

# KYA Series

- Downsized from KY series
- Newly innovative electrolyte is employed to minimize impedance
- Endurance with ripple current : 4,000 to 10,000 hours at 105°C
- Non solvent resistant type
- RoHS Compliant

KYA

↑ Downsized  
KY P166

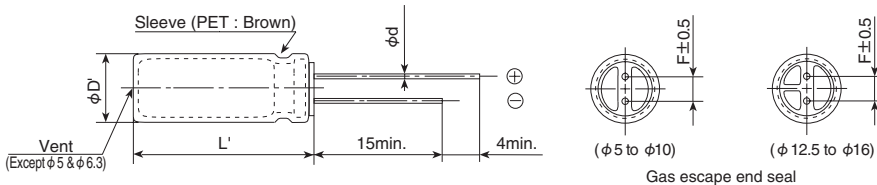


## SPECIFICATIONS

| Items  | Characteristics   |   |
|--|---|---|
| Category   | -40 to +105°C   |   |
| Temperature Range                                      |   |   |
| Rated Voltage Range                                    | 6.3 to 100V <sub>dc</sub>   |   |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)   |   |
| Leakage Current  | I=0.01CV or 3μA, whichever is greater.<br>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 <sub>dc</sub> )  | 6.3V 10V 16V 25V 35V 50V 63V 100V   |
|  | tan δ (Max.)  | 0.22 0.19 0.16 0.14 0.12 0.10 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) | Rated voltage (V <sub>dc</sub> )  | 6.3V 10V 16V 25V 35V 50V 63V 100V   |
|  | Z(-25°C)/Z(+20°C)   | 4 3 2 2 2 2 2 2   |
|  | Z(-40°C)/Z(+20°C)   | 8 6 4 3 3 3 3 3 (at 120Hz)  |
| 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  | 6.3 to 10V <sub>dc</sub> φ5 & 6.3 : 4,000hours φ8 & 10 : 6,000hours φ12.5 to 16 : 8,000hours<br>16 to 100V <sub>dc</sub> φ5 & 6.3 : 5,000hours φ8 & 10 : 7,000hours φ12.5 to 16 : 10,000hours |
|  | 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  |

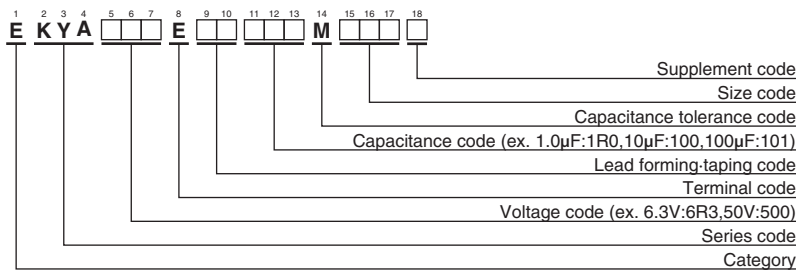
## DIMENSIONS [mm]

Terminal Code : E



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

## PART NUMBERING SYSTEM



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

◆ STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ω max./100kHz) |       | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           | WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ω max./100kHz) |                    | Rated<br>ripple<br>current<br>(mA rms/<br>105°C,<br>100kHz) | Part No.           |                    |
|--------------------------|-------------|-----------------------|------------------------------|-------|---|--------------------|--------------------------|-------------|-----------------------|------------------------------|--------------------|---|--------------------|--------------------|
|                          |             |                       | 20°C                         | -10°C |   |                    |                          |             |                       | 20°C                         | -10°C              |   |                    |                    |
| 6.3                      | 100         | 5×11                  | 0.90                         | 3.6   | 150   | EKYA6R3E□□101ME11D | 25                       | 3,300       | 16×25                 | 0.021                        | 0.060              | 2,930   | EKYA250E□□332ML25S |                    |
|                          | 180         | 5×11                  | 0.40                         | 1.6   | 250   | EKYA6R3E□□181ME11D |                          | 3,900       | 16×25                 | 0.021                        | 0.060              | 2,930   | EKYA250E□□392ML25S |                    |
|                          | 220         | 5×11                  | 0.40                         | 1.6   | 250   | EKYA6R3E□□221ME11D |                          | 4,700       | 16×31.5               | 0.017                        | 0.050              | 3,450   | EKYA250E□□472MLN3S |                    |
|                          | 330         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA6R3E□□331MF11D |                          | 5,600       | 16×35.5               | 0.015                        | 0.044              | 3,610   | EKYA250E□□562MLP1S |                    |
|                          | 470         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA6R3E□□471MF11D |                          | 35          | 33                    | 5×11                         | 0.40               | 1.6   | 250                | EKYA350E□□330ME11D |
|                          | 820         | 8×11.5                | 0.13                         | 0.52  | 640   | EKYA6R3E□□821MHB5D |                          |             | 47                    | 5×11                         | 0.40               | 1.6   | 250                | EKYA350E□□470ME11D |
|                          | 1,200       | 10×12.5               | 0.080                        | 0.32  | 865   | EKYA6R3E□□122MJC5S |                          |             | 100                   | 6.3×11                       | 0.22               | 0.87  | 400                | EKYA350E□□101MF11D |
|                          | 1,200       | 8×15                  | 0.087                        | 0.35  | 840   | EKYA6R3E□□122MH20D |                          |             | 220                   | 8×11.5                       | 0.13               | 0.52  | 640                | EKYA350E□□221MHB5D |
|                          | 1,500       | 8×20                  | 0.069                        | 0.27  | 1,050   | EKYA6R3E□□152MH20D |                          |             | 270                   | 8×15                         | 0.087              | 0.35  | 840                | EKYA350E□□271MH15D |
|                          | 1,800       | 10×16                 | 0.060                        | 0.24  | 1,300   | EKYA6R3E□□182MJ16S |                          |             | 330                   | 10×12.5                      | 0.080              | 0.32  | 865                | EKYA350E□□331MJC5S |
|                          | 2,700       | 10×20                 | 0.046                        | 0.18  | 1,400   | EKYA6R3E□□272MJ20S |                          |             | 390                   | 8×20                         | 0.069              | 0.27  | 1,050              | EKYA350E□□391MH20D |
|                          | 3,300       | 10×25                 | 0.042                        | 0.17  | 1,650   | EKYA6R3E□□332MJ25S |                          |             | 470                   | 10×16                        | 0.060              | 0.24  | 1,300              | EKYA350E□□471MJ16S |
|                          | 3,900       | 12.5×20               | 0.035                        | 0.12  | 1,900   | EKYA6R3E□□392MK20S |                          |             | 680                   | 10×20                        | 0.046              | 0.18  | 1,400              | EKYA350E□□681MJ20S |
|                          | 4,700       | 12.5×25               | 0.027                        | 0.089 | 2,230   | EKYA6R3E□□472MK25S |                          |             | 820                   | 10×25                        | 0.042              | 0.17  | 1,650              | EKYA350E□□821MJ25S |
|                          | 5,600       | 12.5×25               | 0.027                        | 0.089 | 2,230   | EKYA6R3E□□562MK25S |                          |             | 1,000                 | 12.5×20                      | 0.035              | 0.12  | 1,900              | EKYA350E□□102MK20S |
| 10,000                   | 16×25       | 0.021                 | 0.060                        | 2,930 | EKYA6R3E□□103MLN3S  | 1,500              | 12.5×25                  |             | 0.027                 | 0.089                        | 2,230              | EKYA350E□□152MK25S  |                    |                    |
| 12,000                   | 16×31.5     | 0.017                 | 0.050                        | 3,450 | EKYA6R3E□□123MLN3S  | 2,200              | 16×25                    |             | 0.021                 | 0.060                        | 2,930              | EKYA350E□□222ML25S  |                    |                    |
| 15,000                   | 16×35.5     | 0.015                 | 0.044                        | 3,610 | EKYA6R3E□□153MLP1S  | 2,700              | 16×25                    |             | 0.021                 | 0.060                        | 2,930              | EKYA350E□□272ML25S  |                    |                    |
| 10                       | 100         | 5×11                  | 0.90                         | 3.6   | 150   | EKYA100E□□101ME11D | 3,300                    |             | 16×31.5               | 0.017                        | 0.050              | 3,450   | EKYA350E□□332MLN3S |                    |
|                          | 120         | 5×11                  | 0.40                         | 1.6   | 250   | EKYA100E□□121ME11D | 3,900                    | 16×35.5     | 0.015                 | 0.044                        | 3,610              | EKYA350E□□392MLP1S  |                    |                    |
|                          | 330         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA100E□□331MF11D | 50                       | 1.0         | 5×11                  | 4.0                          | 16                 | 30  | EKYA500E□□1R0ME11D |                    |
|                          | 560         | 8×11.5                | 0.13                         | 0.52  | 640   | EKYA100E□□561MHB5D |                          | 2.2         | 5×11                  | 2.5                          | 10                 | 43  | EKYA500E□□2R2ME11D |                    |
|                          | 820         | 8×15                  | 0.087                        | 0.35  | 840   | EKYA100E□□821MH15D |                          | 3.3         | 5×11                  | 2.2                          | 8.8                | 53  | EKYA500E□□3R3ME11D |                    |
|                          | 820         | 10×12.5               | 0.080                        | 0.32  | 865   | EKYA100E□□821MJC5S |                          | 4.7         | 5×11                  | 1.9                          | 7.6                | 88  | EKYA500E□□4R7ME11D |                    |
|                          | 1,000       | 10×12.5               | 0.080                        | 0.32  | 865   | EKYA100E□□102MJC5S |                          | 10          | 5×11                  | 1.5                          | 6.0                | 100   | EKYA500E□□100ME11D |                    |
|                          | 1,200       | 8×20                  | 0.069                        | 0.27  | 1,050   | EKYA100E□□122MH20D |                          | 22          | 5×11                  | 0.70                         | 2.8                | 180   | EKYA500E□□220ME11D |                    |
|                          | 1,200       | 10×16                 | 0.060                        | 0.24  | 1,300   | EKYA100E□□122MJ16S |                          | 27          | 5×11                  | 0.70                         | 2.8                | 250   | EKYA500E□□270ME11D |                    |
|                          | 1,800       | 10×20                 | 0.046                        | 0.18  | 1,400   | EKYA100E□□182MJ20S |                          | 47          | 6.3×11                | 0.30                         | 1.2                | 295   | EKYA500E□□470MF11D |                    |
|                          | 2,200       | 10×25                 | 0.042                        | 0.17  | 1,650   | EKYA100E□□222MJ25S |                          | 56          | 6.3×11                | 0.30                         | 1.2                | 295   | EKYA500E□□560MF11D |                    |
|                          | 3,300       | 12.5×20               | 0.035                        | 0.12  | 1,900   | EKYA100E□□332MK20S |                          | 100         | 8×11.5                | 0.17                         | 0.68               | 555   | EKYA500E□□101MHB5D |                    |
| 3,900                    | 12.5×25     | 0.027                 | 0.089                        | 2,230 | EKYA100E□□392MK25S  | 150                |                          | 8×15        | 0.12                  | 0.48                         | 730                | EKYA500E□□151MH15D  |                    |                    |
| 6,800                    | 16×25       | 0.021                 | 0.060                        | 2,930 | EKYA100E□□682ML25S  | 180                |                          | 10×12.5     | 0.12                  | 0.48                         | 760                | EKYA500E□□181MJC5S  |                    |                    |
| 10,000                   | 16×31.5     | 0.017                 | 0.050                        | 3,450 | EKYA100E□□103MLN3S  | 180                | 8×20                     | 0.091       | 0.36                  | 910                          | EKYA500E□□181MH20D |   |                    |                    |
| 12,000                   | 16×35.5     | 0.015                 | 0.044                        | 3,610 | EKYA100E□□123MLP1S  | 220                | 10×16                    | 0.084       | 0.34                  | 1,050                        | EKYA500E□□221MJ16S |   |                    |                    |
| 16                       | 47          | 5×11                  | 0.40                         | 1.6   | 250   | EKYA160E□□470ME11D | 330                      | 10×20       | 0.060                 | 0.24                         | 1,220              | EKYA500E□□331MJ20S  |                    |                    |
|                          | 100         | 5×11                  | 0.40                         | 1.6   | 250   | EKYA160E□□101ME11D | 470                      | 10×25       | 0.055                 | 0.22                         | 1,440              | EKYA500E□□471MJ25S  |                    |                    |
|                          | 220         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA160E□□221MF11D | 470                      | 12.5×20     | 0.045                 | 0.15                         | 1,660              | EKYA500E□□471MK20S  |                    |                    |
|                          | 270         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA160E□□271MF11D | 560                      | 12.5×20     | 0.045                 | 0.15                         | 1,660              | EKYA500E□□561MK20S  |                    |                    |
|                          | 470         | 8×11.5                | 0.13                         | 0.52  | 640   | EKYA160E□□471MHB5D | 820                      | 12.5×20     | 0.034                 | 0.11                         | 1,950              | EKYA500E□□821MK25S  |                    |                    |
|                          | 680         | 8×15                  | 0.087                        | 0.35  | 840   | EKYA160E□□681MH15D | 1,000                    | 16×25       | 0.025                 | 0.075                        | 2,555              | EKYA500E□□102ML25S  |                    |                    |
|                          | 680         | 10×12.5               | 0.080                        | 0.32  | 865   | EKYA160E□□681MJC5S | 1,200                    | 16×25       | 0.025                 | 0.075                        | 2,555              | EKYA500E□□122ML25S  |                    |                    |
|                          | 820         | 8×20                  | 0.069                        | 0.27  | 1,050   | EKYA160E□□821MH20D | 1,800                    | 16×31.5     | 0.022                 | 0.066                        | 3,010              | EKYA500E□□182MLN3S  |                    |                    |
|                          | 1,000       | 10×16                 | 0.060                        | 0.24  | 1,300   | EKYA160E□□102MJ16S | 2,200                    | 16×35.5     | 0.019                 | 0.057                        | 3,150              | EKYA500E□□222MLP1S  |                    |                    |
|                          | 1,500       | 10×20                 | 0.046                        | 0.18  | 1,400   | EKYA160E□□152MJ20S | 63                       | 10          | 5×11                  | 0.88                         | 3.5                | 173   | EKYA630E□□100ME11D |                    |
|                          | 1,800       | 10×25                 | 0.042                        | 0.17  | 1,650   | EKYA160E□□182MJ25S |                          | 15          | 5×11                  | 0.88                         | 3.5                | 173   | EKYA630E□□150ME11D |                    |
|                          | 2,200       | 12.5×20               | 0.035                        | 0.12  | 1,900   | EKYA160E□□222MK20S |                          | 33          | 6.3×11                | 0.35                         | 1.4                | 278   | EKYA630E□□330MF11D |                    |
|                          | 3,300       | 12.5×25               | 0.027                        | 0.089 | 2,230   | EKYA160E□□332MK25S |                          | 56          | 8×11.5                | 0.22                         | 0.88               | 500   | EKYA630E□□560MHB5D |                    |
|                          | 4,700       | 16×25                 | 0.021                        | 0.060 | 2,930   | EKYA160E□□472ML25S |                          | 82          | 8×15                  | 0.16                         | 0.64               | 665   | EKYA630E□□820MH15D |                    |
|                          | 5,600       | 16×25                 | 0.021                        | 0.060 | 2,930   | EKYA160E□□562ML25S |                          | 100         | 10×12.5               | 0.11                         | 0.44               | 725   | EKYA630E□□101MJC5S |                    |
| 6,800                    | 16×31.5     | 0.017                 | 0.050                        | 3,450 | EKYA160E□□682MLN3S  | 120                |                          | 8×20        | 0.12                  | 0.48                         | 820                | EKYA630E□□121MH20D  |                    |                    |
| 8,200                    | 16×31.5     | 0.017                 | 0.050                        | 3,450 | EKYA160E□□822MLN3S  | 120                |                          | 10×16       | 0.076                 | 0.31                         | 950                | EKYA630E□□121MJ16S  |                    |                    |
| 10,000                   | 16×35.5     | 0.015                 | 0.044                        | 3,610 | EKYA160E□□103MLP1S  | 220                |                          | 10×20       | 0.056                 | 0.23                         | 1,200              | EKYA630E□□221MJ20S  |                    |                    |
| 25                       | 33          | 5×11                  | 0.40                         | 1.6   | 250   | EKYA250E□□330ME11D |                          | 330         | 10×25                 | 0.046                        | 0.19               | 1,350   | EKYA630E□□331MJ25S |                    |
|                          | 47          | 5×11                  | 0.40                         | 1.6   | 250   | EKYA250E□□470ME11D |                          | 330         | 12.5×20               | 0.041                        | 0.13               | 1,570   | EKYA630E□□331MK20S |                    |
|                          | 68          | 5×11                  | 0.40                         | 1.6   | 250   | EKYA250E□□680ME11D |                          | 390         | 12.5×20               | 0.041                        | 0.13               | 1,570   | EKYA630E□□391MK20S |                    |
|                          | 150         | 6.3×11                | 0.22                         | 0.87  | 400   | EKYA250E□□151MF11D |                          | 470         | 12.5×25               | 0.031                        | 0.093              | 1,990   | EKYA630E□□471MK25S |                    |
|                          | 330         | 8×11.5                | 0.13                         | 0.52  | 640   | EKYA250E□□331MHB5D |                          | 560         | 12.5×25               | 0.031                        | 0.093              | 1,990   | EKYA630E□□561MK25S |                    |
|                          | 390         | 8×15                  | 0.087                        | 0.35  | 840   | EKYA250E□□391MH15D |                          | 1,000       | 16×25                 | 0.025                        | 0.075              | 2,730   | EKYA630E□□102ML25S |                    |
|                          | 470         | 10×12.5               | 0.080                        | 0.32  | 865   | EKYA250E□□471MJC5S | 1,200                    | 16×31.5     | 0.021                 | 0.063                        | 2,850              | EKYA630E□□122MLN3S  |                    |                    |
|                          | 560         | 8×20                  | 0.069                        | 0.27  | 1,050   | EKYA250E□□561MH20D | 1,500                    | 16×35.5     | 0.019                 | 0.057                        | 2,900              | EKYA630E□□152MLP1S  |                    |                    |
|                          | 680         | 10×16                 | 0.060                        | 0.24  | 1,300   | EKYA250E□□681MJ16S | 100                      | 1.0         | 5×11                  | 4.5                          | 15                 | 20  | EKYA101E□□1R0ME11D |                    |
|                          | 1,000       | 10×20                 | 0.046                        | 0.18  | 1,400   | EKYA250E□□102MJ20S |                          | 2.2         | 5×11                  | 3.0                          | 13                 | 30  | EKYA101E□□2R2ME11D |                    |
|                          | 1,200       | 10×25                 | 0.042                        | 0.17  | 1,650   | EKYA250E□□122MJ25S |                          | 3.3         | 5×11                  | 2.7                          | 11                 | 40  | EKYA101E□□3R3ME11D |                    |
|                          | 1,500       | 12.5×20               | 0.035                        | 0.12  | 1,900   | EKYA250E□□152MK20S |                          | 4.7         | 5×11                  | 2.5                          | 10                 | 65  | EKYA101E□□4R7ME11D |                    |
|                          | 2,200       | 12.5×25               | 0.027                        | 0.089 | 2,230   | EKYA250E□□222MK25S |                          | 6.8         | 5×11                  | 1.4                          | 5.6                | 125   | EKYA101E□□6R8ME11D |                    |

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

**KYA**Series

◆STANDARD RATINGS

| WV<br>(V <sub>dc</sub> ) | Cap<br>(μF) | Case size<br>φD×L(mm) | Impedance<br>(Ω max./100kHz) |       | Rated<br>ripple<br>current<br>(mA <sub>rms</sub> /<br>105°C,<br>100kHz) | Part No.           |
|--------------------------|-------------|-----------------------|------------------------------|-------|---|--------------------|
|                          |             |                       | 20°C                         | -10°C |   |                    |
| 100                      | 10          | 6.3×11                | 0.57                         | 2.3   | 205   | EKYA101E□□100MF11D |
|                          | 15          | 6.3×11                | 0.57                         | 2.3   | 205   | EKYA101E□□150MF11D |
|                          | 27          | 8×11.5                | 0.36                         | 1.4   | 355   | EKYA101E□□270MHB5D |
|                          | 39          | 8×15                  | 0.25                         | 1.0   | 450   | EKYA101E□□390MH15D |
|                          | 47          | 10×12.5               | 0.17                         | 0.66  | 480   | EKYA101E□□470MJC5S |
|                          | 56          | 8×20                  | 0.19                         | 0.76  | 565   | EKYA101E□□560MH20D |
|                          | 68          | 10×16                 | 0.11                         | 0.47  | 600   | EKYA101E□□680MJ16S |
|                          | 100         | 10×20                 | 0.084                        | 0.34  | 800   | EKYA101E□□101MJ20S |
|                          | 150         | 10×25                 | 0.069                        | 0.28  | 900   | EKYA101E□□151MJ25S |
|                          | 180         | 12.5×20               | 0.062                        | 0.18  | 1,100   | EKYA101E□□181MK20S |
|                          | 220         | 12.5×25               | 0.047                        | 0.14  | 1,250   | EKYA101E□□221MK25S |
|                          | 330         | 16×25                 | 0.038                        | 0.12  | 1,700   | EKYA101E□□331ML25S |
|                          | 470         | 16×31.5               | 0.032                        | 0.095 | 1,850   | EKYA101E□□471MLN3S |
|                          | 560         | 16×35.5               | 0.029                        | 0.086 | 2,000   | EKYA101E□□561MLP1S |

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

◆RATED RIPPLE CURRENT MULTIPLIERS

⊙Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) |      |      |      |
|-----------------|---------------|------|------|------|
|                 | 120           | 1k   | 10k  | 100k |
| 1.0 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.