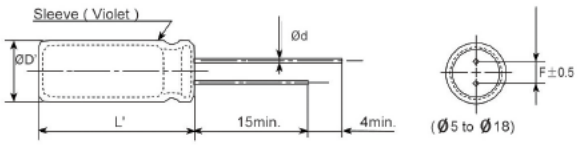
NP Series

- Non-polar design/Bi-polar design
- Temperature range： -40°C~ +105°C
- Life time: +105°C 2000H
- Sleeve color is Black
- RoHs Compliant

◆ SPECIFICATIONS

Items	Characteristics								
Category Temperature Range	-40°C to +105°C								
Rated Voltage Range	6.3 to 250Vdc								
Capacitance Tolerance	±20%(M)					(at 20°C, 120Hz)			
Leakage Current	6.3 to 100Vdc :I=0.01CV(μA) or 3μA， which is greater.					160 to 450Vdc : I≤0.04CV +100μA			
	I≤0.03CV 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 (tan δ)	Rated Voltage (Vdc)	6.3	10	16	25	35	50	63-100	160-250
	tanδ(Max.)	0.19	0.16	0.15	0.14	0.12	0.11	0.09	0.08
	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)	10	16	25	35	50	63	80	100
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	2	2
	Z(-40°C)/Z(+20°C)	3	3	3	3	3	3	3	3
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 2000 hours at 105°C								
	Capacitance change	≤±25% of the initial value (10V: ±30%).							
	D.F. (tan δ)	≤200% of the initial specified value.							
	Leakage current	≤ The initial specified value.							
Shelf Life	The following specifications shall be satisfied when the capacitors performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C after exposing them for 1000hours at 105°C without voltage applied.								
	Capacitance change	≤±25% of the initial value (10V: ±30%).							
	D.F. (tan δ)	≤200% of the initial specified value.							
	Leakage current	≤The initial specified value.							

◆ DIMENSIONS [mm]



φD	5	6.3	8	10	12.5	16	18
φd	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
φD'	φD+0.5max.						
L'	L+2.0max.						

◆ RATED RIPPLE CURRENT MULTIPLIERS

FREQUENCY COEFFICIENT

Freq.(Hz) / μF	120	1K	10K	100K
6.8 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.44	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~	0.85	0.95	0.98	1.00

Part number system for Radial type:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
			N	P	1	H	6	R	8	E	D	0	1	1	M
Type of series					Voltage code(V)		Capacitance code(μF)			Sleeve material	Diameter (mm)	The length(mm)			Capacitance tolerance

◆ Standard Rating of NP Series (6.3v-100v)

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Ripple current mArms, 105°C,100KHz
6.3(0J)	33	5×11	0.19	48
	47	6.3×11	0.19	65
	100	8×12	0.19	105
	220	10×12.5	0.19	168
	330	10×16	0.19	230
	470	10×20	0.19	300
	1000	10×20	0.19	951
10(1A)	22	5×11	0.24	48
	33	6.3×11	0.24	58
	47	6.3×11	0.24	70
	100	5×11	0.24	231
	220	6.3x11	0.24	373
	330	8×11.5	0.24	398
	470	8×11.5	0.24	702
	1000	10×16	0.24	1322
16(1C)	10	5×11	0.20	30
	22	5×11	0.20	52
	33	6.3×11	0.20	66
	47	6.3×11	0.20	90
	100	8×12	0.20	140
	220	10×12.5	0.20	285
	330	8×11.5	0.20	701
	470	10×12.5	0.20	951
	1000	10×20	0.20	1682
25(1E)	10	5×11	0.20	36
	22	6.3×11	0.20	55
	33	6.3×11	0.20	75
	47	6.3×11	0.20	231
	100	6.3×11	0.20	373
	220	8×11.5	0.20	702
	330	10×12.5	0.20	951
	470	10×16	0.20	1322
	1000	12.5×20	0.20	2181
35(1V)	2.2	5×11	0.16	25
	3.3	5×11	0.16	28
	4.7	5×11	0.16	25
	5.6	5×11	0.16	28
	4.7	5×11	0.16	25
	10	6.3×11	0.16	40
	22	6.3×11	0.16	68
	33	6.3×11	0.16	231
	47	8×12	0.16	110
	56	6.3×11	0.16	373
	100	10×16	0.16	196
	220	10×12.5	0.16	951
	330	10×16	0.16	1321
	470	10×20	0.16	1682
	1000	12.5×25	0.16	2561
50(1H)	0.1	5×11	0.14	8
	0.22	5×11	0.14	8
	0.33	5×11	0.14	8
	0.47	5×11	0.14	8
	1	5×11	0.14	12

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Ripple current mArms, 105°C,100KHz
50(1H)	2.2	5×11	0.14	18
	3.3	5×11	0.14	22
	4.7	6.3×11	0.14	30
	5.6	6.3×11	0.14	35
	6.8	6.3×11	0.14	40
	10	6.3×11	0.14	50
	22	6.3×11	0.14	219
	33	6.3×11	0.14	100
	47	6.3×11	0.14	146
	56	6.3×11	0.14	355
	100	8×11.5	0.14	656
	220	10×16	0.14	1266
	330	10×16	0.14	1728
	470	12.5×20	0.14	1895
	1000	16×25	0.14	2782
63(1J)	3.3	6.3×11	0.12	26
	4.7	6.3×11	0.12	32
	5.6	6.3×11	0.12	40
	6.8	6.3×11	0.12	45
	10	8×11.5	0.12	55
	22	8×11.5	0.12	90
	33	8×11.5	0.12	244
	47	10×16	0.12	286
	56	10×16	0.12	462
	100	10×16	0.12	575
	220	10×20	0.12	1247
100 (2A)	0.1	5×11	0.10	13
	0.22	5×11	0.10	15
	0.33	5×11	0.10	15
	0.47	5×11	0.10	15
	1	5×11	0.10	20
	2.2	6.3×11	0.10	28
	3.3	8×11.5	0.10	32
	4.7	8×11.5	0.10	44
	5.6	8×11.5	0.10	52
	6.8	8×11.5	0.10	115
	10	10×12	0.10	130
	22	10×16	0.10	145
	33	10×16	0.10	190
	47	10×16	0.10	443
	56	10×16	0.10	536
	68	10×16	0.10	554
	100	12.5×20	0.10	739
	220	12.5×25	0.10	1155
	330	16×25	0.10	1571
160 (2C)	10	10X16	0.15	291
	22	10X20	0.15	462
	33	10X20	0.15	577
	47	10X20	0.15	693
	100	12.5X30	0.15	1289
	220	16X25	0.15	2121
	330	18X30	0.15	2805

◆ Standard Rating of NP Series (6.3v-100v)

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Ripple current mArms, 105°C,100KHz
200 (2D)	10	10X16	0.15	323
	22	10X20	0.15	531
	33	10X20	0.15	600
	47	12.5X20	0.15	900
	100	16X20	0.15	1456
	150	16X25	0.15	1941
	220	18X30	0.15	2205
	330	18X35	0.15	3004

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Ripple current mArms, 105°C,100KHz
250 (2E)	10	10X20	0.15	346
	22	10X20	0.15	554
	33	12.5X20	0.15	738
	47	12.5X20	0.15	946
	100	16X25	0.15	1571
	150	18X30	0.15	1987
	220	18X30	0.15	2373

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