

QV SERIES ■ ULTRA LONG LIFE, 10 000 HOURS 105°C TYPE

KEY FEATURES



AEC-Q 200



ULTRA LONG LIFE



- ALUMINUM ELECTROLYTIC CAPACITOR • SMD type
- Endurance: 105°C ■ 10 000 hours
- Especially for applications with long life demand
- Vibration-proof (VP) version (up to 30g) available upon request
- AEC-Q200 version available



SPECIFICATIONS

Items		Performance Characteristics						
Operating Temperature Range		-25 ~ +105°C						
Rated Voltage Range	V _R	6.3 ~ 50V DC						
Surge Voltage	V _S	V _S = 1.15·V _R						
Capacitance Range	C _R	10 ~ 680μF						
Cap. Tolerance	ΔC	±20% (120Hz ▪ 20°C)						
Leakage Current (20°C ▪ V _R applied)	I _{LEAK}	≤ 0.01·C _R ·V _R or 3μA whichever is greater ▪ After 2 minutes [I _{LEAK} (μA) ; C _R (μF) ; V _R (V)]						
Dissipation Factor % (20°C ▪ 120Hz)	tanδ	V _R (V DC)	6.3	10	16	25	35	50
		tanδ (%)	32	28	26	16	14	14
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	6.3	10	16	25	35	50
		Z-25°C/Z+20°C	4	3	2	2	2	2
Lifetime Test								
Endurance 105°C (V _R applied)	Test	1 0000 hours						
	ΔC/C _R	≤ ±30% of initial measured value						
	tanδ	≤ 300% of initial specified value						
	I _{Leak}	≤ the initial specified value						
Shelf Life 105°C (V _R = 0)	Test	1000 hours						
	ΔC/C _R	≤ ±30% of initial measured value						
	tanδ	≤ 300% of initial specified value						
	I _{Leak}	≤ the initial specified value						
		Before measurement: Restore capacitor to20°C, apply V _R for 30 min according JIS-C-5101-4						
Resistance to Soldering Heat	The capacitors shall be kept on a hot plate maintained at 250°C for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the characteristic requirements listed below							
	ΔC/C _R	Within ±10% of initial value						
	tanδ	Less than specified value						
	I _{Leak}	Less than specified value						

STANDARD RATINGS

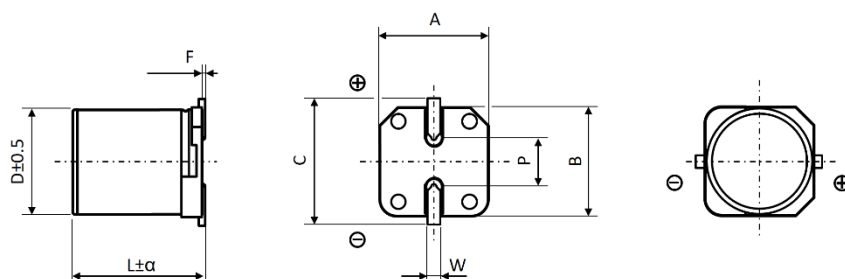
Part number shows blister tape on paper reel

V _R (V)	Standard	Vibration-proof	C _R (μF)	ø D (mm)	L (mm)	Z = Max. Impedance +20°C • 100kHz (mΩ)	I _R = Max. Ripple Current +105°C • 100kHz (mA rms)	CapXon Part Number
6.3	•		47	5.0	7.0	2200	95	QV470M6R3C070ETR □□
	•		100	6.3	7.0	1100	140	QV101M6R3E070ETR □□
	•		220	6.3	8.7	1000	230	QV221M6R3E087ETR □□
	•		330	6.3	8.7	1000	230	QV331M6R3E087ETR □□
	•	•	470	8.0	10.5	220	600	QV471M6R3F105ETR □□
	•	•	560	8.0	10.5	220	600	QV561M6R3F105ETR □□
10	•		33	5.0	7.0	2200	95	QV330M010C070ETR □□
	•		150	6.3	7.0	1100	140	QV151M010E070ETR □□
	•	•	330	8.0	10.5	220	600	QV331M010F105ETR □□
	•	•	470	8.0	10.5	220	600	QV471M010F105ETR □□
	•	•	560	8.0	10.5	220	600	QV561M010F105ETR □□
	•	•	680	10.0	10.5	160	850	QV681M010G105ETR □□
16	•		22	5.0	7.0	2200	95	QV220M016C070ETR □□
	•		47	6.3	7.0	1100	140	QV470M016E070ETR □□
	•		100	6.3	7.0	1100	140	QV101M016E070ETR □□
	•		150	6.3	8.7	1000	230	QV151M016E087ETR □□
	•		220	6.3	8.7	1000	230	QV221M016E087ETR □□
	•	•	330	8.0	10.5	220	600	QV331M016F105ETR □□
	•	•	390	8.0	10.5	220	600	QV391M016F105ETR □□
	•	•	470	10.0	10.5	160	850	QV471M016G105ETR □□
	•	•	680	10.0	10.5	160	850	QV681M016G105ETR □□
25	•		22	5.0	7.0	2200	95	QV220M025C070ETR □□
	•		33	6.3	7.0	1100	140	QV330M025E070ETR □□
	•		47	6.3	7.0	1100	140	QV470M025E070ETR □□
	•		100	6.3	8.7	1000	230	QV101M025E087ETR □□
	•	•	220	8.0	10.5	220	600	QV221M025F105ETR □□
	•	•	330	8.0	10.5	220	600	QV331M025F105ETR □□
	•	•	330	10.0	10.5	160	800	QV331M025G105ETR □□
	•	•	470	10.0	10.5	160	800	QV471M025G105ETR □□
35	•		10	5.0	7.0	2200	95	QV100M035C070ETR □□
	•		10	6.3	7.0	1100	140	QV100M035E070ETR □□
	•		22	5.0	7.0	2200	95	QV220M035C070ETR □□
	•		22	6.3	7.0	1100	140	QV220M035E070ETR □□
	•		33	6.3	8.7	1000	230	QV330M035E087ETR □□
	•		47	6.3	8.7	1000	230	QV470M035E087ETR □□
	•	•	100	8.0	10.5	220	600	QV101M035F105ETR □□
	•	•	220	8.0	10.5	220	600	QV221M035F105ETR □□
	•	•	220	10.0	10.5	160	850	QV221M035G105ETR □□
	•	•	330	10.0	10.5	160	850	QV331M035G105ETR □□
	•	•	390	10.0	10.5	160	850	QV391M035G105ETR □□
50	•	•	47	8.0	10.5	530	350	QV470M050F105ETR □□
	•	•	100	10.0	10.5	350	670	QV101M050G105ETR □□

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

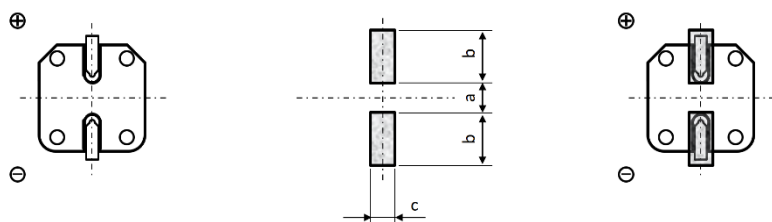
□□: Enter **X** for AEC-Q200
 □□: Enter **XW** for AEC-Q200 and Vibration proof version

DIMENSIONS STANDARD PACKAGE ▀ All dimensions in mm



∅ D	L	α	A ± 0.2	B ± 0.2	C ± 0.2	F	P ± 0.2	W
5.0	7.0	0.3	5.3	5.3	5.9	0.3 max.	1.4	0.5 to 0.8
6.3	7.0	0.3	6.6	6.6	7.2	0.3 max.	2.2	0.5 to 0.8
6.3	8.7	0.3	6.6	6.6	7.2	0.3 max.	2.2	0.5 to 0.8
8.0	10.5	Max	8.3	8.3	9.0	0.3 max.	3.1	0.7 to 1.1
10.0	10.5	Max	10.3	10.3	11.0	0.3 max.	4.5	0.7 to 1.1

PAD LAYOUT STANDARD PACKAGE ▀ All dimensions in mm



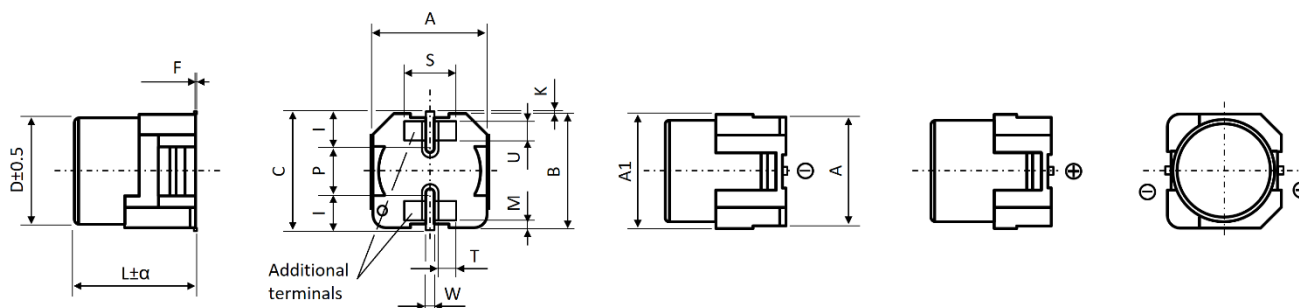
Bottom view

Recommended land patterns

Capacitor mounted on pads

∅ D	L	a	b	c
5.0	7.0	1.4	3.0	1.6
6.3	7.0	2.1	3.5	1.6
6.3	8.7	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

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

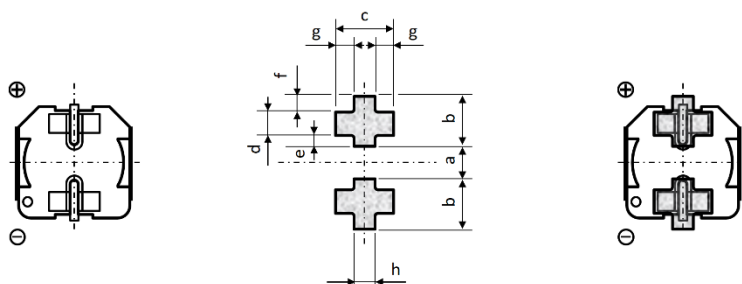


Note: Additional terminals electrical connected to anode or cathode terminal.

Ø D	L	α	A ± 0.2	A1 (max.)	B ± 0.2	C (max.)	F	K ± 0.2
8.0	10.5	0.5	8.3	8.8	8.3	10.0	0 to 0.15	0.7
10.0	10.5	0.5	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

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

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

C_R (μF) / Frequency (Hz)	120	1K	10k	100k
$10 \leq C_R \leq 150$	0.40	0.75	0.90	1.00
$220 \leq C_R$	0.50	0.85	0.94	1.00

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

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.

