

RN series

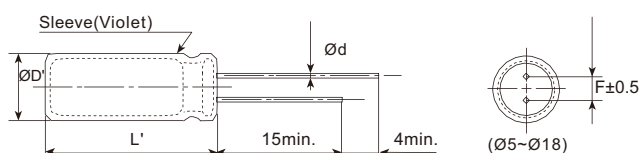
- Miniaturized, high performance, high reliability
- Low impedance, high ripple current, long life
- Endurance: 5,000~10,000 hours at 105°C
- RoHS Compliant



SPECIFICATIONS

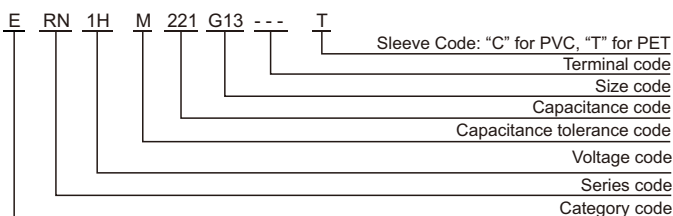
Items	Characteristics								
Category Temperature Range	-40~+105°C								
Rated Voltage Range	25~120 V _{dc}								
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)								
Leakage Current	I≤0.01 CV or 3μA, whichever is greater. Where, I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V) (at 20°C after 2 minutes)								
Dissipation Factor (tanδ)	Rated Voltage(V _{dc})	25	35	50	63	80	100	120	
	Dissipation Factor (Max.)	0.14	0.12	0.10	0.09	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(V _{dc})	25	35	50	63	80	100	120	
	Z(-25°C)/Z(+20°C)	2					3		
	Z(-40°C)/Z(+20°C)	4					6 (at 120Hz)		
Endurance	The specifications listed below 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		≤±20% of the initial value				Dia.(mm)		Load life (hours)
	Dissipation Factor		≤200% of the initial specified value				ØD≤6.3		5,000
	Leakage Current		≤The initial specified value				ØD=8&10		7,000
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		≤±20% of the initial value						
	Dissipation Factor		≤200% of the initial specified value						
	Leakage Current		≤200% of the initial specified value						

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	0.8	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)	120	1k	10k	100k
Cap.(μF)				
Cap.<47	0.40	0.75	0.90	1.00
47≤Cap.<330	0.50	0.85	0.94	1.00
330≤Cap.<820	0.75	0.90	0.95	1.00
Cap.≥820	0.85	0.95	0.98	1.00

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STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL (mm)	Impedance (Ω _{max} /20°C, 100kHz)	Rated ripple current (mA _{rms} /105°C, 100kHz)	Part Number
25	10	5×9	3.500	80	ERN1EM100D09---T
	15	5×9	3.500	80	ERN1EM150D09---T
	22	5×9	3.500	80	ERN1EM220D09---T
	33	5×9	0.810	150	ERN1EM330D09---T
	47	5×9	0.650	180	ERN1EM470D09---T
	56	5×11	0.570	200	ERN1EM560D11---T
	68	5×11	0.570	200	ERN1EM680D11---T
	68	6.3×9	0.740	180	ERN1EM680E09---T
	100	5×11	0.570	200	ERN1EM101D11---T
	120	6.3×9	0.740	180	ERN1EM121E09---T
	180	6.3×11	0.210	350	ERN1EM181E11---T
	180	8×9	0.270	310	ERN1EM181F09---T
	220	6.3×11	0.210	350	ERN1EM221E11---T
	220	8×9	0.270	310	ERN1EM221F09---T
	330	8×12	0.130	660	ERN1EM331F12---T
	330	10×9	0.170	590	ERN1EM331G09---T
	390	8×14	0.150	885	ERN1EM391F14---T
	470	8×16	0.086	850	ERN1EM471F16---T
	470	10×13	0.080	870	ERN1EM471G13---T
	560	8×20	0.069	1050	ERN1EM561F20---T
	560	10×13	0.080	870	ERN1EM561G13---T
	680	8×20	0.069	1050	ERN1EM681F20---T
	680	10×16	0.060	1230	ERN1EM681G16---T
	820	10×16	0.060	1230	ERN1EM821G16---T
	1000	10×20	0.046	1400	ERN1EM102G20---T
	1200	10×25	0.042	1650	ERN1EM122G25---T
	1500	12.5×20	0.035	1910	ERN1EM152W20---T
35	10	5×9	3.500	80	ERN1VM100D09---T
	15	5×9	3.500	80	ERN1VM150D09---T
	22	5×9	3.500	80	ERN1VM220D09---T
	33	5×9	0.810	150	ERN1VM330D09---T
	47	5×11	0.570	200	ERN1VM470D11---T
	56	5×11	0.570	200	ERN1VM560D11---T
	68	6.3×9	0.740	180	ERN1VM680E09---T
	100	6.3×11	0.210	350	ERN1VM101E11---T
	100	8×9	0.270	310	ERN1VM101F09---T
	120	8×9	0.270	310	ERN1VM121F09---T
	180	8×12	0.130	660	ERN1VM181F12---T
	180	10×9	0.170	590	ERN1VM181G09---T
	220	8×12	0.130	660	ERN1VM221F12---T
	220	10×9	0.170	590	ERN1VM221G09---T
	330	8×16	0.086	850	ERN1VM331F16---T
	330	10×13	0.080	870	ERN1VM331G13---T
	390	8×20	0.069	1050	ERN1VM391F20---T
	390	10×13	0.080	870	ERN1VM391G13---T
	470	8×20	0.069	1050	ERN1VM471F20---T
	470	10×16	0.060	1230	ERN1VM471G16---T
	560	10×16	0.060	1230	ERN1VM561G16---T
	680	10×20	0.046	1400	ERN1VM681G20---T
	680	12.5×16	0.049	1450	ERN1VM681W16---T
	820	10×20	0.046	1400	ERN1VM821G20---T
	820	12.5×16	0.049	1450	ERN1VM821W16---T
	1000	12.5×20	0.035	1910	ERN1VM102W20---T
	1200	12.5×20	0.035	1910	ERN1VM122W20---T
50	10	5×9	2.800	100	ERN1HM100D09---T
	15	5×9	2.800	100	ERN1HM150D09---T
	22	5×9	2.800	100	ERN1HM220D09---T
	33	5×11	0.680	190	ERN1HM330D11---T
	47	6.3×9	0.890	170	ERN1HM470E09---T
	56	6.3×11	0.300	300	ERN1HM560E11---T
	56	8×9	0.390	270	ERN1HM560F09---T
	68	6.3×11	0.300	300	ERN1HM680E11---T
	68	8×9	0.390	270	ERN1HM680F09---T
	100	8×9	0.390	270	ERN1HM101F09---T
	120	8×12	0.170	560	ERN1HM121F12---T

WV (Vdc)	Cap (μF)	Size ΦDxL (mm)	Impedance (Ω _{max} /20°C, 100kHz)	Rated ripple current (mA _{rms} /105°C, 100kHz)	Part Number
50	120	10×9	0.220	500	ERN1HM121G09---T
	150	8×12	0.170	560	ERN1HM151F12---T
	150	10×9	0.220	500	ERN1HM151G09---T
	180	8×16	0.120	740	ERN1HM181F16---T
	180	10×13	0.120	760	ERN1HM181G13---T
	220	8×16	0.120	740	ERN1HM221F16---T
	220	10×13	0.120	760	ERN1HM221G13---T
	330	10×16	0.084	1050	ERN1HM331G16---T
	470	10×20	0.058	1230	ERN1HM471G20---T
	560	12.5×16	0.061	1260	ERN1HM561W16---T
	680	12.5×20	0.045	1660	ERN1HM681W20---T
	820	12.5×25	0.034	1960	ERN1HM821W25---T
	1000	12.5×30	0.030	2310	ERN1HM102W30---T
	1000	16×20	0.034	2210	ERN1HM102L20---T
63	10	5×9	3.000	100	ERN1JM100D09---T
	15	5×9	3.000	100	ERN1JM150D09---T
	18	5×9	3.000	100	ERN1JM180D09---T
	22	5×11	2.200	125	ERN1JM220D11---T
	39	6.3×9	2.800	110	ERN1JM390E09---T
	47	6.3×11	0.850	200	ERN1JM470E11---T
	47	8×9	1.100	175	ERN1JM470F09---T
	68	8×9	1.100	175	ERN1JM680F09---T
	82	8×12	0.560	300	ERN1JM820F12---T
	100	8×12	0.500	375	ERN1JM101F12---T
	150	8×16	0.320	500	ERN1JM151F16---T
	180	10×13	0.220	520	ERN1JM181G13---T
	220	10×16	0.180	650	ERN1JM221G16---T
	270	10×16	0.160	720	ERN1JM271G16---T
	270	12.5×13	0.150	780	ERN1JM271W13---T
	330	10×20	0.120	860	ERN1JM331G20---T
	390	12.5×16	0.144	860	ERN1JM391W16---T
	470	12.5×20	0.082	1120	ERN1JM471W20---T
	560	12.5×25	0.062	1420	ERN1JM561W25---T
	680	12.5×30	0.056	1730	ERN1JM681W30---T
	680	16×20	0.064	1500	ERN1JM681L20---T
	820	12.5×30	0.056	1730	ERN1JM821W30---T
	820	16×20	0.064	1500	ERN1JM821L20---T
	27	6.3×11	0.900	180	ERN1BM270E11---T
	27	8×9	1.200	160	ERN1BM270F09---T
	33	6.3×11	0.900	180	ERN1BM330E11---T
	33	8×9	1.200	160	ERN1BM330F09---T
	39	8×9	1.200	160	ERN1BM390F09---T
80	47	8×12	0.650	260	ERN1BM470F12---T
	56	8×12	0.650	260	ERN1BM560F12---T
	56	10×9	0.850	220	ERN1BM560G09---T
	68	8×12	0.650	260	ERN1BM680F12---T
	68	10×9	0.850	220	ERN1BM680G09---T
	82	8×16	0.480	350	ERN1BM820F16---T
	82	10×13	0.340	380	ERN1BM820G13---T
	100	8×16	0.480	350	ERN1BM101F16---T
	100	10×13	0.340	380	ERN1BM101G13---T
	150	10×14	0.340	380	ERN1BM151G14---T
	180	10×16	0.220	480	ERN1BM181G16---T
	220	10×20	0.180	640	ERN1BM221G20---T
	220	12.5×16	0.220	600	ERN1BM221W16---T
	330	12.5×20	0.130	880	ERN1BM331W20---T
	390	12.5×25	0.094	1000	ERN1BM391W25---T
	470	13×25	0.094	1000	ERN1BM471K25---T
	470	16×20	0.096	1080	ERN1BM471L20---T
	560	12.5×30	0.084	1200	ERN1BM561W30---T
	560	16×25	0.076	1360	ERN1BM561L25---T
	680	12.5×35	0.072	1320	ERN1BM681W35---T
	680	16×25	0.076	1360	ERN1BM681L25---T
	2.7	5×9	4.500	80	ERN1KM2R7D09---T
	3.3	5×9	3.000	80	ERN1KM3R3D09---T

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100	4.7	5×9	3.000	80	ERN1KM4R7D09---T
	5.6	5×11	3.000	80	ERN1KM5R6D11---T
	6.8	5×11	3.000	80	ERN1KM6R8D11---T
	10	5×11	3.000	80	ERN1KM100D11---T
	15	6.3×9	2.000	70	ERN1KM150E09---T
	22	6.3×12	0.900	180	ERN1KM220E12---T
	22	8×9	1.200	160	ERN1KM220F09---T
	33	8×9	1.200	160	ERN1KM330F09---T
	47	8×12	0.650	260	ERN1KM470F12---T
	47	10×9	0.850	220	ERN1KM470G09---T
	56	8×16	0.480	350	ERN1KM560F16---T
	56	10×13	0.340	380	ERN1KM560G13---T
	68	8×20	0.360	430	ERN1KM680F20---T
	82	8×20	0.360	430	ERN1KM820F20---T
	82	10×13	0.340	380	ERN1KM820G13---T
	100	10×16	0.220	480	ERN1KM101G16---T
	120	10×16	0.220	480	ERN1KM121G16---T
	150	10×20	0.180	640	ERN1KM151G20---T
	150	12.5×16	0.220	600	ERN1KM151W16---T
	220	12.5×20	0.130	880	ERN1KM221W20---T
	270	12.5×25	0.094	1000	ERN1KM271W25---T
	330	12.5×30	0.084	1200	ERN1KM331W30---T
	330	16×20	0.096	1080	ERN1KM331L20---T
	390	12.5×35	0.072	1320	ERN1KM391W35---T
	390	16×25	0.076	1360	ERN1KM391L25---T
	470	16×25	0.076	1360	ERN1KM471L25---T
	470	18×20	0.096	1080	ERN1KM471M20---T
	560	16×30	0.064	1480	ERN1KM561L30---T
	560	18×25	0.072	1400	ERN1KM561M25---T
120	10	6.3×11	5.5	94	ERN2BM100E11---T
	15	6.3×12	4.5	120	ERN2BM150E12---T
	18	8×9	4.0	140	ERN2BM180F09---T
	22	8×12	3.5	154	ERN2BM220F12---T
	33	8×16	3.0	266	ERN2BM330F16---T
	33	10×13	3.0	266	ERN2BM330G13---T
	47	8×20	2.5	320	ERN2BM470F20---T
	47	10×16	2.5	338	ERN2BM470G16---T
	56	10×16	2.2	338	ERN2BM560G16---T
	68	10×16	2.0	338	ERN2BM680G16---T
	82	10×20	1.8	360	ERN2BM820G20---T
	100	10×25	1.5	450	ERN2BM101G25---T
	120	12.5×20	1.3	620	ERN2BM121W20---T
	150	12.5×25	1.0	675	ERN2BM151W25---T
	220	12.5×30	0.75	825	ERN2BM221W30---T
	220	16×20	0.75	825	ERN2BM221L20---T
	270	16×25	0.55	938	ERN2BM271L25---T
	270	18×20	0.55	938	ERN2BM271M20---T
	330	16×30	0.42	1013	ERN2BM331L30---T
	330	18×25	0.42	1013	ERN2BM331M25---T
	470	16×40	0.30	1125	ERN2BM471L40---T
	470	18×30	0.30	1125	ERN2BM471M30---T

※ Specifications subject to change without notice.