

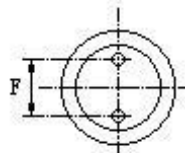
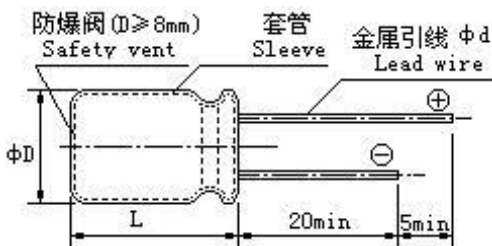
EF

- Low Impedance, Long Life
- Endurance 3000-6000 hours at 105°C
- Comply with the RoHS

SPECIFICATIONS

Category Temperature	-40+105°C											
Voltage Range	6.3-100V.DC											
Capacitance Tolerance	±20%(120Hz,20°C)											
Leakage Current	I≤0.01CV(μA) or 3μA, whichever is greater (2 minutes)											
Dissipation Factor (120hz、20°C)	WV	6.3	10	16	25	35	50	63	80	100		
	tgδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08		
When nominal capacitance is over 1000 μF, tanδ shall be added 0.02 to the list value with increase of every 1000 μF.												
Stability at Low Temperature (120Hz)	WV	6.3	10	16	25	35	50	63	80	100		
	Z _{-25°C} /Z _{+20°C}	5	4	3	3	3	3	3	3	3		
	Z _{-40°C} /Z _{+20°C}	10	8	5	4	4	4	4	4	4		
Endurance	In an environment of +105°C, apply the operating voltage with ripple current for 3000-6000 hours, and after 16 hours of recovery, the product performance meets the following requirements:											
	Working Voltage	6.3-10V			16-100V			Diameter	Product Life			
	Capacitance Change	≤±30%of initial specified value			≤±25%of initial specified value			φ5~φ6.3	3000H			
	Dissipation Factor	≤ 200% of initial specified value									φ8~φ10	5000H
	Leakage Current	≤ initial specified value									≥φ13	6000H
Shelf Life	In an environment of +105°C, apply the operating voltage with ripple current for 1000 hours, and after 16 hours of recovery, the product performance meets the following requirements:											
	Capacitance Change	Within ±20%of initial measured										
	Dissipation Factor	≤200% of initial specified value										
	Leakage Current	≤200% of initial specified value										

DRAWING & DIMENSIONS (Unit: mm)



φD	5	6.3	8	10	13	16	18
F±0.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd±0.05	0.5	0.5	0.5	0.6	0.6	0.8	0.8
L	(L<20) ±1.5				(L≥20) ±2.0		
D	(D<20) ±0.5				(D≥20) ±1.0		

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Capacitance(μF)	Frequency(Hz)	120	1K	10K	100K
	Coefficient				
Capacitance<47		0.55	0.70	0.90	1.00
47≤Capacitance<470		0.70	0.85	0.95	1.00
470≤Capacitance<1000		0.75	0.90	0.98	1.00
Capacitance≥1000		0.80	0.95	1.00	1.00

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NOMINAL CAPACITANCE, RATED VOLTAGE & DIMENSIONS

	6.3V (0J)				10V (1A)			
	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number
100	5X11	0.58	210	EF0J101M0511BBH00000	5X11	0.58	210	EF1A101M0511BBH00000
150	5X11	0.58	210	EF0J151M0511BBH00000	5X11	0.58	210	EF1A151M0511BBH00000
220	6.3X12	0.22	340	EF0J221M6L12CBH00000	6.3X12	0.22	340	EF1A221M6L12CBH00000
330	6.3X12	0.22	340	EF0J331M6L12CBH00000	8X12	0.13	640	EF1A331M0812DBH00000
470	8X12	0.13	640	EF0J471M0812DBH00000	8X12	0.13	640	EF1A471M0812DBH00000
680	8X12	0.13	640	EF0J681M0812DBH00000	8X16	0.087	840	EF1A681M0816DBH00000
1000	8X16	0.087	840	EF0J102M0816DBH00000	8X20	0.069	1050	EF1A102M0820DBH00000
1500	10X20	0.046	1400	EF0J152M1020EBH00000	10X25	0.042	1650	EF1A152M1025EBH00000
2200	10X25	0.042	1650	EF0J222M1025EBH00000	13X20	0.035	1900	EF1A222M1320EBH00000
3300	13X20	0.035	1900	EF0J332M1320EBH00000	13X25	0.030	2124	EF1A332M1325EBH00000

	16V (1C)				25V (1E)			
	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number
47	5X11	0.58	208	EF1C470M0511BBH00000	5X11	0.58	210	EF1E470M0511BBH00000
68	5X11	0.58	208	EF1C680M0511BBH00000				
100	6.3X12	0.22	340	EF1C101M6L12CBH00000	6.3X12	0.22	340	EF1E101M6L12CBH00000
150	6.3X12	0.22	340	EF1C151M6L12CBH00000	6.3X12	0.22	340	EF1E151M6L12CBH00000
220	8X12	0.13	640	EF1C221M0812DBH00000	8X12	0.13	640	EF1E221M0812DBH00000
330	8X12	0.13	640	EF1C331M0812DBH00000	8X16	0.087	840	EF1E331M0816DBH00000
470	8X16	0.087	840	EF1C471M0816DBH00000	8X20	0.069	1050	EF1E471M0820DBH00000
680	8X20	0.069	1050	EF1C681M0820DBH00000	10X20	0.046	1400	EF1E681M1020EBH00000
1000	10X20	0.046	1400	EF1C102M1020EBH00000	13X20	0.035	1900	EF1E102M1320EBH00000
1500	13X20	0.035	1900	EF1C152M1320EBH00000	13X25	0.030	2124	EF1E152M1325EBH00000
2200	13X25	0.030	2124	EF1C222M1325EBH00000	13X30	0.027	2480	EF1E222M1330EBH00000
3300	13X30	0.027	2480	EF1C332M1330EBH00000	16X30	0.026	2880	EF1E332M1630FBH00000

Rated ripple current: (105°C, 100kHz); ESR: (20°C, 100kHz)

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NOMINAL CAPACITANCE, RATED VOLTAGE & DIMENSIONS

	35V (1V)				50V (1H)			
	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number
1.0					5X11	3.0	45	EF1H1R0M0511BBH00000
2.2					5X11	3.0	54	EF1H2R2M0511BBH00000
3.3					5X11	3.0	63	EF1H3R3M0511BBH00000
4.7					5X11	3.0	75	EF1H4R7M0511BBH00000
6.8					5X11	3.0	91	EF1H6R8M0511BBH00000
10					5X11	1.4	110	EF1H100M0511BBH00000
15					5X11	1.4	110	EF1H150M0511BBH00000
22					6.3X12	0.505	183	EF1H220M6L12CBH00000
33	5X11	0.580	210	EF1V330M0511BBH00000	6.3X12	0.337	224	EF1H330M6L12CBH00000
47	6.3X12	0.337	224	EF1V470M6L12CBH00000	6.3X12	0.237	267	EF1H470M6L12CBH00000
68	6.3X12	0.237	267	EF1V680M6L12CBH00000	8X12	0.190	380	EF1H680M0812DBH00000
100	8X12	0.190	380	EF1V101M0812DBH00000	8X12	0.170	555	EF1H101M0812DBH00000
150	8X12	0.130	640	EF1V151M0812DBH00000	10X13	0.120	760	EF1H151M1013EBH00000
220	8X16	0.087	840	EF1V221M0816DBH00000	10X16	0.084	1050	EF1H221M1016EBH00000
330	10X16	0.060	1210	EF1V331M1016EBH00000	10X25	0.055	1440	EF1H331M1025EBH00000
470	10X20	0.046	1400	EF1V471M1020EBH00000	13X20	0.045	1660	EF1H471M1320EBH00000
680	13X20	0.035	1900	EF1V681M1320EBH00000	13X25	0.040	1930	EF1H681M1325EBH00000
1000	13X25	0.032	2124	EF1V102M1325EBH00000	16X25	0.036	2300	EF1H102M1625FBH00000
1500	13X30	0.030	2270	EF1V152M1330EBH00000	16X35	0.032	2750	EF1H152M1635FBH00000
2200	16X30	0.028	2780	EF1V222M1630FBH00000	18X35	0.030	3100	EF1H222M1835FBH00000

	63V (1J)				80V (1K)			
	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number	Dimensions (mm)	ESR (Ω)	Ripple Current	Part Number
10	5X11	2.30	49	EF1J100M0511BBH00000				
15	6.3X12	1.20	115	EF1J150M6L12CBH00000				
22	6.3X12	1.20	115	EF1J220M6L12CBH00000				
33	6.3X12	0.960	126	EF1J330M6L12CBH00000				
47	8X12	0.190	380	EF1J470M0812DBH00000				
68	8X12	0.170	555	EF1J680M0812DBH00000				
100	8X16	0.140	610	EF1J101M0816DBH00000				
150	10X16	0.110	700	EF1J151M1016EBH00000	10X16	0.240	600	EF1K151M1016EBH00000
220	10X20	0.080	920	EF1J221M1020EBH00000	10X20	0.150	680	EF1K221M1020EBH00000
330	13X20	0.065	1250	EF1J331M1320EBH00000	13X20	0.120	750	EF1K331M1320EBH00000
470	13X25	0.053	1620	EF1J471M1325EBH00000	16X20	0.070	1150	EF1K471M1620FBH00000
680	13X30	0.043	1950	EF1J681M1330EBH00000	18X25	0.036	1750	EF1K681M1825FBH00000
1000					16X40	0.029	2200	EF1K102M1640FBH00000

Rated ripple current: (105°C, 100KHz): ESR: (20°C,100KHz)

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NOMINAL CAPACITANCE, RATED VOLTAGE & DIMENSIONS

	100V (2A)			
	Dimensions (mm)	ESR (Ω)	Ripple Current (mA)	Part Number
4.7	5X11	3.0	63	EF2A4R7M0511BBH00000
6.8	6.3X12	3.0	76	EF2A6R8M6L12CBH00000
10	6.3X12	1.440	94	EF2A100M6L12CBH00000
15	6.3X12	0.960	115	EF2A150M6L12CBH00000
22	8X12	0.850	220	EF2A220M0812DBH00000
33	10X13	0.690	314	EF2A330M1013EBH00000
47	10X13	0.344	370	EF2A470M1013EBH00000
68	10X16	0.248	470	EF2A680M1016EBH00000
100	10X25	0.160	560	EF2A101M1025EBH00000
150	10X25	0.160	560	EF2A151M1025EBH00000
220	13X25	0.130	950	EF2A221M1325EBH00000
330	16X25	0.100	1440	EF2A331M1625FBH00000

Rated ripple current: (105°C, 100KHz); ESR: (20°C, 100KHz)