CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

nichicon

RNL

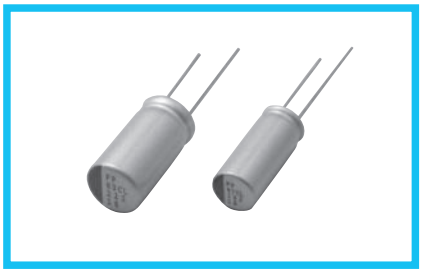
Large Sized, High Capacitance

HR High Ripple Current | Z Low Impedance | F For High Frequency | Anti-Solvent Feature

- 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).

RNE
Higher Capacitance
RNL

FPCAP Expanded

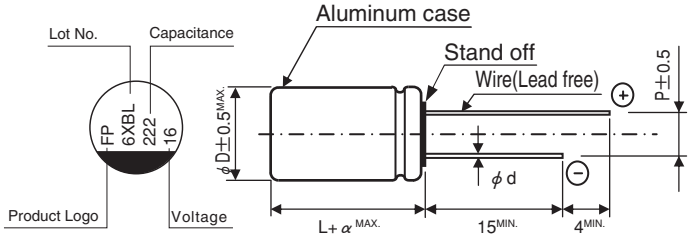


■ Specifications

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14
R	N	L	1	C	2	2	2	M	D	S	1	C	G

- 1 2 3 : Type
- 4 5 : Rated voltage (16V)
- 6 7 8 : Rated capacitance (2200µF)
- 9 : Capacitance tolerance (±20%)
- 10 11 : Configuration
- 12 13 : Control code
- 14 : Lead Forming

FPCAP part number

1 2	3 4 5	6 7	8 9 10	11	12 13	14 15	16
FP	016	RE	222	M	NL	CG	

- 1 2 : Type
- 3 4 5 : Voltage (16V)
- 6 7 : Configuration
- 8 9 10 : Capacitance (2200µF)
- 11 : Capacitance tolerance (±20%)
- 12 13 : Series name
- 14 15 : Lead Forming
- 16 : Control code

● Dimension table in next page.

RNL

■ Dimensions

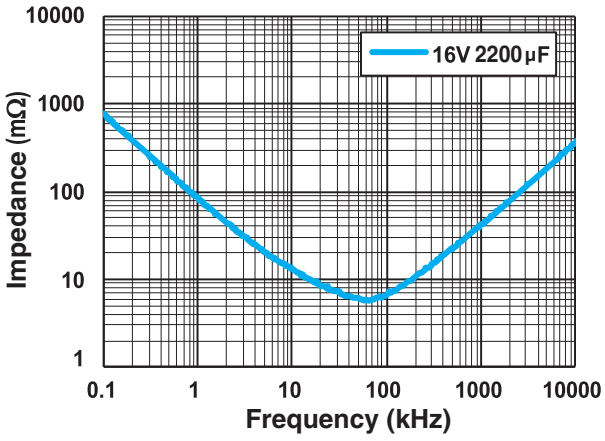
Rated Voltage (V) (code)	Surge Voltage (V)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 2 minutes)	ESR (mΩ) (20°C/100kHz)	Rated Ripple Current (mArms) (105°C/100kHz)	NICHICON	FFPCAP
16 (1C)	18.4	680	8×16	0.12	1088	8	7000	RNL1C681MDS1□□	FP-016RE681M-NL□□
		820	▲ 8×16	0.12	1312	8	7000	RNL1C821MDS6□□	FP-016RE821M-NL□□-DS
		820	8×20	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**

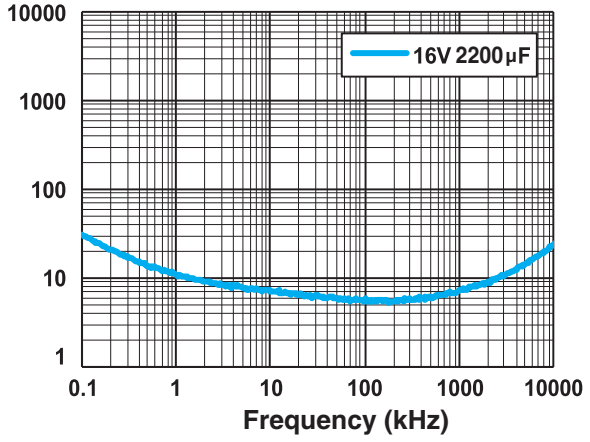
＊: Load life 5000hours.

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

Blue : New product

■ 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.