

Surface Mount Aluminum Electrolytic Capacitors NAWT Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- SUIT FOR HIGH TEMPERATURE REFLOW SOLDERING (UP TO 260°C)
- 2,000 HOUR LOAD LIFE @ +105°C
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

SAC Alloy Compatible
230°C ~ 260°C



RoHS
Compliant

includes all homogeneous materials

CHARACTERISTICS

Rated Voltage Rating	6.3 ~ 50Vdc						
Rated Capacitance Range	0.1 ~ 1,000µF						
Operating Temp. Range	-55 ~ +105°C						
Capacitance Tolerance	±20% (M)						
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV or 3µA whichever is greater						
Tan δ @ 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V. (Vdc)	8.0	13	20	32	44	63
	4mm, 5mm diameter & 6.3x6.1mm	0.30	0.24	0.20	0.16	0.14	0.12
	6.3x8mm & 8~10mm diameter	0.35	0.26	0.24	0.18	0.14	0.12
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	6.3	10	16	25	35	50
	Z-25°C/Z+20°C	4	3	2	2	2	2
	Z-40°C/Z+20°C	8	8	4	4	3	3
Load Life Test @ 105°C All Case Sizes = 2,000 hours	Capacitance Change	Within ±25% of initial measured value					
	Tan δ	Less than ±200% of the specified maximum value					
	Leakage Current	Less than the specified maximum value					

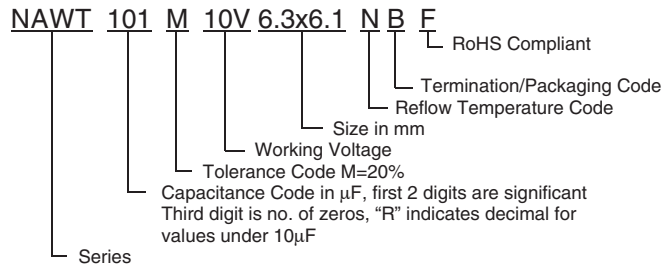
*See Part Number System for Details

LOW ESR COMPONENT
LIQUID ELECTROLYTE
For Performance Data
see www.LowESR.com

STANDARD VALUES AND CASE SIZES (mm)

Cap. (µF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
0.1	R10	-	-	-	-	-	4x6.1
0.22	R22	-	-	-	-	-	4x6.1
0.33	R33	-	-	-	-	-	4x6.1
0.47	R47	-	-	-	-	-	4x6.1
1.0	1R0	-	-	-	-	-	4x6.1
2.2	2R2	-	-	-	-	-	4x6.1
3.3	3R3	-	-	-	-	-	4x6.1
4.7	4R7	-	-	-	-	4x6.1	5x6.1
10	100	-	-	4x6.1	-	5x6.1	6.3x6.1
22	220	4x6.1	-	5x6.1	-	6.3x6.1	6.3x8
33	330	4x6.1	5x6.1	-	6.3x6.1	6.3x8	8x10.5
47	470	5x6.1	-	6.3x6.1	6.3x8	-	8x10.5
							10x10.5
100	101	6.3x6.1	6.3x6.1	6.3x8	8x10.5	8x10.5	8x10.5
						10x10.5	10x10.5
220	221	6.3x8	-	8x10.5	8x10.5	10x10.5	-
					10x10.5	-	
330	331	-	8x10.5	8x10.5	10x10.5	-	-
				10x10.5	-		
470	471	8x10.5	8x10.5	8x10.5	10x10.5	-	-
			10x10.5	10x10.5	-		
1000	102	10x10.5	-	-	-	-	-

PART NUMBER SYSTEM



PEAK REFLOW TEMPERATURE CODES

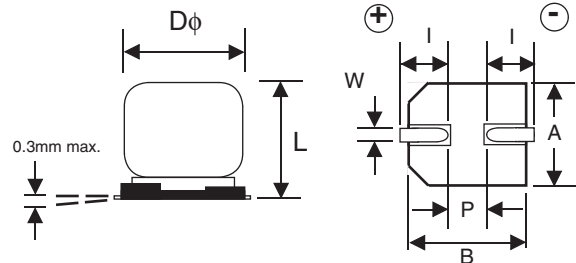
Code	Peak Reflow Temperature
N	260°C
L	250°C

TERMINATION FINISH & PACKAGING OPTIONS CODES

Code	Finish & Reel Size
B	Sn-Bi Finish & 13" Reel
LB	Sn-Bi Finish & 15" Reel
S	100% Sn Finish & 13" Reel
LS	100% Sn Finish & 15" Reel

DIMENSIONS (mm) AND REEL QUANTITIES

Case Size	φD±0.5	L max.	A±0.2	B±0.2	I±0.3	W	P±0.3	Qty/Reel
4x6.1	4.0	6.1	4.3	4.3	1.8	0.5~0.8	1.0	1,200
5x6.1	5.0	6.1	5.3	5.3	2.2	0.5~0.8	1.3	800
6.3x6.1	6.3	6.1	6.6	6.6	2.7	0.5~0.8	1.8	800
6.3x8	6.3	8.0	6.6	6.6	2.7	0.5~0.8	1.8	500
8x10.5	8.0	10.5	8.3	8.3	2.9	0.8~1.1	3.1	300
10x10.5	10.0	10.5	10.3	10.3	3.2	0.8~1.1	4.5	300



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



Surface Mount Aluminum Electrolytic Capacitors NAWT Series

STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple Current (mA) +105°C/120Hz	Load Life Hours @ +105°C
NAWT220M6.3V4X6.1NBF	22	6.3	0.30	26	2,000
NAWT330M6.3V4X6.1NBF	33		0.30	29	2,000
NAWT470M6.3V5X6.1NBF	47		0.30	46	2,000
NAWT101M6.3V6.3X6.1NBF	100		0.30	71	2,000
NAWT221M6.3V6.3X8NBF	220		0.35	121	2,000
NAWT471M6.3V8X10.5LBF	470		0.35	210	2,000
NAWT102M6.3V10X10.5LBF	1000		0.35	485	2,000
NAWT330M10V5X6.1NBF	33	10	0.24	43	2,000
NAWT101M10V6.3X6.1NBF	100		0.24	71	2,000
NAWT331M10V8X10.5LBF	330		0.26	196	2,000
NAWT471M10V8X10.5LBF	470		0.26	210	2,000
NAWT471M10V10X10.5LBF	470		0.26	440	2,000
NAWT100M16V4X6.1NBF	10	16	0.20	28	2,000
NAWT220M16V5X6.1NBF	22		0.20	39	2,000
NAWT470M16V6.3X6.1NBF	47		0.20	70	2,000
NAWT101M16V6.3X8NBF	100		0.24	111	2,000
NAWT221M16V8X10.5LBF	220		0.24	185	2,000
NAWT331M16V8X10.5LBF	330		0.24	290	2,000
NAWT331M16V10X10.5LBF	330		0.24	440	2,000
NAWT471M16V8X10.5LBF	470		0.24	320	2,000
NAWT471M16V10X10.5LBF	470		0.24	460	2,000
NAWT330M25V6.3X6.1NBF	33	25	0.16	65	2,000
NAWT470M25V6.3X8NBF	47		0.18	79	2,000
NAWT101M25V8X10.5LBF	100		0.18	180	2,000
NAWT221M25V8X10.5LBF	220		0.18	320	2,000
NAWT221M25V10X10.5LBF	220		0.18	355	2,000
NAWT331M25V10X10.5LBF	330		0.18	450	2,000
NAWT471M25V10X10.5LBF	470		0.18	490	2,000
NAWT4R7M35V4X6.1NBF	4.7	35	0.14	15	2,000
NAWT100M35V5X6.1NBF	10		0.14	28	2,000
NAWT220M35V6.3X6.1NBF	22		0.14	55	2,000
NAWT330M35V6.3X8NBF	33		0.14	76	2,000
NAWT101M35V8X10.5LBF	100		0.14	180	2,000
NAWT101M35V10X10.5LBF	100		0.14	305	2,000
NAWT221M35V10X10.5LBF	220		0.14	450	2,000
NAWTR10M50V4X6.1NBF	0.1	50	0.12	1.0	2,000
NAWTR22M50V4X6.1NBF	0.22		0.12	2.6	2,000
NAWTR33M50V4X6.1NBF	0.33		0.12	3.2	2,000
NAWTR47M50V4X6.1NBF	0.47		0.12	4.0	2,000
NAWT1R0M50V4X6.1NBF	1.0		0.12	8.0	2,000
NAWT2R2M50V4X6.1NBF	2.2		0.12	11	2,000
NAWT3R3M50V4X6.1NBF	3.3		0.12	14	2,000
NAWT4R7M50V5X6.1NBF	4.7		0.12	19	2,000
NAWT100M50V6.3X6.1NBF	10		0.12	35	2,000
NAWT220M50V6.3X8NBF	22		0.12	67	2,000
NAWT330M50V8X10.5LBF	33		0.12	140	2,000
NAWT470M50V8X10.5LBF	47		0.12	167	2,000
NAWT470M50V10X10.5LBF	47		0.12	180	2,000
NAWT101M50V8X10.5LBF	100		0.12	230	2,000
NAWT101M50V10X10.5LBF	100		0.12	315	2,000

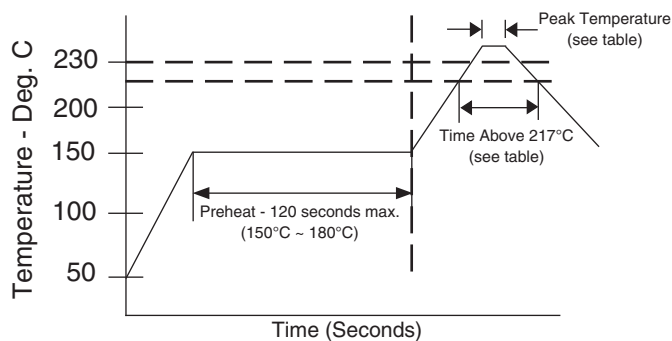
RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Frequency	50/60Hz	120Hz	500Hz	1KHz	10KHz
0.1 ~ 1μF	0.5	1.00	1.20	1.30	1.50
2.2~4.7	0.65	1.00	1.20	1.30	1.50
10~47	0.80	1.00	1.20	1.30	1.50
100~1000	0.80	1.00	1.10	1.15	1.20



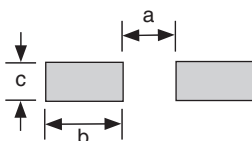
PEAK REFLOW TEMPERATURE AND DURATION

Diameter	Time above 217°C	Peak Temperature 5 seconds
4 ~ 6.3mm ϕ	60 sec. max.	260°C
8 ~ 10mm ϕ	60 sec. max.	250°C



RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
4x6.1	1.0	2.6	1.6
5x6.1	1.4	3.0	1.6
6x3x6.1 6.3x8	2.1	3.5	1.6
8x10.5	3.0	4.1	2.2
10x10.5	4.5	4.3	2.2



Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
www.niccomp.com/RSL