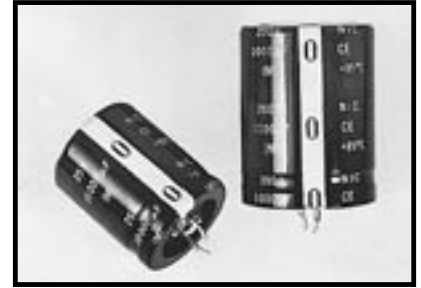


FEATURES

- NEW SIZES FOR LOW PROFILE AND HIGH DENSITY DESIGN OPTIONS
- EXPANDED CV VALUE RANGE
- HIGH RIPPLE CURRENT
- LONG LIFE
- CAN-TOP SAFETY VENT
- DESIGNED AS INPUT FILTER OF SMPS
- STANDARD 10mm (.400") SNAP-IN SPACING

RoHS Compliant

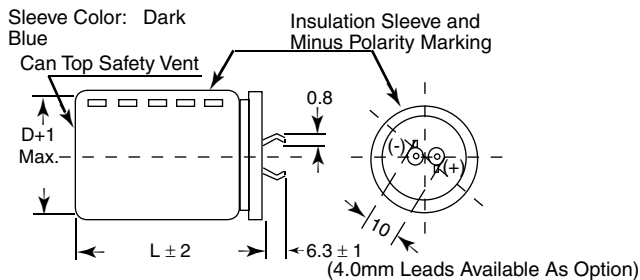
*See Part Number System for Details



SPECIFICATIONS

Operating Temperature Range	-40°C ~ +85°C	-25°C ~ +85°C							
Rated Working Voltage Range	16 ~ 250Vdc	350 ~ 450Vdc							
Rated Capacitance Range	180 ~ 68,000µF	56 ~ 680µF							
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)	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 @ 85°C	0.75	0.8	0.95	1.0	1.05	1.08	1.15	-
	Temperature (°C)	≤ +45		+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							

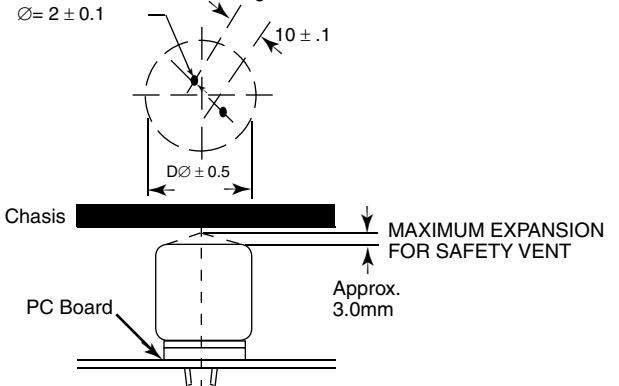
(* 47,000µF add 0.14, 68,000µF add 0.35.)



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.

Recommended PC Board Mounting Holes:

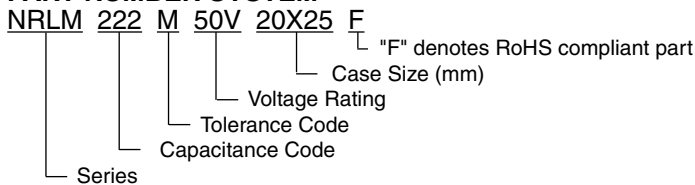


STANDARD PRODUCT LIST, CASE SIZE AND SPECIFICATIONS

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	6800	20x25	0.098	0.083	3.15	3.62
	8200	20x30	0.081	0.069	3.47	3.99
	10,000	20x35 22x30 25x25	0.075	0.063	3.78	4.35
	15,000	20x40 22x35 25x30	0.053	0.045	5.26	6.05
	22,000	22x45 25x35 30x30	0.038	0.032	6.10	7.02
	33,000	25x50 30x40 35x30	0.025	0.021	6.84	7.87
	47,000	30x50 35x40	0.021	0.019	7.47	8.59
	68,000	35x50	0.018	0.017	9.05	10.41
	25	4700	20x25	0.113	0.090	3.05
6800		22x30 25x25	0.078	0.062	3.47	3.99
8200		22x30 25x25	0.065	0.052	3.57	4.11
10,000		22x35 25x30 30x25	0.058	0.046	3.78	4.35
15,000		22x50 25x40 30x30	0.039	0.031	4.63	5.32
22,000		25x50 30x40	0.029	0.023	6.10	7.02
33,000		30x50 35x40	0.020	0.017	6.84	7.87
47,000		35x50	0.017	0.015	8.00	9.20
35	2200	22x25	0.181	0.136	1.40	1.61
	3300	20x25	0.111	0.083	2.73	3.14
	4700	20x35 22x30 25x25	0.078	0.058	3.26	3.75
	6800	22x35 25x30	0.066	0.049	3.68	4.23
	8200	25x35	0.057	0.042	4.00	4.60
	10,000	22x45 25x40 30x30 35x25	0.050	0.037	4.42	5.08
	15,000	25x50 30x40 35x30	0.036	0.027	5.57	6.41
	22,000	30x50 35x40	0.026	0.020	6.10	7.02
	33,000	35x50	0.018	0.014	7.15	8.22

W.V. (Vdc)	Cap. (µF)	Case Size DxL (mm)	ESR (Ω@20°C)		Max. Ripple Current (Arms@85°C)		
			120Hz	20kHz	120Hz	10k~50kHz	
50	2200	20x25	0.151	0.113	2.26	2.60	
	3300	22x30 25x25	0.100	0.075	2.73	3.14	
	4700	25x30 30x25	0.071	0.053	3.03	3.48	
	6800	25x40 30x30	0.049	0.037	3.85	4.43	
	8200	25x45 30x35	0.040	0.030	4.41	5.07	
	10,000	25x50 30x40 35x30	0.036	0.027	4.97	5.72	
	15,000	30x50 35x40	0.028	0.021	6.44	7.41	
	22,000	35x50	0.021	0.017	7.57	8.71	
	1000	22x25	0.381	0.286	1.20	1.38	
63	2200	20x35 22x30 25x25	0.151	0.113	2.52	2.90	
	3300	22x40 25x30 30x25	0.105	0.079	4.10	4.72	
	4700	22x50 25x40 30x30 35x25	0.081	0.061	4.86	5.59	
	6800	25x50 30x40 35x30	0.061	0.046	5.84	6.72	
	8200	30x45 35x35	0.051	0.046	6.00	6.90	
	10,000	35x40	0.041	0.033	6.52	7.50	
	12,000	35x50	0.035	0.028	7.15	8.22	
	80	1500	20x35 22x30 25x25	0.177	0.133	2.26	2.60
		2200	22x40 25x30 30x25	0.121	0.090	2.73	3.14
3300		22x50 25x40 30x30	0.085	0.064	3.21	3.69	
4700		25x50 30x40	0.063	0.048	4.09	4.70	
6800		30x50 35x40	0.046	0.035	5.16	5.93	
8200		35x50	0.038	0.029	5.83	6.70	
1000		20x35 22x30 25x25	0.216	0.140	1.96	2.25	
1500		22x40 25x30 30x25	0.155	0.101	2.57	2.96	
100	2200	25x40 30x30	0.121	0.078	3.14	3.61	
	3300	25x50 30x40	0.090	0.059	4.06	4.67	
	4700	30x50 35x40	0.071	0.049	5.13	5.90	
	6800	35x50	0.049	0.037	6.60	7.59	

PART NUMBER SYSTEM



STANDARD PRODUCT LIST, CASE SIZE AND SPECIFICATIONS

W.V. (Vdc)	Cap. (μ F)	Case Size DxL (mm)	ESR (Ω @20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20kHz	120Hz	10k~50kHz
160	330	22x25	0.553	0.276	1.45	2.03
	470	22x30 25x25	0.423	0.212	2.11	2.95
	680	25x35 30x25	0.293	0.146	2.50	3.50
	820	25x35 30x30	0.263	0.131	2.75	3.85
	1000	25x45 30x35 35x30	0.232	0.128	3.00	4.20
	1500	30x45 35x35	0.166	0.091	3.73	5.22
	2200	35x45	0.113	0.073	4.78	6.69
200	220	22x25 25x25	0.904	0.407	0.87	1.22
	330	20x35 22x30 25x25	0.553	0.249	1.56	2.18
	470	22x35 25x30 30x25	0.388	0.175	1.85	2.59
	680	22x45 25x35 30x30	0.268	0.121	2.68	3.75
	820	25x45 30x35 35x25	0.243	0.109	2.93	4.10
	1000	25x50 30x40 35x30	0.199	0.090	3.25	4.55
	1500	30x50 35x40	0.144	0.072	3.87	5.42
	2200	35x50	0.098	0.054	4.92	6.89
	250	220	22x30 25x25	0.904	0.36	1.17
330		22x35 25x30 30x25	0.653	0.261	1.75	2.45
470		22x45 25x40 30x30	0.388	0.155	2.11	2.95
680		25x50 30x40 35x30	0.268	0.107	2.50	3.50
820		30x45 35x45	0.222	0.089	2.77	3.88
1000		30x50 35x40	0.199	0.090	3.32	4.65
1500		30x50 35x40	0.168	0.083	3.87	4.94
1500		35x50	0.133	0.066	4.04	5.66
250		220	22x30 25x25	0.904	0.36	1.17
	330	22x35 25x30 30x25	0.653	0.261	1.75	2.45
	470	22x45 25x40 30x30	0.388	0.155	2.11	2.95
	680	25x50 30x40 35x30	0.268	0.107	2.50	3.50

W.V. (Vdc)	Cap. (μ F)	Case Size DxL (mm)	ESR (Ω @20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20kHz	120Hz	10k~50kHz
250	820	30x45 35x45	0.222	0.089	2.77	3.88
	1000	30x50 35x40	0.199	0.090	3.32	4.65
	1500	30x50 35x40	0.168	0.083	3.87	4.94
	1500	35x50	0.133	0.066	4.04	5.66
	100	20x35 22x30	1.658	0.580	0.91	1.27
350	150	22x35 25x30 30x25	1.105	0.387	1.12	1.57
	220	22x45 25x40 30x30 35x25	0.754	0.264	1.44	2.02
	330	25x50 30x40 35x30	0.502	0.176	1.88	2.63
	470	30x50 35x40	0.388	0.136	2.40	3.36
	560	35x45	0.355	0.142	2.60	3.64
	680	35x50	0.293	0.117	2.96	4.14
	68	20x30 22x25	2.438	0.853	0.76	1.06
	82	20x30 22x25	2.022	0.708	0.83	1.16
	100	20x35 22x30 25x25	1.658	0.580	0.92	1.29
	150	25x30 30x25	1.105	0.387	1.16	1.62
400	220	25x40 30x30	0.754	0.264	1.49	2.09
	330	30x40 35x35	0.553	0.193	1.90	2.66
	470	35x45	0.388	0.136	2.39	3.35
	56	20x30 22x25	2.960	1.184	0.70	0.98
	68	22x25* 22x30	2.438	0.975	0.76	1.06
450	82	20x35 22x30 25x25	2.022	0.809	0.83	1.16
	100	22x35 25x30 30x25	1.658	0.663	0.93	1.30
	220	25x50 30x40 35x30	0.754	0.301	1.55	2.17
	330	30x50 35x40	0.553	0.249	2.01	2.81
	470	35x50	0.423	0.233	2.53	3.54

* Special Size.

