

FEATURES

- Long life, 105°C, 4,000 ~ 10,000 hours assured
- Low Impedance, suitable for switching power supplies
- Smaller size with large permissible ripple current

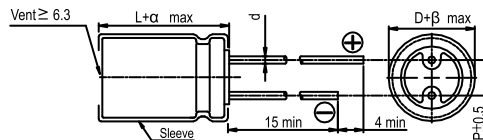
SPECIFICATIONS

| Items | Performance | | | | | | | | | | |
|--|---|-----------------------------------|-----------------------------|------|------|---------|------|------|----|---|--|
| Life | at 105 °C 4,000 ~ 10,000 Hours | | | | | | | | | | |
| Operating Temp. | -55 °C ~ +105 °C | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 120Hz, 20 °C) | | | | | | | | | | |
| Leakage Current (at 20 °C) | I = - 0.1CV or 3 (μA) whichever is greater (after 2 minutes) Where C = rated capacitance in μF. V = rated DC working voltage in V. | | | | | | | | | | |
| Dissipation Factor (Tan φ at 120Hz, 20°C) | Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | | | |
| | Tan φ (max) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | | | |
| Low Temperature Characteristics (at 120Hz) | Impedance ratio shall not exceed the values given in the table below. | | | | | | | | | | |
| | Rated Voltage | | 6 | 10 | 16 | 25 | 35 | 50 | 63 | | |
| | Impedance Ratio | Z (-25°C) / Z (+20 °C) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| Load Life Test | Test Time | 6.3 ~ 10V | 4,000 Hrs for D = 5 ~ 6.3mm | | | | | | | | |
| | | | 6,000 Hrs for D = 8 ~ 10mm | | | | | | | | |
| | | | 8,000 Hrs for D ≥ 12.5mm | | | | | | | | |
| | 16 ~ 63V | 5,000 Hrs for D = 5 ~ 6.3mm | | | | | | | | | |
| | | 7,000 Hrs for D = 8 ~ 10mm | | | | | | | | | |
| | | 10,000 Hrs for D ≥ 12.5mm | | | | | | | | | |
| | Capacitance Change | Within ±25% of initial value | | | | | | | | | |
| | Dissipation Factor | Less than 200% of specified value | | | | | | | | | |
| Leakage Current | Within specified value | | | | | | | | | | |
| * The above specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage applied with rated ripple current for 4,000 ~ 10,000hrs at 105 °C. | | | | | | | | | | | |
| Shelf Life Test | Test Time | 1,000 hours | | | | | | | | | |
| | Capacitance Change | Within ±25% of initial value | | | | | | | | | |
| | Dissipation Factor | Less than 200% of specified value | | | | | | | | | |
| | Leakage Current | Within specified value | | | | | | | | | |
| * The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hrs at 105 °C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements. (Refer to JIS C 5101-4 4.1). | | | | | | | | | | | |
| Ripple Current & Frequency Multipliers | Freq. (Hz) | Cap. (μF) | 120 | 1k | 10k | 100k up | | | | | |
| | | | under ~ 33 | 0.42 | 0.70 | 0.90 | 1.0 | | | | |
| | 39 ~ 270 | 0.50 | 0.73 | 0.92 | 1.0 | | | | | | |
| | 330 ~ 680 | 0.55 | 0.77 | 0.94 | 1.0 | | | | | | |
| | 820 ~ 1,800 | 0.60 | 0.80 | 0.96 | 1.0 | | | | | | |
| | 2,200 ~ 18,000 | 0.70 | 0.85 | 0.98 | 1.0 | | | | | | |
| Other Standards | JIS C 5101-4 | | | | | | | | | | |

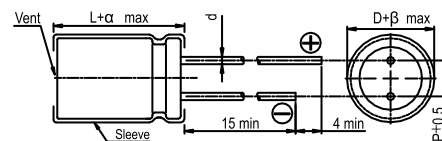
DIMENSIONS

Unit: mm

| | | | | | | | |
|---|-----|-----|--------------------------|-----|------|-----|-----|
| D | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| d | 0.5 | | 0.6 | | 0.8 | | |
| α | 1.0 | | L < 20: 1.5, L ≥ 20: 2.0 | | | | |
| β | 0.5 | | | | | | |



The case size of 12.5×16, 16×16, 16×20, 18×16, 18×20 and 18×25 are suitable for below diagram:



DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: \varnothing D x L(mm)
Ripple Current: mA/rms at 100Hz, 105°C

| V. DC | Code | | 6.3V (0J) | | | 10V (1A) | | | 16V (1C) | | | 25V (1E) | | | | | |
|--------|------|-----------|---------------------|--------------------------------------|----------|---|---------------------|--------------------------------------|----------|---|---------------------|--------------------------------------|--------|---|-------|-------|-------|
| | | | \varnothing D x L | Impedance (Ω , Max / 100kHz) | | Ripple Current (mA / rms, 105°C) 100k Hz | \varnothing D x L | Impedance (Ω , Max / 100kHz) | | Ripple Current (mA / rms, 105°C) 100k Hz | \varnothing D x L | Impedance (Ω , Max / 100kHz) | | Ripple Current (mA / rms, 105°C) 100k Hz | | | |
| | | | | 20°C | -10°C | | | 20°C | -10°C | | | 20°C | -10°C | | | | |
| | | | | | | | | | | | | | | | | | |
| 47 | 470 | | | | | | | | | | | 5 x 11 | 0.58 | 1.16 | 210 | | |
| 56 | 560 | | | | | | | | | | | | | | | | |
| 100 | 101 | | | | 5 x 11 | 0.58 | 1.16 | 210 | | | | 6.3 x 11 | 0.22 | 0.44 | 340 | | |
| 120 | 121 | | | | | | | | | | | | | | | | |
| 150 | 151 | 5 x 11 | 0.58 | 1.16 | 210 | | | | | | | | | | | | |
| 220 | 221 | | | | 6.3 x 11 | 0.22 | 0.44 | 340 | | | | | | | | | |
| 330 | 331 | 6.3 x 11 | 0.22 | 0.44 | 340 | | | | 8 x 11.5 | 0.11 | 0.22 | 640 | 8 x 15 | 0.083 | 0.166 | 840 | |
| 470 | 471 | | | | 8 x 11.5 | 0.11 | 0.22 | 640 | 8 x 15 | 0.083 | 0.166 | 840 | 8 x 20 | 0.064 | 0.128 | 1,050 | |
| 680 | 681 | 8 x 11.5 | 0.11 | 0.22 | 640 | 8 x 15 | 0.083 | 0.166 | 840 | 8 x 20 | 0.064 | 0.128 | 1,050 | 10 x 13 | 0.080 | 0.160 | 865 |
| 820 | 821 | 10 x 12.5 | 0.080 | 0.16 | 865 | 10 x 12.5 | 0.080 | 0.160 | 865 | 10 x 16 | 0.060 | 0.120 | 1,210 | 10 x 16 | 0.060 | 0.120 | 1,210 |
| 1,000 | 102 | 8 x 15 | 0.087 | 0.174 | 840 | 8 x 20 | 0.064 | 0.128 | 1,050 | 10 x 20 | 0.046 | 0.092 | 1,400 | 10 x 20 | 0.046 | 0.092 | 1,400 |
| 1,200 | 122 | 8 x 20 | 0.069 | 0.138 | 1,050 | 10 x 16 | 0.060 | 0.120 | 1,210 | 10 x 25 | 0.042 | 0.084 | 1,650 | 10 x 30 | 0.031 | 0.062 | 1,910 |
| 1,500 | 152 | 10 x 20 | 0.046 | 0.092 | 1,400 | 10 x 25 | 0.042 | 0.084 | 1,650 | 12.5 x 16 | 0.049 | 0.098 | 1,450 | 12.5 x 20 | 0.035 | 0.070 | 1,900 |
| 1,800 | 182 | 12.5 x 16 | 0.045 | 0.090 | 1,450 | 12.5 x 16 | 0.049 | 0.098 | 1,450 | 16 x 16 | 0.042 | 0.084 | 1,940 | 16 x 16 | 0.042 | 0.084 | 1,940 |
| 2,200 | 222 | 10 x 25 | 0.042 | 0.084 | 1,650 | 10 x 30 | 0.031 | 0.062 | 1,910 | 12.5 x 25 | 0.049 | 0.098 | 1,450 | 12.5 x 30 | 0.035 | 0.070 | 1,900 |
| 2,700 | 272 | 10 x 30 | 0.031 | 0.062 | 1,910 | 12.5 x 20 | 0.035 | 0.070 | 1,900 | 16 x 16 | 0.042 | 0.084 | 1,940 | 16 x 16 | 0.042 | 0.084 | 1,940 |
| 3,300 | 332 | 12.5 x 20 | 0.035 | 0.070 | 1,900 | 16 x 16 | 0.042 | 0.084 | 1,940 | 18 x 16 | 0.043 | 0.086 | 2,210 | 18 x 16 | 0.043 | 0.086 | 2,210 |
| 3,900 | 392 | 12.5 x 25 | 0.027 | 0.054 | 2,230 | 12.5 x 25 | 0.049 | 0.098 | 1,450 | 12.5 x 30 | 0.035 | 0.070 | 1,900 | 12.5 x 35 | 0.027 | 0.054 | 2,230 |
| 4,700 | 472 | 12.5 x 30 | 0.024 | 0.048 | 2,650 | 12.5 x 30 | 0.024 | 0.048 | 2,650 | 12.5 x 40 | 0.017 | 0.034 | 3,350 | 12.5 x 40 | 0.017 | 0.034 | 3,350 |
| 5,600 | 562 | 12.5 x 35 | 0.02 | 0.040 | 2,880 | 12.5 x 35 | 0.020 | 0.040 | 2,880 | 12.5 x 45 | 0.015 | 0.030 | 3,150 | 12.5 x 45 | 0.015 | 0.030 | 3,150 |
| 6,800 | 682 | 16 x 25 | 0.021 | 0.042 | 2,930 | 16 x 25 | 0.021 | 0.042 | 2,930 | 18 x 25 | 0.019 | 0.038 | 3,140 | 18 x 25 | 0.019 | 0.038 | 3,140 |
| 8,200 | 822 | 16 x 31.5 | 0.017 | 0.034 | 3,450 | 16 x 31.5 | 0.017 | 0.034 | 3,450 | 18 x 31.5 | 0.015 | 0.030 | 3,150 | 18 x 31.5 | 0.015 | 0.030 | 3,150 |
| 10,000 | 103 | 16 x 35.5 | 0.015 | 0.030 | 3,610 | 16 x 35.5 | 0.015 | 0.030 | 3,610 | 18 x 35.5 | 0.014 | 0.028 | 4,220 | 18 x 35.5 | 0.014 | 0.028 | 4,220 |
| 12,000 | 123 | 18 x 25 | 0.019 | 0.038 | 3,140 | 18 x 25 | 0.019 | 0.038 | 3,140 | 18 x 25 | 0.019 | 0.038 | 3,140 | 18 x 25 | 0.019 | 0.038 | 3,140 |
| 15,000 | 153 | 18 x 35.5 | 0.014 | 0.028 | 4,220 | 18 x 35.5 | 0.014 | 0.028 | 4,220 | 18 x 35.5 | 0.014 | 0.028 | 4,220 | 18 x 35.5 | 0.014 | 0.028 | 4,220 |
| 18,000 | 183 | 18 x 40 | 0.012 | 0.024 | 4,280 | 18 x 40 | 0.012 | 0.024 | 4,280 | 18 x 40 | 0.012 | 0.024 | 4,280 | 18 x 40 | 0.012 | 0.024 | 4,280 |

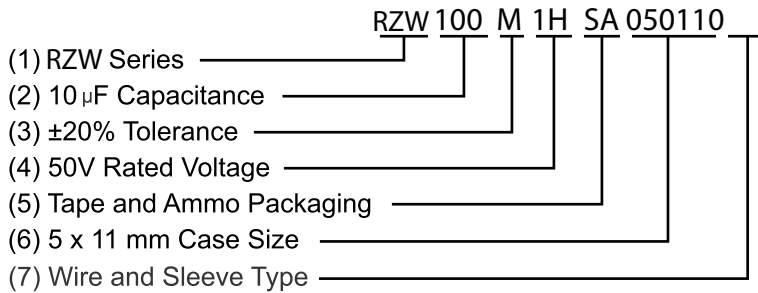
DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: ϕ D x L(mm)
Ripple Current: mA/rms at 105°C

| V. DC μ F | Contents | 35V (1V) | | | | 50V (1H) | | | | 63V (1J) | | | |
|------------------|----------|--|-------------------------------------|----------------------------------|----------------------------------|---------------------------------|-------------------------------------|-------------------------|----------------------------------|-----------------------------------|-------------------------------------|-------------------------|----------------------------------|
| | | ϕ D x L | Impedance (Ω , Max/ 100kHz) | | Ripple Current (mA / rms, 105°C) | ϕ D x L | Impedance (Ω , Max/ 100kHz) | | Ripple Current (mA / rms, 105°C) | ϕ D x L | Impedance (Ω , Max/ 100kHz) | | Ripple Current (mA / rms, 105°C) |
| | | | 20°C | -10°C | 100K Hz | | 20°C | -10°C | 100K Hz | | 20°C | -10°C | 100K Hz |
| 2.2 | 2R2 | | | | | 5 x 11 | 3.3 | 6.6 | 43 | | | | |
| 3.3 | 3R3 | | | | | 5 x 11 | 2.9 | 5.8 | 53 | | | | |
| 4.7 | 4R7 | | | | | 5 x 11 | 2.5 | 5.0 | 95 | | | | |
| 10 | 100 | | | | | 5 x 11 | 2 | 4.0 | 130 | | | | |
| 15 | 150 | | | | | | | | | 5 x 11 | 1.2 | 2.4 | 165 |
| 22 | 220 | | | | | 5 x 11 | 0.91 | 1.82 | 180 | | | | |
| 33 | 330 | 5 x 11 | 0.58 | 1.16 | 210 | | | | | 6.3 x 11 | 0.49 | 0.98 | 265 |
| 56 | 560 | 6.3 x 11 | 0.22 | 0.44 | 340 | 6.3 x 11 | 0.39 | 0.78 | 295 | 8 x 12 | 0.31 | 0.62 | 500 |
| 82 | 820 | | | | | | | | | 8 x 15 10 x 12.5 | 0.22 0.150 | 0.44 0.3 | 665 690 |
| 100 | 101 | | | | | 8 x 11.5 | 0.220 | 0.440 | 555 | | | | |
| 120 | 121 | | | | | 8 x 15 | 0.150 | 0.300 | 730 | 8 x 20.0 10 x 16.0 | 0.170 0.110 | 0.340 0.220 | 820 950 |
| 150 | 151 | 8 x 11.5 | 0.110 | 0.220 | 640 | 10 x 12.5 | 0.160 | 0.320 | 760 | | | | |
| 180 | 181 | | | | | 8 x 20 | 0.118 | 0.236 | 910 | 10 x 20.0 12.5 x 16.0 | 0.078 0.101 | 0.156 0.202 | 1,150 1,150 |
| 220 | 221 | 8 x 15 10 x 12.5 | 0.083 0.080 | 0.166 0.160 | 840 865 | 10 x 16 | 0.110 | 0.220 | 1,050 | 10 x 25 | 0.064 | 0.128 | 1,350 |
| 270 | 271 | 8 x 20 | 0.064 | 0.128 | 1,050 | 10.0 x 20 12.5 x 60 | 0.078 0.079 | 0.156 0.158 | 1,220 1,260 | 12.5 x 20 | 0.057 | 0.114 | 1,500 |
| 330 | 331 | 10 x 16 | 0.060 | 0.120 | 1,210 | 10 x 25 | 0.072 | 0.144 | 1,440 | | | | |
| 390 | 391 | | | | | | | | | 12.5 x 20 | 0.057 | 0.114 | 1,500 |
| 470 | 471 | 10 x 20 12.5 x 16 | 0.046 0.049 | 0.092 0.098 | 1,400 1,450 | 10 x 30 12.5 x 20 16 x 16 | 0.056 0.059 0.072 | 0.112 0.118 0.114 | 1,690 1,660 1,690 | 12.5 x 30 16 x 20 | 0.039 0.045 | 0.078 0.090 | 2,300 2,000 |
| 560 | 561 | 10 x 25 | 0.042 | 0.084 | 1,650 | 12.5 x 25 18 x 16 | 0.044 0.070 | 0.088 0.140 | 1,950 1,930 | 12.5 x 35 | 0.034 | 0.068 | 2,500 |
| 680 | 681 | 10 x 25 10 x 30 12.5 x 20 16 x 16 | 0.030 0.031 0.035 0.042 | 0.060 0.062 0.070 0.084 | 2,200 2,200 1,900 1,940 | | | | | 12.5 x 40 16 x 25 18 x 20 | 0.029 0.035 0.042 | 0.058 0.070 0.084 | 2,800 2,600 2,500 |
| 820 | 821 | 10 x 25 | 0.030 | 0.060 | 2,200 | 12.5 x 35 16 x 20 | 0.033 0.044 | 0.066 0.088 | 2,510 2,210 | 12.5 x 30 16 x 31.5 18 x 25 | 0.022 0.029 0.034 | 0.066 0.058 0.068 | 2,700 2,850 2,800 |
| 1,000 | 102 | 12.5 x 25 18 x 16 | 0.027 0.043 | 0.054 0.086 | 2,230 2,210 | 12.5 x 40 16 x 25 18 x 20 | 0.027 0.033 0.047 | 0.054 0.066 0.094 | 2,920 2,555 2,490 | 16 x 35.5 | 0.027 | 0.054 | 2,900 |
| 1,200 | 122 | 12.5 x 30 16 x 20 | 0.024 0.027 | 0.048 0.054 | 2,650 2,530 | 16 x 31.5 18 x 25 | 0.027 0.028 | 0.054 0.056 | 3,010 2,740 | 16 x 40 18 x 25 18 x 31.5 | 0.025 0.022 0.028 | 0.050 0.086 0.056 | 3,400 2,800 3,300 |
| 1,500 | 152 | 12.5 x 25 | 0.024 | 0.040 | 2,530 | 16 x 35.5 | 0.024 | 0.048 | 3,150 | 18 x 35.5 | 0.025 | 0.050 | 3,400 |
| 1,800 | 182 | 12.5 x 35 16 x 25 18 x 20 | 0.017 0.021 0.026 | 0.034 0.042 0.052 | 3,350 2,930 2,860 | 16 x 40 18 x 31.5 | 0.021 0.024 | 0.042 0.048 | 3,710 3,635 | 18 x 40 | 0.024 | 0.048 | 3,500 |
| 2,200 | 222 | 16 x 31.5 18 x 25 | 0.017 0.019 | 0.034 0.038 | 3,450 3,140 | 18 x 35.5 | 0.022 | 0.044 | 3,680 | | | | |
| 2,700 | 272 | 16 x 35.5 18 x 31.5 | 0.015 0.015 | 0.030 0.030 | 3,610 4,170 | 18 x 40 | 0.018 | 0.036 | 3,800 | | | | |
| 3,300 | 332 | 16 x 40 18 x 35.5 | 0.013 0.014 | 0.026 0.028 | 4,080 4,220 | | | | | | | | |
| 3,900 | 392 | 18 x 40 | 0.012 | 0.024 | 4,280 | | | | | | | | |

Note: Case size in mark of "*" is downsize

HOW TO MAKE A PART NUMBER (Example below)



1. Series: RZW

2. Capacitance: Rated capacitance in μF is represented by a three digit number. The first two digits are the significant figures of the nominal capacitance and the third digit indicates the number of zeros following these figures. The decimal point is represented by the capital letter R. Please refer to the following example.

| μF | 0.1 | 0.47 | 1 | 4.7 | 10 | 47 | 100 | 470 | 1000 | 4700 | 10000 |
|---------------|-----|------|-----|-----|-----|-----|-----|-----|------|------|-------|
| Part Number | 0R1 | R47 | 010 | 4R7 | 100 | 470 | 101 | 471 | 102 | 472 | 103 |

3. Tolerance: (20% IS Typical)

| Code | K | M | T | W |
|-----------|------------|------------|--------------|---------------|
| Tolerance | $\pm 10\%$ | $\pm 20\%$ | + 50% / -10% | + 100% / -10% |

4. Rated Voltage: Voltage in volts (V) is represented by a two digit code showing the rated working voltage indicated as follows:

| Voltage (WV) | 6.3 | 10 | 16 | 25 | 35 | 40 | 50 | 63 | 80 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
|--------------|-----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| Code | 0J | 1A | 1C | 1E | 1V | 1G | 1H | 1J | 1K | 2A | 2C | 2D | 2E | 2V | 2G | 2W |

5. Lead Forming & Package

| Code | Lead Description | Packaging |
|------|----------------------------|--------------|
| BC | Bending Cut | Bulk Packing |
| BK | Straight Lead | Bulk Packing |
| CC | Lead Cutting | Bulk Packing |
| FC | Lead Forming & Cutting | Bulk Packing |
| FF | Lead Forming | Bulk Packing |
| SC | Snap-in & Cutting | Bulk Packing |
| SD | Cathode Lead Beading | Bulk Packing |
| SF | Snap-in, Forming & Cutting | Bulk Packing |
| SA | Straight Lead | Tape & Ammo |
| TA | Lead Forming | Tape & Ammo |
| SR | Straight Lead | Tape & Reel |
| TR | Lead Forming | Tape & Reel |

6. Can Size

Diameter (mm)x10 & Length (mm)x10. Can Size 063110, represents 6.3mm diameter by 11mm length.

7. Sleeve Type* = (Omit) PVC Sleeve

P = PET Sleeve

*Note: All standard RFE Aluminum Electrolytic Capacitors are Lead (Pb) free and RoHS compliant. PET sleeve is available for those companies that also require PVC free product.

LEADED TAPING & PACKAGING SPECIFICATIONS Taping Specification for Radial Lead Type

Fig. 1

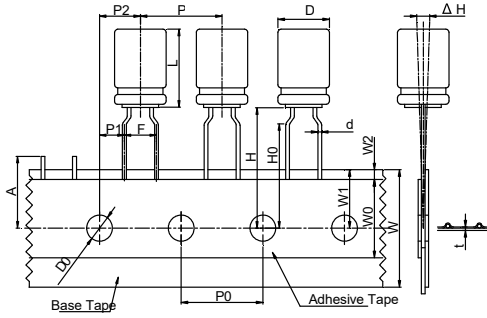


Fig. 2

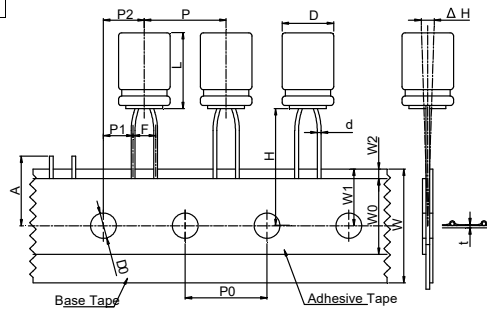


Fig. 3

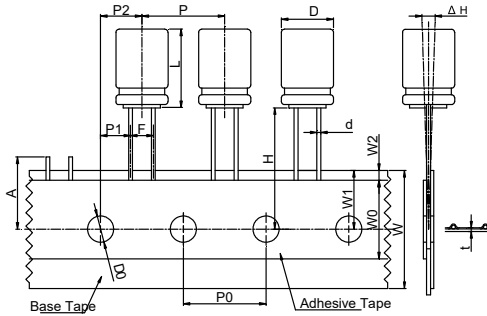
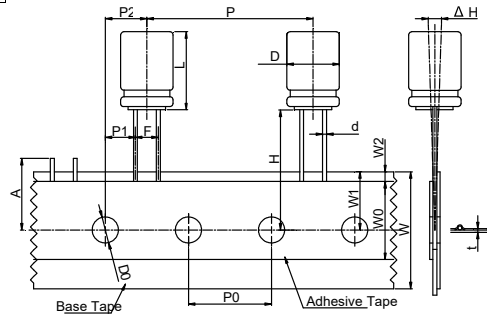


Fig. 4



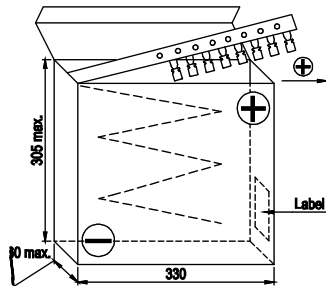
| Packing | TA, TR (Fig. 1) | | | | | | | | SA, SR (Fig. 2, 3, 4) | | | | | | | | | | | |
|----------|-----------------|------|------|------|---------|------|------|------|-----------------------|------|------|------|------|---------|------|------|-----------|------|------|-----------|
| | L ≤ 7mm | | | | L ≥ 7mm | | | | L ≤ 7mm | | | | | L ≥ 7mm | | | | | | |
| Symbol | 3 | 4 | 5 | 6.3 | 8 | 5 | 6.3 | 8 | 3 | 4 | 5 | 6.3 | 8 | 5 | 6.3 | 8 | Tol. | 10 | 13 | Tol. |
| d | 0.4 | 0.45 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.6 | 0.4 | 0.45 | 0.45 | 0.45 | 0.45 | 0.5 | 0.5 | 0.6 | ± 0.05 | 0.6 | 0.6 | ± 0.05 |
| F | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 2.5 | 2.5 | 2.5 | 2.5 | 3.5 | 2.5 | 2.5 | 3.5 | -0.2/+0.8 | 5.0 | 5.0 | -0.2/+0.8 |
| P | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | ± 1.0 | 12.7 | 25.4 | ± 1.0 |
| P0 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | 12.7 | ± 0.2 | 12.7 | 12.7 | ± 0.30 |
| P2 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | 6.35 | ± 1.0 | 6.35 | 6.35 | ± 1.3 |
| P1 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 | 3.85 | 5.1 | 5.1 | 5.1 | 5.1 | 4.6 | 5.1 | 4.6 | 5.1 | ± 0.5 | 3.85 | 3.85 | ± 0.7 |
| H | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 18.5 | 18.5 | 20.0 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 18.5 | 18.5 | 18.5 | ± 0.75 | 18.5 | 18.5 | ± 0.75 |
| H0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | -- | -- | -- | -- | -- | -- | -- | -- | ± 0.5 | -- | -- | ± 0.5 |
| W | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | ± 0.5 | 18.0 | 18.0 | ± 0.5 |
| W0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | Min | 12.0 | 12.0 | Min. |
| W1 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | ± 0.5 | 9.0 | 9.0 | ± 0.5 |
| W2 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | Max. | 1.5 | 1.5 | Max. |
| D0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | ± 0.2 | 4.0 | 4.0 | ± 0.2 |
| t | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | ± 0.2 | 0.7 | 0.7 | ± 0.2 |
| Δ H | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ± 1.0 | 0 | 0 | ± 1.0 |
| ε | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | Max. | 1.0 | 1.0 | Max. |
| A | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | Max. | 11 | 11 | Max. |
| Fig. No. | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | | 3 | 3,4 | |

RADIAL FORMING

Lead Forming & Cutting Specifications for Radial Type (Unit: mm)

| Forming Method | Code | Shape | Dimensions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|------|-------|---|-------|-------|---|--------|------|-------|---------------|-----|-----|---------------|-------|-----------|------|-----|------|-------|------|------|-----|-------|-------------|------|------|-----|-----|-------|------|------------|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----------|-----|-----|-----------|-----|---------------|-----|-----|------|-----|-----|---------------|-----|-----|-----|-----|-----|-----|-----|
| Forming Cut (4 ~ 8) | FC | | <table border="1"> <thead> <tr> <th>D x L</th> <th>d</th> <th>F</th> <th>F'</th> <th>H</th> </tr> </thead> <tbody> <tr><td>3 x 5</td><td>0.40</td><td>1.0</td><td>5.0</td><td>5.0</td></tr> <tr><td>4 x 5</td><td>0.45</td><td>1.5</td><td>5.0</td><td>5.0</td></tr> <tr><td>5 x 5</td><td>0.45</td><td>2.0</td><td>5.0</td><td>5.0</td></tr> <tr><td>6.3 ~ 8 x 5</td><td>0.45</td><td>2.5</td><td>5.0</td><td>5.0</td></tr> <tr><td>4 x 7</td><td>0.45</td><td>1.5</td><td>5.0</td><td>5.0</td></tr> <tr><td>5 x 7 ~ 11</td><td>0.5</td><td>2.0</td><td>5.0</td><td>5.0</td></tr> <tr><td>6 x 7 ~ 15</td><td>0.5</td><td>2.5</td><td>5.0</td><td>5.0</td></tr> <tr><td>8 x 7 ~ 9</td><td>0.5</td><td>3.5</td><td>5.0</td><td>5.0</td></tr> <tr><td>8 x 11.5 ~ 20</td><td>0.6</td><td>3.5</td><td>5.0</td><td>5.0</td></tr> </tbody> </table> | D x L | d | F | F' | H | 3 x 5 | 0.40 | 1.0 | 5.0 | 5.0 | 4 x 5 | 0.45 | 1.5 | 5.0 | 5.0 | 5 x 5 | 0.45 | 2.0 | 5.0 | 5.0 | 6.3 ~ 8 x 5 | 0.45 | 2.5 | 5.0 | 5.0 | 4 x 7 | 0.45 | 1.5 | 5.0 | 5.0 | 5 x 7 ~ 11 | 0.5 | 2.0 | 5.0 | 5.0 | 6 x 7 ~ 15 | 0.5 | 2.5 | 5.0 | 5.0 | 8 x 7 ~ 9 | 0.5 | 3.5 | 5.0 | 5.0 | 8 x 11.5 ~ 20 | 0.6 | 3.5 | 5.0 | 5.0 | | | | | | | | | |
| | | | D x L | d | F | F' | H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 3 x 5 | 0.40 | 1.0 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 4 x 5 | 0.45 | 1.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 5 x 5 | 0.45 | 2.0 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 6.3 ~ 8 x 5 | 0.45 | 2.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 4 x 7 | 0.45 | 1.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 5 x 7 ~ 11 | 0.5 | 2.0 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 6 x 7 ~ 15 | 0.5 | 2.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 8 x 7 ~ 9 | 0.5 | 3.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 x 11.5 ~ 20 | 0.6 | 3.5 | 5.0 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cut (3 ~ 25) | CC | | <table border="1"> <tbody> <tr><td>10</td><td>0.6</td><td>5.0</td><td>-</td><td>4.5</td></tr> <tr><td>12.5</td><td>0.6</td><td>5.0</td><td>-</td><td>4.5</td></tr> <tr><td>16</td><td>0.8</td><td>7.5</td><td>-</td><td>4.5</td></tr> <tr><td>18</td><td>0.8</td><td>7.5</td><td>-</td><td>4.5</td></tr> <tr><td>22</td><td>1.0</td><td>10.0</td><td>-</td><td>4.5</td></tr> <tr><td>25</td><td>1.0</td><td>12.5</td><td>-</td><td>4.5</td></tr> </tbody> </table> | 10 | 0.6 | 5.0 | - | 4.5 | 12.5 | 0.6 | 5.0 | - | 4.5 | 16 | 0.8 | 7.5 | - | 4.5 | 18 | 0.8 | 7.5 | - | 4.5 | 22 | 1.0 | 10.0 | - | 4.5 | 25 | 1.0 | 12.5 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 10 | 0.6 | 5.0 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 12.5 | 0.6 | 5.0 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 16 | 0.8 | 7.5 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 18 | 0.8 | 7.5 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 22 | 1.0 | 10.0 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 25 | 1.0 | 12.5 | - | 4.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Snap-in Forming Cut (4 ~ 8) | SF | | <table border="1"> <thead> <tr> <th>D</th> <th>d</th> <th>H1</th> <th>H2</th> <th>H3</th> <th>F</th> <th>P</th> <th>E</th> </tr> </thead> <tbody> <tr><td>4 ~ 8 x 5</td><td>0.45</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> <tr><td>4 x 7</td><td>0.45</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> <tr><td>5 x 7 ~ 11</td><td>0.5</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> <tr><td>6 x 7 ~ 15</td><td>0.5</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> <tr><td>8 x 7 ~ 9</td><td>0.5</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> <tr><td>8 x 11.5 ~ 20</td><td>0.6</td><td>5.0</td><td>2.8</td><td>2.5</td><td>5.0</td><td>1.1</td><td>1.1</td></tr> </tbody> </table> | D | d | H1 | H2 | H3 | F | P | E | 4 ~ 8 x 5 | 0.45 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | 4 x 7 | 0.45 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | 5 x 7 ~ 11 | 0.5 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | 6 x 7 ~ 15 | 0.5 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | 8 x 7 ~ 9 | 0.5 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | 8 x 11.5 ~ 20 | 0.6 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 |
| | | | | | | D | d | H1 | H2 | H3 | F | P | E | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | 4 ~ 8 x 5 | 0.45 | 5.0 | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 x 7 | 0.45 | 5.0 | | | | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 x 7 ~ 11 | 0.5 | 5.0 | | | | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 x 7 ~ 15 | 0.5 | 5.0 | | | | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 x 7 ~ 9 | 0.5 | 5.0 | | | | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 x 11.5 ~ 20 | 0.6 | 5.0 | | | | 2.8 | 2.5 | 5.0 | 1.1 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | 10 | 0.6 | 4.5 | 2.5 | - | 5.0 | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 12.5 | 0.6 | 4.5 | 2.5 | - | 5.0 | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 16 | 0.8 | 4.5 | 2.5 | - | 7.5 | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 18 | 0.8 | 4.5 | 2.5 | - | 7.5 | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 22 | 1.0 | 4.5 | 2.5 | - | 10.0 | 1.2 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 1.0 | 4.5 | 2.5 | - | 12.5 | 1.2 | 1.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | D x L | d | F±0.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 5 X 11 | 0.5 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 6.3 X 11 ~ 15 | 0.5 | 2.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 X 11.5 ~ 20 | 0.6 | 3.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | 10 | 0.6 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 12.5 | 0.6 | 5.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 16 | 0.8 | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 18 | 0.8 | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | 1.0 | 10.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | 1.0 | 12.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Ammo pack box. (SA, TA) Reel pack box. (SR, TR)
10 Boxes per carton



Packaging Quantity

| D | 3 | 4 | 5 | 6.3 | 8 | 10 | 13 |
|--------|------|------|------|------|------|-----|-----|
| TA, SA | 3000 | 2000 | 2000 | 2000 | 1000 | 500 | 250 |
| TR, SR | 3000 | 1500 | 1200 | 1000 | 800 | 500 | 500 |

NOTES:

- The above quantities are typical. Quantities may vary.
- The component will be oriented on the tape so that the positive lead is leading or the negative lead is leading, depending on the customer's request