

KZN Series

- Adoption of innovative high stability electrolyte
- High ripple current and long endurance
- Rated voltage range : 6.3 to 100V_{dc}, Capacitance range : 56 to 22,000μF
- Endurance with ripple current : 9,000/10,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

KZN

Higher ripple
KZM

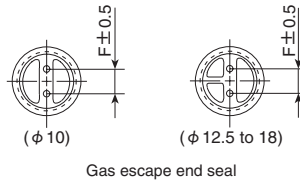
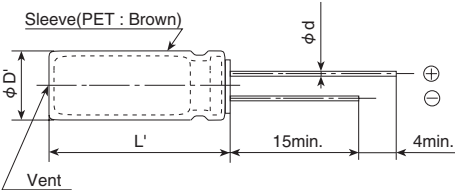


SPECIFICATIONS

Items	Characteristics	
Category	-40 to +105°C	
Temperature Range		
Rated Voltage Range	6.3 to 100V _{dc}	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	I=0.01CV or 3μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 2 minutes)	
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	6.3V 10V 16V 25V 35V 50V 63V 80V 100V
	tan δ (Max.)	0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.09 0.08
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)	
Low Temperature Characteristics (Max. Impedance Ratio)	Z (-25°C) / Z (+20°C)	2max.
	Z (-40°C) / Z (+20°C)	3max.
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for the specified period of time at 105°C.	
	Case size	φ 10 × 12.5L φ 10 × 16L, 20L, 25L φ 12.5 to φ 18
	Time	9,000 hours 10,000 hours
	Capacitance change	≤ ±25% of the initial value (6.3, 10V _{dc} : ≤ ±30%)
	D.F. (tan δ)	≤ 200% of the initial specified value
	Leakage current	≤ The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.	
	Capacitance change	≤ ±25% of the initial value (6.3, 10V _{dc} : ≤ ±30%)
	D.F. (tan δ)	≤ 200% of the initial specified value
	Leakage current	≤ The initial specified value

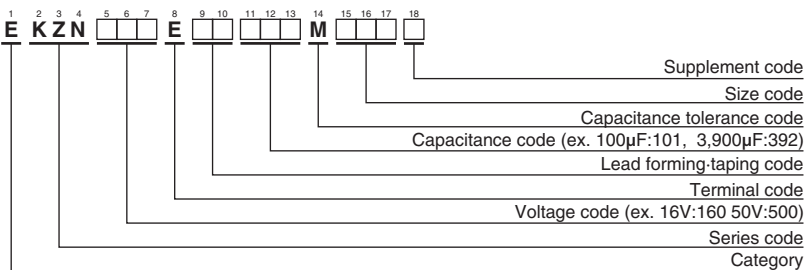
DIMENSIONS [mm]

- Terminal Code : E



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
D'	φD + 0.5max.			
L'	L + 1.5max.			

PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"



KZN Series

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max./100kHz)		Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max./100kHz)		Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.	
			20°C	-10°C						20°C	-10°C			
6.3	1,200	10×12.5	0.053	0.16	1,330	EKZN6R3E□□122MJC5S	16	4,700	18×20	0.020	0.060	3,450	EKZN160E□□472MM20S	
	1,800	10×16	0.038	0.12	1,760	EKZN6R3E□□182MJ16S		5,600	16×25	0.017	0.051	3,810	EKZN160E□□562ML25S	
	2,700	10×20	0.028	0.084	1,960	EKZN6R3E□□272MJ20S		6,800	16×31.5	0.016	0.048	4,100	EKZN160E□□682MLN3S	
	2,700	12.5×16	0.035	0.11	1,900	EKZN6R3E□□272MK16S		6,800	18×25	0.016	0.048	3,880	EKZN160E□□682MM25S	
	3,300	10×25	0.026	0.072	2,250	EKZN6R3E□□332MJ25S		8,200	16×35.5	0.014	0.042	4,280	EKZN160E□□822MLP1S	
	3,900	12.5×20	0.025	0.075	2,480	EKZN6R3E□□392MK20S		8,200	18×31.5	0.014	0.042	4,190	EKZN160E□□822MMN3S	
	5,600	12.5×25	0.019	0.057	2,900	EKZN6R3E□□562MK25S		10,000	16×40	0.013	0.039	4,580	EKZN160E□□103ML40S	
	6,800	12.5×30	0.018	0.054	3,450	EKZN6R3E□□682MK30S		10,000	18×35.5	0.012	0.036	4,380	EKZN160E□□103MMP1S	
	6,800	16×20	0.021	0.063	3,250	EKZN6R3E□□682ML20S		12,000	18×40	0.011	0.033	4,960	EKZN160E□□123MM40S	
	8,200	12.5×35	0.016	0.048	3,570	EKZN6R3E□□822MK35S		25	470	10×12.5	0.053	0.16	1,700	EKZN250E□□471MJC5S
	8,200	18×20	0.020	0.060	3,450	EKZN6R3E□□822MM20S			680	10×16	0.038	0.12	2,000	EKZN250E□□681MJ16S
	10,000	16×25	0.017	0.051	3,630	EKZN6R3E□□103ML25S			820	10×20	0.028	0.084	2,500	EKZN250E□□821MJ20S
	12,000	16×31.5	0.016	0.048	4,100	EKZN6R3E□□123MLN3S			1,000	12.5×16	0.035	0.11	2,400	EKZN250E□□102MK16S
	12,000	18×25	0.016	0.048	3,880	EKZN6R3E□□123MM25S			1,200	10×25	0.026	0.072	2,900	EKZN250E□□122MJ25S
	15,000	16×35.5	0.014	0.042	4,280	EKZN6R3E□□153MLP1S			1,500	12.5×20	0.025	0.075	2,600	EKZN250E□□152MK20S
	15,000	18×31.5	0.014	0.042	4,190	EKZN6R3E□□153MMN3S			1,800	12.5×25	0.019	0.057	3,200	EKZN250E□□182MK25S
18,000	16×40	0.013	0.039	4,580	EKZN6R3E□□183ML40S	2,200	12.5×30		0.018	0.054	3,660	EKZN250E□□222MK30S		
18,000	18×35.5	0.012	0.036	4,380	EKZN6R3E□□183MMP1S	2,200	16×20		0.021	0.063	3,330	EKZN250E□□222ML20S		
22,000	18×40	0.011	0.033	4,960	EKZN6R3E□□223MM40S	2,700	12.5×35		0.016	0.048	4,120	EKZN250E□□272MK35S		
10	1,000	10×12.5	0.053	0.16	1,700	EKZN100E□□102MJC5S	3,300		16×25	0.017	0.051	3,810	EKZN250E□□332ML25S	
	1,200	10×16	0.038	0.12	2,000	EKZN100E□□122MJ16S	3,300		18×20	0.020	0.060	3,450	EKZN250E□□332MM20S	
	1,800	10×20	0.028	0.084	2,500	EKZN100E□□182MJ20S	4,700		16×31.5	0.016	0.048	4,100	EKZN250E□□472MLN3S	
	1,800	12.5×16	0.035	0.11	2,400	EKZN100E□□182MK16S	4,700		18×25	0.016	0.048	3,880	EKZN250E□□472MM25S	
	2,200	10×25	0.026	0.072	2,900	EKZN100E□□222MJ25S	5,600		16×35.5	0.014	0.042	4,280	EKZN250E□□562MLP1S	
	2,700	12.5×20	0.025	0.075	2,600	EKZN100E□□272MK20S	5,600		18×31.5	0.014	0.042	4,190	EKZN250E□□562MMN3S	
	3,900	12.5×25	0.019	0.057	3,200	EKZN100E□□392MK25S	6,800	16×40	0.013	0.039	4,580	EKZN250E□□682ML40S		
	4,700	12.5×30	0.018	0.054	3,660	EKZN100E□□472MK30S	6,800	18×35.5	0.012	0.036	4,380	EKZN250E□□682MMP1S		
	4,700	16×20	0.021	0.063	3,330	EKZN100E□□472ML20S	8,200	18×40	0.011	0.033	4,960	EKZN250E□□822MM40S		
	5,600	12.5×35	0.016	0.048	4,120	EKZN100E□□562MK35S	35	270	10×12.5	0.053	0.16	1,700	EKZN350E□□271MJC5S	
	5,600	18×20	0.020	0.060	3,450	EKZN100E□□562MM20S		390	10×16	0.038	0.12	2,000	EKZN350E□□391MJ16S	
	6,800	16×25	0.017	0.051	3,810	EKZN100E□□682ML25S		470	10×20	0.028	0.084	2,500	EKZN350E□□471MJ20S	
	8,200	16×31.5	0.016	0.048	4,100	EKZN100E□□822MLN3S		560	12.5×16	0.035	0.11	2,400	EKZN350E□□561MK16S	
	8,200	18×25	0.016	0.048	3,880	EKZN100E□□822MM25S		680	10×25	0.026	0.072	2,900	EKZN350E□□681MJ25S	
	10,000	16×35.5	0.014	0.042	4,280	EKZN100E□□103MLP1S		820	12.5×20	0.025	0.075	2,600	EKZN350E□□821MK20S	
	10,000	18×31.5	0.014	0.042	4,190	EKZN100E□□103MMN3S		1,200	12.5×25	0.019	0.057	3,200	EKZN350E□□122MK25S	
12,000	16×40	0.013	0.039	4,580	EKZN100E□□123ML40S	1,500		12.5×30	0.018	0.054	3,660	EKZN350E□□152MK30S		
12,000	18×35.5	0.012	0.036	4,380	EKZN100E□□123MMP1S	1,500		16×20	0.021	0.063	3,330	EKZN350E□□152ML20S		
15,000	18×40	0.011	0.033	4,960	EKZN100E□□153MM40S	1,800		12.5×35	0.016	0.048	4,120	EKZN350E□□182MK35S		
16	680	10×12.5	0.053	0.16	1,700	EKZN160E□□681MJC5S		1,800	16×25	0.017	0.051	3,810	EKZN350E□□182ML25S	
	1,000	10×16	0.038	0.12	2,000	EKZN160E□□102MJ16S		1,800	18×20	0.020	0.060	3,450	EKZN350E□□182MM20S	
	1,500	10×20	0.028	0.084	2,500	EKZN160E□□152MJ20S		2,700	16×31.5	0.016	0.048	4,100	EKZN350E□□272MLN3S	
	1,500	12.5×16	0.035	0.11	2,400	EKZN160E□□152MK16S		2,700	18×25	0.016	0.048	3,880	EKZN350E□□272MM25S	
	1,800	10×25	0.026	0.072	2,900	EKZN160E□□182MJ25S		3,300	16×35.5	0.014	0.042	4,280	EKZN350E□□332MLP1S	
	2,200	12.5×20	0.025	0.075	2,600	EKZN160E□□222MK20S		3,300	18×31.5	0.014	0.042	4,190	EKZN350E□□332MMN3S	
	2,700	12.5×25	0.019	0.057	3,200	EKZN160E□□272MK25S	3,900	16×40	0.013	0.039	4,580	EKZN350E□□392ML40S		
	3,300	12.5×30	0.018	0.054	3,660	EKZN160E□□332MK30S	3,900	18×35.5	0.012	0.036	4,380	EKZN350E□□392MMP1S		
	3,900	12.5×35	0.016	0.048	4,120	EKZN160E□□392MK35S	4,700	18×40	0.011	0.033	4,960	EKZN350E□□472MM40S		
	3,900	16×20	0.021	0.063	3,330	EKZN160E□□392ML20S								

□□ : Enter the appropriate lead forming or taping code.



KZN Series

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max./100kHz)		Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Impedance (Ω max./100kHz)		Rated ripple current (mA _{rms} /105°C, 100kHz)	Part No.
			20°C	-10°C						20°C	-10°C		
50	150	10×12.5	0.073	0.22	1,280	EKZN500E□□151MJCS5	80	220	10×25	0.055	0.22	1,780	EKZN800E□□221MJ25S
	220	10×16	0.053	0.16	1,650	EKZN500E□□221MJ16S		220	12.5×16	0.090	0.27	1,430	EKZN800E□□221MK16S
	330	10×20	0.038	0.12	2,060	EKZN500E□□331MJ20S		270	10×25	0.055	0.22	1,780	EKZN800E□□271MJ25S
	330	12.5×16	0.045	0.14	2,160	EKZN500E□□331MK16S		270	12.5×20	0.048	0.15	1,800	EKZN800E□□271MK20S
	390	10×25	0.032	0.10	2,420	EKZN500E□□391MJ25S		330	12.5×20	0.048	0.15	1,800	EKZN800E□□331MK20S
	470	12.5×20	0.032	0.10	2,300	EKZN500E□□471MK20S		390	12.5×25	0.038	0.12	2,210	EKZN800E□□391MK25S
	680	12.5×25	0.025	0.080	2,800	EKZN500E□□681MK25S		470	12.5×30	0.033	0.11	2,520	EKZN800E□□471MK30S
	820	12.5×30	0.023	0.074	3,370	EKZN500E□□821MK30S		470	16×20	0.036	0.12	2,150	EKZN800E□□471ML20S
	820	16×20	0.026	0.084	3,070	EKZN500E□□821ML20S		560	12.5×35	0.026	0.078	2,860	EKZN800E□□561MK35S
	1,000	12.5×35	0.021	0.067	3,810	EKZN500E□□102MK35S		680	12.5×40	0.026	0.078	3,150	EKZN800E□□681MK40S
	1,200	16×25	0.022	0.070	3,510	EKZN500E□□122ML25S		680	16×25	0.028	0.084	2,620	EKZN800E□□681ML25S
	1,200	18×20	0.025	0.075	3,120	EKZN500E□□122MM20S		680	18×20	0.032	0.096	2,280	EKZN800E□□681MM20S
	1,500	16×31.5	0.019	0.057	4,030	EKZN500E□□152MLN3S		820	16×31.5	0.022	0.066	2,900	EKZN800E□□821MLN3S
	1,500	18×25	0.021	0.063	3,530	EKZN500E□□152MM25S		820	18×25	0.027	0.081	2,750	EKZN800E□□821MM25S
	1,800	16×35.5	0.016	0.048	4,220	EKZN500E□□182MLP1S		1,000	18×25	0.027	0.081	2,750	EKZN800E□□102MM25S
	2,200	16×40	0.014	0.042	4,500	EKZN500E□□222ML40S		1,000	16×35.5	0.020	0.060	3,150	EKZN800E□□102MLP1S
2,200	18×31.5	0.016	0.048	4,080	EKZN500E□□222MMN3S	1,200	16×40	0.018	0.054	3,710	EKZN800E□□122ML40S		
2,700	18×35.5	0.013	0.039	4,270	EKZN500E□□272MMP1S	1,200	18×31.5	0.020	0.060	3,150	EKZN800E□□122MMN3S		
3,300	18×40	0.012	0.036	4,850	EKZN500E□□332MM40S	1,500	18×35.5	0.018	0.054	3,710	EKZN800E□□152MMP1S		
63	120	10×12.5	0.090	0.36	990	EKZN630E□□121MJCS5	1,800	18×40	0.017	0.051	4,060	EKZN800E□□182MM40S	
	180	10×16	0.061	0.25	1,200	EKZN630E□□181MJ16S	100	56	10×12.5	0.14	0.56	860	EKZN101E□□560MJCS5
	270	10×20	0.045	0.18	1,570	EKZN630E□□271MJ20S		82	10×16	0.090	0.36	1,150	EKZN101E□□820MJ16S
	270	12.5×16	0.058	0.18	1,570	EKZN630E□□271MK16S		100	10×20	0.068	0.28	1,570	EKZN101E□□101MJ20S
	330	10×25	0.037	0.12	1,990	EKZN630E□□331MJ25S		120	10×20	0.068	0.28	1,570	EKZN101E□□121MJ20S
	390	12.5×20	0.033	0.10	1,990	EKZN630E□□391MK20S		120	12.5×16	0.090	0.27	1,430	EKZN101E□□121MK16S
	560	12.5×25	0.026	0.080	2,460	EKZN630E□□561MK25S		150	10×25	0.055	0.22	1,780	EKZN101E□□151MJ25S
	680	12.5×30	0.024	0.075	2,760	EKZN630E□□681MK30S		180	12.5×20	0.048	0.15	1,800	EKZN101E□□181MK20S
	680	16×20	0.027	0.085	2,380	EKZN630E□□681ML20S		220	12.5×25	0.038	0.12	2,210	EKZN101E□□221MK25S
	820	12.5×35	0.022	0.068	3,040	EKZN630E□□821MK35S		270	12.5×30	0.033	0.11	2,520	EKZN101E□□271MK30S
	820	18×20	0.026	0.078	2,530	EKZN630E□□821MM20S		270	16×20	0.036	0.12	2,150	EKZN101E□□271ML20S
	1,000	16×25	0.024	0.072	2,890	EKZN630E□□102ML25S		330	16×20	0.036	0.12	2,150	EKZN101E□□331ML20S
	1,200	16×31.5	0.020	0.060	3,280	EKZN630E□□122MLN3S		390	12.5×35	0.026	0.078	2,860	EKZN101E□□391MK35S
	1,200	18×25	0.022	0.066	2,930	EKZN630E□□122MM25S		390	16×25	0.028	0.084	2,620	EKZN101E□□391ML25S
	1,500	16×35.5	0.018	0.054	3,440	EKZN630E□□152MLP1S		390	18×20	0.032	0.096	2,280	EKZN101E□□391MM20S
	1,500	18×31.5	0.018	0.054	3,380	EKZN630E□□152MMN3S		470	12.5×40	0.026	0.078	3,150	EKZN101E□□471MK40S
1,800	16×40	0.016	0.048	3,690	EKZN630E□□182ML40S	470		16×31.5	0.022	0.066	2,900	EKZN101E□□471MLN3S	
1,800	18×35.5	0.017	0.051	3,550	EKZN630E□□182MMP1S	560	16×31.5	0.022	0.066	2,900	EKZN101E□□561MLN3S		
2,200	18×40	0.015	0.045	3,930	EKZN630E□□222MM40S	560	16×35.5	0.020	0.060	3,150	EKZN101E□□561MLP1S		
80	82	10×12.5	0.14	0.56	860	EKZN800E□□820MJCS5	560	18×25	0.027	0.081	2,750	EKZN101E□□561MM25S	
	100	10×12.5	0.14	0.56	860	EKZN800E□□101MJCS5	680	16×35.5	0.020	0.060	3,150	EKZN101E□□681MLP1S	
	120	10×16	0.090	0.36	1,150	EKZN800E□□121MJ16S	680	16×40	0.018	0.054	3,710	EKZN101E□□681ML40S	
	150	10×16	0.090	0.36	1,150	EKZN800E□□151MJ16S	680	18×31.5	0.020	0.060	3,150	EKZN101E□□681MMN3S	
	180	10×20	0.068	0.28	1,570	EKZN800E□□181MJ20S	820	16×40	0.018	0.054	3,710	EKZN101E□□821ML40S	
	180	12.5×16	0.090	0.27	1,430	EKZN800E□□181MK16S	820	18×35.5	0.018	0.054	3,710	EKZN101E□□821MMP1S	
	220	10×20	0.068	0.28	1,570	EKZN800E□□221MJ20S	1,000	18×40	0.017	0.051	4,060	EKZN101E□□102MM40S	

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

◎ Frequency Multipliers

Capacitance(μF)	Frequency(Hz)			
	120	1k	10k	100k
56 to 180	0.40	0.75	0.90	1.00
220 to 560	0.50	0.85	0.94	1.00
680 to 1,800	0.60	0.87	0.95	1.00
2,200 to 3,900	0.75	0.90	0.95	1.00
4,700 to 22,000	0.85	0.95	0.98	1.00

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.



- Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.
- Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.
- The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.
In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

[Part Numbering System](#)

[Part Numbering System \(Appendix\)](#)

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