

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	See Part Number System for Details						LO LI F se
Rated Capacitance Range	22 ~ 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	
	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
22	220	-	-	-	-	-	6.3x8
33	330	-	-	-	-	-	6.3x8
47	470	-	-	-	6.3x8	-	8x10.5
100	101	-	-	6.3x8	8x10.5	8x10.5	8x10.5
220	221	6.3x8	-	8x10.5	8x10.5	10x10.5	-
330	331	-	8x10.5	8x10.5	10x10.5	-	-
470	471	8x10.5	8x10.5	8x10.5	10x10.5	-	-
1000	102	10x10.5	-	-	-	-	-

PART NUMBER SYSTEM

NAWT 101 M 16V 6.3x8 N B F

Series | Working Voltage | Tolerance Code M=20% | Capacitance Code in μF, first 2 digits are significant
Third digit is no. of zeros, "R" indicates decimal for values under 10μF

Size in mm | Termination/Packaging Code | Reflow Temperature Code

RoHS Compliant

PEAK REFLOW TEMPERATURE CODES

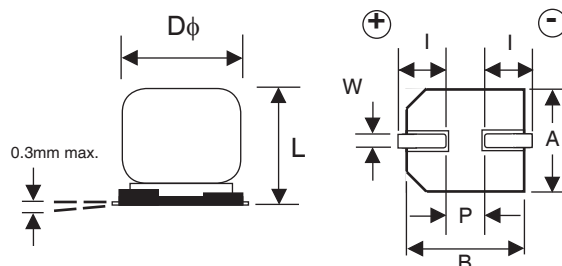
Code	Peak Reflow Temperature
N	260°C
L	250°C

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
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	0.7~1.1	3.2	300
10x10.5	10.0	10.5	10.3	10.3	3.2	0.7~1.4	4.6	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
NAWT221M6.3V6.3X8NBF	220	6.3	0.35	121	2,000
NAWT471M6.3V8X10.5LBF	470		0.35	210	2,000
NAWT102M6.3V10X10.5LBF	1000		0.35	485	2,000
NAWT331M10V8X10.5LBF	330	10	0.26	196	2,000
NAWT471M10V8X10.5LBF	470		0.26	210	2,000
NAWT471M10V10X10.5LBF	470		0.26	440	2,000
NAWT101M16V6.3X8NBF	100	16	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
NAWT470M25V6.3X8NBF	47	25	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
NAWT330M35V6.3X8NBF	33	35	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
NAWT220M50V6.3X8NBF	22	50	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

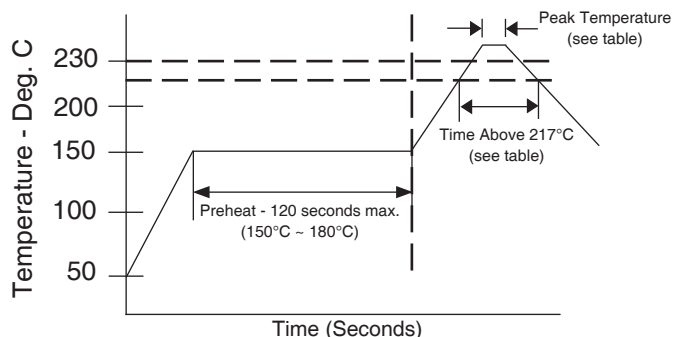
RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Frequency	50/60Hz	120Hz	500Hz	1KHz	10KHz
22 ~ 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

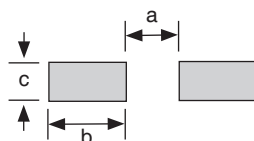
Diameter	Time above 217°C	Peak Temperature 5 seconds
6.3mm φ	60 sec. max.	260°C
8 ~ 10mm φ	60 sec. max.	250°C

Capacitors can withstand two times reflow at the above conditions. Second reflow shall be at least one hour after natural cool to room temperature.



RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
6.3x8	2.1	3.5	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5



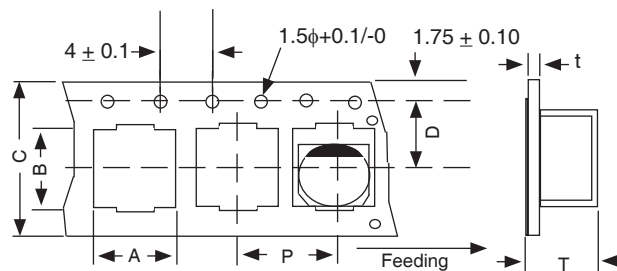
Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
www.niccomp.com/RSL



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CARRIER TAPE DIMENSIONS & REEL QTY

Case Size	A ± 0.2	B ± 0.2	C ± 0.3	D ± 0.1	P ± 0.1	T ± 0.2	t ± 0.1
6.3x8	7.0	7.0	16.0	7.5	12.0	8.2	0.6
8x10.5	8.7	8.7	24.0	11.5	16.0	11.1	0.6
10x10.5	10.7	10.7	24.0	11.5	16.0	11.2	0.6



REEL DIMENSIONS & REEL QTY

Case Size	W ± 1.0	Quantity	
		TR13 (330mm)	TR15 (380mm)
6.3x8	18	500	900
8x10.5	26	300	500
10x10.5	26	300	500

