Large Can Aluminum Electrolytic Capacitors

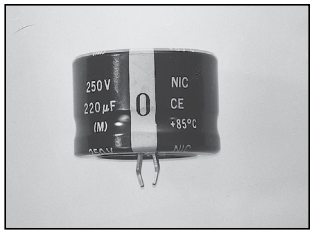
NRLF Series

FEATURES

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

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



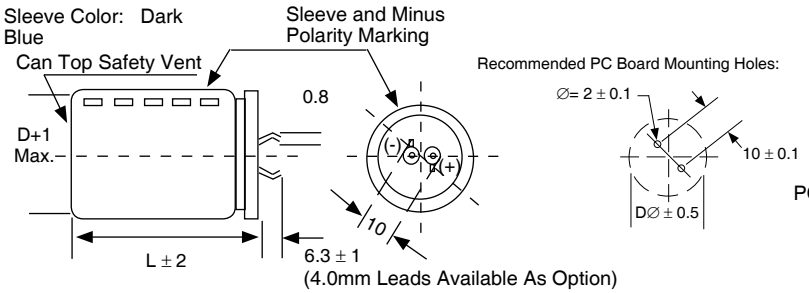
SPECIFICATIONS

Operating Temperature Range		-40 ~ +85°C					-25 ~ +85°C		
Rated Voltage Range		16 ~ 250Vdc					350 ~ 450Vdc		
Rated Capacitance Range		100 ~ 15,000µF					33 ~ 150µF		
Capacitance Tolerance		±20% (M)							
Max. Leakage Current (µA) After 5 minutes (20°C)		$3 \times \sqrt{C(\mu F)V}$							
Max. Tan δ at 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)	16	25	35	50	63	80	100	160
	S.V. (Vdc)	20	32	44	63	79	100	125	200
	W.V. (Vdc)	180	200	250	350	400	450	-	-
	S.V. (Vdc)	220	250	300	400	450	500	-	-
Ripple Current Correction Factors	Frequency (Hz)	50	60	100	120	500	1K	10K ~ 50K	-
	Multiplier at 85°C 16 ~ 100Vdc	0.93	0.95	0.99	1.00	1.05	1.08	1.15	-
	Multiplier at 85°C 160 ~ 450Vdc	0.75	0.80	0.95	1.0	1.20	1.25	1.40	
Low Temperature Stability (16 to 250Vdc)	Temperature (°C)	0	-25	-40	-	-	-	-	-
	Capacitance Change	-5%	-10	-30%	-	-	-	-	-
	Impedance Ratio	1.5	3	9	-	-	-	-	-
Load Life Test 2,000 hours at +85°C	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
Shelf Life Test 1,000 hours at +85°C (no load)	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
Surge Voltage Test Per JIS-C-5141 (table #6, #4) Surge voltage applied: 30 seconds "On" and 5.5 minutes no voltage "Off"	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
Soldering Effect Refer to MIL-STD-202F Method 210A	Capacitance Change	Within ±10% of initial measured value							
	Tan δ	Less than specified maximum value							
	Leakage Current	Less than specified maximum value							

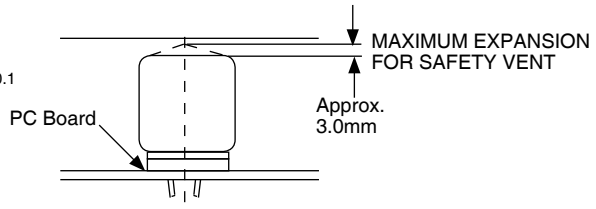
MECHANICAL CHARACTERISTICS:

1. Safety Vent:: The capacitors are provided with a pressure sensitive safety vent on the top. 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.



Notice for Mounting
The space from the top of the can shall be more than (3mm) from chassis or other construction materials so that safety vent has room to expand in case of emergency.



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 LIST, CASE SIZE AND SPECIFICATIONS

Part Number	Cap (µF)	W.V.	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@85°C)	
				120Hz	20KHz	120Hz	10K ~ 50KHz
NRLF472M16V22X20F	4,700	16	22x20	0.159	0.135	1.60	1.84
NRLF682M16V25X20F	6,800		25x20	0.110	0.093	1.80	2.07
NRLF103M16V30X20F	10,000		30x20	0.083	0.070	2.40	2.76
NRLF153M16V35X20F	15,000		35x20	0.055	0.047	3.20	3.68
NRLF332M25V22X20F	3,300	25	22x20	0.176	0.141	1.60	1.84
NRLF472M25V25X20F	4,700		25x20	0.123	0.099	1.80	2.07
NRLF682M25V30X20F	6,800		30x20	0.078	0.062	2.30	2.65
NRLF103M25V35X20F	10,000		35x20	0.061	0.049	2.70	3.11
NRLF222M35V22X20F	2,200	35	22x20	0.181	0.136	1.40	1.61
NRLF332M35V25X20F	3,300		25x20	0.121	0.090	1.70	1.96
NRLF472M35V30X20F	4,700		30x20	0.088	0.066	2.00	2.30
NRLF682M35V35X20F	6,800		35x20	0.071	0.053	2.40	2.76
NRLF152M50V22X20F	1,500	50	22x20	0.254	0.191	1.20	1.38
NRLF222M50V25X20F	2,200		25x20	0.173	0.130	1.40	1.612
NRLF332M50V30X20F	3,300		30x20	0.116	0.087	1.70	1.96
NRLF472M50V35X20F	4,700		35x20	0.081	0.061	2.10	2.42
NRLF102M63V22X20F	1,000	63	22x20	0.381	0.286	1.20	1.38
NRLF152M63V25X20F	1,500		25x20	0.254	0.191	1.30	1.50
NRLF222M63V30X20F	2,200		30x20	0.173	0.130	1.50	1.96
NRLF332M63V35X20F	3,300		35x20	0.126	0.094	1.70	1.96
NRLF681M80V22X20F	680	80	22x20	0.439	0.329	1.00	1.15
NRLF102M80V25X20F	1,000		25x20	0.298	0.244	1.20	1.38
NRLF152M80V30X20F	1,500		30x20	0.199	0.149	1.40	1.61
NRLF222M80V35X20F	2,200		35x20	0.136	0.102	1.70	1.96
NRLF471M100V22X20F	470	100	22x20	0.529	0.344	1.00	1.15
NRLF681M100V25X20F	680		25x20	0.366	0.238	1.10	1.27
NRLF102M100V30X20F	1,000		30x20	0.249	0.162	1.20	1.38
NRLF152M100V35X20F	1,500		35x20	0.177	0.115	1.50	1.73
NRLF221M160V22X20F	220	160	22x20	0.980	0.490	0.75	1.05
NRLF271M160V25X20F	270		25x20	0.798	0.399	0.87	1.22
NRLF391M160V30X20F	390		30x20	0.595	0.298	1.10	1.54
NRLF561M160V35X20F	560		35x20	0.414	0.207	1.30	1.82
NRLF151M200V22X20F	150	200	22x20	1.326	0.597	0.65	0.91
NRLF221M200V25X20F	220		25x20	0.904	0.407	0.87	1.22
NRLF331M200V30X20F	330		30x20	0.653	0.294	1.00	1.40
NRLF471M200V35X20F	470		35x20	0.459	0.206	1.30	1.82
NRLF121M250V22X20F	120	250	22x20	1.658	0.663	0.45	0.63
NRLF151M250V25X20F	150		25x20	1.326	0.531	0.65	0.91
NRLF221M250V30X20F	220		30x20	0.754	0.301	0.87	1.22
NRLF331M250V35X20F	330		35x20	0.553	0.221	1.10	1.54
NRLF470M400V22X20F	47	400	22x20	3.527	1.235	0.25	0.35
NRLF680M400V25X20F	68		25x20	2.926	1.024	0.35	0.49
NRLF101M400V30X20F	100		30x20	1.989	0.696	0.47	0.66
NRLF151M400V35X20F	150		35x20	1.326	0.464	0.60	0.84
NRLF330M450V22X20F	33	450	22x20	6.028	2.411	0.20	0.28
NRLF470M450V25X20F	47		25x20	4.233	1.693	0.29	0.41
NRLF680M450V30X20F	68		30x20	2.926	1.170	0.38	0.53
NRLF101M450V35X20F	100		35x20	1.989	0.796	0.52	0.73

PART NUMBER SYSTEM

NRLF 152 M 50V 22X20 S F

- NRLF — Series
- 152 — Capacitance Code
- M — Tolerance Code
- 50V — Voltage Rating
- 22X20 — Case Size (mm)
- S — Optional 4mm Lead Length
- F — RoHS compliant