

Miniature Aluminum Electrolytic Capacitors

NRE-AX Series

HIGH CV, RADIAL LEADS, POLARIZED

FEATURES

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

RoHS

Compliant

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range		6.3, 8, 10 & 400Vdc			
Capacitance Range		4.7 ~ 1,200μF			
Operating Temperature Range		-40 ~ +105°C			
Capacitance Tolerance		±20%(M)			
Max. Leakage Current @ 20°C		6.3, 8 & 10Vdc		400Vdc	
		0.01CV or 3μA whichever is less (after 2 minutes)		0.04CV + 100μA (after 1 minute) 0.02CV + 25μA (after 5 minutes)	
Max. Tan δ @ 120Hz/20°C	W.V. (Vdc)	6.3	8	10	400
	S.V. (Vdc)	8	10	13	450
	Tan δ	0.22	0.20	0.19	0.25
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	6.3	8	10	400
	Z-25°C/Z+20°C	2	2	2	6
	Z-40°C/Z+20°C	12	12	12	10
Load Life Test at Rated W.V. @ +105°C		Hours		L ≤ 7.5 = 1,000, L ≥ 9 = 2,000	
		Capacitance Change		Within ±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. (μF)	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-AX820M6.3V5X7F	82	6.3	0.22	510	0.25	1,000	
NRE-AX221M6.3V6.3X7F	220		0.22	720	0.13	1,000	
NRE-AX221M6.3V5X11F	220		0.22	800	0.14	2,000	
NRE-AX331M6.3V6.3X9F	330		0.22	970	0.083	2,000	
NRE-AX471M6.3V6.3X9F	470		0.22	970	0.083	2,000	
NRE-AX471M6.3V8X7.5F	470		0.22	1080	0.065	1,000	
NRE-AX471M6.3V6.3X11F	470		0.22	1140	0.067	2,000	
NRE-AX561M6.3V6.3X15F	560		0.22	1370	0.054	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-AX750M8V5X7F	75		8	0.20	510	0.25	1,000
NRE-AX201M8V6.3X7F	200	0.20		720	0.13	1,000	
NRE-AX201M8V5X11F	200	0.20		800	0.14	2,000	
NRE-AX301M8V6.3X9F	300	0.20		970	0.083	2,000	
NRE-AX391M8V8X7.5F	390	0.20		1080	0.065	1,000	
NRE-AX431M8V6.3X11F	430	0.20		1140	0.067	2,000	
NRE-AX511M8V6.3X15F	510	0.20		1370	0.054	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-AX680M10V5x7F	68	10		0.19	510	0.25	1,000
NRE-AX181M10V6.3x7F	180			0.19	720	0.13	1,000
NRE-AX181M10V5x11F	180		0.19	800	0.14	2,000	
NRE-AX271M10V6.3x9F	270		0.19	970	0.083	2,000	
NRE-AX331M10V8x7.5F	330		0.19	1080	0.065	1,000	
NRE-AX391M10V6.3x11F	390		0.19	1140	0.067	2,000	
NRE-AX471M10V6.3x15F	470		0.19	1370	0.054	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	

New Values



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-AX4R7M400V8X9F	4.7	400	0.25	50	2,000
NRE-AX6R8M400V8X10.8F	6.8		0.25	70	2,000
NRE-AX8R2M400V8X16F	8.2		0.25	85	2,000
NRE-AX8R2M400V10X9F	8.2		0.25	85	2,000
NRE-AX100M400V10X12.5F	10		0.25	100	2,000
NRE-AX120M400V8X20F	12		0.25	120	2,000
NRE-AX150M400V10X16F	15		0.25	150	2,000

LEAD SPACING AND DIAMETER (mm)

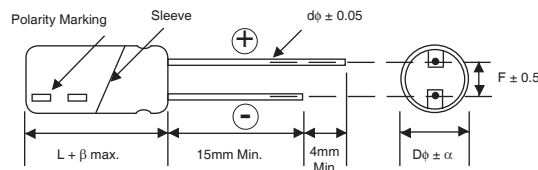
$L \leq 7.5\text{mm}$

Case Dia. (D ϕ)	5	6.3	8
Lead Dia. (d ϕ)		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 ϕ)	5	6.3	8	10
Lead Dia. (d ϕ)	0.5		0.6	
Lead Spacing (F)	2.0	2.5	3.5	5.0
Dim. α	0.5			
Dim. β	6.3V ~ 10V $\beta = 1.5$			
	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.

RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

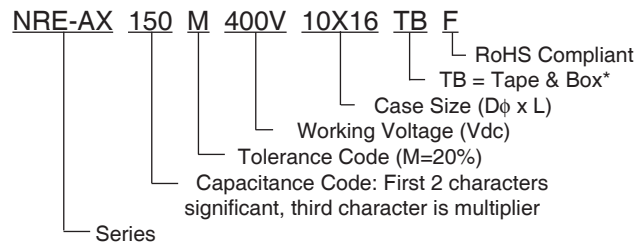
6.3V ~ 10V

Frequency (Hz)	120	500	1K	100K <
68 ~ 300 μ F	0.50	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 >
4.7 ~ 8.2 μ F	0.65	1.00	1.20	1.30	1.50
10 ~ 15 μ F	0.80	1.00	1.20	1.30	1.50

PART NUMBER SYSTEM



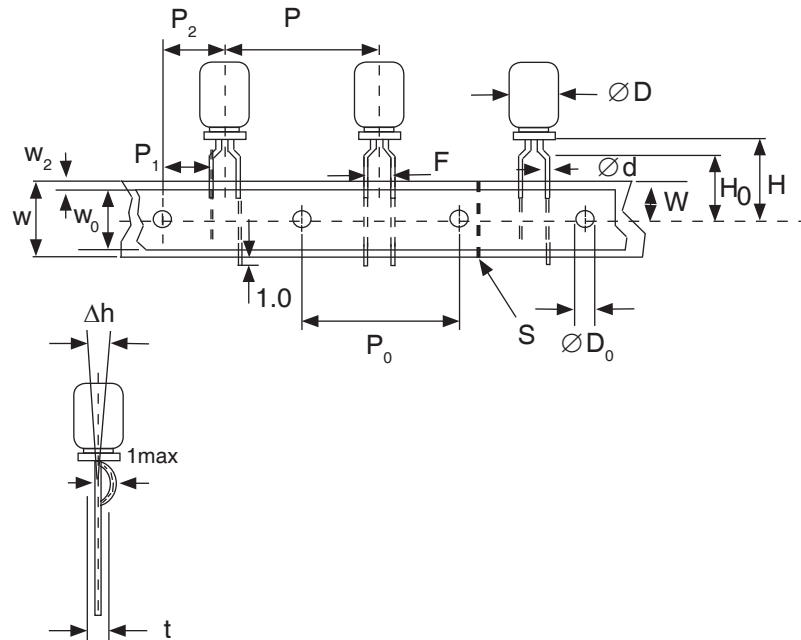
*see taping specifications for details



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

Taping Dimensions (mm)

Case Dia. (D ϕ)	5		6.3			8				
Case Size Dim.	5x7	5x11	6.3x7	6.3x9	6.3x11	8x7.5	8x9	8x10.8	8x16	8x20
d ϕ \pm 0.05	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
H \pm 0.75	18.5	18.5	18.5	18.5	18.5	20.0	20.0	20.0	20.0	20.0
F $+0.8 \sim -0.2$	5.0 $-0.2 \sim +0.8$									
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 ~ 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)									

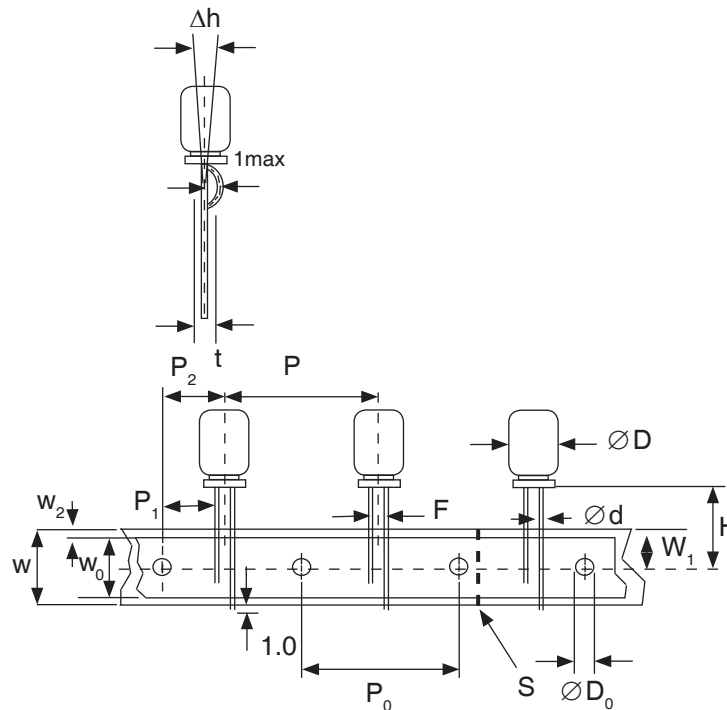


STANDARD RADIAL TAPING (5mm LEAD SPACING, STRAIGHT LEADS) TB

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	19.0	19.0	19.0
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		
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)		

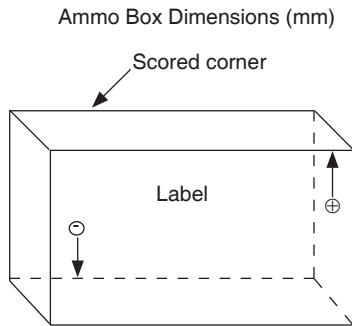
***Optional Taping Specifications**
P₀ = 15.0mm & P₂ = 7.5mm (P/N Suffix: TB15MMP)



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)
5x7	2,000
5x11	2,000
6.3x7	2,000
6.3x9	2,000
6.3x11	2,000
6.3x15	2,000
8x7.5	1,000
8x9	1,000
8x10.8	1,000
8x16	1,000
8x20	1,000
10x9	500
10x12.5	500
10x16	500