

FEATURES

- LONG LIFE (105°C, 2000 HOURS)
- LOW PROFILE AND HIGH DENSITY DESIGN OPTIONS
- EXPANDED CV VALUE RANGE
- HIGH RIPPLE CURRENT
- CAN-TOP SAFETY VENT
- DESIGNED AS INPUT FILTER OF SMPS
- STANDARD 10mm (.400") SNAP-IN SPACING

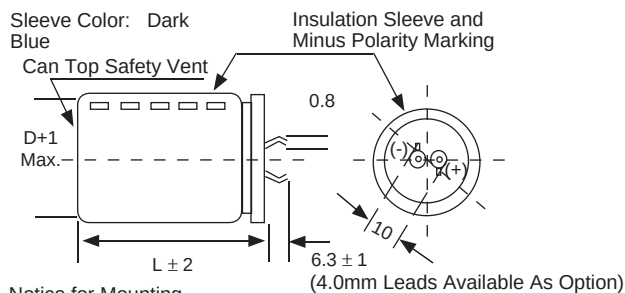
**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details



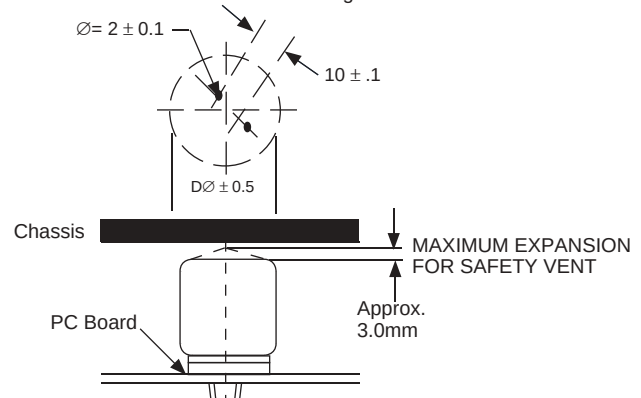
SPECIFICATIONS

Operating Temperature Range	-40 ~ +105°C	-25 ~ +105°C									
Rated Voltage Range	10 ~ 250Vdc	450Vdc									
Rated Capacitance Range	180 ~ 68,000μF	56 ~ 470μF									
Capacitance Tolerance	±20% (M) at 120Hz, +20°C										
Max. Leakage Current (μA) After 5 minutes (20°C)	3 x $\sqrt{C(\mu F)V}$										
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)		10	16	25	35	50	63	80	100 ~ 400	450
	Tan δ max.		0.55	0.45	0.35	0.30	0.25	0.20	0.17	0.15	0.20
Surge Voltage	W.V. (Vdc)		10	16	25	35	50	63	80	100	160
	S.V. (Vdc)		13	20	32	44	63	79	100	125	200
	W.V. (Vdc)		180	200	250	400	450	-	-	-	-
	S.V. (Vdc)		220	250	300	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	1.0	1.05	1.08	1.15	-	-
		160 ~ 450Vdc	0.75	0.80	0.95	1.0	1.20	1.25	1.40	-	-
Low Temperature Stability (10 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								



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:



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

W.V.	Cap (μ F)	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20KHz	120Hz	10K ~ 50KHz
10	6,800	20x25	0.110	0.093	1.30	1.50
	8,200	20x30	0.091	0.077	1.60	1.84
	10,000	22x25	0.075	0.063	1.80	2.07
	15,000	25x25	0.053	0.045	2.30	2.65
	22,000	25x35 30x25	0.038	0.032	2.60	2.99
	33,000	25x45 30x35 35x30	0.027	0.023	3.40	3.91
	47,000	30x45 35x35	0.023	0.020	4.20	4.83
	68,000	35x50	0.021	0.020	5.50	6.33
	8,200	22x25	0.085	0.068	2.20	2.53
	10,000	22x30	0.071	0.057	2.40	2.76
16	15,000	25x25	0.066	0.053	2.60	2.99
	22,000	25x35 30x30	0.046	0.037	3.20	3.68
	33,000	25x45 30x35 35x30	0.033	0.028	3.80	4.37
	47,000	30x45 35x35	0.023	0.020	4.70	5.41
	56,000	35x45	0.020	0.018	5.50	6.33
	68,000	35x50	0.019	0.017	6.00	6.90
	4,700	22x25	0.106	0.079	2.00	2.30
	6,800	25x25	0.073	0.055	2.40	2.76
	8,200	25x30 30x25	0.061	0.045	2.70	3.11
	10,000	25x35 30x30	0.051	0.039	3.00	3.45
25	15,000	25x45 30x35 35x30	0.036	0.031	3.60	4.14
	22,000	30x45 35x35	0.025	0.022	4.30	4.95
	33,000	35x50	0.018	0.016	5.50	6.33
	3,300	22x25	0.121	0.090	1.90	2.19
	4,700	25x25	0.088	0.066	2.20	2.53
	6,800	25x35 30x30	0.061	0.046	2.60	2.99
	8,200	25x40 30x30 35x25	0.051	0.038	2.90	3.34
	10,000	25x45 30x35 35x30	0.041	0.031	3.20	3.68
	15,000	30x45 35x35	0.030	0.022	3.90	4.49
	22,000	35x50	0.023	0.017	5.00	5.75

W.V.	Cap (μ F)	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20KHz	120Hz	10K ~ 50KHz
50	2,200	22x30	0.105	0.079	1.70	1.96
	3,300	25x30	0.070	0.053	2.00	2.30
	4,700	25x40 30x30 35x25	0.053	0.040	2.50	2.88
	6,800	25x50 30x40 35x30	0.046	0.035	3.30	3.80
	8,200	30x45 35x35	0.038	0.029	3.60	4.14
	10,000	30x50 35x40	0.033	0.025	4.00	4.60
	15,000	35x50	0.022	0.018	4.80	5.52
	1,500	22x30	0.188	0.141	1.50	1.73
	2,200	25x30	0.128	0.096	2.00	2.30
	3,300	25x40 30x30 35x25	0.090	0.068	2.50	2.88
63	4,700	25x50 30x40 35x30	0.063	0.048	3.00	3.45
	6,800	30x50 35x40	0.049	0.037	3.60	4.14
	8,200	35x45	0.040	0.030	3.90	4.49
	10,000	35x50	0.033	0.028	4.40	5.06
	1,000	25x25	0.182	0.119	1.30	1.50
	1,500	25x30	0.133	0.093	1.70	1.96
	2,200	25x35 30x30 35x25	0.090	0.063	2.10	2.42
	3,300	25x50 30x40 35x30	0.065	0.049	2.60	2.99
	4,700	30x50 35x40	0.049	0.037	2.60	2.99
	6,800	35x50	0.041	0.031	3.90	4.49
80	820	25x25	0.202	0.121	1.40	2.10
	1,000	25x30	0.182	0.109	1.70	2.55
	1,500	25x40 30x30 35x25	0.122	0.079	2.10	3.15
	2,200	25x50 30x40 35x30	0.090	0.059	2.60	3.90
	3,300	30x50 35x40	0.075	0.053	3.20	4.80
	4,700	35x50	0.053	0.040	3.80	5.70

STANDARD PRODUCT LIST, CASE SIZE AND SPECIFICATIONS

W.V.	Cap (μ F)	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20KHz	120Hz	10K ~ 50KHz
160	220	20x25	0.829	0.373	1.00	1.40
	330	22x30	0.553	0.249	1.20	1.68
	470	25x30	0.459	0.208	1.40	1.96
	680	25x35 30x30	0.317	0.143	1.70	2.38
	820	25x40 30x30	0.263	0.118	2.00	2.80
	1,000	25x45 30x35	0.216	0.108	2.20	3.08
	1,500	30x45 35x35	0.166	0.083	2.50	3.50
	1,800	30x45	0.129	0.064	2.70	3.78
	2,200	35x50	0.113	0.057	2.90	4.06
	220	22x25	0.754	0.339	1.00	1.40
200	330	25x25	0.502	0.226	1.20	1.68
	470	22x40 25x35 30x25	0.353	0.159	1.40	1.96
	680	25x40 30x30	0.244	0.110	1.70	2.38
	820	25x50 30x35 35x30	0.222	0.111	2.00	2.80
	1,000	30x45 35x35	0.199	0.099	2.20	3.08
	1,500	35x50	0.144	0.072	2.50	3.50
	220	25x25	0.754	0.377	1.00	1.40
	330	25x35 30x25	0.502	0.251	1.20	1.68
	470	25x45 30x35 35x30	0.353	0.176	1.40	1.96
	680	30x45 35x35	0.244	0.122	1.70	2.38
250	820	30x50 35x40	0.202	0.101	2.00	2.80
	1,000	35x45	0.199	0.099	2.20	3.08

W.V.	Cap (μ F)	Case Size	ESR (Ω @ 20°C)		Max. Ripple Current (Arms@85°C)	
			120Hz	20KHz	120Hz	10K ~ 50KHz
400	68	25x25	1.950	0.683	0.56	0.78
	82	25x25	1.617	0.566	0.64	0.90
	100	25x30	1.325	0.464	0.69	0.97
	150	25x40 30x30	0.884	0.309	0.82	1.15
	220	25x50 30x40 35x30	0.603	0.211	1.10	1.54
	330	30x50 35x40	0.402	0.161	1.35	1.89
	470	35x50	0.282	0.127	1.75	2.45
	56	22x25	2.368	0.947	0.40	0.56
	68	25x25	1.950	0.683	0.50	0.70
	82	22x35	1.617	0.647	0.56	0.78
450	100	25x30 30x25	1.326	0.531	0.64	0.90
	150	25x40 30x30	0.884	0.354	0.79	1.11
	220	30x40 35x30	0.678	0.271	1.00	1.40
	330	30x50 35x40	0.502	0.201	1.38	1.93
	470	35x50	0.353	0.123	1.74	2.44

PART NUMBER SYSTEM

NRLMW 471 M 250V 30X35 F
 └─ Series
 └─ Capacitance Code
 └─ Tolerance Code
 └─ Voltage Rating
 └─ Case Size (mm)
 └─ RoHS compliant