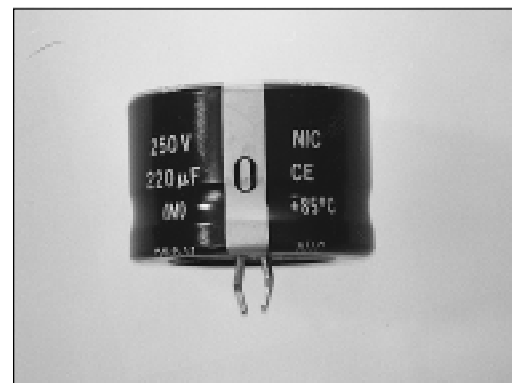


FEATURES

- LOW PROFILE (20mm HEIGHT)
- LOW DISSIPATION FACTOR AND LOW ESR
- HIGH RIPPLE CURRENT
- WIDE CV SELECTION
- SUITABLE FOR SWITCHING POWER SUPPLIES

SPECIFICATIONS

Operating Temperature Range	-40°C ~ +85°C	-25°C ~ +85°C
Rated Working Voltage Range	16 ~ 250Vdc	400 ~ 450Vdc
Rated Capacitance Range	100 ~ 15,000μF	33 ~ 150μF
Capacitance Tolerance	± 20% (M) at 120Hz, +20°C	
Max. Leakage Current After 5 Minutes (20°C)	$3\sqrt{C(\mu F)V}$ (μA)	
Dissipation Factor (Tan δ) 120Hz/20°C	W.V. (Vdc)	16 25 35 50 63 80 100 160~450
	Tan δ max.	0.50 0.40 0.35 0.30 0.25 0.20 0.20 0.15
Surge Voltage	W.V. (Vdc)	10 16 25 35 50 63 80 100
	S.V. (Vdc)	13 20 32 44 63 79 100 125
	W.V. (Vdc)	160 200 250 400 450 - - -
	S.V. (Vdc)	200 250 300 450 500 - - -
Ripple Current Correction Factors	Frequency (Hz)	50 60 100 120 500 1K 10K~50K -
	Multiplier @ 85°C	16 ~ 100Vdc 0.93 0.95 0.99 1.0 1.05 1.08 1.15 -
		160 ~ 450Vdc 0.75 0.80 0.95 1.0 1.20 1.25 1.40 -
	Temperature (°C)	≤ +40 +60 +70 +85
	Multiplier	1.5 1.4 1.3 1.0
Low Temperature Stability (16 ~ 250Vdc Ratings)	Temperature (°C)	0 -25 -40 -
	Capacitance Decrease	5% 10% 30% -
	Impedance Ratio	1.5 3 9 -
Load Life Test 2,000 Hours @ 85°C	Capacitance Change	Within ± 20% of initial measured value
	Tan δ & ESR	Less than 200% of the specified maximum value
	Leakage Current	Less than the specified maximum value
Shelf Life Test No Load 1,000 Hours @ 85°C	Capacitance Change	Within ± 20% of initial measured value
	Tan δ & ESR	Less than 200% of the specified maximum value
	Leakage Current	Less than the specified maximum value
Surge Voltage Test 1,000 Cycles of 0.5" On & 4.5" Off at 25°C	Capacitance Change	Within ± 20% of initial measured value
	Tan δ & ESR	Less than 200% of the specified maximum value
	Leakage Current	Less than the specified maximum value
Soldering Effect MIL-STD-202F Method 210A	Capacitance Change	Within ± 10% of initial measured value
	Tan δ & ESR	Less than the specified maximum value
	Leakage Current	Less than the specified maximum value



LEADED

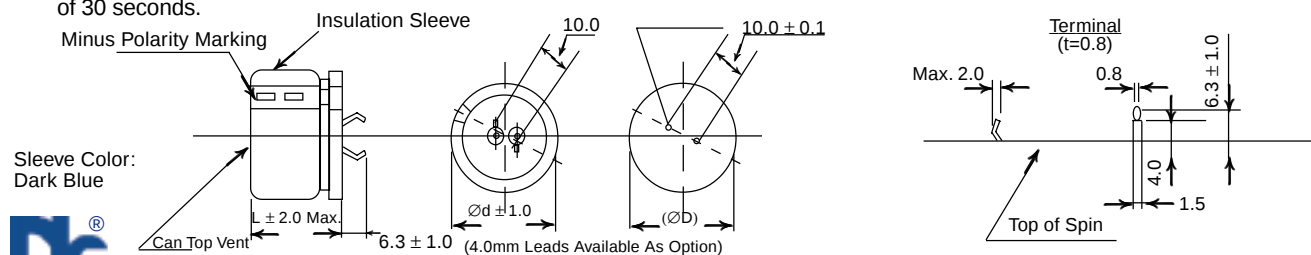
MECHANICAL CHARACTERISTICS:

1. Safety Vent:

The capacitors are provided with a pressure sensitive safety vent on the top of can which is normally covered by a PVC patch for the purpose of insulation. The vent is designed to rupture in the event that high internal gas pressure is developed by circuit malfunction or mis-use like reverse voltage.

2. Terminal Strength:

Each terminal of the capacitor shall withstand an axial pull force of 4.5Kg for a period 10 seconds or a radial bent force of 2.5Kg for a period of 30 seconds.



STANDARD PRODUCT LIST CASE SIZE AND SPECIFICATIONS

W.V. (Vdc)	Cap. (μF)	Case Size DxL (mm)	ESR(Ω@20°C)		Max. Ripple Current (Arms/85°C)	
			120Hz	20kHz	120Hz	10k-50kHz
16	4700	22x20	0.159	0.135	1.60	1.84
	6800	25x20	0.110	0.093	1.80	2.07
	10,000	30x20	0.083	0.070	2.40	2.76
	15,000	35x20	0.055	0.047	3.20	3.68
25	3300	22x20	0.176	0.141	1.60	1.84
	4700	25x20	0.123	0.099	1.80	2.07
	6800	30x20	0.078	0.062	2.30	2.65
	10000	35x20	0.061	0.049	2.70	3.11
35	2200	22x20	0.181	0.136	1.40	1.61
	3300	25x20	0.121	0.090	1.70	1.96
	4700	30x20	0.088	0.066	2.00	2.30
	6800	35x20	0.071	0.053	2.40	2.76
50	1500	22x20	0.254	0.191	1.20	1.38
	2200	25x20	0.173	0.130	1.40	1.61
	3300	30x20	0.116	0.087	1.70	1.96
	4700	35x20	0.081	0.061	2.10	2.42
63	1000	22x20	0.381	0.286	1.20	1.38
	1500	25x20	0.254	0.191	1.30	1.50
	2200	30x20	0.173	0.130	1.50	1.96
	3300	35x20	0.126	0.094	1.70	1.96
80	680	22x20	0.439	0.329	1.00	1.15
	1000	25x20	0.298	0.244	1.20	1.38
	1500	30x20	0.199	0.149	1.40	1.61
	2200	35x20	0.136	0.102	1.70	1.96
100	470	22x20	0.529	0.344	1.00	1.15
	680	25x20	0.366	0.238	1.10	1.27
	1000	30x20	0.249	0.162	1.20	1.38
	1500	35x20	0.177	0.115	1.50	1.73
160	220	22x20	0.980	0.490	0.75	1.05
	270	25x20	0.798	0.399	0.87	1.22
	390	30x20	0.595	0.298	1.10	1.54
	560	35x20	0.414	0.207	1.30	1.82
200	150	22x20	1.326	0.597	0.65	0.91
	220	25x20	0.904	0.407	0.87	1.22
	330	30x20	0.653	0.294	1.00	1.40
	470	35x20	0.459	0.206	1.30	1.82
250	120	22x20	1.658	0.663	0.45	0.63
	150	25x20	1.326	0.531	0.65	0.91
	220	30x20	0.754	0.301	0.87	1.22
	330	35x20	0.553	0.221	1.10	1.54
400	47	22x20	3.527	1.235	0.25	0.35
	68	25x20	2.926	1.024	0.35	0.49
	100	30x20	1.989	0.696	0.47	0.66
	150	35x20	1.326	0.464	0.60	0.84
450	33	22x20	6.028	2.411	0.20	0.28
	47	25x20	4.233	1.693	0.29	0.41
	68	30x20	2.926	1.17	0.38	0.53
	100	35x20	1.989	0.796	0.52	0.73

PART NUMBERING SYSTEM

NRLF **152** **M** **50V** **22X20**
 | | | | |
 Series Capacitance Code Tolerance Code Voltage Rating Case Size (mm)