

KZ SERIES ■ LOW IMPEDANCE 105°C TYPE

KEY FEATURES



- **ALUMINUM ELECTROLYTIC CAPACITOR** ■ THT type
- Endurance: 105°C ■ 1 000 hours up to 2 000 hours
- Low impedance and high ripple current
- Wide capacitance range
- Small dimensions



SPECIFICATIONS

Items		Performance Characteristics						
Operating Temperature Range		-40 ~ +105°C						
Rated Voltage Range	V_R	6.3 ~ 50V DC						
Surge Voltage	V_S	$V_S = 1.15 \cdot V_R$						
Capacitance Range	C_R	1 ~ 6800 μ F						
Cap. Tolerance	ΔC	$\pm 20\%$ (120Hz ■ 20°C)						
Leakage Current (20°C ■ V_R applied)	I_{LEAK}	$\leq 0.01 \cdot C_R \cdot V_R$ or 3 μ A, whichever is greater ■ After 2 minutes [I_{LEAK} (μ A) ; C_R (μ F) ; V_R (V)]						
Dissipation Factor % (20°C ■ 120Hz)	$\tan \delta$	V_R (V DC)	6.3	10	16	25	35	50
		$\tan \delta$ (%)	18	16	14	12	10	9
		For $C_R > 1000\mu$ F, add 2% per every multiple 1000 μ F of rated capacitance value						
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	3	3	3	3
		Z-40°C/Z+20°C	8	6	4	3	3	3
		For capacitance > 1000 μ F						
		Z-25°C/Z+20°C	Add 0.5 for every multiple 1000 μ F of rated capacitance value					
Z-40°C/Z+20°C	Add 1 for every multiple 1000 μ F of rated capacitance value							
Lifetime Test								
Endurance 105°C (V_R & I_R applied)	Test	2 000 hours					$\geq \phi$ D 8 mm	
		1 000 hours					ϕ D 5 ~ 6.3 mm	
	$\Delta C/C_R$	$\leq \pm 20\%$ of initial measured value						
	$\tan \delta$	$\leq 200\%$ of initial specified value						
	I_{Leak}	\leq the initial specified value						
Shelf Life 105°C ($V_R = 0$)	Test	1 000 hours						
	$\Delta C/C_R$	$\leq \pm 20\%$ of initial measured value						
	$\tan \delta$	$\leq 200\%$ of initial specified value						
	I_{Leak}	\leq the initial specified value						
	Before measurement: Restore capacitor to 20°C, apply V_R for 30 min according JIS-C-5101-4							

STANDARD RATINGS

Part number shows bulk version with straight leads

V _R (V)	C _R (μF)	∅ 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	22	5	11	3000	80	KZ220M6R3C110A
	33	5	11	2000	90	KZ330M6R3C110A
	47	5	11	1500	140	KZ470M6R3C110A
	56	5	11	1500	150	KZ560M6R3C110A
	68	5	11	1100	160	KZ680M6R3C110A
	100	5	11	1000	170	KZ101M6R3C110A
	120	5	11	900	173	KZ121M6R3C110A
	150	5	11	850	178	KZ151M6R3C110A
	180	6.3	11	720	215	KZ181M6R3E110A
	220	6.3	11	620	295	KZ221M6R3E110A
	270	6.3	11	500	320	KZ271M6R3E110A
	330	6.3	11	450	380	KZ331M6R3E110A
	470	8	11.5	220	460	KZ471M6R3F115A
	560	8	11.5	220	490	KZ561M6R3F115A
	680	8	11.5	190	520	KZ681M6R3F115A
	820	8	11.5	190	605	KZ821M6R3F115A
	1000	8	11.5	180	680	KZ102M6R3F115A
	1200	10	12.5	150	750	KZ122M6R3G125A
	1500	10	12.5	140	820	KZ152M6R3G125A
	1800	10	16	120	920	KZ182M6R3G160A
	2200	10	20	100	1150	KZ222M6R3G200A
	2700	10	20	75	1500	KZ272M6R3G200A
3300	10	20	60	1620	KZ332M6R3G200A	
3900	13	25	58	1820	KZ392M6R3I250A	
4700	13	25	40	1920	KZ472M6R3I250A	
5600	13	30	38	2210	KZ562M6R3I300A	
6800	16	25	32	2380	KZ682M6R3J250A	
10	22	5	11	2500	90	KZ220M010C110A
	33	5	11	2000	105	KZ330M010C110A
	47	5	11	1300	155	KZ470M010C110A
	56	5	11	1200	165	KZ560M010C110A
	68	5	11	1000	175	KZ680M010C110A
	100	5	11	750	215	KZ101M010C110A
	120	6.3	11	730	240	KZ121M010E110A
	150	6.3	11	600	225	KZ151M010E110A
	180	6.3	11	580	280	KZ181M010E110A
	220	6.3	11	430	300	KZ221M010E110A
	270	8	11.5	280	405	KZ271M010F115A
	330	8	11.5	250	465	KZ331M010F115A
	470	8	11.5	220	500	KZ471M010F115A
	560	8	11.5	170	620	KZ561M010F115A
	680	8	11.5	120	750	KZ681M010F115A
	820	10	12.5	100	805	KZ821M010G125A
	1000	10	12.5	80	1050	KZ102M010G125A

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)	ϕ D (mm)	L (mm)	Z - Max. Impedance +20°C - 100kHz (m Ω)	I_R - Max. Ripple Current +105°C - 100kHz (mA rms)	CapXon Part Number
10	1200	10	16	65	1150	KZ122M010G160A
	1500	10	16	62	1210	KZ152M010G160A
	1800	10	20	60	1280	KZ182M010G200A
	2200	10	20	50	1520	KZ222M010G200A
	2700	13	20	48	1580	KZ272M010I200A
	3300	13	20	43	1700	KZ332M010I200A
	3900	13	25	40	1860	KZ392M010I250A
	4700	13	25	38	1950	KZ472M010I250A
	5600	16	25	33	2290	KZ562M010J250A
	6800	16	25	28	2480	KZ682M010J250A
16	10	5	11	4000	80	KZ100M016C110A
	22	5	11	2000	110	KZ220M016C110A
	33	5	11	1800	114	KZ330M016C110A
	47	5	11	1000	160	KZ470M016C110A
	56	5	11	800	180	KZ560M016C110A
	68	5	11	650	200	KZ680M016C110A
	100	5	11	550	255	KZ101M016C110A
	120	6.3	11	450	270	KZ121M016E110A
	150	6.3	11	400	292	KZ151M016E110A
	180	6.3	11	320	380	KZ181M016E110A
	220	6.3	11	250	430	KZ221M016E110A
	270	8	11.5	200	480	KZ271M016F115A
	330	8	11.5	150	595	KZ331M016F115A
	470	8	11.5	150	650	KZ471M016F115A
	560	8	11.5	120	730	KZ561M016F115A
	680	10	12.5	90	890	KZ681M016G125A
	820	10	12.5	85	980	KZ821M016G125A
	1000	10	16	70	1180	KZ102M016G160A
	1200	10	20	60	1320	KZ122M016G200A
	1500	10	20	56	1450	KZ152M016G200A
	1800	10	20	53	1510	KZ182M016G200A
	2200	13	20	40	1820	KZ222M016I200A
	2700	13	20	35	2050	KZ272M016I200A
	3300	13	25	33	2300	KZ332M016I250A
	3900	16	25	33	2550	KZ392M016J250A
	4700	16	25	32	2580	KZ472M016J250A
	5600	16	31.5	30	2650	KZ562M016J315A
	6800	16	31.5	24	2900	KZ682M016J315A
25	4.7	5	11	3500	72	KZ4R7M025C110A
	5.6	5	11	3500	75	KZ5R6M025C110A
	6.8	5	11	2800	83	KZ6R8M025C110A
	10	5	11	2500	87	KZ100M025C110A
	22	5	11	1800	118	KZ220M025C110A
	33	5	11	1400	155	KZ330M025C110A

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STANDARD RATINGS

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25	47	5	11	900	183	KZ470M025C110A
	56	5	11	830	207	KZ560M025C110A
	68	5	11	690	210	KZ680M025C110A
	100	6.3	11	340	378	KZ101M025E110A
	120	6.3	11	330	380	KZ121M025E110A
	150	8	11.5	325	390	KZ151M025F115A
	180	8	11.5	250	430	KZ181M025F115A
	220	8	11.5	150	550	KZ221M025F115A
	270	8	11.5	150	520	KZ271M025F115A
	330	8	11.5	130	710	KZ331M025F115A
	470	8	11.5	78	980	KZ471M025F115A
	470	8	16	70	1050	KZ471M025F160A
	560	10	16	65	1080	KZ561M025G160A
	680	10	16	65	1100	KZ681M025G160A
	820	10	20	50	1350	KZ821M025G200A
	1000	10	20	45	1580	KZ102M025G200A
	1200	13	20	40	1720	KZ122M025I200A
	1500	13	20	40	1780	KZ152M025I200A
	1800	13	20	35	1980	KZ182M025I200A
	2200	13	25	33	2000	KZ222M025I250A
2700	13	25	32	2250	KZ272M025I250A	
3300	16	25	27	2580	KZ332M025J250A	
4700	16	31.5	25	2850	KZ472M025J315A	
5600	16	35.5	25	3000	KZ562M025J355A	
6800	18	35.5	25	3550	KZ682M025K355A	
35	4.7	5	11	3500	87	KZ4R7M035C110A
	5.6	5	11	3000	95	KZ5R6M035C110A
	6.8	5	11	2700	98	KZ6R8M035C110A
	10	5	11	2200	107	KZ100M035C110A
	22	5	11	1500	150	KZ220M035C110A
	33	5	11	1200	180	KZ330M035C110A
	47	5	11	750	257	KZ470M035C110A
	56	6.3	11	600	283	KZ560M035E110A
	68	6.3	11	550	290	KZ680M035E110A
	100	6.3	11	260	430	KZ101M035E110A
	120	8	11.5	200	470	KZ121M035F115A
	150	8	11.5	200	510	KZ151M035F115A
	180	8	11.5	180	570	KZ181M035F115A
	220	8	11.5	130	620	KZ221M035F115A
	270	10	12.5	120	850	KZ271M035G125A
	330	8	16	80	1050	KZ331M035F160A
	470	10	16	65	1100	KZ471M035G160A
	560	13	20	60	1300	KZ561M035I200A
680	13	20	56	1570	KZ681M035I200A	

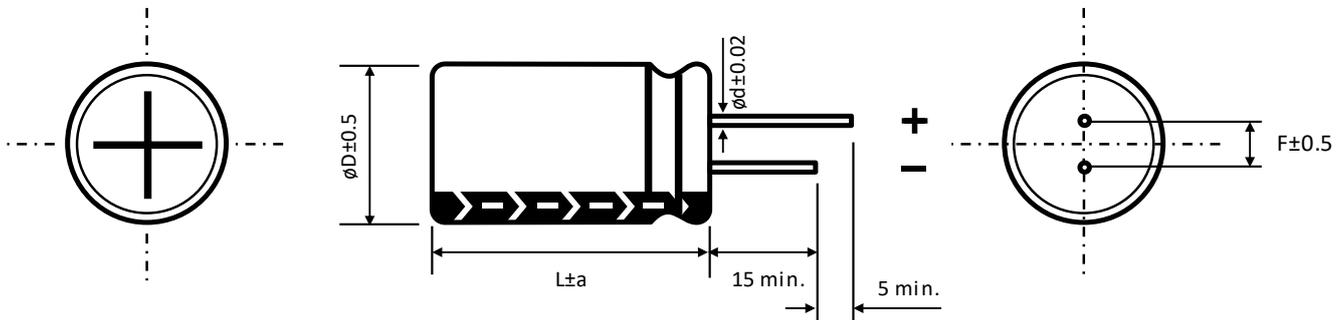
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35	820	13	20	48	1700	KZ821M035I200A
	1000	13	20	42	1820	KZ102M035I200A
	1200	13	25	38	2130	KZ122M035I250A
	1500	13	25	38	2150	KZ152M035I250A
	1800	13	25	35	2450	KZ182M035I250A
	2200	16	25	34	2650	KZ222M035J250A
	2700	16	31.5	30	2690	KZ272M035J315A
	3300	16	35.5	27	2750	KZ332M035J355A
	4700	18	35.5	25	2940	KZ472M035K355A
5600	18	35.5	24	3050	KZ562M035K355A	
50	1	5	11	3800	42	KZ010M050C110A
	2.2	5	11	2800	55	KZ2R2M050C110A
	3.3	5	11	2000	62	KZ3R3M050C110A
	4.7	5	11	2000	90	KZ4R7M050C110A
	5.6	5	11	1800	108	KZ5R6M050C110A
	6.8	5	11	1800	112	KZ6R8M050C110A
	10	5	11	1750	120	KZ100M050C110A
	22	5	11	1500	150	KZ220M050C110A
	33	6.3	11	780	233	KZ330M050E110A
	47	6.3	11	650	270	KZ470M050E110A
	56	6.3	11	600	290	KZ560M050E110A
	68	6.3	11	500	310	KZ680M050E110A
	100	8	11.5	170	480	KZ101M050F115A
	120	10	12.5	164	500	KZ121M050G125A
	150	10	12.5	160	560	KZ151M050G125A
	180	10	12.5	140	580	KZ181M050G125A
	220	10	16	90	640	KZ221M050G160A
	270	10	16	80	905	KZ271M050G160A
	330	10	16	70	1050	KZ331M050G160A
	470	13	20	50	1450	KZ471M050I200A
	560	13	20	50	1510	KZ561M050I200A
	680	13	20	50	1750	KZ681M050I200A
	820	13	25	40	1980	KZ821M050I250A
	1000	13	25	40	2000	KZ102M050I250A
	1200	16	25	38	2200	KZ122M050J250A
	1500	16	25	38	2300	KZ152M050J250A
	1800	16	31.5	36	2610	KZ182M050J315A
	2200	16	31.5	33	2900	KZ222M050J315A
	2700	18	35.5	28	3000	KZ272M050K355A
	3300	18	35.5	26	3050	KZ332M050K355A

See "PACKAGING INFORMATION" to taped or formed products.

DIMENSIONS ▪ All dimensions in mm


ϕD	5	6.3	8		10	13	16	18
F	2	2.5	3.5		5	5	7.5	7.5
ϕd	0.5		L < 20	L ≥ 20	0.6		0.8	
			0.5	0.6				

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

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

C_R (μF) / Frequency (Hz)	50/60	100/120	400	1k	10k	50k - 100k
$C_R \leq 10$	0.47	0.59	0.76	0.85	0.97	1
$10 < C_R \leq 100$	0.52	0.65	0.8	0.89	0.97	1
$100 < C_R \leq 1000$	0.58	0.72	0.84	0.9	0.98	1
$1000 \leq C_R$	0.63	0.78	0.87	0.91	0.98	1

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



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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