RF series

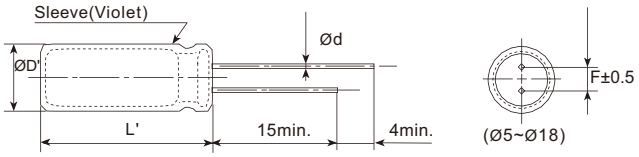
- Ultra-low impedance, high ripple current
- Endurance: 3,000~6,000 hours at 105°C
- **RoHS Compliant**

SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-40~+105°C										
Rated Voltage Range	6.3~120 Vdc										
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)										
Leakage Current	I≤0.01CV or 3μA, whichever is greater. Where, I:Max.leakage current (μA),C:Nominal capacitance (μF),V: Rated voltage (V) (at 20°C after 2 minutes)										
Dissipation Factor (tanδ)	Rated Voltage(Vdc)	6.3	10	16	25	35	50	63	80	100	120
	Dissipation Factor (Max.)	0.15	0.14	0.12	0.10	0.10	0.08	0.08	0.08	0.08	0.12
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C,120Hz)										
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(Vdc)	6.3	10	16	25	35	50	63	80	100	120
	Z(-25°C)/Z(+20°C)	5	4	3							3
	Z(-40°C)/Z(+20°C)	10	8	5	4						6 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for a specified period of time at 105 °C.										
	Capacitance Change	≤±25% of the initial value									
	Dissipation Factor	≤200% of the initial specified value									
	Leakage Current	≤The initial specified value									
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after leaving them under no load at 105°C for 1,000 hours.										
	Capacitance Change	≤±25% of the initial value									
	Dissipation Factor	≤200% of the initial specified value									
	Leakage Current	≤200% of the initial specified value									

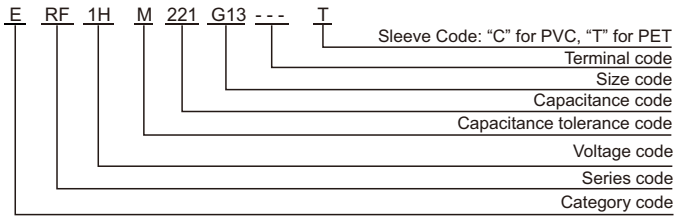
Dia.(mm)	Load life (hours)
ØD≤6.3	3,000
ØD=8	4,000
ØD=10	5,000
ØD≥12.5	6,000

DIMENSIONS[mm]



ØD	5	6.3	8		10	12.5	13	16	18
Ød	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5		5.0	5.0	5. 0	7.5	7.5
ØD'	ØD+0.5max.								
L'	L+2max.								

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) / Cap.(μF)	120	1k	10k	100k
Cap.<220	0.40	0.75	0.90	1.00
220≤Cap.<680	0.50	0.85	0.94	1.00
680≤Cap.<2200	0.60	0.87	0.95	1.00
2200≤Cap.<4700	0.75	0.90	0.95	1.00
Cap.≥4700	0.85	0.95	0.98	1.00

RF series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
6.3	150	5×11	0.290	300	ERF0JM151D11---T
	220	6.3×11	0.205	377	ERF0JM221E11---T
	330	6.3×11	0.120	455	ERF0JM331E11---T
	470	6.3×12	0.100	510	ERF0JM471E12---T
	1000	8×16	0.052	1000	ERF0JM102F16---T
	1200	8×20	0.040	1300	ERF0JM122F20---T
	1200	10×16	0.037	1480	ERF0JM122G16---T
	1500	10×16	0.037	1480	ERF0JM152G16---T
	2200	10×20	0.021	2200	ERF0JM222G20---T
	3300	12.5×20	0.020	2410	ERF0JM332W20---T
	4700	12.5×30	0.015	3340	ERF0JM472W30---T
	6800	16×25	0.015	3510	ERF0JM682L25---T
10	100	5×11	0.290	300	ERF1AM101D11---T
	100	6.3×9	0.290	300	ERF1AM101E09---T
	220	6.3×11	0.120	455	ERF1AM221E11---T
	470	8×12	0.071	810	ERF1AM471F12---T
	470	10×9	0.092	720	ERF1AM471G09---T
	680	8×16	0.055	1046	ERF1AM681F16---T
	680	10×13	0.052	1080	ERF1AM681G13---T
	1000	8×20	0.040	1300	ERF1AM102F20---T
	1000	10×16	0.037	1480	ERF1AM102G16---T
	2200	12.5×20	0.020	2410	ERF1AM222W20---T
	3300	12.5×25	0.020	2820	ERF1AM332W25---T
	4700	12.5×35	0.021	3450	ERF1AM472W35---T
	5600	16×25	0.015	3510	ERF1AM562L25---T
16	100	5×11	0.210	320	ERF1CM101D11---T
	220	6.3×12	0.084	721	ERF1CM221E12---T
	330	8×12	0.071	810	ERF1CM331F12---T
	330	10×9	0.092	680	ERF1CM331G09---T
	470	8×16	0.055	1045	ERF1CM471F16---T
	470	10×13	0.052	1080	ERF1CM471G13---T
	680	8×20	0.040	1300	ERF1CM681F20---T
	680	10×16	0.040	1480	ERF1CM681G16---T
	1000	10×20	0.023	1870	ERF1CM102G20---T
	1200	10×25	0.021	2200	ERF1CM122G25---T
	1500	12.5×20	0.029	2410	ERF1CM152W20---T
	2200	12.5×25	0.017	2820	ERF1CM222W25---T
	2700	12.5×30	0.015	3340	ERF1CM272W30---T
	2700	16×20	0.017	3190	ERF1CM272L20---T
	3300	12.5×35	0.014	3450	ERF1CM332W35---T
	3300	16×25	0.016	3350	ERF1CM332L25---T
	3900	16×25	0.015	3510	ERF1CM392L25---T
25	47	5×11	0.290	300	ERF1EM470D11---T
	100	5×11	0.260	320	ERF1EM101D11---T
	100	6.3×11	0.140	455	ERF1EM101E11---T
	220	6.3×11	0.150	455	ERF1EM221E11---T
	220	8×12	0.078	810	ERF1EM221F12---T
	330	8×16	0.055	1045	ERF1EM331F16---T
	330	10×13	0.052	1080	ERF1EM331G13---T
	470	8×16	0.045	1120	ERF1EM471F16---T
	560	10×16	0.030	1675	ERF1EM561G16---T
	680	10×20	0.036	1870	ERF1EM681G20---T
	820	10×20	0.035	1900	ERF1EM821G20---T
	1000	12.5×16	0.028	1920	ERF1EM102W16---T
	1500	12.5×25	0.030	2750	ERF1EM152W25---T
	2200	12.5×25	0.027	2820	ERF1EM222W25---T
	2700	16×25	0.015	3510	ERF1EM272L25---T
35	33	5×12	0.570	300	ERF1VM330D12---T
	100	6.3×12	0.450	440	ERF1VM101E12---T
	100	8×11	0.200	632	ERF1VM101F11---T
	220	8×12	0.100	810	ERF1VM221F12---T

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
35	220	10×9	0.120	720	ERF1VM221G09---T
	330	10×16	0.037	1480	ERF1VM331G16---T
	470	10×16	0.055	1526	ERF1VM471G16---T
	680	12.5×20	0.045	2410	ERF1VM681W20---T
	1000	12.5×25	0.025	2820	ERF1VM102W25---T
	1200	16×20	0.017	3190	ERF1VM122L20---T
	1500	12.5×35	0.014	3450	ERF1VM152W35---T
50	22	5×12	0.540	288	ERF1HM220D12---T
	56	6.3×12	0.300	435	ERF1HM560E12---T
	100	8×12	0.160	774	ERF1HM101F12---T
	120	8×16	0.130	1000	ERF1HM121F16---T
	150	10×13	0.110	1029	ERF1HM151G13---T
	180	8×20	0.085	1240	ERF1HM181F20---T
	220	10×13	0.130	1029	ERF1HM221G13---T
	270	10×16	0.090	1020	ERF1HM271G16---T
	330	10×16	0.045	1150	ERF1HM331G16---T
	470	10×20	0.036	1500	ERF1HM471G20---T
	560	12.5×20	0.035	2150	ERF1HM561W20---T
	680	12.5×20	0.040	2100	ERF1HM681W20---T
	820	16×20	0.022	2780	ERF1HM821L20---T
	1000	16×25	0.025	3060	ERF1HM102L25---T
63	33	6.3×11	1.200	126	ERF1JM330E11---T
	47	6.3×12	0.800	150	ERF1JM470E12---T
	82	8×12	0.480	320	ERF1JM820F12---T
	82	10×13	0.420	420	ERF1JM820G13---T
	100	8×12	0.500	280	ERF1JM101F12---T
	100	10×13	0.300	420	ERF1JM101G13---T
	120	8×16	0.350	350	ERF1JM121F16---T
	150	10×13	0.300	400	ERF1JM151G13---T
	220	10×16	0.160	480	ERF1JM221G16---T
	330	10×20	0.160	640	ERF1JM331G20---T
	470	13×20	0.100	880	ERF1JM471K20---T
	560	13×20	0.086	1180	ERF1JM561K20---T
	680	16×20	0.085	1250	ERF1JM681L20---T
	820	16×25	0.057	1570	ERF1JM821L25---T
	1000	16×25	0.045	1800	ERF1JM102L25---T
	1000	18×20	0.050	1780	ERF1JM102M20---T
	1500	18×30	0.036	2150	ERF1JM152M30---T
	1800	18×40	0.032	2280	ERF1JM182M40---T
80	150	10×16	0.240	600	ERF1BM151G16---T
	220	10×20	0.150	680	ERF1BM221G20---T
	330	12.5×20	0.120	750	ERF1BM331W20---T
	470	16×20	0.070	1150	ERF1BM471L20---T
	680	18×25	0.036	1750	ERF1BM681M25---T
	1000	16×40	0.029	2200	ERF1BM102L40---T
	1000	18×35	0.027	2200	ERF1BM102M35---T
100	6.8	5×11	1.400	86	ERF1KM6R8D11---T
	6.8	6.3×9	1.800	80	ERF1KM6R8E09---T
	22	6.3×12	1.000	235	ERF1KM220E12---T
	27	10×9	0.470	320	ERF1KM270G09---T
	33	10×13	0.450	320	ERF1KM330G13---T
	47	10×13	0.320	480	ERF1KM470G13---T
	68	10×16	0.220	600	ERF1KM680G16---T
	100	10×16	0.200	750	ERF1KM101G16---T
	150	10×20	0.170	850	ERF1KM151G20---T
	220	13×20	0.150	860	ERF1KM221K20---T
	330	12.5×25	0.100	1000	ERF1KM331W25---T
	330	16×20	0.070	1350	ERF1KM331L20---T
	470	16×25	0.045	1640	ERF1KM471L25---T
	560	18×25	0.050	1800	ERF1KM561M25---T
	680	16×40	0.034	2200	ERF1KM681L40---T

RF series

STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Size ΦDxL(mm)	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/105°C, 100kHz)	Part Number
100	680	18×35	0.034	2200	ERF1KM681M35---T
	820	18×40	0.032	2700	ERF1KM821M40---T
120	10	6.3×12	5.500	80	ERF2BM100E12---T
	22	8×12	3.500	130	ERF2BM220F12---T
	33	8×16	3.000	220	ERF2BM330F16---T
	33	10×13	3.000	220	ERF2BM330G13---T
	47	10×16	2.500	270	ERF2BM470G16---T
	56	10×16	2.200	285	ERF2BM560G16---T
	68	10×20	1.800	300	ERF2BM680G20---T
	100	10×25	1.500	380	ERF2BM101G25---T
	120	13×20	1.300	620	ERF2BM121K20---T
	150	12.5×25	1.000	570	ERF2BM151W25---T
	220	12.5×30	0.800	750	ERF2BM221W30---T
	220	16×20	0.600	760	ERF2BM221L20---T
	270	16×25	0.550	800	ERF2BM271L25---T
	270	18×20	0.500	800	ERF2BM271M20---T
	330	16×30	0.420	860	ERF2BM331L30---T
	330	18×25	0.420	860	ERF2BM331M25---T
	470	16×40	0.300	960	ERF2BM471L40---T
	470	18×30	0.300	960	ERF2BM471M30---T

※ Specifications subject to change without notice.