

KZE Series

- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current: 2,000 to 5,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant



SPECIFICATIONS

| Items | Characteristics | | | | | | | | | |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------|-------------------|-----------------------------|------|------|------|------|------|
| Category | -40 to +105°C | | | | | | | | | |
| Temperature Range | -40 to +105°C | | | | | | | | | |
| 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. | | | | | | | | | |
| | Time | φ 5 & φ 6.3 : 2,000hours | φ 8 : 3,000hours | φ 10 : 4,000hours | φ 12.5 to φ 18 : 5,000hours | | | | | |
| | Capacitance change | ≤ ±25% of the initial value | | | | | | | | |
| | 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 | | | | | | | | |
| | D.F. (tan δ) | ≤ 200% of the initial specified value | | | | | | | | |
| | Leakage current | ≤ The initial specified value | | | | | | | | |

DIMENSIONS [mm]

- Terminal Code : E



| φD | 5 | 6.3 | 8 | 10, 12.5 | 16, 18 |
|-----|-------------|-----|-----|----------|--------|
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.8 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 7.5 |
| φD' | φ D+0.5max. | | | | |
| L' | L+1.5max. | | | | |

PART NUMBERING SYSTEM



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

◆ STANDARD RATINGS

| WV (V _{ac}) | Cap (µF) | Case size φD×L(mm) | Impedance (Ω max./100kHz) | | Rated ripple current (mA rms/105°C, 100kHz) | Part No. | WV (V _{ac}) | 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 | 150 | 5×11 | 0.30 | 1.0 | 250 | EKZE6R3E□□151ME11D | 35 | 270 | 8×20 | 0.041 | 0.13 | 1,250 | EKZE350E□□271MH20D | |
| | 330 | 6.3×11 | 0.13 | 0.41 | 405 | EKZE6R3E□□331MF11D | | 330 | 10×16 | 0.038 | 0.12 | 1,430 | EKZE350E□□331MJ16S | |
| | 560 | 8×11.5 | 0.072 | 0.22 | 760 | EKZE6R3E□□561MHB5D | | 470 | 10×20 | 0.023 | 0.069 | 1,820 | EKZE350E□□471MJ20S | |
| | 820 | 8×15 | 0.056 | 0.17 | 995 | EKZE6R3E□□821MH15D | | 560 | 10×25 | 0.022 | 0.066 | 2,150 | EKZE350E□□561MJ25S | |
| | 1,000 | 10×12.5 | 0.053 | 0.16 | 1,030 | EKZE6R3E□□102MJC5S | | 680 | 12.5×20 | 0.021 | 0.053 | 2,360 | EKZE350E□□681MK20S | |
| | 1,200 | 8×20 | 0.041 | 0.13 | 1,250 | EKZE6R3E□□122MH20D | | 1,000 | 12.5×25 | 0.018 | 0.045 | 2,770 | EKZE350E□□102MK25S | |
| | 1,200 | 10×16 | 0.038 | 0.12 | 1,430 | EKZE6R3E□□122MJ16S | | 1,200 | 12.5×30 | 0.016 | 0.041 | 3,290 | EKZE350E□□122MK30S | |
| | 1,500 | 10×20 | 0.023 | 0.069 | 1,820 | EKZE6R3E□□152MJ20S | | 1,200 | 16×20 | 0.018 | 0.045 | 3,140 | EKZE350E□□122ML20S | |
| | 2,200 | 10×25 | 0.022 | 0.066 | 2,150 | EKZE6R3E□□222MJ25S | | 1,500 | 12.5×35 | 0.015 | 0.039 | 3,400 | EKZE350E□□152MK35S | |
| | 3,300 | 12.5×20 | 0.021 | 0.053 | 2,360 | EKZE6R3E□□332MK20S | | 1,800 | 16×25 | 0.016 | 0.043 | 3,460 | EKZE350E□□182ML25S | |
| | 3,900 | 12.5×25 | 0.018 | 0.045 | 2,770 | EKZE6R3E□□392MK25S | | 50 | 22 | 5×11 | 0.34 | 1.18 | 238 | EKZE500E□□220ME11D |
| | 4,700 | 12.5×30 | 0.016 | 0.041 | 3,290 | EKZE6R3E□□472MK20S | | | 56 | 6.3×11 | 0.14 | 0.50 | 385 | EKZE500E□□560MF11D |
| | 5,600 | 12.5×35 | 0.015 | 0.039 | 3,400 | EKZE6R3E□□562MK35S | | | 100 | 8×11.5 | 0.074 | 0.22 | 724 | EKZE500E□□101MHB5D |
| | 5,600 | 16×20 | 0.018 | 0.045 | 3,140 | EKZE6R3E□□562ML20S | | | 120 | 8×15 | 0.061 | 0.18 | 950 | EKZE500E□□121MH15D |
| 6,800 | 16×25 | 0.016 | 0.043 | 3,460 | EKZE6R3E□□682ML25S | 150 | 10×12.5 | | 0.061 | 0.18 | 979 | EKZE500E□□151MJC5S | | |
| 10 | 100 | 5×11 | 0.30 | 1.0 | 250 | EKZE100E□□101ME11D | 180 | | 8×20 | 0.046 | 0.14 | 1,190 | EKZE500E□□181MH20D | |
| | 220 | 6.3×11 | 0.13 | 0.41 | 405 | EKZE100E□□221MF11D | 220 | | 10×16 | 0.042 | 0.12 | 1,370 | EKZE500E□□221MJ16S | |
| | 470 | 8×11.5 | 0.072 | 0.22 | 760 | EKZE100E□□471MHB5D | 270 | | 10×20 | 0.030 | 0.090 | 1,580 | EKZE500E□□271MJ20S | |
| | 680 | 8×15 | 0.056 | 0.17 | 995 | EKZE100E□□681MH15D | 330 | | 10×25 | 0.028 | 0.085 | 1,870 | EKZE500E□□331MJ25S | |
| | 680 | 10×12.5 | 0.053 | 0.16 | 1,030 | EKZE100E□□681MJC5S | 470 | | 12.5×20 | 0.027 | 0.068 | 2,050 | EKZE500E□□471MK20S | |
| | 1,000 | 8×20 | 0.041 | 0.13 | 1,250 | EKZE100E□□102MH20D | 560 | | 12.5×25 | 0.023 | 0.059 | 2,410 | EKZE500E□□561MK25S | |
| | 1,000 | 10×16 | 0.038 | 0.12 | 1,430 | EKZE100E□□102MJ16S | 680 | | 12.5×30 | 0.021 | 0.052 | 2,860 | EKZE500E□□681MK30S | |
| | 1,200 | 10×20 | 0.023 | 0.069 | 1,820 | EKZE100E□□122MJ20S | 820 | | 12.5×35 | 0.019 | 0.051 | 2,960 | EKZE500E□□821MK35S | |
| | 1,500 | 10×25 | 0.022 | 0.066 | 2,150 | EKZE100E□□152MJ25S | 820 | | 16×20 | 0.023 | 0.059 | 2,730 | EKZE500E□□821ML20S | |
| | 2,200 | 12.5×20 | 0.021 | 0.053 | 2,360 | EKZE100E□□222MK20S | 1,000 | 16×25 | 0.021 | 0.056 | 3,010 | EKZE500E□□102ML25S | | |
| | 3,300 | 12.5×25 | 0.018 | 0.045 | 2,770 | EKZE100E□□332MK25S | 63 | 15 | 5×11 | 0.88 | 3.5 | 165 | EKZE630E□□150ME11D | |
| | 3,900 | 12.5×30 | 0.016 | 0.041 | 3,290 | EKZE100E□□392MK30S | | 33 | 6.3×11 | 0.35 | 1.4 | 265 | EKZE630E□□330MF11D | |
| | 3,900 | 16×20 | 0.018 | 0.045 | 3,140 | EKZE100E□□392ML20S | | 56 | 8×11.5 | 0.22 | 0.88 | 500 | EKZE630E□□560MHB5D | |
| | 4,700 | 12.5×35 | 0.015 | 0.039 | 3,400 | EKZE100E□□472MK35S | | 82 | 8×15 | 0.16 | 0.64 | 665 | EKZE630E□□820MH15D | |
| 5,600 | 16×25 | 0.016 | 0.043 | 3,460 | EKZE100E□□562ML25S | 82 | | 10×12.5 | 0.11 | 0.44 | 690 | EKZE630E□□820MJC5S | | |
| 16 | 56 | 5×11 | 0.30 | 1.0 | 250 | EKZE160E□□560ME11D | | 120 | 8×20 | 0.12 | 0.48 | 820 | EKZE630E□□121MH20D | |
| | 120 | 6.3×11 | 0.13 | 0.41 | 405 | EKZE160E□□121MF11D | | 120 | 10×16 | 0.076 | 0.31 | 950 | EKZE630E□□121MJ16S | |
| | 330 | 8×11.5 | 0.072 | 0.22 | 760 | EKZE160E□□331MHB5D | | 180 | 10×20 | 0.056 | 0.23 | 1,150 | EKZE630E□□181MJ20S | |
| | 470 | 8×15 | 0.056 | 0.17 | 995 | EKZE160E□□471MH15D | | 180 | 12.5×16 | 0.072 | 0.29 | 1,150 | EKZE630E□□181MK16S | |
| | 470 | 10×12.5 | 0.053 | 0.16 | 1,030 | EKZE160E□□471MJC5S | | 220 | 10×25 | 0.046 | 0.19 | 1,350 | EKZE630E□□221MJ25S | |
| | 680 | 8×20 | 0.041 | 0.13 | 1,250 | EKZE160E□□681MH20D | | 270 | 12.5×20 | 0.041 | 0.13 | 1,500 | EKZE630E□□271MK20S | |
| | 680 | 10×16 | 0.038 | 0.12 | 1,430 | EKZE160E□□681MJ16S | | 390 | 12.5×25 | 0.031 | 0.093 | 1,900 | EKZE630E□□391MK25S | |
| | 1,000 | 10×20 | 0.023 | 0.069 | 1,820 | EKZE160E□□102MJ20S | | 470 | 12.5×30 | 0.028 | 0.084 | 2,300 | EKZE630E□□471MK30S | |
| | 1,200 | 10×25 | 0.022 | 0.066 | 2,150 | EKZE160E□□122MJ25S | | 470 | 16×20 | 0.032 | 0.096 | 2,000 | EKZE630E□□471ML20S | |
| | 1,500 | 12.5×20 | 0.021 | 0.053 | 2,360 | EKZE160E□□152MK20S | 560 | 12.5×35 | 0.024 | 0.072 | 2,500 | EKZE630E□□561MK35S | | |
| | 2,200 | 12.5×25 | 0.018 | 0.045 | 2,770 | EKZE160E□□222MK25S | 680 | 12.5×40 | 0.021 | 0.063 | 2,800 | EKZE630E□□681MK40S | | |
| | 2,700 | 12.5×30 | 0.016 | 0.041 | 3,290 | EKZE160E□□272MK30S | 680 | 16×25 | 0.025 | 0.075 | 2,600 | EKZE630E□□681ML25S | | |
| | 2,700 | 16×20 | 0.018 | 0.045 | 3,140 | EKZE160E□□272ML20S | 680 | 18×20 | 0.030 | 0.090 | 2,500 | EKZE630E□□681MM20S | | |
| | 3,300 | 12.5×35 | 0.015 | 0.039 | 3,400 | EKZE160E□□332MK35S | 820 | 16×31.5 | 0.021 | 0.063 | 2,850 | EKZE630E□□821MLN3S | | |
| 3,900 | 16×25 | 0.016 | 0.043 | 3,460 | EKZE160E□□392ML25S | 820 | 18×25 | 0.024 | 0.072 | 2,800 | EKZE630E□□821MM25S | | | |
| 25 | 47 | 5×11 | 0.30 | 1.0 | 250 | EKZE250E□□470ME11D | 1,000 | 16×35.5 | 0.019 | 0.057 | 2,900 | EKZE630E□□102MLP1S | | |
| | 100 | 6.3×11 | 0.13 | 0.41 | 405 | EKZE250E□□101MF11D | 1,200 | 16×40 | 0.018 | 0.054 | 3,400 | EKZE630E□□122ML40S | | |
| | 220 | 8×11.5 | 0.072 | 0.22 | 760 | EKZE250E□□221MHB5D | 1,200 | 18×31.5 | 0.020 | 0.060 | 3,300 | EKZE630E□□122MMN3S | | |
| | 330 | 8×15 | 0.056 | 0.17 | 995 | EKZE250E□□331MH15D | 1,500 | 18×35.5 | 0.018 | 0.054 | 3,400 | EKZE630E□□152MMP1S | | |
| | 330 | 10×12.5 | 0.053 | 0.16 | 1,030 | EKZE250E□□331MJC5S | 1,800 | 18×40 | 0.017 | 0.051 | 3,500 | EKZE630E□□182MM40S | | |
| | 470 | 8×20 | 0.041 | 0.13 | 1,250 | EKZE250E□□471MH20D | 80 | 68 | 10×12.5 | 0.17 | 0.66 | 480 | EKZE800E□□680MJC5S | |
| | 470 | 10×16 | 0.038 | 0.12 | 1,430 | EKZE250E□□471MJ16S | | 100 | 10×16 | 0.11 | 0.47 | 600 | EKZE800E□□101MJ16S | |
| | 680 | 10×20 | 0.023 | 0.069 | 1,820 | EKZE250E□□681MJ20S | | 120 | 10×20 | 0.084 | 0.34 | 800 | EKZE800E□□121MJ20S | |
| | 820 | 10×25 | 0.022 | 0.066 | 2,150 | EKZE250E□□821MJ25S | | 150 | 10×25 | 0.069 | 0.28 | 900 | EKZE800E□□151MJ25S | |
| | 1,000 | 12.5×20 | 0.021 | 0.053 | 2,360 | EKZE250E□□102MK20S | | 150 | 12.5×16 | 0.11 | 0.34 | 750 | EKZE800E□□151MK16S | |
| | 1,500 | 12.5×25 | 0.018 | 0.045 | 2,770 | EKZE250E□□152MK25S | | 220 | 12.5×20 | 0.062 | 0.18 | 1,100 | EKZE800E□□221MK20S | |
| | 1,800 | 12.5×30 | 0.016 | 0.041 | 3,290 | EKZE250E□□182MK30S | | 330 | 12.5×25 | 0.047 | 0.14 | 1,250 | EKZE800E□□331MK25S | |
| | 1,800 | 16×20 | 0.018 | 0.045 | 3,140 | EKZE250E□□182ML20S | | 330 | 16×20 | 0.048 | 0.15 | 1,350 | EKZE800E□□331ML20S | |
| | 2,200 | 12.5×35 | 0.015 | 0.039 | 3,400 | EKZE250E□□222MK35S | | 390 | 12.5×30 | 0.042 | 0.13 | 1,500 | EKZE800E□□391MK30S | |
| 2,700 | 16×25 | 0.016 | 0.043 | 3,460 | EKZE250E□□272ML25S | 470 | | 12.5×35 | 0.036 | 0.11 | 1,650 | EKZE800E□□471MK35S | | |
| 35 | 33 | 5×11 | 0.30 | 1.0 | 250 | EKZE350E□□330ME11D | | 470 | 16×25 | 0.038 | 0.12 | 1,700 | EKZE800E□□471ML25S | |
| | 56 | 6.3×11 | 0.13 | 0.41 | 405 | EKZE350E□□560MF11D | | 470 | 18×20 | 0.045 | 0.14 | 1,500 | EKZE800E□□471MM20S | |
| | 150 | 8×11.5 | 0.072 | 0.22 | 760 | EKZE350E□□151MHB5D | | 560 | 12.5×40 | 0.032 | 0.095 | 1,800 | EKZE800E□□561MK40S | |
| | 220 | 8×15 | 0.056 | 0.17 | 995 | EKZE350E□□221MH15D | | 680 | 16×31.5 | 0.032 | 0.095 | 1,850 | EKZE800E□□681MLN3S | |
| | 220 | 10×12.5 | 0.053 | 0.16 | 1,030 | EKZE350E□□221MJC5S | 680 | 18×25 | 0.036 | 0.11 | 1,750 | EKZE800E□□681MM25S | | |

□ : Enter the appropriate lead forming or taping code.

◆ 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 | | |
| 80 | 820 | 16×35.5 | 0.029 | 0.086 | 2,000 | EKZE800E□□821MLP1S | 100 | 150 | 12.5×20 | 0.062 | 0.18 | 1,100 | EKZE101E□□151MK20S |
| | 820 | 18×31.5 | 0.030 | 0.090 | 1,900 | EKZE800E□□821MMN3S | | 220 | 12.5×25 | 0.047 | 0.14 | 1,250 | EKZE101E□□221MK25S |
| | 1,000 | 16×40 | 0.027 | 0.081 | 2,200 | EKZE800E□□102ML40S | | 220 | 16×20 | 0.048 | 0.15 | 1,350 | EKZE101E□□221ML20S |
| | 1,000 | 18×35.5 | 0.027 | 0.081 | 2,200 | EKZE800E□□102MMP1S | | 270 | 12.5×30 | 0.042 | 0.13 | 1,500 | EKZE101E□□271MK30S |
| | 1,200 | 18×40 | 0.026 | 0.077 | 2,700 | EKZE800E□□122MM40S | | 330 | 12.5×35 | 0.036 | 0.11 | 1,650 | EKZE101E□□331MK35S |
| 100 | 6.8 | 5×11 | 1.4 | 5.6 | 125 | EKZE101E□□6R8ME11D | | 330 | 16×25 | 0.038 | 0.12 | 1,700 | EKZE101E□□331ML25S |
| | 15 | 6.3×11 | 0.57 | 2.3 | 205 | EKZE101E□□150MF11D | | 330 | 18×20 | 0.045 | 0.14 | 1,500 | EKZE101E□□331MM20S |
| | 27 | 8×11.5 | 0.36 | 1.4 | 355 | EKZE101E□□270MHB5D | | 390 | 12.5×40 | 0.032 | 0.095 | 1,800 | EKZE101E□□391MK40S |
| | 39 | 8×15 | 0.25 | 1.0 | 450 | EKZE101E□□390MH15D | | 470 | 16×31.5 | 0.032 | 0.095 | 1,850 | EKZE101E□□471MLN3S |
| | 47 | 10×12.5 | 0.17 | 0.66 | 480 | EKZE101E□□470MJC5S | | 470 | 18×25 | 0.036 | 0.11 | 1,750 | EKZE101E□□471MM25S |
| | 56 | 8×20 | 0.19 | 0.76 | 565 | EKZE101E□□560MH20D | | 560 | 16×35.5 | 0.029 | 0.086 | 2,000 | EKZE101E□□561MLP1S |
| | 68 | 10×16 | 0.11 | 0.47 | 600 | EKZE101E□□680MJ16S | | 560 | 18×31.5 | 0.030 | 0.090 | 1,900 | EKZE101E□□561MMN3S |
| | 82 | 10×20 | 0.084 | 0.34 | 800 | EKZE101E□□820MJ20S | | 680 | 16×40 | 0.027 | 0.081 | 2,200 | EKZE101E□□681ML40S |
| | 100 | 12.5×16 | 0.11 | 0.34 | 750 | EKZE101E□□101MK16S | | 680 | 18×35.5 | 0.027 | 0.081 | 2,200 | EKZE101E□□681MMP1S |
| | 120 | 10×25 | 0.069 | 0.28 | 900 | EKZE101E□□121MJ25S | | 820 | 18×40 | 0.026 | 0.077 | 2,700 | EKZE101E□□821MM40S |

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

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | | | |
|-----------------|---------------|------|------|------|
| | 120 | 1k | 10k | 100k |
| 6.8 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 | 0.85 | 0.95 | 0.98 | 1.00 |

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.