

# Large Can Aluminum Electrolytic Capacitors

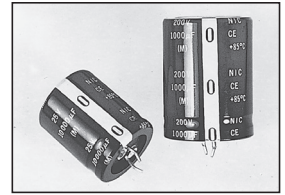
NRLLW Series

## FEATURES

- LONG LIFE AT +105°C (10,000 HOURS)
- HIGH RIPPLE CURRENT IN SMALL SIZE
- SUITABLE FOR SWITCHING POWER SUPPLIES

**RoHS Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



## SPECIFICATIONS

Operating Temperature Range		-25 ~ +105°C				
Rated Voltage Range		400 ~ 450Vdc				
Rated Capacitance Range		120 ~ 560μF				
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)	400	420	450		
	Tan δ max.	0.20	0.20	0.20		
Surge Voltage	W.V. (Vdc)	400	420	450		
	S.V. (Vdc)	450	470	500		
Ripple Current Frequency Correction Factors	Frequency (Hz)	60 (50)	120	500	1K	10K≤
	Multiplier	0.80	1.00	1.20	1.25	1.40
Low Temperature Stability		Z-25°C/Z+20°C		8 max.		
Load Life Test 10,000 hours at +105°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 +105°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				
Resistance to Soldering Heat Immersion +260°C ± 5°C for 10 ± 1 seconds up to 2.0mm from capacitor body	Capacitance Change	Within ±10% of initial measured value				
	Tan δ	Less than specified maximum value				
	Leakage Current	Less than specified maximum value				

## MECHANICAL CHARACTERISTICS:

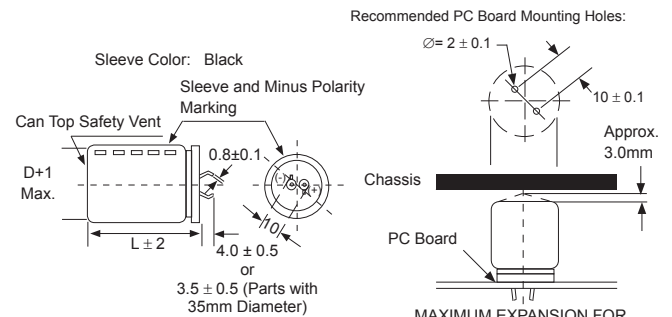
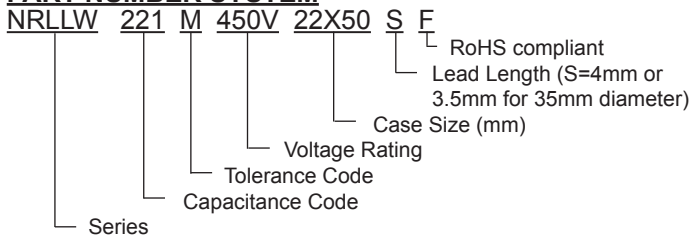
### 1. Safety Vent:

The capacitors are provided with a pressure sensitive safety vent on the top of can. 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 2.0Kg for a period 10 seconds or a radial bent force of 2.5Kg for a period of 30 seconds.

## PART NUMBER SYSTEM



### 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 at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



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SPECIFICATIONS ARE SUBJECT TO CHANGE

## STANDARD PRODUCT LIST, CASE SIZE AND SPECIFICATIONS

Part Number	Cap. (µF)	W.V. (Vdc)	Case Size DxL (mm)	Leakage Current after 5 minutes (µA @ +20°C)	Tan δ max. +20°C @ 120Hz	Max. Ripple Current (Arms @ +105°C)	
						120Hz	10K ~ 50KHz
NRLLW151M400V20X45SF	150	400	20X45	734	0.20	1.22	1.70
NRLLW181M400V20X50SF	180	400	20X50	804	0.20	1.37	1.91
NRLLW181M400V22X40SF	180	400	22X40	804	0.20	1.33	1.86
NRLLW181M400V25X35SF	180	400	25X35	804	0.20	1.32	1.84
NRLLW221M400V22X50SF	220	400	22X50	889	0.20	1.55	2.17
NRLLW221M400V25X40SF	220	400	25X40	889	0.20	1.50	2.10
NRLLW221M400V30X30SF	220	400	30X30	889	0.20	1.43	2.00
NRLLW221M400V35X25SF	220	400	35X25	889	0.20	1.34	1.87
NRLLW271M400V25X45SF	270	400	25X45	985	0.20	1.70	2.38
NRLLW271M400V30X35SF	270	400	30X35	985	0.20	1.63	2.28
NRLLW331M400V30X40SF	330	400	30X40	1089	0.20	1.84	2.57
NRLLW331M400V35X30SF	330	400	35X30	1089	0.20	1.63	2.28
NRLLW391M400V30X45SF	390	400	30X45	1184	0.20	2.04	2.85
NRLLW391M400V35X35SF	390	400	35X35	1184	0.20	1.85	2.59
NRLLW471M400V30X50SF	470	400	30X50	1300	0.20	2.26	3.16
NRLLW471M400V35X40SF	470	400	35X40	1300	0.20	2.07	2.89
NRLLW561M400V35X50SF	560	400	35X50	1419	0.20	2.45	3.43
NRLLW151M420V20X45SF	150	420	20X45	752	0.20	1.20	1.68
NRLLW181M420V22X45SF	180	420	22X45	824	0.20	1.35	1.89
NRLLW181M420V25X35SF	180	420	25X35	824	0.20	1.29	1.80
NRLLW221M420V25X40SF	220	420	25X40	911	0.20	1.47	2.05
NRLLW221M420V30X30SF	220	420	30X30	911	0.20	1.39	1.94
NRLLW221M420V35X25SF	220	420	35X25	911	0.20	1.31	1.83
NRLLW271M420V25X50SF	270	420	25X50	1010	0.20	1.73	2.42
NRLLW271M420V30X35SF	270	420	30X35	1010	0.20	1.59	2.22
NRLLW271M420V35X30SF	270	420	35X30	1010	0.20	1.53	2.14
NRLLW331M420V30X40SF	330	420	30X40	1116	0.20	1.80	2.52
NRLLW331M420V35X35SF	330	420	35X35	1116	0.20	1.75	2.45
NRLLW391M420V30X50SF	390	420	30X50	1214	0.20	2.09	2.92
NRLLW391M420V35X40SF	390	420	35X40	1214	0.20	1.95	2.73
NRLLW471M420V35X45SF	470	420	35X45	1332	0.20	2.16	3.02
NRLLW121M450V20X45SF	120	450	20X45	697	0.20	1.11	1.55
NRLLW151M450V20X50SF	150	450	20X50	779	0.20	1.25	1.75
NRLLW151M450V22X45SF	150	450	22X45	779	0.20	1.26	1.76
NRLLW151M450V25X35SF	150	450	25X35	779	0.20	1.21	1.69
NRLLW181M450V22X50SF	180	450	22X50	853	0.20	1.41	1.97
NRLLW181M450V25X40SF	180	450	25X40	853	0.20	1.37	1.91
NRLLW181M450V30X30SF	180	450	30X30	853	0.20	1.31	1.83
NRLLW181M450V35X25SF	180	450	35X25	853	0.20	1.24	1.73
NRLLW221M450V25X45SF	220	450	25X45	943	0.20	1.55	2.17
NRLLW221M450V30X35SF	220	450	30X35	943	0.20	1.49	2.08
NRLLW271M450V30X40SF	270	450	30X40	1045	0.20	1.69	2.36
NRLLW271M450V35X30SF	270	450	35X30	1045	0.20	1.52	2.12
NRLLW331M450V30X45SF	330	450	30X45	1156	0.20	1.90	2.66
NRLLW331M450V35X35SF	330	450	35X35	1156	0.20	1.74	2.43
NRLLW391M450V30X50SF	390	450	30X50	1256	0.20	2.10	2.94
NRLLW391M450V35X40SF	390	450	35X40	1256	0.20	1.94	2.71
NRLLW471M450V35X50SF	470	450	35X50	1379	0.20	2.29	3.20