

Miniature Aluminum Electrolytic Capacitors

NRWX Series

+125°C WIDE TEMPERATURE RANGE, RADIAL LEADS, POLARIZED

FEATURES

- -55°C ~ +125°C EXTENDED OPERATING TEMPERATURE RANGE
- LOW IMPEDANCE AND HIGH RIPPLE CURRENT AT HIGH FREQUENCY

CHARACTERISTICS

Rated Voltage Range	10 ~ 50Vdc					
Capacitance Range	1.0 ~ 4,700μF					
Operating Temperature Range	-55 ~ +125°C					
Capacitance Tolerance	±20% (M)					
Max. Leakage Current @ 20°C	0.01CV or 3μA, whichever is greater after 2 minutes					
Max. Tan δ @ 120Hz/20°C (add 0.02 for every 1,000μF for values above 1,000μF)	W.V. (Vdc)	10	16	25	35	50
	Tan δ	0.20	0.16	0.14	0.12	0.10
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	2	2	2	2	2
	Z-40°C/Z+20°C	4	3	3	3	3
Load Life Test at Rated W.V. +125°C 2,000 Hours: ≥10mm Dia +125°C 1,000 Hours: 8mm Dia	Capacitance Change	Within ±25% of initial measured value				
	Tan δ	Less than 200% of specified maximum value				
	Leakage Current	Less than specified maximum value				

RoHS

Compliant

includes all homogeneous materials

*See Part Number System for Details



MAX. RIPPLE CURRENT

(mA rms AT 100KHz & 125°C)

Cap (μF)	Working Voltage (Vdc)				
	10	16	25	35	50
1.0	-	-	-	-	28
2.2	-	-	-	-	42
3.3	-	-	-	-	49
4.7	-	-	-	-	70
10	-	-	-	-	150
22	-	-	-	-	210
33	-	-	-	-	230
47	-	-	-	230	230
100	-	250	280	315	315
220	280	350	380	420	560
330	350	380	490	560	630
470	380	490	590	630	770
1000	590	770	1050	980	1200
2200	1050	1150	1500	-	-
3300	1150	1500	-	-	-
4700	1500	-	-	-	-

MAX. IMPEDANCE (Ω AT 100KHz/125°C)

Cap (μF)	Working Voltage (Vdc)				
	10	16	25	35	50
1.0	-	-	-	-	2.0
2.2	-	-	-	-	1.8
3.3	-	-	-	-	1.5
4.7	-	-	-	-	1.15
10	-	-	-	-	0.95
22	-	-	-	-	0.65
33	-	-	-	-	0.45
47	-	-	-	0.45	0.45
100	-	0.39	0.26	0.35	0.35
220	0.26	0.20	0.17	0.29	0.20
330	0.20	0.17	0.15	0.20	0.12
470	0.17	0.15	0.12	0.12	0.10
1000	0.12	0.07	0.05	0.06	0.045
2200	0.05	0.04	0.03	-	-
3300	0.04	0.03	-	-	-
4700	0.03	-	-	-	-

RIPPLE CURRENT CORRECTION FACTOR

Frequency (Hz)	100Hz ~ <1KHz	1KHz ~ < 10KHz	≥ 10KHz
C<4.7μF	0.4	0.7	1.0
4.7μF≤C<100μF	0.55	0.8	1.0
100μF≤C<1000μF	0.7	0.9	1.0
1000μF≤C	0.9	0.95	1.0

PART NUMBERING SYSTEM

NRWX 331 M 35V 10X20 F

Series Capacitance Code: First 2 characters significant, third character is multiplier

Tolerance Code (M=20%)

Working Voltage (Vdc)

Case Size (Dφ x L)

RoHS Compliant

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 AND CASE SIZE D ϕ x L (mm)

Cap (μ F)	Code	Working Voltage (WVDC)				
		10	16	25	35	50
1.0	1R0	-	-	-	-	8x11.5
2.2	2R2	-	-	-	-	8x11.5
3.3	3R3	-	-	-	-	8x11.5
4.7	4R7	-	-	-	-	8x11.5
10	100	-	-	-	-	8x11.5
22	220	-	-	-	-	8x11.5
33	330	-	-	-	-	8x12.5
47	470	-	-	-	8x12.5	8x12.5
100	101	-	8x11.5	8x12.5	10x12.5	10x12.5
220	221	8x12.5	10x12.5	10x12.5	10x16	10x20
330	331	10x12.5	10x12.5	10x16	10x20	12.5x20
470	471	10x12.5	10x16	10x20	12.5x20	12.5x25
1000	102	10x20	12.5x20	12.5x25	16x25	16x31.5
2200	222	12.5x25	16x25	16x31.5	-	-
3300	332	16x25	16x31.5	-	-	-
4700	472	16x31.5	-	-	-	-

DIAMETER AND LEADSPACE (mm)

Case Diameter (D ϕ)	8 ϕ	10 ϕ	12.5 ϕ	16 ϕ
Lead Space (F)	3.5	5.0	5.0	7.5
Lead Diameter (d ϕ)	0.6	0.6	0.8	0.8
Dimension α	0.5	0.5	1.0	1.0

$\beta = L < 20\text{mm} = 1.5\text{mm}$, $L > 20\text{mm} = 2.0\text{mm}$

