

NATF Series

Surface Mount Aluminum Electrolytic Capacitors

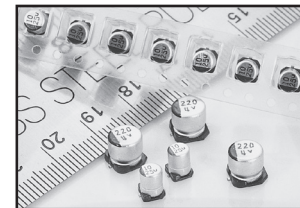


FEATURES

- EXTENDED TEMPERATURE +125°C & REDUCED SIZE
- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING
- MEETS THE REQUIREMENTS OF AEC-Q200*

*Contact NIC for supporting test data

Available with Wide
Anti-Vibration
Terminations

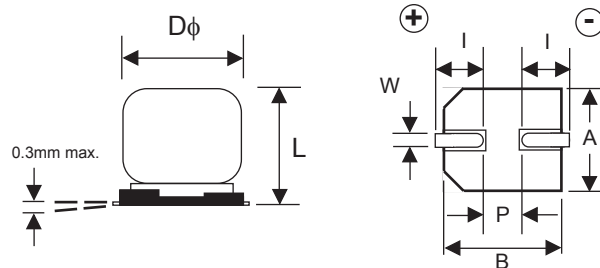


CHARACTERISTICS

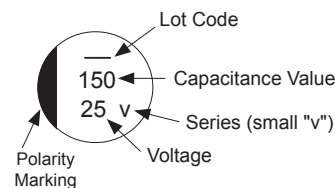
Rated Voltage Range	16 ~ 63VDC					
Rated Capacitance Range	47 ~ 680 μ F					
Operating Temp. Range	-40 ~ +125°C					
Capacitance Tolerance	\pm 20% (M)					
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV					
Working Voltage & Surge Voltage Ratings	W.V. (Vdc)	16	25	35	50	63
	S.V. (Vdc)	20	32	44	63	79
Tan δ @ 120Hz/20°C	Tan δ @ 120Hz/20°C	0.20	0.16	0.14	0.14	0.14
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	16	25	35	50	63
	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 W.V. @ 125°C 6.3x6.3mm: 1,000 Hours 6.3x8mm, 8x10.8mm & 10x10.8mm: 2,000 Hours 10x14mm: 4,000 Hours	Capacitance Change	Within \pm 30% of initial measured value				
	Tan δ	Less than 300% of specified max. value				
	Leakage Current	Less than specified max. value				

STANDARD PRODUCT AND CASE SIZE D ϕ xL (mm)

Cap. (μ F)	Code	Working Voltage (Vdc)				
		16	25	35	50	63
47	470	-	-	6.3X6.3		
68	680					8X10.8
100	101	6.3X6.3	-	6.3X8	8X10.8	8X10.8
150	151	-	6.3X8	-	8X10.8	10X10.8
220	221	-	-	8X10.8	10X10.8	
270	271				10X10.8	
330	331	-	8X10.8	10X10.8		
390	391	-	-	10X14		
470	471	-	10X10.8	10X14		
560	561	-	10X14	10X14		
680	681	-	10X14	-		



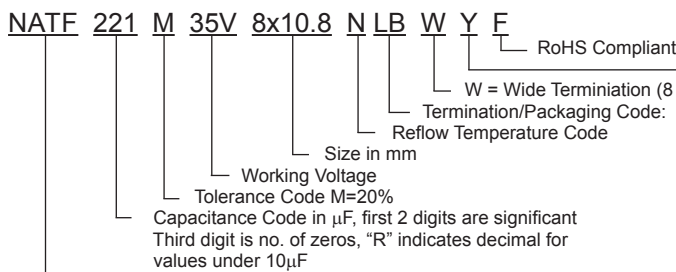
Part Marking



DIMENSIONS (mm)

Case Size	D ϕ \pm 0.5	L max.	A, B \pm 0.2	I \pm 0.3	P \pm 0.3	W
6.3x6.3	6.3	6.3	6.6	2.5	2.2	0.5 ~ 0.8
6.3x8	6.3	8.0	6.6	2.5	2.2	0.5 ~ 0.8
8x10.8	8.0	10.8	8.3	2.9	3.2	0.7 ~ 1.0
10x10.8	10.0	10.8	10.3	3.2	4.6	1.0 ~ 1.4
10x14	10.0	14.0	10.3	3.2	4.6	1.0 ~ 1.4

PART NUMBER SYSTEM



Termination / Packaging Code
LB = Sn-Bi / 15" reel

Reflow Code
L = +250°C
N = +260°C
K = +245°C
J = +240°C

Optional: Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site.

Performance Passives By Design

NIC Components Corp.
100 Baylis Road. Melville, NY 11747

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www.niccomp.com

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STANDARD VALUES, CASE SIZES & SPECIFICATIONS

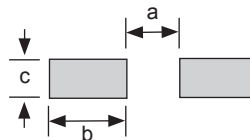
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @120Hz/20°C	Max. ESR (Ω) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/125°C	Load Life Hours @ +125°C	
NATF101M16V6.3X6.3NLBYF	100	16	0.20	1.20	110	1,000	
NATF151M25V6.3X8NLBYF	150	25	0.16	0.60	220	2,000	
NATF331M25V8X10.8NLBYF	330		0.16	0.30	300	2,000	
NATF471M25V10X10.8LLBYF	470		0.16	0.20	500	2,000	
NATF561M25V10X14LLBYF	560		0.16	0.15	710	4,000	
NATF681M25V10X14LLBYF	680		0.16	0.15	710	4,000	
NATF470M35V6.3X6.3NLBYF	47		35	0.14	1.20	110	1,000
NATF101M35V6.3X8NLBYF	100	0.14		0.60	220	2,000	
NATF221M35V8X10.8NLBYF	220	0.14		0.30	300	2,000	
NATF331M35V10X10.8LLBYF	330	0.14		0.20	500	2,000	
NATF391M35V10X14LLBYF	390	0.14		0.15	710	4,000	
NATF471M35V10X14LLBYF	470	0.14		0.15	710	4,000	
NATF561M35V10X14LLBYF	560	0.14		0.15	710	4,000	
NATF101M50V8X10.8NLBYF	100	50		0.14	0.45	250	2000
NATF151M50V8X10.8NLBYF	150			0.14	0.45	250	2000
NATF221M50V10X10.8LLBYF	220			0.14	0.30	350	2000
NATF271M50V10X10.8LLBYF	270		0.14	0.30	350	2000	
NATF680M63V8X10.8KLBIF	68		63	0.14	0.50	250	2000
NATF101M63V8X10.8KLBIF	100	0.14		0.50	250	2000	
NATF151M63V10X10.8JLBIF	150	0.14		0.30	350	2000	

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	100 ≤ f < 1K	1K ≤ f < 10K	10K ≤ f < 100K	100K ≤ f
47μF ~ 680μF	0.6	0.85	0.93	1.00

LAND PATTERN DIMENSIONS (mm)

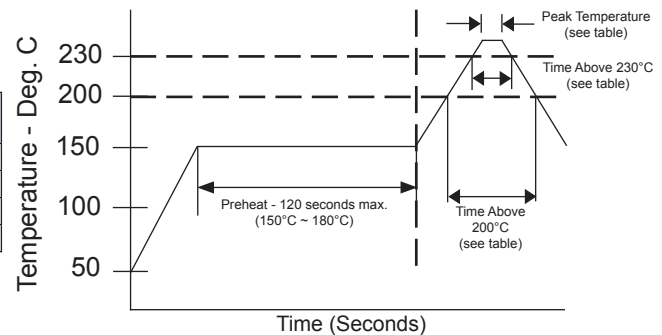
Case Size	a	b	c
6.3 dia.	1.8	3.6	1.8
8 dia.	2.8	4.1	2.1
10 dia.	4.3	4.4	2.5



PEAK REFLOW TEMPERATURES AND DURATION

Voltage	Diameter	Time above 200°C	Time above 230°C	Peak Temperature Within 5 seconds
16 ~ 50V	6.3 & 8mm φ	80 sec. max.	40 sec. max.	260°C
	10mm φ	70 sec. max.	40 sec. max.	250°C
63V	8mm φ	60 sec. max.	30 sec. max.	245°C
	10mm φ	50 sec. max.	20 sec. max.	240°C

Capacitors can withstand two reflow passes under the specified conditions. Capacitors must be allowed to cool to room temperature before the second reflow pass.



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

PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com

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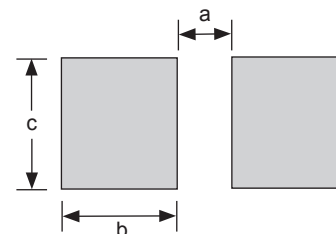
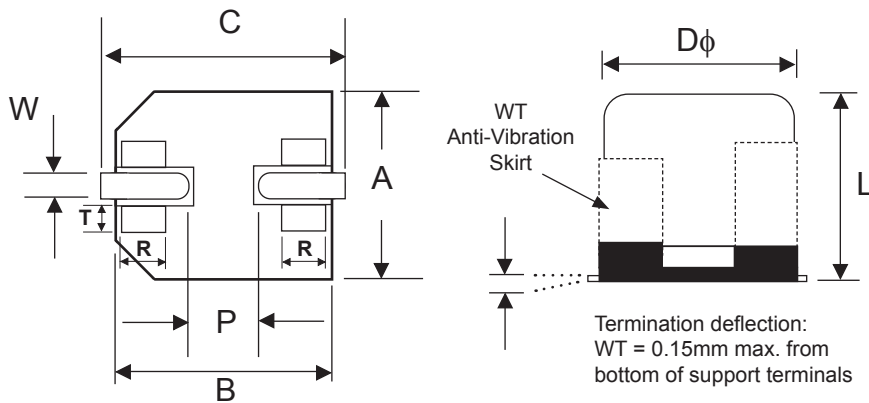


W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	D ϕ \pm 0.5	L max.	A, B \pm 0.2	C \pm 0.2	P \pm 0.2	W	R	T
8x10.8	8.0	11.2	8.3	9.0	3.2	0.7 ~ 1.0	(0.7)	(1.3)
10x10.8	10.0	11.2	10.3	11.0	4.6	1.0 ~ 1.4	(0.7)	(1.3)
10x14	10.0	14.5	10.3	11.0	4.6	1.0 ~ 1.4	(0.7)	(1.3)

W (WIDE TERMINATIONS) LAND PATTERN DIM. (mm)

Case Size	a	b	c
8x10.8	2.5	4.5	4.7
10x10.8	3.8	4.8	4.7
10x14	3.8	4.8	4.7



W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction and duration of vibration: 3 orthogonal directions mutually for 2 hours each Frequency: 5 to 2000Hz reciprocation for 20 minutes Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log Thickness of Solder Paste: 0.20mm \pm 0.03mm
Capacitance	During test, measure value to be stabilized
Appearance	No remarkable abnormalities

CARRIER TAPE

Case Size	A \pm 0.2	B \pm 0.2	C \pm 0.3	D \pm 0.1	P \pm 0.1	T \pm 0.2	t max.
6.3x6.3	7.0	7.0	16.0	7.5	12.0	6.5	0.6
6.3x8	7.0	7.0	16.0	7.5	12.0	8.2	0.6
8x10.8	8.7	8.7	24.0	11.5	16.0	11.1	0.6
10x10.8	10.7	10.7	24.0	11.5	16.0	11.2	0.6
10x14	10.7	10.7	24.0	11.5	16.0	14.6	0.6

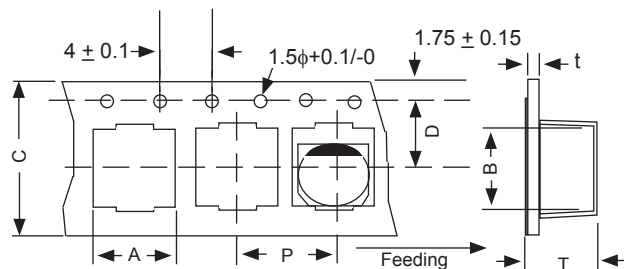
TR15 380mm (15") REEL

Case Size	W (mm)	Qty per Reel
		15" (380mm)
6.3x6.3	18	1000
6.3x8	18	900
8x10.8	26	500
10x10.8	26	500
10x14	26	400

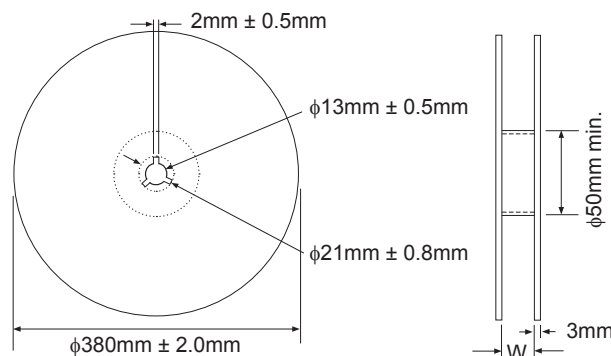
TAPING SPECIFICATIONS (mm)

- Both Leader and Trailer tape: Minimum 10 empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

CARRIER



REEL



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