

TV SERIES ■ HIGH TEMP., AUTOMOTIVE 125°C TYPE

KEY FEATURES



AEC-Q 200



°C HIGH TEMPERATURE



- ALUMINUM ELECTROLYTIC CAPACITOR • SMD type
- Endurance: 125°C ■ 1 000 hours up to 2 000 hours
- Especially for applications with high ambient temperatures
- Vibration-proof (VP) version (up to 30g) available upon request
- AEC-Q200 version available



SPECIFICATIONS

Items		Performance Characteristics											
Operating Temperature Range		-40 ~ +125°C											
Rated Voltage Range	V _R	10 ~ 50V DC						160 ~ 450V DC					
Surge Voltage	V _S	(V _R ≤ 315V): V _S = 1.15·V _R						(V _R > 315V): V _S = 1.10·V _R					
Capacitance Range	C _R	10 ~ 330μF						1 ~ 18μF					
Cap. Tolerance	ΔC	±20% (120Hz ▪ 20°C)											
Leakage Current (20°C ▪ V _R applied)	I _{LEAK}	≤ 0.03·C _R ·V _R or 3μA Whichever is greater ▪ After 1 minute						≤ 0.04·C _R ·V _R + 100μA After 1 minute					
		[I _{LEAK} (μA) ; C _R (μF) ; V _R (V)]											
Dissipation Factor % (20°C ▪ 120Hz)	tanδ	V _R (V DC)	10	16	25	35	50	160	200	250	400	450	
		tanδ (%)	32	24	21	18	18	20	20	25	25	30	
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	10	16	25	35	50	160	200	250	400	450	
		Z-25°C/Z+20°C	12	8	6	4	4	8	8	8	12	15	
		Z-40°C/Z+20°C	14	8	6	4	4	-	-	-	-	-	
Lifetime Test													
Endurance 125°C (V _R applied)	Test	2 000 hours						Ø 8 x 10.5mm & Ø 10 x 10.5mm					
		1 000 hours						Ø 6.3 x 7.7mm & Ø 8 x 6.5mm					
	ΔC/C _R	≤ ±30% of initial measured value											
	tanδ	≤ 300% of initial specified value											
	I _{Leak}	≤ the initial specified value											
Shelf Life 125°C (V _R = 0)	Test	1 000 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 to 20°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											

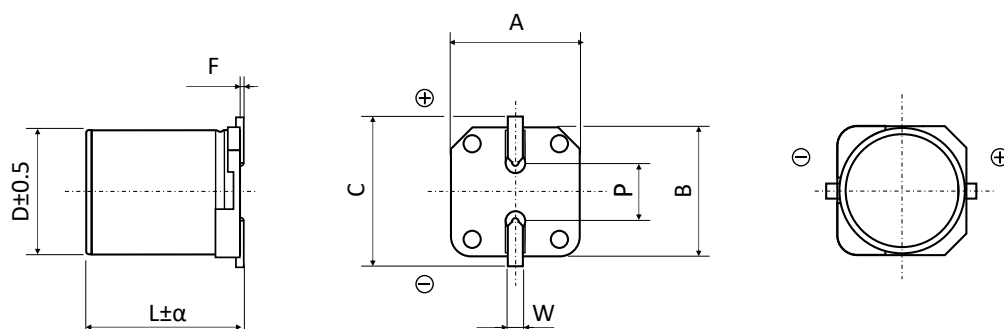
STANDARD RATINGS

Part number shows blister tape on paper reel

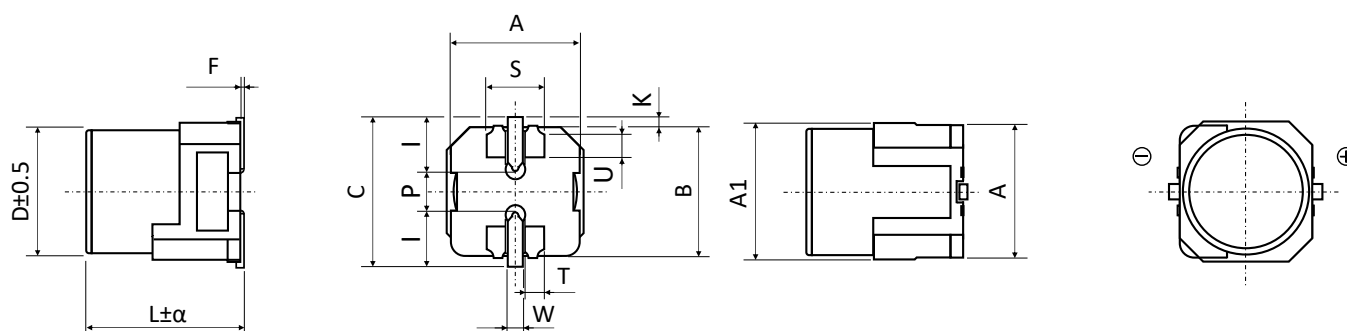
V _R (V)	Standard	Vibration-proof	C _R (μF)	ø D (mm)	L (mm)	I _R • Max. Ripple Current +125°C • 120Hz (mA rms)	CapXon Part Number
10	•	•	100	6.3	7.7	53	TV101M010E077ETR □□
	•		100	8	6.5	58	TV101M010F065ETR □□
	•	•	220	8	10.5	90	TV221M010F105ETR □□
	•	•	330	10	10.5	112	TV331M010G105ETR □□
16	•	•	100	8	10.5	66	TV101M016F105ETR □□
	•	•	220	10	10.5	102	TV221M016G105ETR □□
25	•	•	47	6.3	7.7	45	TV470M025E077ETR □□
	•		47	8	6.5	48	TV470M025F065ETR □□
	•	•	100	8	10.5	74	TV101M025F105ETR □□
	•	•	220	10	10.5	116	TV221M025G105ETR □□
35	•	•	33	6.3	7.7	40	TV330M035E077ETR □□
	•		33	8	6.5	44	TV330M035F065ETR □□
	•	•	47	8	10.5	52	TV470M035F105ETR □□
	•	•	100	10	10.5	80	TV101M035G105ETR □□
50	•	•	10	6.3	7.7	22	TV100M050E077ETR □□
	•		10	8	6.5	24	TV100M050F065ETR □□
	•	•	22	6.3	7.7	35	TV220M050E077ETR □□
	•		22	8	6.5	38	TV220M050F065ETR □□
	•	•	33	8	10.5	46	TV330M050F105ETR □□
	•	•	47	10	10.5	58	TV470M050G105ETR □□
160	•	•	6.8	8	10.5	42	TV6R8M160F105ETR □□
	•	•	10	10	10.5	59	TV100M160G105ETR □□
	•	•	18	10	10.5	65	TV180M160G105ETR □□
200	•	•	4.7	8	10.5	36	TV4R7M200F105ETR □□
	•	•	6.8	10	10.5	59	TV6R8M200G105ETR □□
	•	•	10	10	10.5	59	TV100M200G105ETR □□
250	•	•	3.3	8	10.5	28	TV3R3M250F105ETR □□
	•	•	4.7	10	10.5	59	TV4R7M250G105ETR □□
400	•	•	1	8	10.5	27	TV010M400F105ETR □□
	•	•	1.8	8	10.5	30	TV1R8M400F105ETR □□
	•	•	2.2	8	10.5	33	TV2R2M400F105ETR □□
	•	•	2.2	10	10.5	37	TV2R2M400G105ETR □□
	•	•	3.3	8	10.5	36	TV3R3M400F105ETR □□
	•	•	3.3	10	10.5	39	TV3R3M400G105ETR □□
	•	•	4.7	10	10.5	46	TV4R7M400G105ETR □□
	•	•	5.6	10	10.5	50	TV5R6M400G105ETR □□
450	•	•	2.2	8	10.5	28	TV2R2M450F105ETR □□
	•	•	3.3	10	10.5	32	TV3R3M450G105ETR □□
	•	•	3.9	10	10.5	38	TV3R9M450G105ETR □□

□□: 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

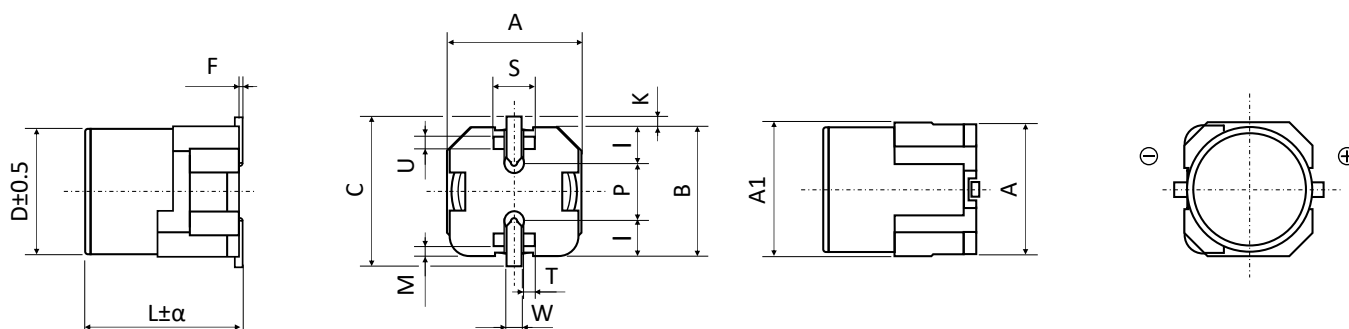
DIMENSIONS STANDARD PACKAGE ▀ All dimensions in mm


∅ D	L	α	A ± 0.2	B ± 0.2	C ± 0.2	F	P ± 0.2	W
6.3	7.7	Max	6.6	6.6	7.2	0.3 max.	2.2	0.5 to 0.8
8.0	6.5	Max	8.3	8.3	9.0	0.3 max.	2.3	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

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


∅ D	L	α	A ± 0.2	A1 (max.)	B ± 0.2	C (max.)	F	K
6.3	8.0	0.3	6.6	7.1	6.6	7.8	0 to 0.15	0.35 +0.15/-0.2

∅ D	L	P ± 0.2	S ± 0.1	I ± 0.1	T ± 0.1	U ± 0.1	W ± 0.1
6.3	8.0	2.2	2.9	2.4	1.1	1.55	0.65

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


ϕD	L	α	$A \pm 0.2$	$A1 \text{ (max.)}$	$B \pm 0.2$	$C \text{ (max.)}$	F	$K \pm 0.2$
8	10.5	0.5	8.3	8.8	8.3	10.0	0 to 0.15	0.7
10	10.5	0.5	10.3	10.8	10.3	12.0	0 to 0.15	0.7

ϕD	L	$P \pm 0.2$	$S \pm 0.1$	$I \pm 0.1$	$T \pm 0.1$	$U \pm 0.1$	$W \pm 0.1$	$M \pm 0.1$
8	10.5	3.1	3	3.4	1.4	0.7	1.2	0.7
10	10.5	4.6	3.3	3.5	1.5	0.8	1.2	0.9

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

$C_R (\mu F)$ / Frequency (Hz)	50/60	100/120	500	1k	10k ~ 100k
$1 \leq C_R \leq 47$	0.8	1	1.2	1.3	1.5
$100 < C_R \leq 330$	0.8	1	1.1	1.15	1.2

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.

Except for the written expressed warranties, CapXon does not impliedly, by assumption or whatever else, warrant, undertake, promise any other warranty or guaranty for any CapXon product.

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