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.

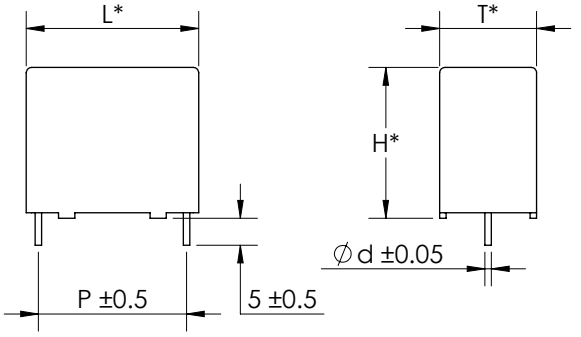
Highlights

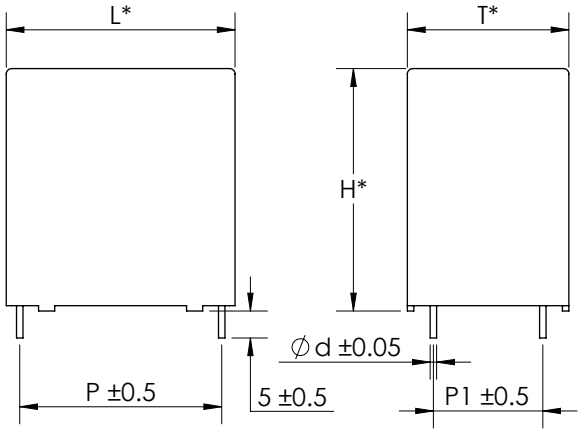
- Optimized AC voltage performance
- THB 85 °C / 85% RH 1500 h at rated voltage
- Self-healing and low loss
- Suitable for high frequency applications

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% equivalent DC voltage (1.414 x Vac) for 10s
Test Voltage between Terminals and Case @ 25°C	3 kVac @ 50/60 Hz for 10 s
Insulation Resistance	≥30,000 MΩxµF @ 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

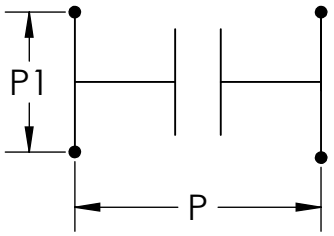




* ±0.8 for L ≤ 42.5mm
±1.0 for L = 57.5mm

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

c UL us UL Recognized E128034
construction only - unprotected



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Part Numbering System

ALH	406	K	251	C08	4
Series	Capacitance	Tolerance	Voltage	Case	Leads
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)	Irms 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)
160 Vac													
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
250 Vac													
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 Polypropylene Board Mount AC Filtering Capacitors

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

Part Number	Cap C (µF)	Typ ESR 10 kHz (mΩ)	Thermal Res (°C/W)	Irms 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)
275 Vac													
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
350 Vac													
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
400 Vac													
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
450 Vac													
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

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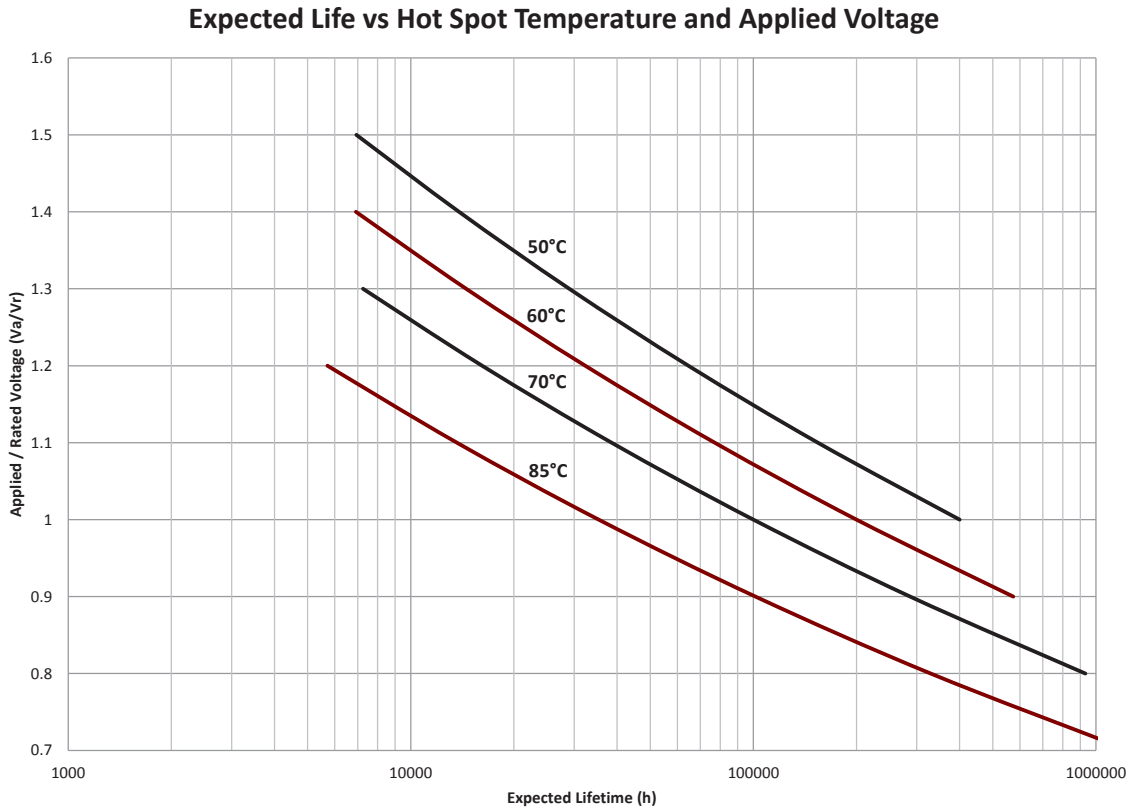
Typical Performance Curves



Mouser Electronics

Authorized Distributor

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