

HIGH CV, HIGH TEMPERATURE, RADIAL LEADS, POLARIZED

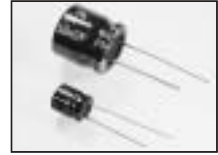
FEATURES

- EXTENDED VALUE AND HIGH VOLTAGE
- NEW REDUCED SIZES

RoHS
Compliant

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range			6.3 ~ 50Vdc				160 ~ 250Vdc				350 ~ 450Vdc			
Capacitance Range			100 ~ 10,000μF				4.7 ~ 220μF				1.5 ~ 68μF			
Operating Temperature Range			-55 ~ +105°C				-40 ~ +105°C				-25 ~ +105°C			
Capacitance Tolerance			±20%(M)											
Max. Leakage Current @ 20°C			6.3 ~ 50Vdc				160 ~ 450Vdc							
			0.01CV or 3μA whichever is greater after 2 minutes				CV≤1,000μF				CV>1,000μF			
							0.1CV + 40μA (1 min.)				0.04CV + 100μA (1 min.)			
							.03CV + 15μA (5 min.)				0.02CV + 25μA (5 min.)			
Max. Tan δ @ 120Hz/20°C		W.V. (Vdc)	6.3	10	16	25	35	50	160	200	250	350	400	450
		S.V. (Vdc)	8.0	13	20	32	44	63	200	250	300	400	450	500
		C≤1,000μF	0.30	0.26	0.20	0.18	0.14	0.12	0.20	0.20	0.20	0.20	0.20	0.25
		W.V. (Vdc)	6.3	10	16	25	35	50	160	200	250	350	400	450
		C≤1,000μF	0.26	0.22	0.18	0.16	0.14	0.12	0.20	0.20	0.20	0.20	0.20	0.25
		C=2,000μF	0.28	0.24	0.20	0.18	0.16	0.14	-	-	-	-	-	-
		C=3,300μF	0.30	0.26	0.22	0.20	0.18	-	-	-	-	-	-	-
		C=4,700μF	0.32	0.28	0.24	0.22	-	-	-	-	-	-	-	-
		C=6,800μF	0.36	0.32	0.28	-	-	-	-	-	-	-	-	-
Low Temperature Stability Impedance Ratio @ 120Hz		C=10,000μF	0.44	0.40	-	-	-	-	-	-	-	-	-	-
		W.V. (Vdc)	6.3	10	16	25	35	50	160	200	250	350	400	450
		Z-25°C/Z+20°C	4	3	2	2	2	2	3	3	3	6	6	6
		Z-40°C/Z+20°C	8	6	4	4	3	3	-	-	-	-	-	-
Load Life Test at Rated W.V. +105°C 2,000 Hours			Capacitance Change				Within ±25% of initial measured value							
			Tan δ				Less than 200% of specified maximum value							
			Leakage Current				Less than specified maximum value							

STANDARD PRODUCT AND CASE SIZE TABLE D φ x L (mm)

Cap. (μF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
100	101	-	-	-	-	-	8x9
150	151	-	-	-	-	8x9	8x9
220	221	-	-	-	8x9	10x9	-
330	331	-	-	8x9	10x9	10x9	-
470	471	8x9	8x9	8x9	10x9	-	12.5x16
680	681	8x9	10x9	10x9	12.5x16	12.5x16	16x16
1000	102	10x9	10x9	-	12.5x16	16x16	16x20
2200	222	12.5x16	12.5x16	16x16	16x20	18x20	18x25
3300	332	16x16	16x16	16x20	18x20	18x25	-
4700	472	18x16	16x20	18x20	18x25	-	-
6800	682	16x20	18x20	18x25	-	-	-
10000	103	18x20	18x25	-	-	-	-

PERMISSIBLE RIPPLE CURRENT (mA rms AT 120Hz AND 105°C)

Cap. (μF)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
100	-	-	-	-	-	200
150	-	-	-	-	250	300
220	-	-	-	240	300	-
330	-	-	270	310	360	-
470	270	295	310	370	-	570
680	300	350	370	640	640	710
1000	460	460	-	670	850	890
2200	770	770	930	1100	1200	1320
3300	930	930	1200	1200	1490	-
4700	1000	1200	1330	1490	-	-
6800	1200	1330	1680	-	-	-
10000	1430	1680	-	-	-	-

PART NUMBER SYSTEM

NREHS 102 M 35V 16X16 E

Series Capacitance Code: First 2 characters significant, third character is multiplier Tolerance Code (M=20%) Working Voltage (Vdc) Case Size (Dφ x L) RoHS Compliant

PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.
Also found at www.niccomp.com/precautions
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com

STANDARD PRODUCT AND CASE SIZE TABLE D ϕ x L (mm)

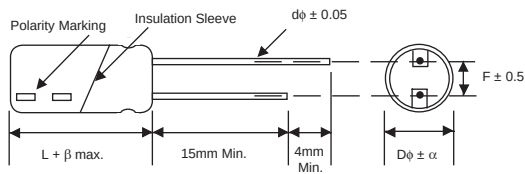
Cap. (μ F)	Code	Working Voltage (Vdc)					
		160	200	250	350	400	450
1.5	1R5	-	-	-	-	-	8x9
2.2	2R2	-	-	-	-	8x9	10x9
3.3	3R3	-	-	-	8x9	10x9	-
4.7	4R7	8x9	8x9	8x9	10x9	10x9	-
6.8	6R8	8x9	8x9	10x9	12.5x16	12.5x16	12.6x16
10	100	10x9	10x9	-	12.5x16	12.5x16	16x16
22	220	-	12.5x16	12.5x16	18x16	16x20	16x20
33	330	12.5x16	12.5x16	16x16	16x20	16x20	18x25
47	470	16x16	16x16	18x16	18x20	18x20	18x25
68	680	18x16	16x20	16x20	18x25	-	-
100	101	16x20	16x20	18x25	-	-	-
150	151	18x20	18x25	-	-	-	-
220	221	18x25	-	-	-	-	-

PERMISSIBLE RIPPLE CURRENT
(mA rms AT 120Hz AND 105°C)

Cap. (μ F)	Working Voltage (Vdc)					
	160	200	250	350	400	450
1.5	-	-	-	-	-	19
2.2	-	-	-	-	35	29
3.3	-	-	-	37	40	-
4.7	54	54	54	49	49	-
6.8	60	60	69	94	94	77
10	85	85	-	100	100	109
22	-	156	156	183	187	170
33	175	175	238	238	238	238
47	245	250	309	309	309	275
68	305	355	397	397	-	-
100	381	381	451	-	-	-
150	464	532	-	-	-	-
220	602	-	-	-	-	-

LEAD SPACING AND DIAMETER (mm)

Case Dia. (D ϕ)	8	10	12.5	16	18
Lead Dia. (d ϕ)	0.6	0.6	0.6	0.8	0.8
Lead Spacing (F)	3.5	5.0	5.0	7.5	7.5
Dim. α	0.5	0.5	0.5	0.5	0.5



β max. $L \leq 16\text{mm} = 1.5\text{mm}$, $L \geq 20\text{mm} = 2.0\text{mm}$

RIPPLE CURRENT FREQUENCY
CORRECTION FACTORS

Frequency (Hz)	60	120	500	1K	10K $\geq$
1.5 ~ 6.8 μ F	0.65	1.00	1.20	1.30	1.50
10 ~ 68 μ F	0.80	1.00	1.20	1.30	1.50
100 ~ 1000 μ F	0.80	1.00	1.10	1.15	1.20
2200 ~ 10000 μ F	0.80	1.00	1.05	1.10	1.15