

Type AXLH -40 °C to +150 °C

High Temperature Axial Leaded Aluminum Electrolytic Capacitors

HIGH PERFORMANCE AXIAL LEADED ALUMINUM ELECTROLYTIC CAPACITORS



Type AXLH capacitors are a new generation of high performance aluminum electrolytic capacitors rated up to 2000 hours at 150 °C. They are designed for applications that place high demands on a capacitor. The capacitor's outstanding features include low ESR, low leakage current, a long shelf life and a high ripple current capability.

Highlights

- 150 °C Operating Temperature
- Up to 28 Amps RMS Continuous Ripple Current
- Capacitance Range: 470 µF to 4700 µF
- High Vibration Resistance
- Very Long Shelf Life
- Low Leakage Current

Specifications

Capacitance Range (100 Hz/+20 °C)	470 to 4700 µF					
Capacitance Tolerance (100 Hz/+20 °C)	-10/+30%					
Rated Voltage	25, 40, 63 Vdc					
Operating Temperature	-40 °C to +150 °C					
Leakage Current (at 20°C)	I = 0.003 CV +4.0 µA; after 5 minutes at rated voltage I = leakage current in µAmps C = rated capacitance in µF V = rated DC Working voltage in Volts					
Ripple Current vs. Frequency Correction Factors	Frequency (Hz)	100	300	1000	5000	100 kHz
	Ripple Current Correction Factor	0.35	0.57	0.8	1	1.04
Shelf Life	(+105 °C/0 Vdc): 5000 hours (+40 °C/0 Vdc): 10 years					
Standard	IEC 60384-4 long life grade 40/125/56					
RoHS Compliant						

Part Numbering System

AXLH

Type

222

Capacitance

222 = 2200 µF

P

Capacitance Tolerance

P = -10/+30%

025

Voltage Code

025 = 25 Vdc

040 = 40 Vdc

063 = 63 Vdc

E

Case Dia.Code

E = 20 mm

D

Case

Length Code

D = 27 mm

H = 35 mm

L = 43 mm

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Load Life Test	<table><tr><td>Test</td><td>Mount the capacitor on a heat sink with a low thermal resistance path. Apply the maximum rated voltage for 2000 hrs at +150°C with the +150°C maximum ripple current applied to the capacitor. After the test, measure the capacitance, ESR, and DCL at +20°C.</td></tr><tr><td>ΔC</td><td>Capacitance will be within ±15% of the initial value</td></tr><tr><td>ESR</td><td>ESR will be less than 2 times the initial value</td></tr><tr><td>DCL</td><td>The leakage current will be within the specified value</td></tr><tr><td>Appearance</td><td>No electrolyte leakage or other visible damage. The markings will be legible.</td></tr></table>	Test	Mount the capacitor on a heat sink with a low thermal resistance path. Apply the maximum rated voltage for 2000 hrs at +150°C with the +150°C maximum ripple current applied to the capacitor. After the test, measure the capacitance, ESR, and DCL at +20°C.	ΔC	Capacitance will be within ±15% of the initial value	ESR	ESR will be less than 2 times the initial value	DCL	The leakage current will be within the specified value	Appearance	No electrolyte leakage or other visible damage. The markings will be legible.
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Vibration Test	<table><tr><td>Test</td><td>Clamp the case to the test fixture. Frequency range is 10 - 2000 Hz. Amplitude of 1.5mm or 20 g acceleration. Duration of test is 22 hours in each of three directions. After the test, measure the capacitance at +20°C.</td></tr><tr><td>ΔC</td><td>Capacitance change from the initial measurement must not exceed 5%.</td></tr><tr><td>Appearance</td><td>No electrolyte leakage or other visible damage.</td></tr></table>	Test	Clamp the case to the test fixture. Frequency range is 10 - 2000 Hz. Amplitude of 1.5mm or 20 g acceleration. Duration of test is 22 hours in each of three directions. After the test, measure the capacitance at +20°C.	ΔC	Capacitance change from the initial measurement must not exceed 5%.	Appearance	No electrolyte leakage or other visible damage.				
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Storage at Low Temperature Test	<table><tr><td>Test</td><td>Subject the capacitor to 72 hours at -55°C. After 16 hours at room temperature, measure the capacitance and DCL.</td></tr><tr><td>ΔC</td><td>Capacitance change from the initial measurement must not exceed 10%.</td></tr><tr><td>DCL</td><td>Leakage current will meet the initial specification.</td></tr><tr><td>Appearance</td><td>No electrolyte leakage or other visible damage. The markings are to be legible.</td></tr></table>	Test	Subject the capacitor to 72 hours at -55°C. After 16 hours at room temperature, measure the capacitance and DCL.	ΔC	Capacitance change from the initial measurement must not exceed 10%.	DCL	Leakage current will meet the initial specification.	Appearance	No electrolyte leakage or other visible damage. The markings are to be legible.		
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Charge and Discharge Test	<table><tr><td>Test</td><td>Subject the capacitor to 1 million charge/discharge cycles at +20°C. For each cycle, apply the rated voltage for 0.5 seconds using a 0.1 second charge/discharge time constant. After the test, the following will apply;</td></tr><tr><td>ΔC</td><td>Capacitance will be within ±10% of the initial value.</td></tr><tr><td>Appearance</td><td>No electrolyte leakage or other visible damage.</td></tr></table>	Test	Subject the capacitor to 1 million charge/discharge cycles at +20°C. For each cycle, apply the rated voltage for 0.5 seconds using a 0.1 second charge/discharge time constant. After the test, the following will apply;	ΔC	Capacitance will be within ±10% of the initial value.	Appearance	No electrolyte leakage or other visible damage.				
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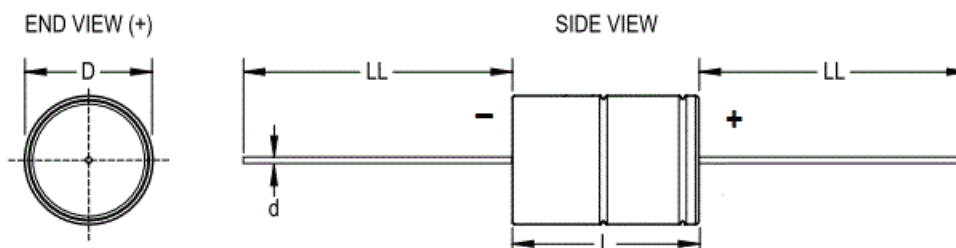
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Ratings

Rated Capacitance 100Hz/+20°C (μF)	Capacitance Tolerance (%)	VDC	Cornell Dubilier Part Number	Case Size D x L (mm)	Max. ESR 100 Hz/+20°C (mΩ)	Max. ESR 100 kHz/+20°C (mΩ)	Rated Ripple Current ≥ 5kHz/+125°C (A)	Maximum Ripple Current ≥ 5kHz/+125°C (A)
2200	-10/+30	25	AXLH222P025ED	20 x 27	50	25	7.1	9.1
3300	-10/+30	25	AXLH332P025EH	20 x 35	34	17	8.9	11.3
4700	-10/+30	25	AXLH472P025EL	20 x 43	25	13	10.3	13.1
1500	-10/+30	40	AXLH152P040ED	20 x 27	57	22	7.3	9.3
2200	-10/+30	40	AXLH222P040EH	20 x 35	41	17	8.9	11.2
2700	-10/+30	40	AXLH272P040EL	20 x 43	32	13	10.1	12.8
470	-10/+30	63	AXLH471P063ED	20 x 27	125	32	5.5	7.0
680	-10/+30	63	AXLH681P063EH	20 x 35	87	23	6.9	8.7
900	-10/+30	63	AXLH901P063EL	20 x 43	67	18	8.1	10.2

Outline Drawings & Dimensions Table



Size Code	Dimensions in mm				Approximate Weight (grams)
	D	L	d	LL	
	± 0.5	± 1	± 0.03	± 2	
ED	20	26.5	1	40	13
EH	20	34.5	1	40	20
EL	20	42.5	1	40	24

Note: Bend leads at least 3.5 mm from the case.

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Heat-Sinked Ratings

Cornell Dubilier Part Number	Max. ESR 5-100 kHz 125-150°C (mΩ)	Maximum Ripple Current *		
		≥ 5 kHz/+125°C (A)	≥ 5 kHz/+140°C (A)	≥ 5 kHz/+150°C (A)
AXLH222P025ED	10.6	22.2	14	6.3
AXLH332P025EH	7.8	25.8	16.3	7.3
AXLH472P025EL	6.4	28.5	18	8.1
AXLH152P040ED	10	22.8	14.4	6.5
AXLH222P040EH	7.9	25.7	16.2	7.3
AXLH272P040EL	6.7	27.9	17.6	7.9
AXLH471P063ED	17.5	17.3	10.9	4.9
AXLH681P063EH	13	20	12.7	5.7
AXLH901P063EL	10.6	22.2	14	6.3

* When the capacitor is mounted to a heat-sink using low thermal resistance path.

Capacitor Markings

Marking

-- CDM ++
AXLH222P025ED
2200 uF 25VDC
160603

Description

Logo, Polarity Marks
CDE Part Number
Capacitance, Rated Voltage (VDC)
Date Code (Year, Week), Batch Number

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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