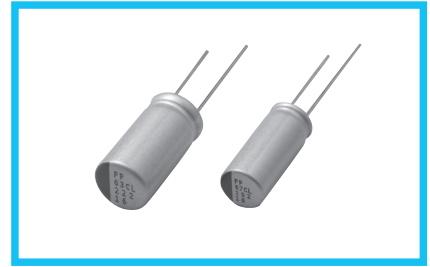


**RNL** Large Sized, High Capacitance



**FPCAP** Expanded



- Low ESR, High Capacitance, High ripple current.
- Large Sized.
- Load life of 2000 / 5000 hours at 105°C.
- Radial lead type : Lead free flow soldering condition correspondence.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



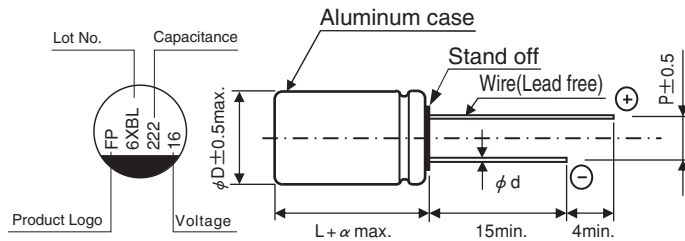
■ Specifications

| Item                          | Performance Characteristics  |   |
|-------------------------------|--|---|
| Category Temperature Range    | -55 to +105°C  |   |
| Rated Voltage Range           | 16 to 25V  |   |
| Rated Capacitance Range       | 270 to 2400μF  |   |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C  |   |
| Tangent of loss angle (tan δ) | Less than or equal to the specified value at 120Hz, 20°C   |   |
| ESR (※1)                      | Less than or equal to the specified value at 100kHz, 20°C  |   |
| Leakage Current (※2)          | Less than or equal to the specified value. After 2 minutes' application of rated voltage at 20°C |   |
| Endurance                     | Test condition   | 105°C, rated voltage 2000 / 5000Hrs.              |
|                               | Capacitance change   | Within ±20% of initial value before test          |
|                               | tan δ  | 150% or less than the initial specified value     |
|                               | ESR(※1)  | 150% or less than the initial specified value     |
|                               | Leakage current (※2)   | Less than or equal to the initial specified value |

※1 ESR should be measured at both of the terminal ends closest to the capacitor body.

※2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.

■ Dimensions



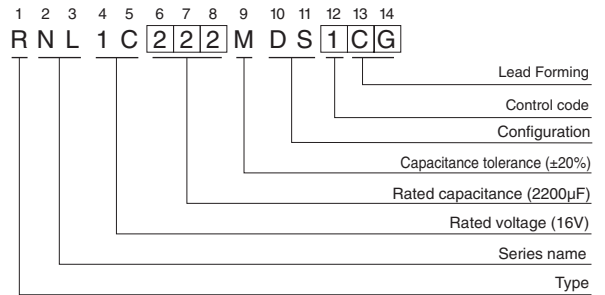
(mm)

| φD×L    | φd  | P   | α   |
|---------|-----|-----|-----|
| φ8×16L  | 0.6 | 3.5 | 1.5 |
| φ8×20L  | 0.6 | 3.5 | 1.5 |
| φ10×16L | 0.6 | 5.0 | 1.5 |
| φ10×20L | 0.6 | 5.0 | 1.5 |

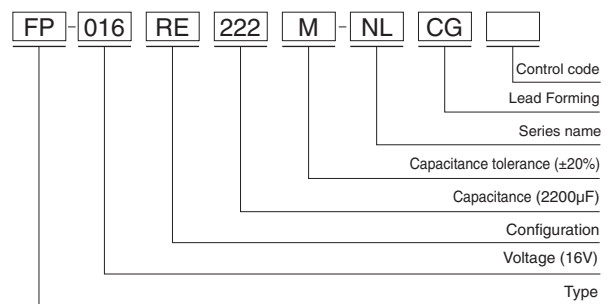
● Frequency coefficient of rated ripple current

| Frequency   | 120 Hz | 1 kHz | 10 kHz | 100 kHz | 300 kHz |
|-------------|--------|-------|--------|---------|---------|
| Coefficient | 0.10   | 0.45  | 0.50   | 1.00    | 1.00    |

Type numbering system (Example : 16V 2200μF)  
Nichicon part number



FPCAP part number



● Dimension table in next page.

RNL

■ Dimensions

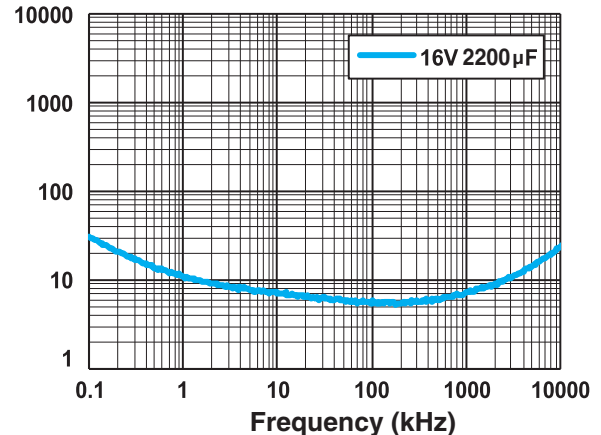
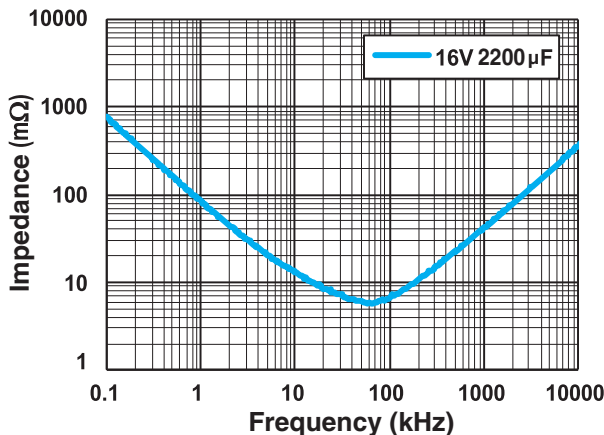
| Rated Voltage (V) (code) | Surge Voltage (V) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 2 minutes) | ESR (mΩ) (20°C/100kHz) | Rated Ripple Current (mA rms) (105°C/100kHz) | NICHICON         | FFPCAP                  |
|--------------------------|-------------------|------------------------|---------------------|-------|--|------------------------|--|------------------|-------------------------|
| 16 (1C)                  | 18.4              | 680                    | 8×16                | 0.12  | 1088   | 8                      | 7000   | RNL1C681MDS1□□   | FP-016RE681M-NL□□       |
|                          |                   | 820                    | ▲ 8×16              | 0.12  | 1312   | 8                      | 7000   | RNL1C821MDS6□□   | FP-016RE821M-NL□□-DS    |
|                          |                   | * 820                  | 8×16                | 0.12  | 1312   | 8                      | 7000   | RNL1C821MDSBSQ□□ | FP-016RE821M-NL□□-5K-DS |
|                          |                   | 820                    | 8×20                | 0.12  | 1312   | 8                      | 7500   | RNL1C821MDS1□□   | FP-016RE821M-NL□□       |
|                          |                   | * 820                  | 8×20                | 0.12  | 1312   | 8                      | 7500   | RNL1C821MDSASQ□□ | FP-016RE821M-NL□□-5K    |
|                          |                   | 1000                   | 8×20                | 0.12  | 1600   | 8                      | 7500   | RNL1C102MDS1□□   | FP-016RE102M-NL□□       |
|                          |                   | * 1000                 | 8×20                | 0.12  | 1600   | 8                      | 7500   | RNL1C102MDSASQ□□ | FP-016RE102M-NL□□-5K    |
|                          |                   | 1000                   | 10×16               | 0.12  | 1600   | 8                      | 7700   | RNL1C102MDS4□□   | FP-016RE102M-NL□□-MS    |
|                          |                   | * 1000                 | 10×16               | 0.12  | 1600   | 8                      | 7700   | RNL1C102MDSBSQ□□ | FP-016RE102M-NL□□-5K-MS |
|                          |                   | 1200                   | 8×20                | 0.12  | 1920   | 8                      | 7500   | RNL1C122MDS1□□   | FP-016RE122M-NL□□       |
|                          |                   | * 1200                 | 8×20                | 0.12  | 1920   | 8                      | 7500   | RNL1C122MDSASQ□□ | FP-016RE122M-NL□□-5K    |
|                          |                   | 1200                   | 10×16               | 0.12  | 1920   | 8                      | 7700   | RNL1C122MDS4□□   | FP-016RE122M-NL□□-MS    |
|                          |                   | * 1200                 | 10×16               | 0.12  | 1920   | 8                      | 7700   | RNL1C122MDSBSQ□□ | FP-016RE122M-NL□□-5K-MS |
|                          |                   | 1500                   | ▲ 8×20              | 0.12  | 2400   | 8                      | 7500   | RNL1C152MDS6□□   | FP-016RE152M-NL□□-DS    |
|                          |                   | 1500                   | 10×16               | 0.12  | 2400   | 8                      | 7700   | RNL1C152MDS4□□   | FP-016RE152M-NL□□-MS    |
|                          |                   | * 1500                 | 10×16               | 0.12  | 2400   | 8                      | 7700   | RNL1C152MDSBSQ□□ | FP-016RE152M-NL□□-5K-MS |
|                          |                   | 1500                   | 10×20               | 0.12  | 2400   | 8                      | 8100   | RNL1C152MDS1□□   | FP-016RE152M-NL□□       |
|                          |                   | * 1500                 | 10×20               | 0.12  | 2400   | 8                      | 8100   | RNL1C152MDSASQ□□ | FP-016RE152M-NL□□-5K    |
|                          |                   | 1800                   | 10×16               | 0.12  | 2880   | 8                      | 7700   | RNL1C182MDS4□□   | FP-016RE182M-NL□□-MS    |
|                          |                   | * 1800                 | 10×16               | 0.12  | 2880   | 8                      | 7700   | RNL1C182MDSBSQ□□ | FP-016RE182M-NL□□-5K-MS |
|                          |                   | 1800                   | 10×20               | 0.12  | 2880   | 8                      | 8100   | RNL1C182MDS1□□   | FP-016RE182M-NL□□       |
|                          |                   | * 1800                 | 10×20               | 0.12  | 2880   | 8                      | 8100   | RNL1C182MDSASQ□□ | FP-016RE182M-NL□□-5K    |
|                          |                   | 2200                   | 10×20               | 0.12  | 3520   | 8                      | 8100   | RNL1C222MDS1□□   | FP-016RE222M-NL□□       |
|                          |                   | * 2200                 | 10×20               | 0.12  | 3520   | 8                      | 8100   | RNL1C222MDSASQ□□ | FP-016RE222M-NL□□-5K    |
| 2400                     | 10×20             | 0.12                   | 3840                | 8     | 8100   | RNL1C242MDS1□□         | FP-016RE242M-NL□□                            |                  |                         |
| * 2400                   | 10×20             | 0.12                   | 3840                | 8     | 8100   | RNL1C242MDSASQ□□       | FP-016RE242M-NL□□-5K                         |                  |                         |
| 25 (1E)                  | 28.7              | 270                    | 8×16                | 0.12  | 675  | 10                     | 5800   | RNL1E271MDS1□□   | FP-025RE271M-NL□□       |
|                          |                   | 330                    | 8×16                | 0.12  | 825  | 10                     | 5800   | RNL1E331MDS1□□   | FP-025RE331M-NL□□       |
|                          |                   | 390                    | 8×16                | 0.12  | 975  | 10                     | 5800   | RNL1E391MDS1□□   | FP-025RE391M-NL□□       |
|                          |                   | 470                    | 8×16                | 0.12  | 1175   | 10                     | 5800   | RNL1E471MDS1□□   | FP-025RE471M-NL□□       |
|                          |                   | 560                    | 8×16                | 0.12  | 1400   | 10                     | 5800   | RNL1E561MDS1□□   | FP-025RE561M-NL□□       |
|                          |                   | 560                    | 10×16               | 0.12  | 1400   | 10                     | 5800   | RNL1E561MDS4□□   | FP-025RE561M-NL□□-MS    |
|                          |                   | * 560                  | 10×16               | 0.12  | 1400   | 10                     | 5800   | RNL1E561MDSBSQ□□ | FP-025RE561M-NL□□-5K-MS |
|                          |                   | 680                    | 10×16               | 0.12  | 1700   | 10                     | 5800   | RNL1E681MDS4□□   | FP-025RE681M-NL□□-MS    |
|                          |                   | * 680                  | 10×16               | 0.12  | 1700   | 10                     | 5800   | RNL1E681MDSBSQ□□ | FP-025RE681M-NL□□-5K-MS |
|                          |                   | 680                    | 10×20               | 0.12  | 1700   | 10                     | 8100   | RNL1E681MDS9□□   | FP-025RE681M-NL□□-US    |
|                          |                   | * 680                  | 10×20               | 0.12  | 1700   | 10                     | 8100   | RNL1E681MDSCSQ□□ | FP-025RE681M-NL□□-5K-US |
|                          |                   | 820                    | 10×16               | 0.12  | 2050   | 10                     | 5800   | RNL1E821MDS4□□   | FP-025RE821M-NL□□-MS    |
|                          |                   | * 820                  | 10×16               | 0.12  | 2050   | 10                     | 5800   | RNL1E821MDSBSQ□□ | FP-025RE821M-NL□□-5K-MS |
|                          |                   | 820                    | 10×20               | 0.12  | 2050   | 10                     | 8100   | RNL1E821MDS1□□   | FP-025RE821M-NL□□       |
|                          |                   | * 820                  | 10×20               | 0.12  | 2050   | 10                     | 8100   | RNL1E821MDSASQ□□ | FP-025RE821M-NL□□-5K    |
|                          |                   | 1000                   | 10×16               | 0.12  | 2500   | 10                     | 5800   | RNL1E102MDS4□□   | FP-025RE102M-NL□□-MS    |
|                          |                   | * 1000                 | 10×16               | 0.12  | 2500   | 10                     | 5800   | RNL1E102MDSBSQ□□ | FP-025RE102M-NL□□-5K-MS |
|                          |                   | 1000                   | 10×20               | 0.12  | 2500   | 10                     | 8100   | RNL1E102MDS1□□   | FP-025RE102M-NL□□       |
|                          |                   | * 1000                 | 10×20               | 0.12  | 2500   | 10                     | 8100   | RNL1E102MDSASQ□□ | FP-025RE102M-NL□□-5K    |
|                          |                   | 1200                   | 10×20               | 0.12  | 3000   | 10                     | 8100   | RNL1E122MDS1□□   | FP-025RE122M-NL□□       |
| * 1200                   | 10×20             | 0.12                   | 3000                | 10    | 8100   | RNL1E122MDSASQ□□       | FP-025RE122M-NL□□-5K                         |                  |                         |

Blue : New product (as of October 2023)

\* : Load life 5000hours.

"▲" In this case, [6] will be put at 12th digit of type numbering system

■ Frequency Characteristics (The frequency characteristics are typical and not a guaranteed value.)



• For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.