

KS SERIES ▀ OVERVOLTAGE VENT 105°C TYPE

KEY FEATURES



- **ALUMINUM ELECTROLYTIC CAPACITOR** ▀ THT type
- Endurance: 105°C ▀ 2 000 hours
- High ripple current
- Defined vent operation in overvoltage situation
- High voltage version



SPECIFICATIONS

Items		Performance Characteristics		
Operating Temperature Range		-25 ~ +105°C		
Rated Voltage Range	V_R	200 ~ 400V DC		
Surge Voltage	V_S	Defined vent operation in overvoltage situation; $V_S = 1.50 \cdot V_R$		
Capacitance Range	C_R	4.7 ~ 470μF		
Cap. Tolerance	ΔC	±20% (120Hz ▀ 20°C)		
Leakage Current (20°C ▀ V_R applied)	I_{LEAK}	≤ 0.01 $C_R \cdot V_R$ or 3μA ▀ After 1 minute [I_{LEAK} (μA) ; C_R (μF) ; V_R (V)]		
Dissipation Factor % (20°C ▀ 120Hz)	tanδ	V_R (V DC)	200	400
		tanδ (%)	15	15
Low Temperature Characteristics at 120Hz	Z ratio max.	V_R (V DC)	200	400
		Z-25°C/Z+20°C	3	6

Lifetime Test				
Endurance 105°C (V_R & I_R applied)	Test	2 000 hours		
	$\Delta C/C_R$	≤ ±20% of initial measured value		
	tanδ	≤ 200% of initial specified value		
	I_{Leak}	≤ the initial specified value		
Shelf Life 105°C ($V_R = 0$)	Test	1 000 hours		
	$\Delta C/C_R$	≤ ±20% of initial measured value		
	tanδ	≤ 200% 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				

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

V_R (V)	C_R (μF) / Frequency (Hz)	50/60	100/120	400	1k	≥ 10k
200	22 ~ 470	0.85	1	1.1	1.25	1.5
	4.7 ~ 68	0.85	1	1.05	1.2	1.4
400	82 ~ 150	0.85	1	1.03	1.15	1.35

STANDARD RATINGS

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	I _R - Max. Ripple Current +105°C - 120Hz (mA rms)	CapXon Part Number
200	22	10	20	120	KS220M200G200A
	33	10	25	160	KS330M200G250A
	33	13	20	160	KS330M200I200A
	47	10	30	195	KS470M200G300A
	47	13	20	195	KS470M200I200A
	56	13	25	210	KS560M200I250A
	68	13	25	270	KS680M200I250A
	68	16	20	270	KS680M200J200A
	82	13	30	310	KS820M200I300A
	82	16	20	320	KS820M200J200A
	82	16	25	360	KS820M200J250A
	100	16	25	400	KS101M200J250A
	100	18	20	400	KS101M200K200A
	120	16	25	460	KS121M200J250A
	120	16	31.5	500	KS121M200J315A
	120	18	25	500	KS121M200K250A
	150	16	31.5	560	KS151M200J315A
	150	16	35.5	590	KS151M200J355A
	150	18	25	560	KS151M200K250A
	180	16	35.5	600	KS181M200J355A
	180	18	31.5	650	KS181M200K315A
	220	18	31.5	700	KS221M200K315A
	220	18	35.5	740	KS221M200K355A
330	18	35.5	780	KS331M200K355A	
330	18	40	840	KS331M200K400A	
390	18	40	860	KS391M200K400A	
390	18	45	920	KS391M200K450A	
470	18	45	1120	KS471M200K450A	
400	4.7	10	12.5	60	KS4R7M400G125A
	10	10	16	100	KS100M400G160A
	10	10	20	125	KS100M400G200A
	22	13	20	135	KS220M400I200A
	22	13	25	150	KS220M400I250A
	22	16	20	150	KS220M400J200A
	33	13	25	180	KS330M400I250A
	33	16	20	210	KS330M400J200A
	47	16	31.5	300	KS470M400J315A
	47	16	35.5	320	KS470M400J355A
	47	18	25	300	KS470M400K250A
	47	18	31.5	320	KS470M400K315A
	56	16	31.5	360	KS560M400J315A
	56	18	25	350	KS560M400K250A
	56	18	31.5	370	KS560M400K315A
68	16	31.5	365	KS680M400J315A	

See "PACKAGING INFORMATION" to taped or formed products.

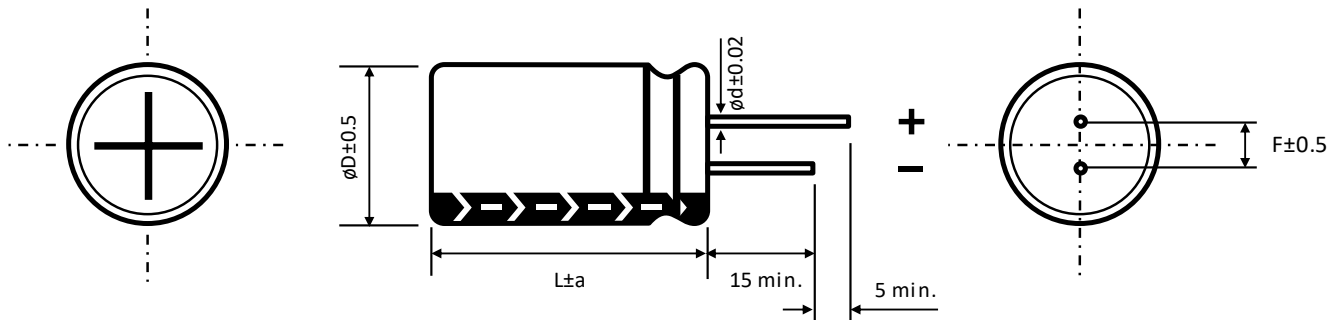
STANDARD RATINGS

Part number shows bulk version with straight leads

V_R (V)	C_R (μ F)	ϕD (mm)	L (mm)	I_R - Max. Ripple Current +105°C - 120Hz (mA rms)	CapXon Part Number
400	68	16	35.5	380	KS680M400J355A
	68	18	31.5	375	KS680M400K315A
	82	16	35.5	410	KS820M400J355A
	82	18	31.5	410	KS820M400K315A
	82	18	35.5	450	KS820M400K355A
	100	16	35.5	470	KS101M400J355A
	100	18	31.5	470	KS101M400K315A
	100	18	35.5	490	KS101M400K355A
	120	18	31.5	520	KS121M400K315A
	120	18	35.5	540	KS121M400K355A
	120	18	40	560	KS121M400K400A
	150	18	35.5	770	KS151M400K355A
150	18	40	790	KS151M400K400A	

See "PACKAGING INFORMATION" to taped or formed products.

DIMENSIONS - All dimensions in mm



ϕD	10	13	16	18
F	5	5	7.5	7.5
ϕd	0.6		0.8	

a	$\phi D < 16$	$\phi D = 16$		$\phi D = 18$	
	1.5	L = 25 to 35.5	L < 25 and L \geq 40	L = 25 to 31.5	L < 25 and L \geq 35.5
		1.5	2	1.5	2

DEFINED OVERVOLTAGE VENT OPERATION

Ordinary Aluminum Electrolytic Capacitors with rated voltages of $V_R > 315V$ have a surge voltage of $V_S = 1.10 \cdot V_R$. Surge voltage is the maximum voltage which may applied to the capacitor for a short time. In maximum 5 times with a duration of one minute each per hour, according JIS C 5101-4.





It applies to $V_R = 200V$ then $V_S = 220V$ and to $V_R = 400V$ then $V_S = 440V$.

The leakage current of the capacitor increases exponentially when the rated voltage is exceeded and increases the pressure inside the component. In the worst case, the capacitor explodes.

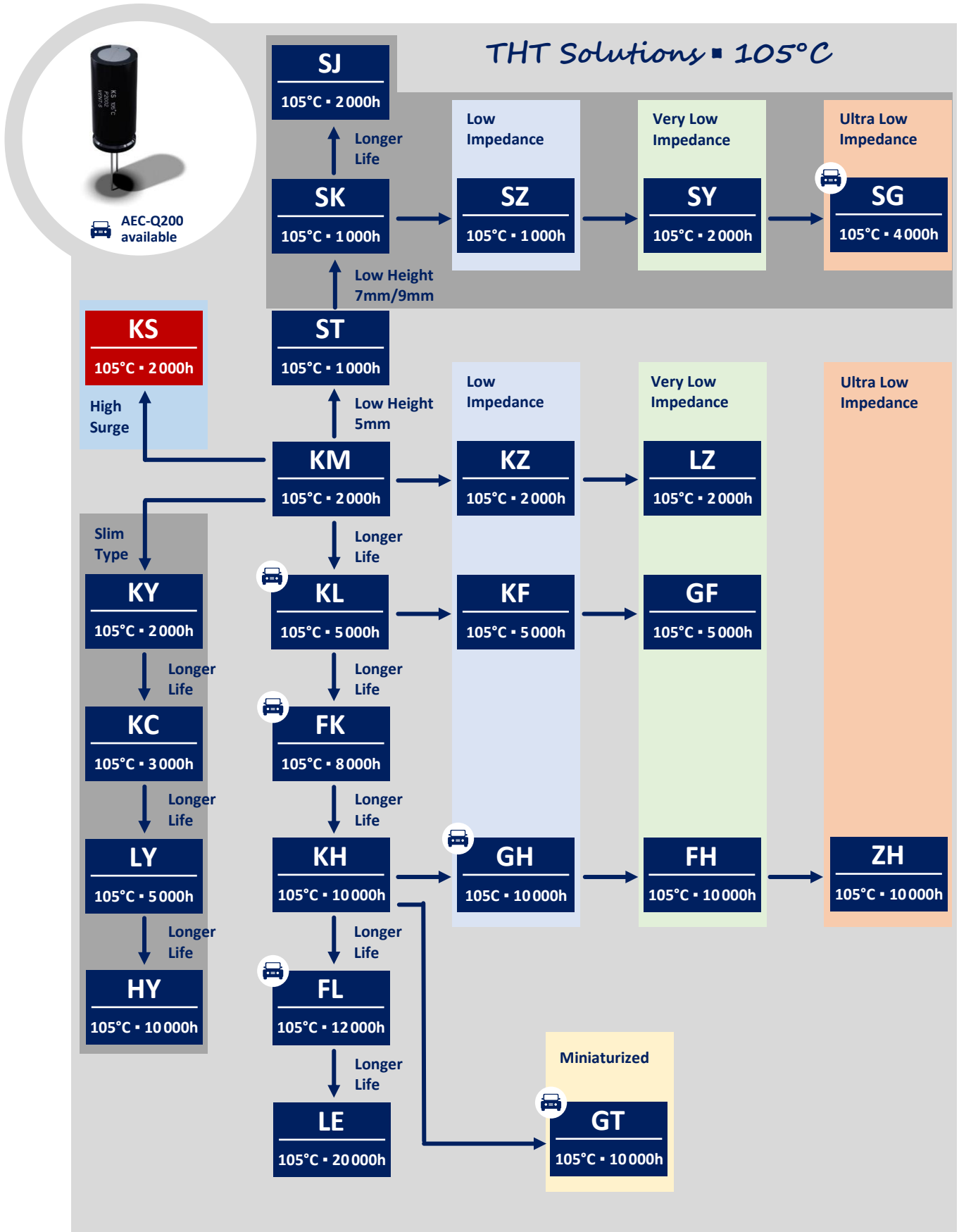
Due to its internal structure, the KS series can cope with surge voltages with 1.5 times the rated voltage and definitely opens its safety vent. An explosion of the component is impossible.

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	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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