

AB SERIES ■ MINIATURIZED HIGH RIPPLE CURRENT TYPE

KEY FEATURES



AEC-Q200



TEMPERATURE



MINIATURIZED

- HYBRID CONDUCTIVE POLYMER • SMD type
- Endurance: 125°C ■ 4 000 hours
- Low ESR and **extremely** high ripple current in small dimensions
- Vibration Proof (VP) version (up to 30g) available
- AEC-Q200 version available



SPECIFICATIONS

Items		Performance Characteristics
Operating Temperature Range		-55 ~ +125°C
Rated Voltage Range	V_R	25 ~ 35V DC
Surge Voltage	V_S	($V_R \leq 100V$): $V_S = 1.25 \cdot V_R$
Capacitance Range	C_R	33 ~ 680 μ F
Cap. Tolerance	ΔC	$\pm 20\%$ (120Hz ■ 20°C)
Leakage Current (20°C ■ V_R applied)	I_{LEAK}	Not to exceed the values shown in standard ratings After 2 minutes
Dissipation Factor % (20°C ■ 120Hz)	$\tan \delta$	Not to exceed the values shown in standard ratings
Equivalent Series Resistance (20°C ■ 100kHz)	ESR	Not to exceed the values shown in standard ratings
Lifetime Test		
Endurance 125°C (V_R & I_R applied)	Test	4 000 hours
	$\Delta C/C_R$	Within $\pm 30\%$ of the initial value
	$\tan \delta$	Less than 200% of the specified value
	ESR	Less than 200% of the specified value
	I_{Leak}	Less than the specified value

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

Frequency (Hz)	100 ≤ Freq. < 120	120 ≤ Freq. < 200	200 ≤ Freq. < 300	300 ≤ Freq. < 500
Coefficient K_f	0.15	0.15	0.20	0.25
Frequency (Hz)	500 ≤ Freq. < 1k	1k ≤ Freq. < 2k	2k ≤ Freq. < 3k	3k ≤ Freq. < 5k
Coefficient K_f	0.35	0.45	0.55	0.60
Frequency (Hz)	5k ≤ Freq. < 10k	10k ≤ Freq. < 15k	15k ≤ Freq. < 20k	20k ≤ Freq. < 40k
Coefficient K_f	0.65	0.70	0.75	0.75
Frequency (Hz)	40k ≤ Freq. < 50k	50k ≤ Freq. < 100k	100k ≤ Freq. < 500k	500k ≤ Freq. < 1M
Coefficient K_f	0.80	0.85	1.00	1.05

STANDARD RATINGS

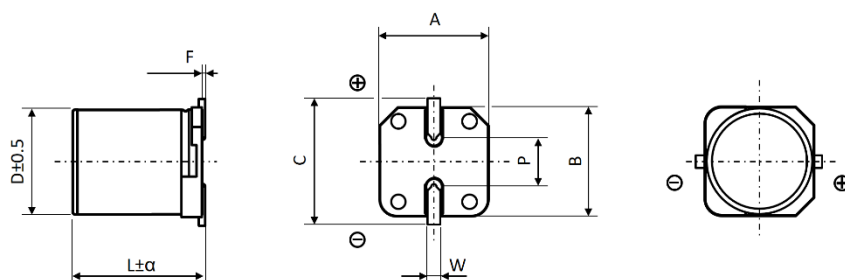
Part number shows blister tape on paper reel

V_R (V)	Standard	Vibration-proof	C_R (μF)	ϕD (mm)	L (mm)	I_{LEAK} (μA , 2min)	$\tan\delta$ +20°C • 120Hz (%)	Max. ESR +20°C • 100kHz (m Ω)	I_R • Max. Ripple Cur- rent +125°C • 100kHz (mA rms)	CapXon Part Number
25	•		47	5.0	5.8	11.8	14	80	850	AB470M025C058PTR □□
	•		56	5.0	5.8	14.0	14	80	850	AB560M025C058PTR □□
	•	•	68	6.3	5.8	17.0	14	50	1300	AB680M025E058PTR □□
	•	•	82	6.3	5.8	20.5	14	50	1300	AB820M025E058PTR □□
	•	•	100	6.3	5.8	25.0	14	50	1300	AB101M025E058PTR □□
	•	•	150	6.3	7.7	37.5	14	30	1800	AB151M025E077PTR □□
	•	•	180	6.3	7.7	45.0	14	30	1800	AB181M025E077PTR □□
	•	•	270	8.0	10.5	67.5	14	27	2000	AB271M025F105PTR □□
	•	•	330	8.0	10.5	82.5	14	27	2000	AB331M025F105PTR □□
	•	•	470	10.0	10.5	117.5	14	20	2800	AB471M025G105PTR □□
	•	•	560	10.0	10.5	140.0	14	20	2800	AB561M025G105PTR □□
	•	•	680	10.0	12.4	170.0	14	16	3160	AB681M025G124PTR □□
35	•		33	5.0	5.8	11.5	12	100	750	AB330M035C058PTR □□
	•		39	5.0	5.8	13.7	12	100	750	AB390M035C058PTR □□
	•	•	56	6.3	5.8	19.6	12	60	1200	AB560M035E058PTR □□
	•	•	68	6.3	5.8	23.8	12	60	1200	AB680M035E058PTR □□
	•	•	100	6.3	7.7	35.0	12	35	1700	AB101M035E077PTR □□
	•	•	120	6.3	7.7	42.0	12	35	1700	AB121M035E077PTR □□
	•	•	180	8.0	10.5	63.0	12	27	2000	AB181M035F105PTR □□
	•	•	220	8.0	10.5	77.0	12	27	2000	AB221M035F105PTR □□
	•	•	330	10.0	10.5	115.5	12	20	2800	AB331M035G105PTR □□
	•	•	390	10.0	10.5	136.5	12	20	2800	AB391M035G105PTR □□

□□: Leave **blank** for Standard package
 □□: Enter **W** for Vibration proof version

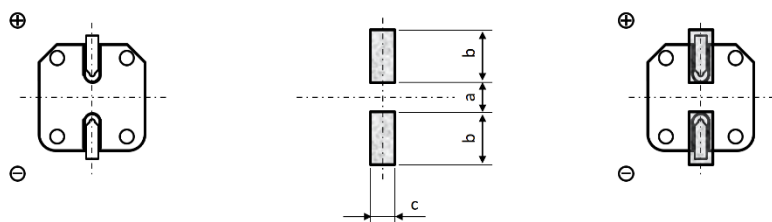
□□: Enter **X** for AEC-Q200
 □□: Enter **XW** for AEC-Q200 and Vibration proof version

DIMENSIONS STANDARD PACKAGE ▪ All dimensions in mm



ϕD	L	α	$A \pm 0.2$	$B \pm 0.2$	$C \pm 0.2$	F	$P \pm 0.2$	W
5.0	5.8	0.3	5.3	5.3	5.9	0.3 max.	1.4	0.5 to 0.8
6.3	5.8	0.3	6.6	6.6	7.2	0.3 max.	2.2	0.5 to 0.8
6.3	7.7	0.3	6.6	6.6	7.2	0.3 max.	2.2	0.5 to 0.8
8.0	10.5	0.3	8.3	8.3	9.0	0.3 max.	3.1	0.7 to 1.1
10.0	10.5	0.3	10.3	10.3	11.0	0.3 max.	4.5	0.7 to 1.1
10.0	12.4	0.3	10.3	10.3	11.0	0.3 max.	4.5	1.0 to 1.4

PAD LAYOUT STANDARD PACKAGE ▀ All dimensions in mm



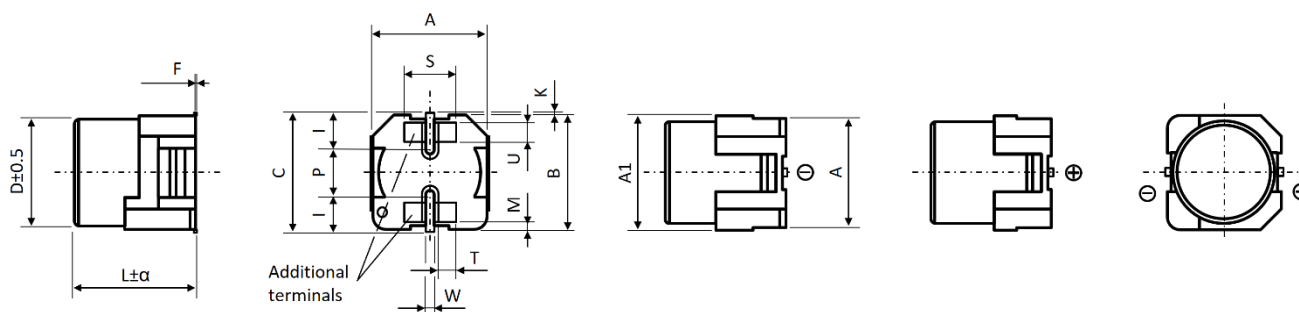
Bottom view

Recommended land patterns

Capacitor mounted on pads

∅ D	L	a	b	c
5.0	5.8	1.4	3.0	1.6
6.3	5.8	2.1	3.5	1.6
6.3	7.7	2.1	3.5	1.6
8.0	10.5	2.8	4.2	1.9
10.0	10.5	4.3	4.4	1.9
10.0	12.4	4.3	4.4	1.9

DIMENSIONS VP PACKAGE (VIBRATION-PROOF) ∅ D6.3 ▀ All dimensions in mm

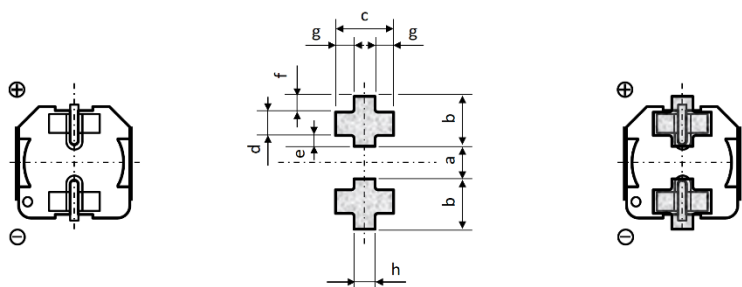


Note: Additional terminals electrical connected to anode or cathode terminal.

∅ D	L	α	A ± 0.2	A1 (max.)	B ± 0.2	C (max.)	F	K
6.3	5.8	-0.3/+0.7	6.6	7.1	6.6	7.8	0 to 0.15	0.35 +0.15/-0.2
6.3	7.7	-0.3/+0.7	6.6	7.1	6.6	7.8	0 to 0.15	0.35 +0.15/-0.2

∅ D	L	I ± 0.1	M ± 0.1	P ± 0.2	S ± 0.1	T ± 0.1	U ± 0.1	W ± 0.1
6.3	5.8	2.5	0.35	2.2	3.2	1.1	0.7	0.65
6.3	7.7	2.5	0.35	2.2	3.2	1.1	0.7	0.65

PAD LAYOUT VP PACKAGE (VIBRATION-PROOF) Ø D6.3 ▀ All dimensions in mm



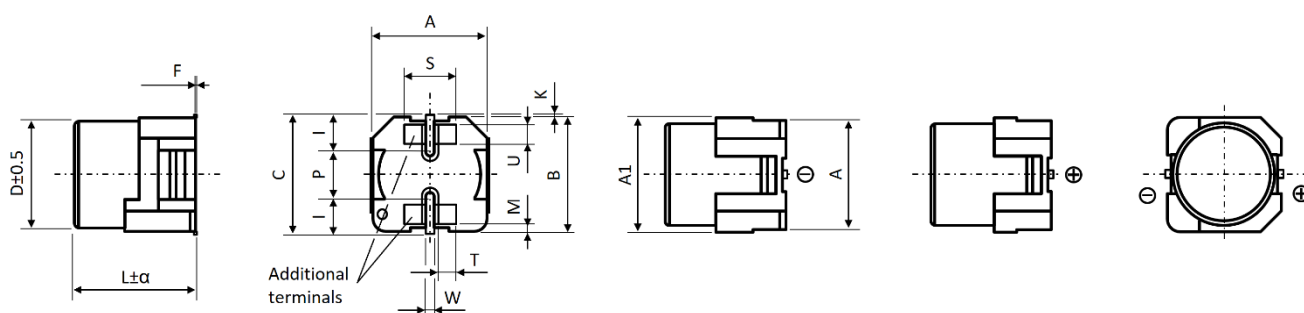
Bottom view

Recommended land patterns

Capacitor mounted on pads

Ø D	L	a	b	c	d	e	f	g	h
6.3	5.8	1.2	3.6	3.2	2.0	0.95	0.65	1.0	1.2
6.3	7.7	1.2	3.6	3.2	2.0	0.95	0.65	1.0	1.2

DIMENSIONS VP PACKAGE (VIBRATION-PROOF) Ø D8 and D10 ▀ All dimensions in mm

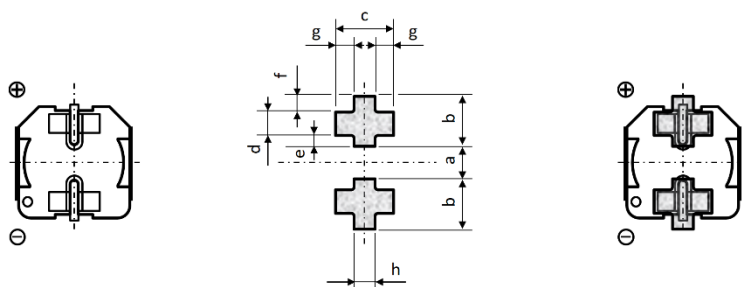


Note: Additional terminals electrical connected to anode or cathode terminal.

Ø D	L	α	A ± 0.2	A1 (max.)	B ± 0.2	C (max.)	F	K ± 0.2
8.0	10.5	-0.3/+0.7	8.3	8.8	8.3	10.0	0 to 0.15	0.7
10.0	10.5	-0.3/+0.7	10.3	10.8	10.3	12.0	0 to 0.15	0.7
10.0	12.4	-0.3/+0.7	10.3	10.8	10.3	12.0	0 to 0.15	0.7

Ø D	L	I ± 0.1	M ± 0.1	P ± 0.2	S ± 0.1	T ± 0.1	U ± 0.1	W ± 0.1
8.0	10.5	3.3	0.75	3.1	3.3	0.9	0.8	1.2
10.0	10.5	3.5	0.9	4.6	3.3	0.9	0.8	1.2
10.0	12.4	3.5	0.9	4.6	3.3	0.9	0.8	1.2

PAD LAYOUT VP PACKAGE (VIBRATION-PROOF) Ø D8 and D10 • All dimensions in mm



Bottom view

Recommended land patterns

Capacitor mounted on pads

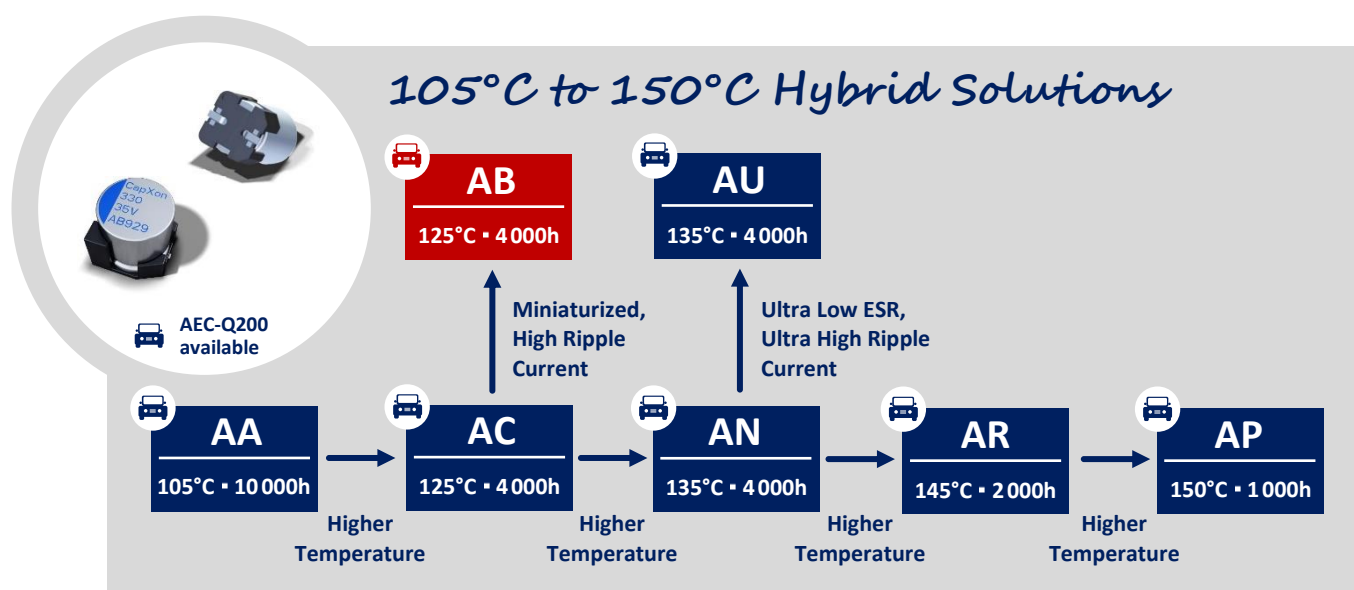
Ø D	L	a	b	c	d	e	f	g	h
8.0	10.5	2.7	4.0	4.7	1.3	1.0	1.7	1.1	2.5
10.0	10.5	3.9	4.4	4.7	1.3	1.2	1.9	1.1	2.5
10.0	12.4	3.9	4.4	4.7	1.3	1.2	1.9	1.1	2.5

PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

General Precautions & Guidelines	Packaging Information	Vibration Test Profiles	3D Models	Reliability Tests

GROUP CHART



DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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For further information, please visit our website www.capxongroup.com or contact CapXon directly.