

NRE-AX Series

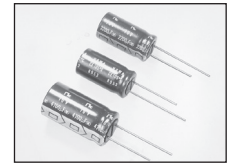
Radial Leaded Aluminum Electrolytic Capacitors



HIGH CV, RADIAL LEADS, POLARIZED

FEATURES

- LOW AND HIGH VOLTAGE, WIDE TEMPERATURE
- NEW REDUCED SIZES



CHARACTERISTICS

Rated Voltage Range		6.3 ~ 35 & 400Vdc						
Capacitance Range		4.7 ~ 1,200 μ F						
Operating Temperature Range		-40 ~ +105°C						
Capacitance Tolerance		\pm 20%(M)						
Max. Leakage Current @ 20°C		6.3 ~ 35Vdc					400Vdc	
		0.01CV or 3 μ A whichever is less (after 2 minutes)					0.04CV + 100 μ A (after 1 minute) 0.02CV + 25 μ A (after 5 minutes)	
Max. Tan δ @ 120Hz/20°C	W.V. (Vdc)	6.3	8	10	16	25	35	400
	S.V. (Vdc)	8	10	13	20	32	44	450
	Tan δ	0.22	0.20	0.19	0.16	0.14	0.12	0.25
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	6.3	8	10	20	32	44	400
	Z-25°C/Z+20°C	2	2	2	2	2	2	6
	Z-40°C/Z+20°C	12	12	12	10	8	6	10
Load Life Test at Rated W.V. @ +105°C		Hours			L \leq 7.5 = 1,000, L \geq 9 = 2,000			
		Capacitance Change			Within \pm 25% of initial measured value			
		Tan δ			Less than 200% of specified value			
		Leakage Current			Less than specified value			

STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

Part Number	Cap. (μ F)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA) +105°C/120Hz	Impedance (Ω) +20°C/100KHz	Load Life Hours @ +105°C
NRE-AX221M6.3V5X11F	220	6.3	0.22	800	0.14	2,000
NRE-AX471M6.3V6.3X11F	470		0.22	1140	0.067	2,000
NRE-AX681M6.3V8X9F	680		0.22	1360	0.049	2,000
NRE-AX821M6.3V8X10.8F	820		0.22	1600	0.042	2,000
NRE-AX102M6.3V8X16F	1000		0.22	2010	0.027	2,000
NRE-AX102M6.3V10X9F	1000		0.22	1540	0.036	2,000
NRE-AX122M6.3V10X12.5F	1200		0.22	1970	0.025	2,000
NRE-AX201M8V6.3X7F	200	8.0	0.20	720	0.13	1,000
NRE-AX431M8V6.3X11F	430		0.20	1140	0.067	2,000
NRE-AX621M8V8X9F	620		0.20	1360	0.049	2,000
NRE-AX751M8V8X10.8F	750		0.20	1600	0.042	2,000
NRE-AX911M8V8X16F	910		0.20	2010	0.027	2,000
NRE-AX911M8V10X9F	910		0.20	1540	0.036	2,000
NRE-AX112M8V10X12.5F	1100		0.20	1970	0.025	2,000
NRE-AX181M10V5x11F	180	10	0.19	800	0.14	2,000
NRE-AX391M10V6.3x11F	390		0.19	1140	0.067	2,000
NRE-AX561M10V8x9F	560		0.19	1360	0.049	2,000
NRE-AX681M10V8x10.8F	680		0.19	1600	0.042	2,000
NRE-AX821M10V8x16F	820		0.19	2010	0.027	2,000
NRE-AX821M10V10x9F	820		0.19	1540	0.036	2,000
NRE-AX102M10V10x12.5F	1000		0.19	1970	0.025	2,000

PRECAUTIONS

Please review the notes on correct use, safety and precautions found at
<https://www.niccomp.com/wp-content/uploads/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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STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

Part Number	Cap. (μ F)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA) +105°C/120Hz	Impedance (Ω) +20°C/100KHz	Load Life Hours @ +105°C
NRE-AX391M16V8X9F	390	16	0.16	1360	0.049	2,000
NRE-AX471M16V8X10.8F	470		0.16	1600	0.042	2,000
NRE-AX561M16V8X16F	560		0.16	2010	0.027	2,000
NRE-AX561M16V10X9F	560		0.16	1540	0.036	2,000
NRE-AX681M16V10X12.5F	680		0.16	1970	0.025	2,000
NRE-AX102M16V10X16F	1000		0.16	2480	0.019	2,000
NRE-AX221M25V8X9F	220	25	0.14	1360	0.049	2,000
NRE-AX271M25V8X10.8F	270		0.14	1600	0.042	2,000
NRE-AX391M25V8X16F	390		0.14	2010	0.027	2,000
NRE-AX391M25V10X9F	390		0.14	1540	0.036	2,000
NRE-AX471M25V10X12.5F	470		0.14	1970	0.025	2,000
NRE-AX681M25V10X16F	680		0.14	2480	0.019	2,000
NRE-AX151M35V8X9F	150	35	0.12	1360	0.049	2,000
NRE-AX181M35V8X10.8F	180		0.12	1600	0.042	2,000
NRE-AX221M35V8X16F	220		0.12	2010	0.027	2,000
NRE-AX221M35V10X9F	220		0.12	1540	0.036	2,000
NRE-AX271M35V10X12.5F	270		0.12	1970	0.025	2,000
NRE-AX391M35V10X16F	390		0.12	2480	0.019	2,000

STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

Part Number	Cap. (μ F)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA) +105°C/120Hz	Load Life Hours @ +105°C
NRE-AX4R7M400V6.3X14F	4.7	400	0.25	50	2,000
NRE-AX4R7M400V8X9F	4.7		0.25	50	2,000
NRE-AX6R8M400V8X10.8F	6.8		0.25	70	2,000
NRE-AX7R5M400V8X10.8F	7.5		0.25	75	2,000
NRE-AX8R2M400V8X16F	8.2		0.25	85	2,000
NRE-AX8R2M400V10X9F	8.2		0.25	85	2,000
NRE-AX100M400V8X16F	10		0.25	90	2,000
NRE-AX100M400V10X12.5F	10		0.25	100	2,000
NRE-AX120M400V10X12.5F	12		0.25	110	2,000
NRE-AX120M400V8X20F	12		0.25	120	2,000
NRE-AX150M400V8X20F	15		0.25	130	2,000
NRE-AX150M400V10X16F	15		0.25	150	2,000
NRE-AX180M400V10X16F	18		0.25	150	2,000
NRE-AX220M400V12.5X16F	22		0.25	180	2,000
NRE-AX240M400V12.5X16F	24		0.25	190	2,000

RIPPLE CURRENT FREQUENCY

CORRECTION FACTORS

6.3V ~ 35V

Frequency (Hz)	120	500	1K	100K \leq
68 ~ 82 μ F	0.21	0.73	0.92	1.00
150 ~ 270 μ F	0.36	0.73	0.92	1.00
330 ~ 750 μ F	0.55	0.77	0.94	1.00
820 ~ 1200 μ F	0.60	0.80	0.96	1.00

400V

Frequency (Hz)	60	120	500	1K	10K \geq
4.7 ~ 8.2 μ F	0.65	1.00	1.20	1.30	1.50
10 ~ 24 μ F	0.80	1.00	1.20	1.30	1.50

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LEAD SPACING AND DIAMETER (mm)

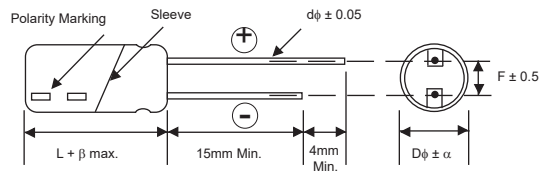
$L \leq 7.5\text{mm}$

Case Dia. ($D\phi$)	5	6.3	8
Lead Dia. ($d\phi$)	0.45		
Lead Spacing (F)	2.0	2.5	3.5
Dim. α	0.5		
Dim. β	1.0		

$L \geq 9.0\text{mm}$

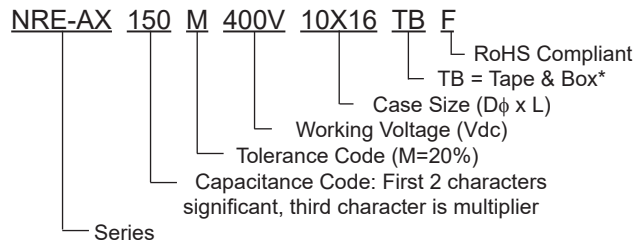
Case Dia. ($D\phi$)	5	6.3	8	10	12.5
Lead Dia. ($d\phi$)	0.5		0.6		
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0
Dim. α	0.5				
Dim. β	6.3V ~ 35V $\beta = 1.5$				
	400V $L \leq 10.8$ $\beta = 1.5$				
	$L \geq 12.5$ $\beta = 2.0$				

DIMENSIONS (mm)



Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

PART NUMBER SYSTEM



*see taping specifications for details

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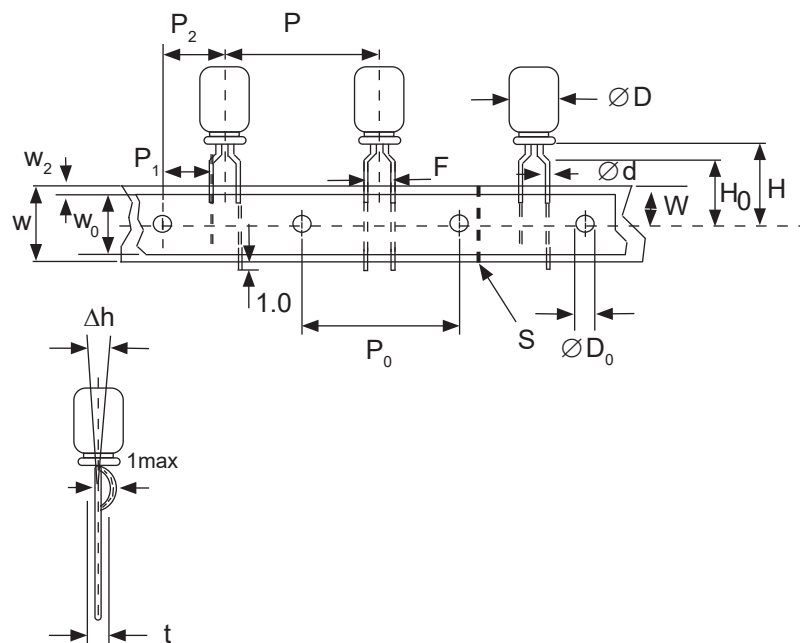
Radial Led Aluminum Electrolytic Capacitors



STANDARD RADIAL TAPING (5mm LEAD SPACING, FORMED LEADS) TB

Taping Dimensions (mm)

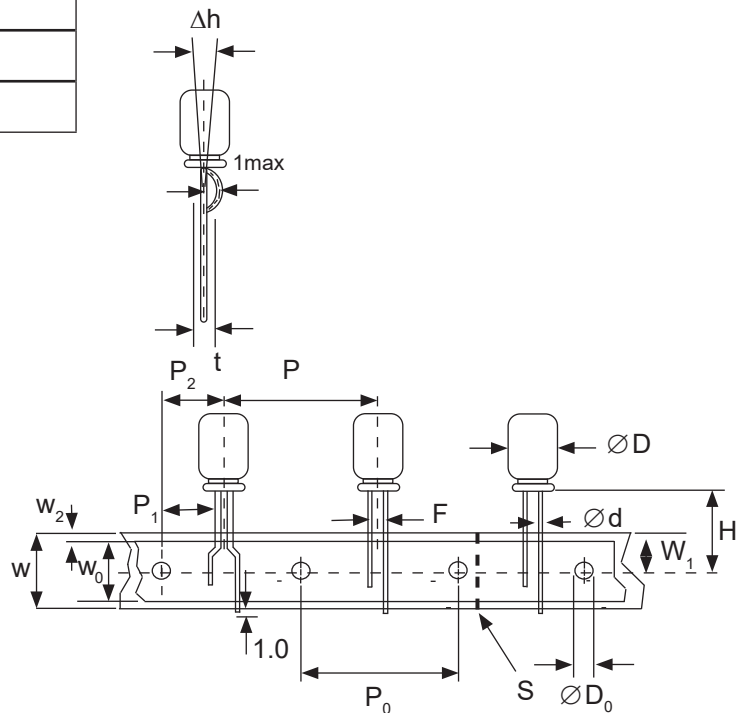
Case Dia. (D ϕ)	5	6.3		8.0			
Case Size	5x11	6.3x7	6.3x11	8x9	8x10.8	8x16	8x20
Dim.							
d ϕ \pm 0.05	0.5	0.45	0.5	0.6	0.6	0.6	0.6
H \pm 0.75	18.5	17.5	18.5	20.0	20.0	20.0	20.0
F $+0.8 \sim -0.2$	5.0 -02 \sim +0.8						
P	12.7 \pm 1.0						
P ₀	12.7 \pm 0.2						
P ₁	3.85 \pm 0.5 (at end of tape)						
P ₂	6.35 \pm 1.0						
W	18.0 \pm 0.5						
W ₀	11.5 min.						
W ₁	9.0 \pm 0.5						
W ₂	0 \sim 2.5						
H ₀	16.0 \pm 0.5						
l	1.0 max.						
D ₀ ϕ	4.0 \pm 0.2						
Δ h	0 \pm 1.0 (at top of can)						
t	0.7 \pm 0.2 (not including lead)						



SPECIAL STRAIGHT LEAD TAPING TBST*

Taping Dimensions (mm)

Case Dia. (D ϕ)	6.3		8.0			
Case Size Dim.	6.3x7	6.3x11	8x9	8x10.8	8x16	8x20
d ϕ \pm 0.05	0.45	0.5	0.6	0.6	0.6	0.6
H \pm 0.75	17.5	18.5	20.0	20.0	20.0	20.0
F $+0.8 \sim -0.2$	2.5	2.5	3.5	3.5	3.5	3.5
P \pm 1.0	12.7 \pm 0.2					
P ₀	12.7 \pm 0.2					
P ₁	5.1	5.1	4.6	4.6	4.6	4.6
P ₂	6.35 \pm 1.0					
W	18.0 \pm 0.5					
W ₀	11.5 min.					
W ₁	9.0 \pm 0.5					
W ₂	0 ~ 2.5					
l	1.0 max.					
D ₀ ϕ	4.0 \pm 0.2					
Δ h	0 \pm 1.0 (at top of can)					
t	0.7 \pm 0.2 (not including lead)					



*Straight leads will extend from the based of the component to the edge of the carrier. The section of lead below the adhesive tape may be straight or formed.

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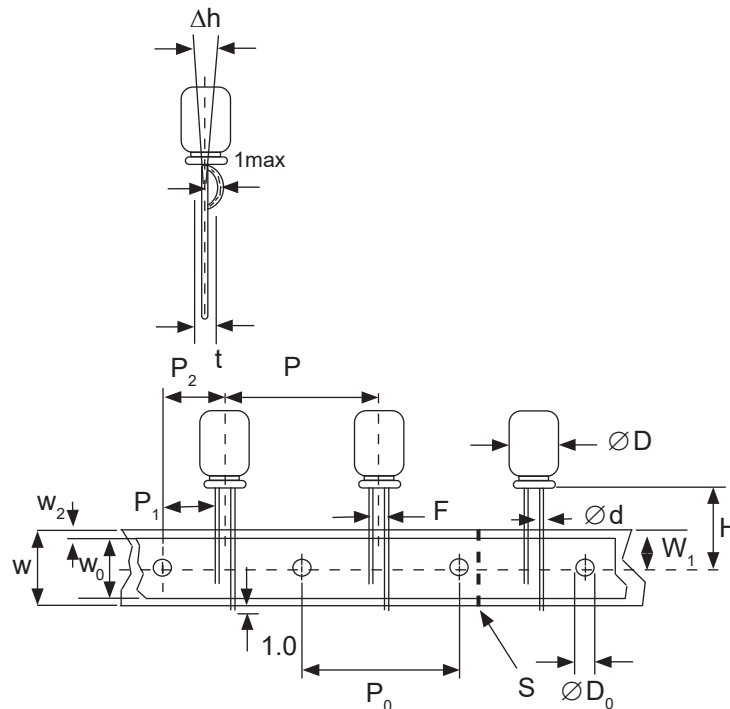
STANDARD RADIAL TAPING (5mm LEAD SPACING, STRAIGHT LEADS) TB

Taping Dimensions (mm)

Case Dia. (D ϕ)	10x9	10x12.5	10x16
d ϕ \pm 0.05	0.6	0.6	0.6
H \pm 0.75	20.0	20.0	20.0
F +0.8 ~ -0.2	5.0		
P \pm 1.0	12.7*		
P ₀	12.7 \pm 0.2		
P ₁	3.85		
P ₂	6.35 \pm 1.0		
W	18.0 \pm 0.5		
W ₀	11.5 min		
W ₁	9.0 \pm 0.5		
W ₂	0 ~ 2.5		
l	1.0 max.		
D ₀ ϕ	4.0 \pm 0.2		
Δ h	0 \pm 1.0 (at top of can)		
t	0.7 \pm 0.2 (not including lead)		

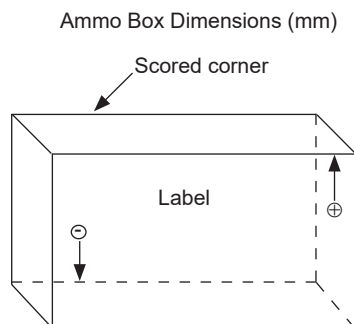
***Optional Taping Specifications**

P₀ = 15.0mm & P₂ = 7.5mm (P/N Suffix: TB15MMP)



NOTE: ANODE (+) LEAD FEEDS OFF FIRST. FOR OPTION OF NEGATIVE (-) LEAD FIRST, SPECIFY "TBN".

RADIAL TAPED PACKAGING



Ammo Box (Tape & Box) TB, TBST

Size of box and component quantity

Case Dia (D ϕ) or Case Size	Q'ty per Box (pcs)
5x11	2,000
6.3x7	2,000
6.3x11	2,000
8x9	1,000
8x10.8	1,000
8x16	1,000
8x20	1,000
10x9	500
10x12.5	500
10x16	500