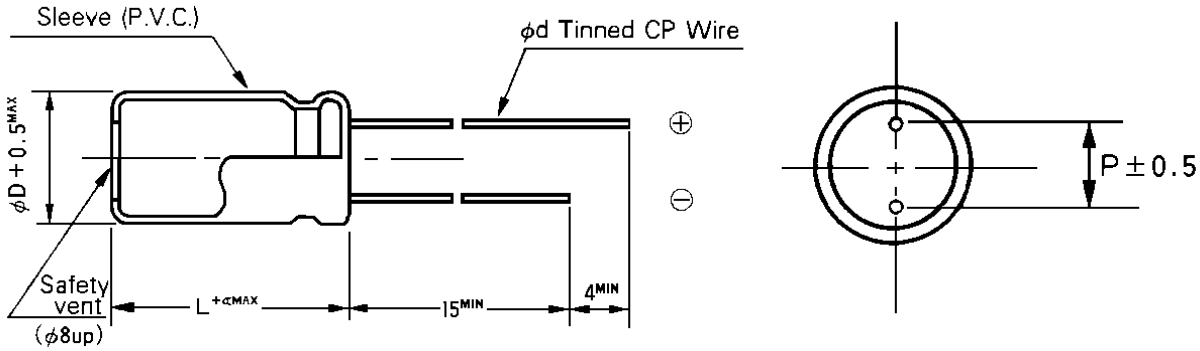
FMEX Series

Features

* High reliability with high ripple current
* Low impedence for high frequency operation
* Temperature Rated at 105ºC
* 2000, 3000 and 5000 Hour lifetimes (Can size dependent)
* Available in standard and low profile can sizes
* Solvent proof

Item	Performance Characteristics
Operating Temperature Range	-55ºC to +105ºC
Working Voltage Range	6.3 to 63 Volts D.C.
Nominal Capacitance Range	0.47 to 15000 uF
Capacitance Tolerance	+/- 20 % (120 Hz), 20ºC
Leakage Current (+20ºC)	I <=0.03 CV or 4 uA, whichever is greater after 1 Minute of applied voltage
Dissipation Factor % (120 Hz, +20ºC)	Less than the value below: WVDC: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 — 120 Hz tan δ (Max): 0.24 / 0.2 / 0.16 / 0.14 / 0.12 / 0.1 / 0.09 — 20ºC For capacitances of more than 1000uF, add 0.02 for every increase of 1000uf (120Hz, 20ºC)
Temperature Characteristic	Impedence Ratio WVDC: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 — 120 Hz Z(-55ºC) / Z(+20ºC): 4 / 4 / 3 / 3 / 3 / 2 / 2
Load Life	Test conditions Duration: Ø D <=6.3mm 2000 Hrs; 8mm <Ø D< 10mm 3000 Hrs; Ø D > 10mm 5000 Hrs Ambient temperature: +105ºC Applied voltage: Rated working voltage Ripple Current: Maximum rated ripple current. After testing--Measure at 20ºC Capacitance change: <= +/- 20% of initial measured value Dissipation factor: <= 200% of initial specified value Leakage current: <= The initial specified value
Shelf Life	Test Conditions Duration time: 1000 Hrs Ambient temperature: +105ºC Applied voltage: According to JIS C-5102 4-3 After testing--Measure at 20ºC Same limits as for load life.
Marking	White print on black sleeve
Applicable Standards	Characteristics of W of JIS C-5141

Physical Dimensions and Mounting Details



Diameter	5	6.3	8	10	12.5	16	18
Lead Pitch	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Lead Diameter	0.5	0.5	0.5	0.6	0.6	0.8	0.8

Please Note: Case size 12.5 dia. and 25mm long has a lead dia. of 0.8 mm.

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FMEX Series

Ir (mA) specified at 105ºC and 100 KHz
Impedence (Z) specified at 20ºC and 100 KHz

FMEX Standard Products Table 6.3 to 35 Volt

	6.3 V (Case Code A)			6.3 V (Case Code B)			10 V (Case Code A)			10 V (Case Code B)		
uF	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z
68							5 x 11	155	0.800			
100	5 x 11	150	0.850				6.3 x 11	220	0.550			
150	6.3 x 11	220	0.490				6.3 x 11	260	0.350			
220	6.3 x 11	260	0.300				6.3 x 15	370	0.240			
330	6.3 x 15	405	0.200				8 x 11.5	460	0.160			
470	8 x 15	550	0.140	10 x 12.5	570	0.140	8 x 16	590	0.120	10 x 12.5	590	0.130
680	8 x 20	735	0.100	10 x 15	700	0.110	8 x 20	790	0.085	10 x 15	775	0.090
1000	10 x 20	950	0.075	12.5 x 15	885	0.085	10 x 20	1060	0.060	12.5 x 15	1040	0.065
1500	10 x 25	1220	0.055	12.5 x 15	1040	0.065	10 x 31.5	1440	0.045	16 x 15	1320	0.050
2200	10 x 31.5	1470	0.043	16 x 15	1340	0.049	12.5 x 25	1710	0.034	18 x 15	1600	0.039
3300	12.5 x 25	1690	0.034	18 x 15	1600	0.039	12.5 x 35.5	2140	0.026	16 x 20	1850	0.031
4700	12.5 x 35.5	2100	0.028	18 x 20	1920	0.032	16 x 31.5	2440	0.023	18 x 25	2250	0.026
6800	16 x 31.5	2370	0.024	18 x 25	2190	0.027	16 x 35.5	2690	0.020	18 x 31.5	2540	0.022
10000	16 x 40	2750	0.020	18 x 31.5	2490	0.023	18 x 40	3020	0.017			
15000	18 x 40	2960	0.018									

	16 V (Case Code A)			16 V (Case Code B)			25 V (Case Code A)			25 V (Case Code B)		
uF	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z
33							5 x 11	150	0.800			
47	5 x 11	155	0.800				6.3 x 11	220	0.550			
68	6.5 x 11	225	0.500				6.3 x 11	260	0.360			
100	6.3 x 11	265	0.350				6.3 x 15	380	0.240			
120										6.3 x 15	390	0.250
150	6.3 x 15	375	0.230				8 x 11.5	455	0.160			
220	8 x 11.5	460	0.160				8 x 15	615	0.110	10 x 12.5	600	0.130
270	8 x 12	465	0.160									
330	8 x 15	590	0.120	10 x 12.5	625	0.120	8 x 20	785	0.085	10 x 15	745	0.095
470	8 x 20	770	0.090	10 x 15	760	0.090	10 x 20	1010	0.065	12.5 x 15	980	0.070
680	10 x 20	1030	0.065	12.5 x 15	970	0.070	10 x 31.5	1380	0.046	16 x 15	1260	0.055
1000	10 x 31.5	1400	0.047	16 x 15	1270	0.055	12.5 x 25	1640	0.036	18 x 15	1490	0.043
1200	10 x 31	1440	0.044	12.5 x 20	1440	0.044						
1500	12.5 x 25	1620	0.036	18 x 15	1540	0.041	12.5 x 31.5	1960	0.029	16 x 20	1730	0.034
2200	12.5 x 31.5	2010	0.028	16 x 20	1760	0.033	12.5 x 40	2360	0.024	18 x 20	2020	0.028
3300	12.5 x 40	2390	0.023	18 x 20	2110	0.027	16 x 35.5	2610	0.020	18 x 31.5	2460	0.023
4700	16 x 35.5	2650	0.020	18 x 31.5	2480	0.023	18 x 40	2960	0.018			
6800	18 x 35.5	2890	0.018									

FMEX Series

Ir (mA) specified at 105ºC and 100 KHz
Impedence (Z) specified at 20ºC and 100 KHz

FMEX Standard Products Table 6.3 to 35 Volt

	35 V (Case Code A)			35 V (Case Code B)			50 V (Case Code A)			50 V (Case Code B)		
uF	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z
0.47							5 x 11	24	3.900			
0.68							5 x 11	30	3.700			
1							5 x 11	38	3.500			
1.5							5 x 11	46	3.300			
2.2							5 x 11	56	3.000			
3.3							5 x 11	70	2.600			
4.7							5 x 11	82	2.200			
6.8							5 x 11	92	1.800			
10							5 x 11	115	1.400			
15							5 x 11	145	0.930			
22	5 x 11	160	0.750				6.3 x 11	200	0.650			
33	6.3 x 11	225	0.490				6.3 x 11	235	0.430			
47	6.3 x 11	265	0.340				6.3 x 15	330	0.300			
56										6.3 x 15	405	0.290
68	6.3 x 15	370	0.240				8 x 11.5	410	0.200			
100	8 x 11.5	465	0.160				8 x 20	630	0.140	10 x 15	565	0.160
150	8 x 15	590	0.120	10 x 12.5	625	0.120	10 x 20	810	0.100	12.5 x 15	760	0.110
220	8 x 20	790	0.085	10 x 17	760	0.090	10 x 25	1030	0.075	12.5 x 15	880	0.080
330	10 x 20	1030	0.060	12.5 x 15	1020	0.065	10 x 31.5	1240	0.055	16 x 15	1210	0.060
470	10 x 31.5	1420	0.046	16 x 15	1280	0.055	12.5 x 25	1490	0.044	18 x 15	1430	0.046
680	12.5 x 25	1610	0.035	18 x 15	1490	0.042	12.5 x 35.5	1870	0.036	16 x 20	1630	0.040
1000	12.5 x 31.5	1970	0.029	16 x 20	1750	0.034	16 x 31.5	2180	0.030	18 x 25	2000	0.033
1500	12.5 x 40	2360	0.024	18 x 20	2040	0.028	16 x 40	2400	0.026	18 x 31.5	2240	0.029
1800				18 x 25	2290	0.034						
2200	16 x 35.5	2700	0.020	18 x 31.5	2490	0.023	18 x 40	2560	0.024			
3300	18 x 40	3040	0.017									

Ir (mA) specified at 105ºC and 100 KHz
Impedence (Z) specified at 20ºC and 100 KHz

FMEX Standard Products Table 63 to 100 Volt

	63 V (Case Code A)			63 V (Case Code B)			100 V (Case Code A)			100V (Case Code B)		
uF	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z	Dia x L	Ir(mA)	Z
10	5 x 11	135	1.060									
15	6.3 x 11	190	0.730									
22	6.3 x 11	215	0.520							8 x 11.5	282	0.660
33	6.3 x 15	305	0.350									
47	8 x 11.5	365	0.250									
68	8 x 15	500	0.170	10 x 12.5	500	0.190						
100	10 x 20	750	0.120	12.5 x 15	700	0.140						
120				10 x 20	650	0.160						
150	10 x 25	950	0.090	12.5 x 15	820	0.095						
220	12.5 x 20	1100	0.065	16 x 15	1060	0.070						
270				12.5 x 25	1150	0.074						
330	12.5 x 25	1420	0.049	18 x 15	1370	0.050						
470	12.5 x 35.5	1780	0.039	16 x 25	1640	0.042						
680	16 x 31.5	2050	0.032	18 x 25	1940	0.035						
1000	16 x 40	2360	0.027	18 x 35.5	2220	0.029						

Application Data

Ripple current multipliers for temperature

Temperature (deg. C.)	+45	+60	+85	+105
Factor	1.8	1.5	1.3	1

Ripple current multipliers for frequency

For operation at 10 KHz to 200 KHz
Ripple current multiplier =1

For operation at other frequencies, use the graph below
to determine the ripple current multiplier.