



# Type ALH, AC Filter Capacitors for Harsh Environments



**85 °C / 85% RH , 1500h @ Vr, AEC-Q200 Qualified**

Type ALH AC harmonic filter capacitors use the most advanced construction technology to meet the challenges of harsh environments. The series offers 50% greater life than competitive 85/85 THB-rated power film capacitors with designs that pass the rigors of automotive-grade electrical and mechanical testing.

## Highlights

- Optimized AC voltage performance
- THB 85 °C / 85% RH 1500 h at rated voltage
- Self-healing and low loss
- Suitable for high frequency applications

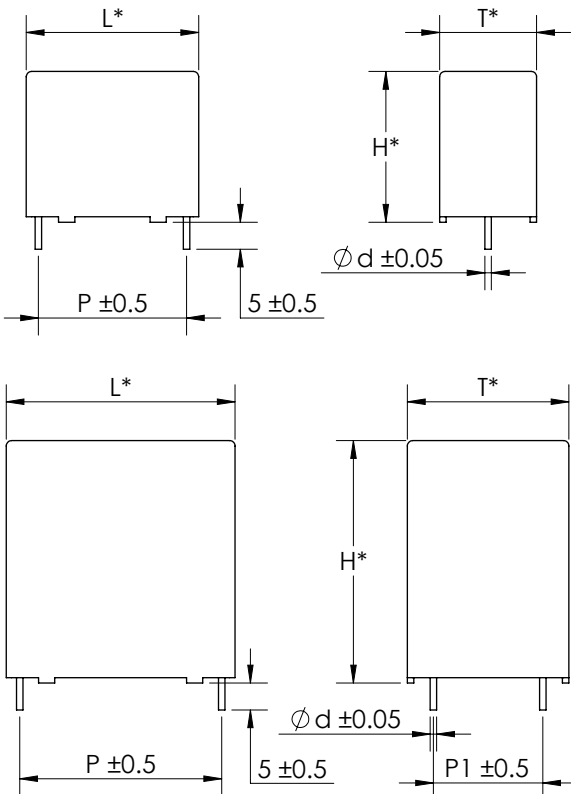


## Specifications

Capacitance Range	0.22 to 50 µF
Capacitance Tolerance	±10% standard , ±5% optional
Rated Voltage	160 to 450 Vac
Operating Temperature Range	-40 °C to 105 °C (>85 °C derate voltage 1.35% per °C)
Maximum rms Current	see data tables
Test Voltage between Terminals @ 25 °C	150% rated DC voltage for 10 s
Test Voltage between Terminals and Case @ 25°C	3 kVac @ 50/60 Hz for 10 s
Insulation Resistance	≥30,000 MΩ×µF @ 100 Vdc 25 °C after 1 minute
Life Expectancy	100,000 h @ 70°C hot spot, rated voltage
THB Rating	85 °C / 85% RH - rated voltage - 1500 h
Reference Standards	IEC 61071, AEC-Q200 qualified


RoHS Compliant

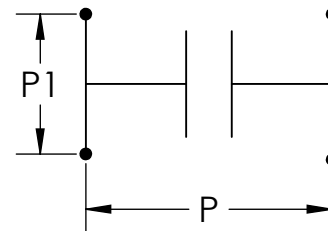
## Dimensions



\* ±0.8 for L ≤ 42.5mm  
±1.0 for L = 57.5mm

Construction Details	
Case Material	Plastic UL94V-0
Resin Material	Dry Resin UL94V-0
Terminal Material	Tin Plated Copper

 UL Recognized E128034  
construction only - unprotected



# Type ALH, AC Filter Capacitors for Harsh Environments

85 °C / 85% RH , 1500h @ Vr, AEC-Q200 Qualified

## Part Numbering System

<b>ALH</b>	<b>406</b>	<b>K</b>	<b>251</b>	<b>C08</b>	<b>4</b>
<b>Series</b>	<b>Capacitance</b>	<b>Tolerance</b>	<b>Voltage</b>	<b>Case</b>	<b>Leads</b>
ALH	EIA Cap Code 684 = 0.68 μF 105 = 1 μF 406 = 40 μF	K = ±10% Standard J = ±5% Optional	161 = 160 Vac 251 = 250 Vac 271 = 275 Vac 351 = 350 Vac 401 = 400 Vac 451 = 450 Vac	See ratings table	2 = 2 Leads 4 = 4 Leads

## Ratings

Part Number	Cap C (μF)	Typ ESR 10 kHz (mΩ)	Thermal Res (°C/W)	I <sub>rms</sub> 10 kHz 70 °C (A)	Typ ESL (nH)	dv/dt (V/μs)	Peak Current (A)	Dimensions					
								L (mm)	H (mm)	T (mm)	P (mm)	P1 (mm)	d (mm)
<b>160 Vac (300 Vdc)</b>													
ALH105K161A022	1.0	30.3	19.8	5	24	32	32.0	32.0	20	11.0	27.5	\	0.8
ALH225K161A022	2.2	15.3	20.0	7	24	32	70.4	32.0	20	11.0	27.5	\	0.8
ALH335K161A032	3.3	11.3	27.1	7	24	32	105.6	32.0	22	13.0	27.5	\	0.8
ALH505K161A052	5.0	8.8	34.8	7	26	32	160.0	32.0	28	14.0	27.5	\	0.8
ALH106K161A072	10.0	6.8	45.0	7	26	32	320.0	32.0	33	18.0	27.5	\	0.8
ALH106K161B064	10.0	7.2	14.5	12	30	22	220.0	42.5	37	28.0	37.5	10.2	1.2
ALH206K161B064	20.0	6.9	15.1	12	30	22	440.0	42.5	37	28.0	37.5	10.2	1.2
ALH306K161B104	30.0	7.4	14.1	12	30	22	660.0	42.5	45	30.0	37.5	20.3	1.2
ALH406K161C064	40.0	7.6	13.7	12	35	16	640.0	57.5	45	30.0	52.5	20.3	1.2
ALH506K161C084	50.0	7.5	13.9	12	35	16	800.0	57.5	50	35.0	52.5	20.3	1.2
<b>250 Vac (475 Vdc)</b>													
ALH105K251A022	1.0	14.0	16.7	8	24	40	40.0	32.0	20	11.0	27.5	\	0.8
ALH155K251A022	1.5	10.0	23.4	8	24	40	60.0	32.0	20	11.0	27.5	\	0.8
ALH205K251A032	2.0	8.2	22.6	9	24	40	80.0	32.0	22	13.0	27.5	\	0.8
ALH335K251A052	3.3	6.2	29.9	9	26	40	132.0	32.0	28	14.0	27.5	\	0.8
ALH405K251A072	4.0	5.9	31.4	9	26	40	160.0	32.0	33	18.0	27.5	\	0.8
ALH505K251A072	5.0	5.2	35.6	9	26	40	200.0	32.0	33	18.0	27.5	\	0.8
ALH685K251A082	6.8	4.9	15.6	9	28	40	272.0	32.0	37	22.0	27.5	\	0.8
ALH106K251B084	10.0	5.6	13.7	14	30	30	300.0	42.5	40	20.0	37.5	10.2	1.2
ALH156K251B064	15.0	5.2	14.7	14	30	30	450.0	42.5	37	28.0	37.5	10.2	1.2
ALH206K251B104	20.0	4.8	15.9	14	30	30	600.0	42.5	45	30.0	37.5	20.3	1.2
ALH256K251C064	25.0	5.7	13.4	14	35	25	625.0	57.5	45	30.0	52.5	20.3	1.2
ALH306K251C064	30.0	5.3	14.4	14	35	25	750.0	57.5	45	30.0	52.5	20.3	1.2
ALH356K251C084	35.0	5.5	13.9	14	35	25	875.0	57.5	50	35.0	52.5	20.3	1.2
ALH406K251C084	40.0	5.2	14.7	14	35	25	1000.0	57.5	50	35.0	52.5	20.3	1.2

# Type ALH, AC Filter Capacitors for Harsh Environments



85 °C / 85% RH , 1500h @ Vr, AEC-Q200 Qualified

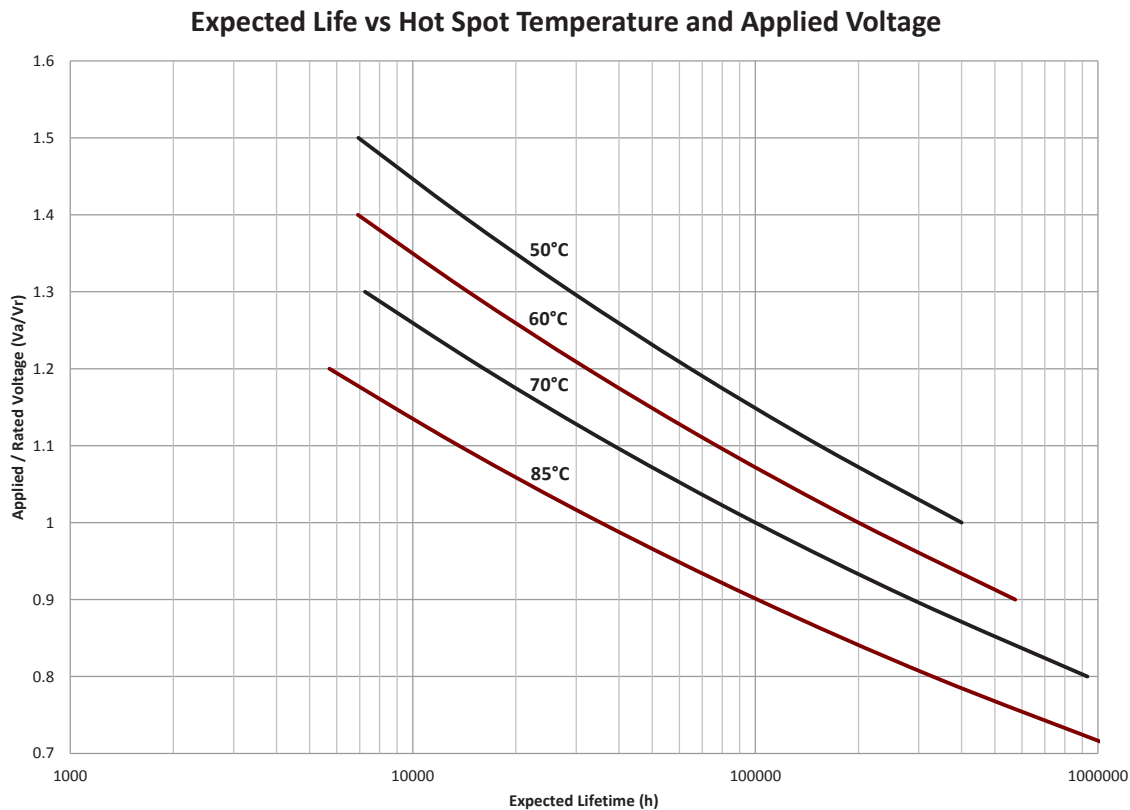
Part Number	Cap C (µF)	Typ ESR 10 kHz (mΩ)	Thermal Res (°C/W)	I rms		Peak Current (A)	Dimensions						
				10 kHz 70 °C (A)	Typ ESL (nH)		L (mm)	H (mm)	T (mm)	P (mm)	P1 (mm)	d (mm)	
<b>275 Vac (520 Vdc)</b>													
ALH105K271A022	1.0	13.0	18.0	8	24	40	40.0	32.0	20	11.0	27.5	\	0.8
ALH335K271A072	3.3	6.2	29.9	9	26	40	132.0	32.0	33	18.0	27.5	\	0.8
ALH685K271A082	6.8	4.7	39.4	9	28	40	272.0	32.0	37	22.0	27.5	\	0.8
ALH106K271B084	10.0	5.9	13.0	14	30	30	300.0	42.5	40	20.0	37.5	10.2	1.2
ALH156K271B104	15.0	5.1	15.0	14	30	30	450.0	42.5	45	30.0	37.5	20.3	1.2
ALH206K271C064	20.0	6.0	12.8	14	35	25	500.0	57.5	45	30.0	52.5	20.3	1.2
ALH306K271C084	30.0	5.3	14.4	14	35	25	750.0	57.5	50	35.0	52.5	20.3	1.2
<b>350 Vac (630 Vdc)</b>													
ALH684K351A022	0.68	15.0	15.6	8	24	45	30.6	32.0	20	11.0	27.5	\	0.8
ALH105K351A032	1.0	10.9	17.0	9	24	45	45.0	32.0	22	13.0	27.5	\	0.8
ALH205K351A072	2.0	7.3	25.4	9	26	45	90.0	32.0	33	18.0	27.5	\	0.8
ALH225K351A072	2.2	6.9	26.8	9	26	45	99.0	32.0	33	18.0	27.5	\	0.8
ALH335K351A082	3.3	5.7	32.5	9	28	45	148.5	32.0	37	22.0	27.5	\	0.8
ALH475K351B084	4.7	6.9	11.1	14	30	34	159.8	42.5	40	20.0	37.5	10.2	1.2
ALH505K351B084	5.0	6.8	11.3	14	30	34	170.0	42.5	40	20.0	37.5	10.2	1.2
ALH685K351B064	6.8	6.2	12.3	14	30	34	231.2	42.5	37	28.0	37.5	10.2	1.2
ALH106K351B104	10.0	5.3	14.4	14	30	34	340.0	42.5	45	30.0	37.5	20.3	1.2
ALH126K351C064	12.0	6.8	11.3	14	35	28	336.0	57.5	45	30.0	52.5	20.3	1.2
ALH206K351C084	20.0	5.9	13.0	14	35	28	560.0	57.5	50	35.0	52.5	20.3	1.2
<b>400 Vac (760 Vdc)</b>													
ALH474K401A022	0.47	18.6	16.5	7	24	50	23.5	32.0	20	11.0	27.5	\	0.8
ALH105K401A052	1.0	10.3	18.0	9	26	50	50.0	32.0	28	14.0	27.5	\	0.8
ALH155K401A072	1.5	8.1	22.9	9	26	50	75.0	32.0	33	18.0	27.5	\	0.8
ALH225K401A072	2.2	6.4	28.9	9	26	50	110.0	32.0	33	18.0	27.5	\	0.8
ALH305K401A082	3.0	5.7	32.5	9	28	50	150.0	32.0	37	22.0	27.5	\	0.8
ALH505K401B064	5.0	6.2	12.3	14	30	40	200.0	42.5	37	28.0	37.5	10.2	1.2
ALH106K401C064	10.0	6.9	11.1	14	35	35	350.0	57.5	45	30.0	52.5	20.3	1.2
ALH156K401C084	15.0	6.1	12.5	14	35	35	525.0	57.5	50	35.0	52.5	20.3	1.2
<b>450 Vac (850 Vdc)</b>													
ALH224K451A022	0.22	30.9	19.4	5	24	55	12.1	32.0	20	11.0	27.5	\	0.8
ALH474K451A032	0.47	15.7	14.9	8	24	55	25.9	32.0	22	13.0	27.5	\	0.8
ALH105K451A072	1.0	9.2	25.5	8	26	55	55.0	32.0	33	18.0	27.5	\	0.8
ALH155K451A082	1.5	7.3	32.1	8	28	55	82.5	32.0	37	22.0	27.5	\	0.8
ALH335K451B064	3.3	7.4	10.3	14	30	45	148.5	42.5	37	28.0	37.5	10.2	1.2
ALH475K451B104	4.7	6.2	12.3	14	30	45	211.5	42.5	45	30.0	37.5	20.3	1.2
ALH685K451C064	6.8	7.5	10.2	14	35	38	258.4	57.5	45	30.0	52.5	20.3	1.2
ALH106K451C084	10.0	6.6	11.6	14	35	38	380.0	57.5	50	35.0	52.5	20.3	1.2

# Type ALH, AC Filter Capacitors for Harsh Environments



85 °C / 85% RH , 1500h @ Vr, AEC-Q200 Qualified

## Typical Performance Curves



**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the “Information”) in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements (“Cornell Dubilier”) has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View ALH305K401A082 on WIN SOURCE](#)
- ⊖ [Cornell Dubilier Electronics \(CDE\) Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management