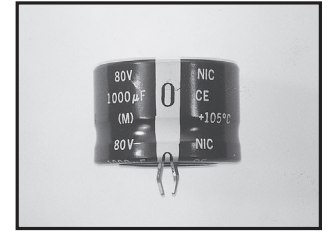


### FEATURES

- LOW PROFILE (20mm HEIGHT)
- EXTENDED TEMPERATURE RATING +105°C
- 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 ~ +105°C			-25 ~ +105°C				
Rated Voltage Range		16 ~ 250Vdc			400Vdc				
Rated Capacitance Range		68 ~ 10,000µF			33 ~ 100µF				
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 ~ 400	
	Tan δ max.	0.45	0.35	0.30	0.25	0.20	0.17	0.15	
Surge Voltage	W.V. (Vdc)	16	25	35	50	63	80	100	
	S.V. (Vdc)	20	32	44	63	79	100	125	
	W.V. (Vdc)	160	200	250	400	400	-	-	
	S.V. (Vdc)	220	250	300	400	450	-	-	
Ripple Current Correction Factors	Frequency (Hz)	50	60	100	120	500	1K	10K ~ 50K	
	Multiplier at 105°C	16 ~ 100Vdc	0.93	0.95	0.99	1.00	1.05	1.08	1.15
		160 ~ 400Vdc	0.75	0.80	0.95	1.00	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 +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							
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:

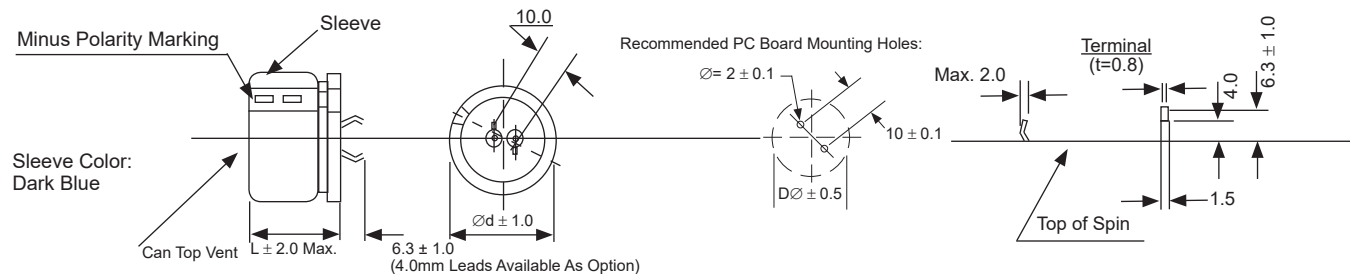
\*NON-STANDARD VOLTAGES FOR THIS SERIES

#### 1. Pressure 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 4.5Kg for a period 10 seconds or a radial bent force of 2.5Kg for a period of 30 seconds.



### PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumAppInfoCautions.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)



## STANDARD PRODUCT LIST, CASE SIZE AND SPECIFICATIONS

Part Number	Cap (μF)	W.V.	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@105°C)	
				120Hz	20KHz	120Hz	10K ~ 50KHz
NRLFW332M16V22X20F	3,300	16	22x20	0.216	0.173	1.30	1.50
NRLFW472M16V25X20F	4,700		25x20	0.152	0.121	1.60	1.84
NRLFW682M16V30X20F	6,800		30x20	0.105	0.084	1.80	2.07
NRLFW103M16V35X20F	10,000		35x20	0.071	0.057	2.40	2.76
NRLFW222M25V22X20F	2,200	25	22x20	0.241	0.181	1.30	1.50
NRLFW332M25V25X20F	3,300		25x20	0.161	0.121	1.60	1.84
NRLFW472M25V30X20F	4,700		30x20	0.113	0.085	1.80	2.07
NRLFW682M25V35X20F	6,800		35x20	0.080	0.060	2.30	2.65
NRLFW152M35V22X20F	1,500	35	22x20	0.267	0.216	1.10	1.27
NRLFW222M35V25X20F	2,200		25x20	0.196	0.140	1.40	1.61
NRLFW332M35V30X20F	3,300		30x20	0.131	0.098	1.70	1.96
NRLFW472M35V35X20F	4,700		35x20	0.095	0.071	2.00	2.30
NRLFW102M50V22X20F	1,000	50	22x20	0.265	0.199	0.90	1.04
NRLFW152M50V25X20F	1,500		25x20	0.177	0.133	1.20	1.38
NRLFW222M50V30X20F	2,200		30x20	0.121	0.089	1.40	1.61
NRLFW332M50V35X20F	3,300		35x20	0.085	0.064	1.70	1.96
NRLFW681M63V22X20F	680	63	22x20	0.463	0.347	0.90	1.04
NRLFW102M63V25X20F	1,000		25x20	0.315	0.236	1.20	1.38
NRLFW152M63V30X20F	1,500		30x20	0.210	0.157	1.30	1.50
NRLFW222M63V35X20F	2,200		35x20	0.143	0.107	1.50	1.70
NRLFW471M80V22X20F	470	80	22x20	0.459	0.298	0.80	0.92
NRLFW681M80V25X20F	680		25x20	0.317	0.206	1.00	1.15
NRLFW102M80V30X20F	1,000		30x20	0.216	0.140	1.20	1.38
NRLFW152M80V35X20F	1,500		35x20	0.155	0.108	1.40	1.61
NRLFW331M100V22X20F	330	100	22x20	0.653	0.392	0.80	1.20
NRLFW471M100V25X20F	470		25x20	0.459	0.275	1.00	1.50
NRLFW681M100V30X20F	680		30x20	0.317	0.190	1.10	1.65
NRLFW102M100V35X20F	1,000		35x20	0.216	0.129	1.20	1.80
NRLFW151M160V22X20F	150	160	22x20	1.437	0.647	0.55	0.77
NRLFW221M160V25X20F	220		25x20	0.098	0.441	0.75	1.05
NRLFW331M160V30X20F	330		30x20	0.553	0.249	1.00	1.40
NRLFW471M160V35X20F	470		35x20	0.459	0.208	1.15	1.61
NRLFW101M200V22X20F	100	200	22x20	1.989	0.895	0.50	0.70
NRLFW151M200V25X20F	150		25x20	1.326	0.597	0.65	0.91
NRLFW221M200V30X20F	220		30x20	0.904	0.407	0.87	1.22
NRLFW331M200V35X20F	330		35x20	0.603	0.271	1.10	1.54
NRLFW680M250V22X20F	68	250	22x20	2.926	1.463	0.40	0.56
NRLFW101M250V25X20F	100		25x20	1.989	0.995	0.50	0.70
NRLFW151M250V30X20F	150		30x20	1.326	0.663	0.65	0.91
NRLFW221M250V35X20F	220		35x20	0.904	0.452	0.87	1.22
NRLFW330M400V22X20F	33	400	22x20	5.024	1.758	0.20	0.28
NRLFW470M400V25X20F	47		25x20	3.527	1.235	0.25	0.35
NRLFW680M400V30X20F	68		30x20	2.438	0.853	0.35	0.49
NRLFW101M400V35X20F	100		35x20	1.658	0.580	0.47	0.66

### PART NUMBER SYSTEM

