

RN Series

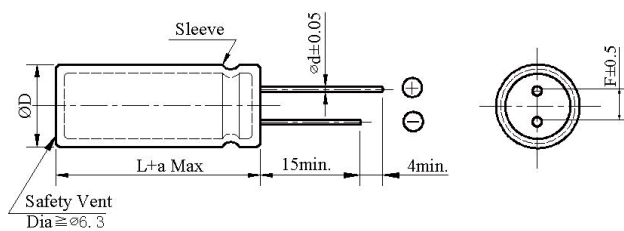
- Miniaturized, Low profile with 9mm height
- Suitable for High-end power
- Load life 4,000~6,000 hours at 105°C
- RoHS Compliant



SPECIFICATIONS

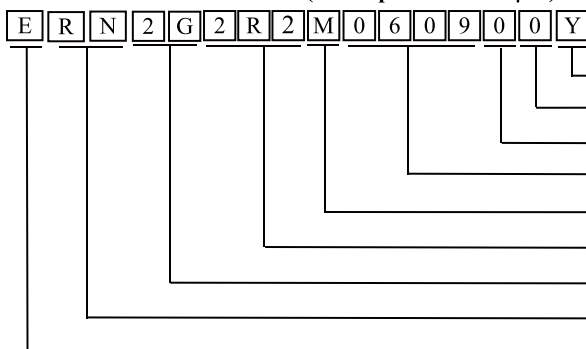
Item	Performance Characteristics															
Category Temperature Range	-40 ~ +105°C															
Working Voltage Range	10 ~ 450Vdc															
Capacitance Range	0.47 ~ 680μF															
Capacitance Tolerance	±20% (at 20°C and 120Hz)															
Dissipation Factor (tanδ) (at 20°C, 120Hz)	Rated Voltage (V) 10 16 25 35 50 63 80 100 16~250 350~450															
	tanδ(Max) 0.19 0.16 0.14 0.12 0.10 0.09 0.09 0.09 0.15 0.20															
Leakage Current	10~100Vdc 160~450Vdc															
	I ≤ 0.01CV or 3μA, Which is greater(2minutes) I ≤ 0.02CV + 10μA (2minutes)															
I: Leakage current (μA) C: Rated capacitance (μF) V: Rated voltage (V)																
Low Temperature Characteristics Impedance Ratio(MAX)	Rated Voltage (V) 10 16 25 35 50 63 80 100 160~250 350~400															
	Z(-40°C)/Z(+20°C) 10 8 5 4 3 3 3 3 7 9 (at 120Hz)															
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 4,000 to 6,000 hours at 105°C.															
	<table border="1"> <tr> <td>Capacitance change</td> <td>≡ ±25% of the initial value</td> <td>Size</td> <td>Life time (hours)</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≡ 200% of the specified value</td> <td>≤6.3Φ</td> <td>4,000</td> </tr> <tr> <td>Leakage current</td> <td>≡ specified value</td> <td>=8Φ</td> <td>5,000</td> </tr> <tr> <td></td> <td></td> <td>≥10Φ</td> <td>6,000</td> </tr> </table>	Capacitance change	≡ ±25% of the initial value	Size	Life time (hours)	Dissipation factor(tanδ)	≡ 200% of the specified value	≤6.3Φ	4,000	Leakage current	≡ specified value	=8Φ	5,000			≥10Φ
Capacitance change	≡ ±25% of the initial value	Size	Life time (hours)													
Dissipation factor(tanδ)	≡ 200% of the specified value	≤6.3Φ	4,000													
Leakage current	≡ specified value	=8Φ	5,000													
		≥10Φ	6,000													
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 20°C after the rated voltage applied for 1,000 hours at 105°C without voltage applied.															
	<table border="1"> <tr> <td>Capacitance change</td> <td>≡ ±25% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≡ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≡ 200% of the specified value</td> </tr> </table>	Capacitance change	≡ ±25% of the initial value	Dissipation factor(tanδ)	≡ 200% of the specified value	Leakage current	≡ 200% of the specified value									
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Leakage current	≡ 200% of the specified value															

DIMENSIONS (mm)



ΦD	5	6.3	8	10
ΦD	ΦD +0.5 Max			
Φd	0.5	0.5	0.5	0.6
F	2.0	2.5	3.5	5.0
a	L+2.0 Max			

PART NUMBER SYSTEM (Example : 400V 2.2μF)



RN Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 100KHz

μF \ Vdc	10V		16V		25V		35V		50V	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
0.47									5×9	20
1.0									5×9	29
1.8									5×9	34
2.2									5×9	36
2.7									5×9	44
3.3									5×9	50
3.9									5×9	67
4.7									5×9	84
5.6									5×9	86
6.8									5×9	88
8.2									5×9	92
10	5×9	52	5×9	67	5×9	86	5×9	95	5×9	95
12	5×9	63	5×9	71	5×9	95	5×9	100	5×9	104
15	5×9	71	5×9	86	5×9	105	5×9	114	5×9	114
18	5×9	80	5×9	93	5×9	110	5×9	118	5×9	123
22	5×9	86	5×9	105	5×9	114	5×9	152	5×9	138
33	5×9	100	5×9	114	5×9	143	5×9	204	6.3×9	240
39	5×9	128	5×9	143	5×9	171	5×9	204	6.3×9	299
47	5×9	135	5×9	152	5×9	200	6.3×9	255	8×9	428
56	5×9	143	5×9	162	6.3×9	235	6.3×9	320	8×9	428
68	5×9	152	5×9	171	6.3×9	280	6.3×9	371	8×9	428
82	5×9	162	5×9	200	6.3×9	320	6.3×9	371	8×9	556
100	5×9	171	5×9	276	6.3×9	350	8×9	419	8×9	556
120	5×9	200	6.3×9	320	6.3×9	371	8×9	419	10×9	618
150	5×9	276	6.3×9	371	8×9	419	10×9	727	10×9	618
180	6.3×9	320	6.3×9	371	8×9	419	10×9	727		
220	6.3×9	345	8×9	419	8×9	419	10×9	727		
270	6.3×9	371	8×9	419	10×9	727				
330	8×9	419	8×9	727	10×9	727				
390	8×9	727	10×9	727						
470	8×9	727	10×9	727						
560	10×9	727	10×9	727						
680	10×9	727								

RN Series

◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 100KHz

μF \ Vdc	63V		80V		100V		160V		200V	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
0.47	5×9	21	5×9	22	5×9	22				
1.0	5×9	31	5×9	32	5×9	32				
1.8	5×9	38	5×9	40	5×9	40				
2.2	5×9	42	5×9	44	5×9	44				
2.7	5×9	48	5×9	51	5×9	51				
3.3	5×9	55	5×9	58	5×9	58			6.3×9	90
3.9	5×9	73	5×9	76	5×9	76			6.3×9	99
4.7	5×9	92	5×9	95	5×9	95	6.3×9	99	8×9	99
5.6	5×9	94	5×9	100	6.3×9	108	6.3×9	105	8×9	128
6.8	5×9	97	5×9	105	6.3×9	115	6.3×9	116	8×9	128
8.2	5×9	103	5×9	119	6.3×9	122	8×9	124	8×9	128
10	5×9	105	5×9	128	6.3×9	130	8×9	125	10×9	143
12	5×9	114	6.3×9	150	6.3×9	205	10×9	128		
15	5×9	138	6.3×9	165	6.3×9	205	10×9	133		
18	5×9	147	6.3×9	205	8×9	205	10×9	135		
22	6.3×9	185	6.3×9	205	8×9	205				
27	6.3×9	214	8×9	247	8×9	351				
33	6.3×9	214	8×9	247	10×9	351				
39	6.3×9	238	8×9	247	10×9	351				
47	8×9	247	10×9	428						
56	8×9	333	10×9	428						
68	10×9	466	10×9	428						
82	10×9	466								
100	10×9	475								

μF \ Vdc	250V		350V		400V		450V	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
1.0	6.3×9	90	6.3×9	65	6.3×9	65	6.3×9	73
1.2	6.3×9	90	6.3×9	90	6.3×9	73	6.3×9	73
1.5	6.3×9	90	6.3×9	90	6.3×9	73	6.3×9	81
1.8	6.3×9	90	6.3×9	99	6.3×9	86	8×9	86
2.2	6.3×9	99	6.3×9	114	6.3×9	86	8×9	86
2.7	6.3×9	107	8×9	124	8×9	111	8×9	86
3.3	6.3×9	107	8×9	124	8×9	111	10×9	111
3.9	6.3×9	107	8×9	124	8×9	115	10×9	118
4.7	8×9	128	8×9	124	10×9	120	10×9	119
5.6	8×9	128	10×9	143	10×9	152		
6.8	8×9	128	10×9	143				
8.2	10×9	143						
10	10×9	143						

◆ RIPPLE CURRENT MULTIPLIERS
Frequency Multipliers

Vdc	Cap(μF)	Frequency (Hz)				
		50	120	1K	10K	100K
10 ~ 450	0.47~8.2	0.26	0.40	0.70	0.90	1.00
	10~82	0.41	0.55	0.83	0.94	1.00
	100~680	0.54	0.67	0.87	0.96	1.00