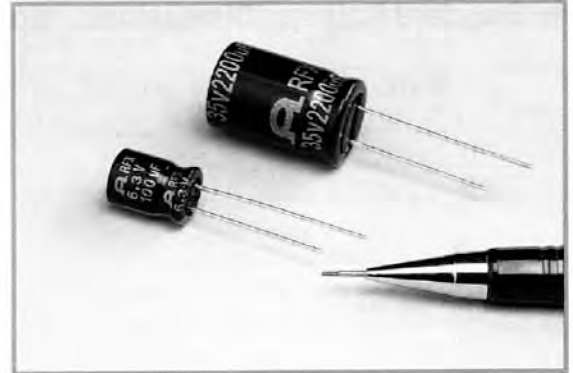


RFX SERIES

Low Z, High Ripple Current, Radial Leads

■ Features

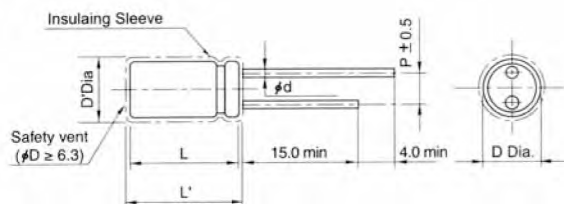
- Low impedance at high frequency (Lower than RFS)
- Large permissible ripple current
- For switching mode power supply
- Load life of 4000 hours at 105°C



■ Specifications

| Item | Performance Characteristics | | | | | | | | | |
|--|---|--|------|------|---------|------|------|----------|------|--|
| Operating temperature range | -40°C ~ +105°C | | | | | | | | | |
| Rated working voltage range | 6.3V ~ 100V | | | | | | | | | |
| Nominal capacitance range | 22 μ F ~ 6800 μ F, \pm 20% (at 20°C, 120Hz) | | | | | | | | | |
| D.C Leakage current(at 20°C) | The following specifications shall be satisfied when the rated voltage is applied for the required time. $I \leq 0.01CV(1 \text{ min})$ or $3\mu A(2 \text{ min})$, whichever is greater Where I =Leakage current(μA) C=Nominal capacitance(μF) V=Rated voltage(V) | | | | | | | | | |
| Tan δ (max., at 20°C, 120Hz) | W.V(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | |
| | Tan δ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | |
| When capacitance is over 1000 μ F, Tan δ shall be added 0.02 to the listed value with increase of every each 1000 μ F | | | | | | | | | | |
| Characteristics at low temperature (max.) (impedance ratio at 120Hz) | W.V(V) | 6.3 ~ 10 | | | 16 ~ 35 | | | 50 ~ 100 | | |
| | Z-40°C/Z+20°C | 3 | | | 3 | | | 3 | | |
| Load life | After applying rated working voltage for 4000 hours(ϕ 5, ϕ 6.3 : 2000 hours, ϕ 8 : 3000 hours) at +105°C and then being stabilized at +20°C, capacitors shall meet following limits. | | | | | | | | | |
| | Capacitance change | Within \pm 25% of the initial measured value | | | | | | | | |
| | Tan δ | \leq 200% of the initial specified value | | | | | | | | |
| | Leakage current | \leq The initial specified value | | | | | | | | |
| Shelf life | After storage for 1000 hours at +105°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet following limits. | | | | | | | | | |
| | Capacitance change | Within \pm 25% of the initial measured value | | | | | | | | |
| | Tan δ | \leq 200% of the initial specified value | | | | | | | | |
| | Leakage current | \leq 200% of the initial specified value | | | | | | | | |

■ Dimensions



• Standard lead style

| ϕD | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 |
|----------|-----|-----|-----|------|------|------|
| P | 2.0 | 2.5 | 3.5 | 5.0 | | 7.5 |
| ϕd | 0.5 | | | 0.6 | | 0.8 |

D'=[D +0.5] Max.

L'=[L+1.0] Max. at D \leq 8.0

L'=[L+1.5]Max. at D \geq 10.0

■ Ripple current coefficient

• Frequency

| Cap(μ F) | Freq(Hz) | 120 | 1K | 10K | 100K |
|-----------------------|----------|------|------|------|------|
| Cap \leq 33 | | 0.42 | 0.70 | 0.90 | 1.0 |
| 33 < Cap \leq 330 | | 0.50 | 0.73 | 0.92 | 1.0 |
| 330 < Cap \leq 1000 | | 0.55 | 0.77 | 0.94 | 1.0 |
| 1000 < Cap | | 0.60 | 0.80 | 0.96 | 1.0 |

• Temperature

| Temperature | \leq 70°C | 85°C | 105°C |
|-------------|-------------|------|-------|
| Factor | 2.1 | 1.7 | 1.0 |

RFX SERIES

Standard Ratings[Dimensions, Impedance, Ripple Current]

 ϕ D x L(mm)

| Cap(μ F) | W.V(V) | 6.3(0J) | | | 10(1A) | | | 16(1C) | | | 25(1E) | | |
|---------------|--------|-----------|-------|----------------|-----------|-------|----------------|-----------|-------|----------------|-----------|-------|----------------|
| | | SIZE | Z | I _r | SIZE | Z | I _r | SIZE | Z | I _r | SIZE | Z | I _r |
| 47 | | | | | | | 5 x 11 | 0.30 | 250 | 5 x 11 | 0.03 | 250 | |
| 100 | | | | | 5 x 11 | 0.30 | 250 | 6.3 x 11 | 0.013 | 405 | 6.3 x 11 | 0.13 | 405 |
| 150 | | 5 x 11 | 0.30 | 250 | 6.3 x 11 | 0.13 | 405 | 6.3 x 11 | 0.013 | 405 | 8 x 11.5 | 0.072 | 760 |
| 220 | | 6.3 x 11 | 0.13 | 405 | 6.3 x 11 | 0.13 | 405 | 8 x 11.5 | 0.072 | 760 | 8 x 11.5 | 0.072 | 760 |
| 330 | | 6.3 x 11 | 0.13 | 405 | 8 x 11.5 | 0.072 | 760 | 8 x 11.5 | 0.072 | 760 | 10 x 12.5 | 0.053 | 1030 |
| 470 | | 8 x 11.5 | 0.072 | 760 | 8 x 11.5 | 0.072 | 760 | 10 x 12.5 | 0.053 | 1030 | 10 x 16 | 0.038 | 1430 |
| 680 | | 10 x 12.5 | 0.053 | 1030 | 10 x 12.5 | 0.053 | 1030 | 10 x 16 | 0.038 | 1430 | 10 x 20 | 0.023 | 1820 |
| 1000 | | 10 x 12.5 | 0.053 | 1030 | 10 x 16 | 0.038 | 1430 | 10 x 20 | 0.023 | 1820 | 12.5 x 20 | 0.021 | 2360 |
| 1200 | | 10 x 16 | 0.038 | 1430 | 10 x 20 | 0.023 | 1820 | 10 x 20 | 0.023 | 1820 | 12.5 x 25 | 0.019 | 2650 |
| 1500 | | 10 x 20 | 0.023 | 1820 | 10 x 20 | 0.023 | 1820 | 12.5 x 20 | 0.021 | 2350 | 12.5 x 25 | 0.018 | 2770 |
| 2200 | | 10 x 20 | 0.023 | 1820 | 12.5 x 20 | 0.021 | 2360 | 12.5 x 25 | 0.018 | 2770 | 16 x 25 | 0.016 | 3460 |
| 3300 | | 12.5 x 20 | 0.021 | 2360 | 12.5 x 25 | 0.018 | 2770 | 16 x 25 | 0.016 | 3460 | 16 x 31.5 | 0.015 | 3680 |
| 4700 | | 12.5 x 25 | 0.018 | 2770 | 16 x 25 | 0.016 | 3460 | | | | | | |
| 6800 | | 16 x 25 | 0.016 | 3460 | | | | | | | | | |

| Cap(μ F) | W.V(V) | 35(1V) | | | 50(1H) | | | 63(1J) | | | 100(2A) | | |
|---------------|--------|-----------|-------|----------------|-----------|-------|----------------|-----------|-------|----------------|-----------|-------|----------------|
| | | SIZE | Z | I _r | SIZE | Z | I _r | SIZE | Z | I _r | SIZE | Z | I _r |
| 22 | | | | | 5 x 11 | 0.34 | 238 | 6.3 x 11 | 0.30 | 270 | 8 x 11.5 | 0.30 | 360 |
| 33 | | 5 x 11 | 0.30 | 250 | 6.3 x 11 | 0.13 | 405 | 6.3 x 11 | 0.30 | 270 | 10 x 12.5 | 0.25 | 460 |
| 47 | | 6.3 x 11 | 0.13 | 405 | 6.3 x 11 | 0.13 | 405 | 8 x 11.5 | 0.20 | 500 | 10 x 16 | 0.20 | 600 |
| 100 | | 8 x 11.5 | 0.072 | 760 | 8 x 11.5 | 0.074 | 724 | 10 x 16 | 0.10 | 950 | 12.5 x 20 | 0.10 | 1050 |
| 150 | | 8 x 11.5 | 0.072 | 760 | 10 x 12.5 | 0.061 | 979 | 10 x 20 | 0.08 | 1100 | 12.5 x 25 | 0.070 | 1200 |
| 220 | | 10 x 12.5 | 0.053 | 1030 | 10 x 16 | 0.042 | 1370 | 12.5 x 20 | 0.07 | 1300 | 16 x 25 | 0.060 | 1650 |
| 330 | | 10 x 16 | 0.038 | 1430 | 10 x 20 | 0.028 | 1870 | 12.5 x 20 | 0.04 | 1495 | 16 x 31.5 | 0.040 | 1770 |
| 470 | | 10 x 20 | 0.023 | 1820 | 12.5 x 20 | 0.027 | 2050 | 12.5 x 25 | 0.035 | 1900 | 18 x 40 | 0.030 | 2080 |
| 680 | | 12.5 x 20 | 0.021 | 2360 | 12.5 x 25 | 0.021 | 2860 | 16 x 25 | 0.030 | 2780 | | | |
| 1000 | | 12.5 x 25 | 0.018 | 2770 | 16 x 25 | 0.021 | 3010 | 16 x 35.5 | 0.020 | 2840 | | | |
| 1500 | | 16 x 25 | 0.016 | 3460 | | | | | | | | | |
| 2200 | | | | | | | | | | | | | |

I_r : Maximum permissible ripple current[mA(rms) at 105°C, 100KHz]Z : Max. Impedance[Ω at 20°C, 100KHz]

ORDERING INFORMATION for Leaded Type



Daewoo Components Corp.

Through-Hole Part Numbering System Example:

RM = Leaded Radial 85°C Miniature Series, **102** = 1000µF, **M** =20% Tolerance, **1E** 25 Volts, **B** = Bulk,
1020 = Case size (Dia x H) = 10.0 x 20.0mm, **E** = 5.0mm



(1) Series

See Quick Guide on page 2
Example: RSS, RM, RMU,...

(2) Capacitance Value Code

Capacitance expressed in micro Farads (µF)
First two digits are significant figures
Third digit denotes the number of zeros
Use R for decimal point for values less than 10µF

Examples:

| CODE | Capacitance |
|------|-------------|
| R10 | 0.1 µF |
| R68 | 0.68 µF |
| 1R0 | 1.0 µF |
| 100 | 10 µF |
| 680 | 68 µF |
| 471 | 470 µF |
| 102 | 1000 µF |
| 103 | 10000 µF |

(3) Capacitance Tolerance Code

| CODE | Cap. Tol. | CODE | Cap. Tol. |
|------|-----------|------|-------------|
| J | ±5% | V | -10% ~ +20% |
| K | ±10% | Q | -10% ~ +30% |
| M | ±20% | T | -10% ~ +50% |
| R | +20%, -0% | | |

(4) Rated Voltage Code

| CODE | Voltage | CODE | Voltage |
|------|---------|------|---------|
| 0G | 4.0V | 2C | 160V |
| 0J | 6.3V | 2S | 180V |
| 1A | 10V | 2D | 200V |
| 1C | 16V | 2E | 250V |
| 1E | 25V | 2F | 315V |
| 1V | 35V | 2V | 350V |
| 1H | 50V | 2G | 400V |
| 1J | 63V | 2W | 450V |
| 1K | 80V | 3Z | 1000V |
| 2A | 100V | | |

(5) Packaging Form & Lead Style Code (see page 7, 8, 9 for details)

| | Code | Packaging Form & Lead Style |
|----------------------------|------|---|
| Bulk | B | Bulk: Standard Package |
| | L | Bulk: 4 -8ø Long Leads Formed to 5 mm Pitch |
| Snap-In | 1 | 10-13ø Snap-in Cut 5.0mm |
| | 2 | 16-13ø Snap-in Cut 5.0mm |
| | 3 | 10-13ø Snap-in Cut 4.5mm |
| | 4 | 16-18ø Snap-in Cut 4.5mm |
| | 5 | 4-8ø Snap-in Cut 7.5mm |
| Form | F | 4-8ø Forming Cut 6.5mm |
| | G | 4-8ø Forming Cut 10.0mm |
| Straight Cut | C | 4-18ø Straight Cut 4.0mm |
| | 6 | 4-18ø Straight Cut 3.1mm |
| | 7 | 4-18ø Straight Cut 5.0mm |
| | 8 | 4-18ø Straight Cut 6.35mm |
| Ammo Tape (+) Leading | A | 4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm |
| | | 4-8ø Form Tape & Ammo 5mm Pitch |
| | | 10ø Straight Ammo Tape 5mm Pitch |
| | | 13ø Straight Ammo Tape 5mm Pitch |
| | | 16-18ø Straight Ammo Tape 5mm Pitch |
| Tape & Reel (+) Leading | T | 4-8ø Straight Ammo Detail Ranges: 4-6.3ø; F=2.5mm 8ø; F=3.5mm |
| | | 4-13ø Form Tape & Reel 5mm Pitch |
| | | 10-13ø Straight Reel Tape 5mm Pitch |

NOTE: Standard Pack Anode(+) Lead Leading FEEDS OFF FIRST
Special Option Cathode(-) Lead Leading available upon request
Standard Packages: B = Bulk, A = Ammo, T = Tape & Reel

(6) Example Dimension Code (Diameter x Height in mm)

| Size Code | Diameter | Height | Size Code | Diameter | Height |
|-----------|----------|--------|-----------|----------|--------|
| 0405 | 4 | 5 | 1320 | 13 | 20 |
| 0407 | 4 | 7 | 1631 | 16 | 31.5 |
| 0505 | 5 | 5 | 1835 | 18 | 35.5 |
| 0507 | 5 | 7 | 2240 | 22 | 40 |
| 0607 | 6.3 | 7 | 2545 | 25 | 45 |
| 0511 | 5 | 11 | 3035 | 30 | 35 |
| 0605 | 6 | 5 | 3500 | 35 | 100 |
| 0611 | 6.3 | 11 | 3501 | 35 | 110 |
| 0805 | 8 | 5 | 5102 | 51 | 120 |
| 0811 | 8 | 11 | 6303 | 63.5 | 130 |
| 1012 | 10 | 12.5 | 7604 | 76 | 140 |
| 1220 | 12.5 | 20 | 8904 | 89 | 140 |

(7) Lead Spacing Code (LS)

| Code | X | A | B | C | D | E | J | F |
|------|------|------|------|------|------|------|------|------|
| LS | 1.0 | 1.5 | 2.0 | 2.5 | 3.5 | 5.0 | 7.0 | 7.5 |
| Code | K | M | G | P | H | Q | R | S |
| LS | 8.0 | 10.0 | 10.5 | 12.0 | 12.5 | 12.8 | 15.0 | 16.0 |
| Code | T | U | V | W | Y | Z | | |
| LS | 20.0 | 21.7 | 28.3 | 30.0 | 31.6 | 32 | | |