

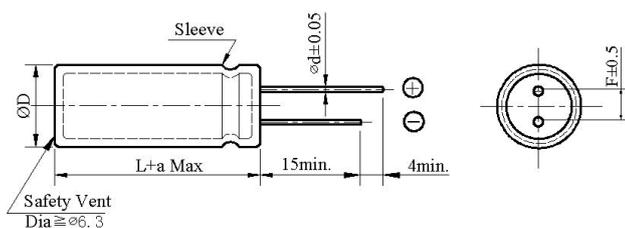
NP Series

- Standard Bi-polarized series.
- Endurance: 1000 hours at 105°C.
- RoHS Compliant
- RoHS Compliant
- ◆ SPECIFICATIONS



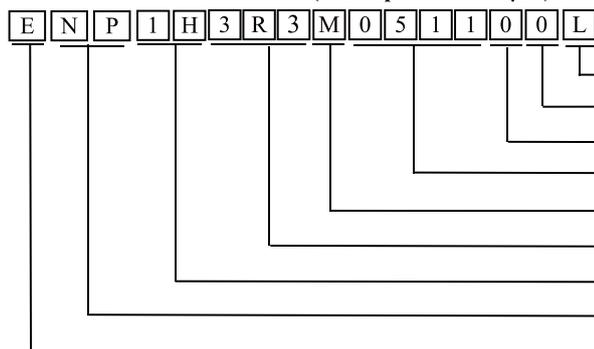
Item	Performance Characteristics																																						
Category Temperature Range	-40 ~ +105°C																																						
Working Voltage Range	6.3 ~ 100Vdc																																						
Capacitance Range	0.47 ~ 6800 μF																																						
Capacitance Tolerance	±20% (at 20°C and 120Hz)																																						
Dissipation Factor (tanδ) (at 20°C, 120Hz)	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>tanδ(Max)</td> <td>0.24</td> <td>0.24</td> <td>0.20</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> </tr> </table>	Rated Voltage (V)	6.3	10	16	25	35	50	63	80	100	tanδ(Max)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.12	0.10																		
	Rated Voltage (V)	6.3	10	16	25	35	50	63	80	100																													
tanδ(Max)	0.24	0.24	0.20	0.20	0.16	0.14	0.12	0.12	0.10																														
The above values should be increased by 0.02 for every additional 1000μF																																							
Leakage Current	$I \leq 0.06CV$ or $10\mu A$, Which is greater(2minutes) $I \leq 0.03CV$ or $3\mu A$, Which is greater(5minutes) I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V)																																						
	<table border="1"> <tr> <td>Rated Voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>Z(-25°C)/Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>										Rated Voltage (V)	6.3	10	16	25	35	50	63	80	100	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	Z(-40°C)/Z(+20°C)	10	8	6	4	3	3	3	3
Rated Voltage (V)	6.3	10	16	25	35	50	63	80	100																														
Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2																														
Z(-40°C)/Z(+20°C)	10	8	6	4	3	3	3	3	3																														
Low Temperature Characteristics Impedance Ratio(MAX)	(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 1,000 hours at 105°C.																																						
	Capacitance change		≅ ±20% of the initial value																																				
	Dissipation factor(tanδ)		≅ 200% of the specified value																																				
	Leakage current		≅ specified value																																				
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 20°C after the rated voltage applied for 500 hours at 105°C without voltage applied.																																						
	Capacitance change		≅ ±20% of the initial value																																				
	Dissipation factor(tanδ)		≅ 200% of the specified value																																				
	Leakage current		≅ 200% of the specified value																																				

◆ DIMENSIONS (mm)



ΦD	5	6.3	8	10	12.5	16	18
ΦD	ΦD +0.5 Max						
Φd	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	7.5	7.5
a	L+2.0 Max						

◆ PART NUMBER SYSTEM(Example : 50V 3.3μF)



NP Series

◆ Standard Ratings & Permissible rated ripple current

WV (Vdc)	Cap (μF)	Case Size ΦD×L (mm)	Max.Rated ripple current mArms@105°C 120Hz
6.3	33	5×11	45
	47	5×11	54
	100	6.3×11	90
	220	8×12	150
	330	8×12	185
	470	10×12	260
	1000	10×20	460
	2200	12.5×25	820
	3300	16×25	1110
	4700	16×30	1430
6800	18×35	1830	
10	22	5×11	37
	33	5×11	45
	47	5×11	54
	100	6.3×11	90
	220	8×12	150
	330	10×16	240
	470	10×16	290
	1000	12.5×20	510
	2200	16×25	910
	3300	16×30	1200
4700	18×35	1520	
16	10	5×11	27
	22	5×11	40
	33	5×11	49
	47	6.3×11	67
	100	8×12	110
	220	10×12	195
	330	10×16	265
	470	10×20	345
	1000	12.5×25	605
	2200	16×30	1070
3300	18×35	1400	
25	10	5×11	27
	22	5×11	46
	33	6.3×11	56
	47	6.3×11	67
	100	8×12	110
	220	10×16	215
	330	12.5×20	320
	470	12.5×20	380
	1000	16×25	670
	2200	18×35	1140
35	22	6.3×11	51
	33	8×12	72
	47	8×12	86
	100	10×16	160
	220	12.5×20	290
	330	12.5×20	350
470	12.5×25	465	
1000	16×30		

WV (Vdc)	Cap (μF)	Case Size ΦD×L (mm)	Max.Rated ripple current mArms@105°C 120Hz	
50	0.47	5×11	7.0	
	1	5×11	10	
	2.2	5×11	15	
	3.3	5×11	18	
	4.7	5×11	22	
	10	6.3×11	37	
	22	8×12	63	
	33	8×12	77	
	47	10×12	105	
	100	10×20	190	
	220	12.5×25	340	
	330	16×25	460	
	470	16×30	590	
63	3.3	5×11	20	
	4.7	6.3×11	24	
	10	6.3×11	40	
	22	8×12	68	
	33	10×12	98	
	47	10×16	130	
	100	12.5×20	225	
	220	16×25	405	
	330	16×30	535	
	470	18×35	680	
	80	3.3	6.3×11	23
		4.7	6.3×11	27
		10	8×12	46
22		10×16	89	
33		10×16	105	
47		10×20	140	
100		12.5×25	245	
220		16×30	435	
330		18×35	570	
100		0.47	5×11	8.0
	1	5×11	12	
	2.2	6.3×11	20	
	3.3	6.3×11	25	
	4.7	6.3×11	30	
	10	8×12	50	
	22	10×16	97	
	33	12.5×20	140	
	47	12.5×20	170	
	100	16×25	300	
	220	18×35	510	

◆ RIRIPPLE CURRENT MULTIPLIERS
Frequency Multipliers

Cap(μF)	Frequency (Hz)				
	50/60	120	1K	10K	100K
0.47 ~ 47	0.75	1.00	1.57	1.75	2.00
100 ~ 470	0.80	1.00	1.34	1.40	1.50
1000 ~ 6800	0.85	1.00	1.13	1.13	1.13