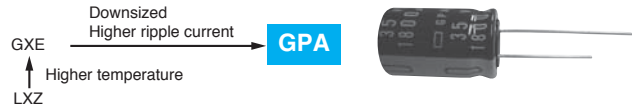


Upgrade!

GPA Series

- Downsized, low impedance and high-ripple current version of GXE series
- Specified ESR after endurance test
- For high ripple current automotive applications. (Direct fuel injection and electric power steering etc.)
- Endurance with ripple current : 3,000 to 5,000 hours at 125°C
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant

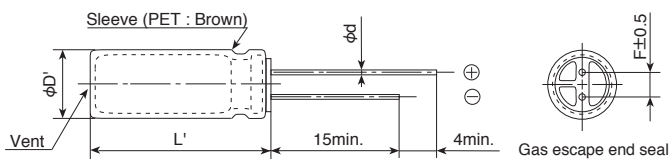


◆ SPECIFICATIONS

| Items   | Characteristics   |                                       |      |      |      |      |      |
|---|---|---------------------------------------|------|------|------|------|------|
| Category  | -40 to +125°C   |                                       |      |      |      |      |      |
| Temperature Range   | -40 to +125°C   |                                       |      |      |      |      |      |
| Rated Voltage Range   | 25 to 100V <sub>dc</sub>  |                                       |      |      |      |      |      |
| Capacitance Tolerance   | ±20% (M) (at 20°C, 120Hz)   |                                       |      |      |      |      |      |
| Leakage Current   | I=0.03CV or 4μA, whichever is greater. (at 20°C, 1 minute)<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)   |                                       |      |      |      |      |      |
| Dissipation Factor (tanδ)   | Rated voltage (V <sub>dc</sub> )  | 25V                                   | 35V  | 50V  | 63V  | 80V  | 100V |
|   | tanδ (Max.)   | 0.14                                  | 0.12 | 0.10 | 0.10 | 0.08 | 0.08 |
| When nominal capacitance exceeds 1,000μF, add 0.02 to the above value for each 1,000μF increase. (at 20°C, 120Hz) |   |                                       |      |      |      |      |      |
| Low Temperature Characteristics (Max. Impedance Ratio)  | Rated voltage (V <sub>dc</sub> )  | 25V                                   | 35V  | 50V  | 63V  | 80V  | 100V |
|   | Z(-25°C)/Z(+20°C)   | 2                                     | 2    | 2    | 2    | 2    | 2    |
|   | Z(-40°C)/Z(+20°C)   | 4                                     | 4    | 4    | 4    | 4    | 4    |
| (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 5,000 hours (3,000 hours for 25L and less) at 125 °C.         |                                       |      |      |      |      |      |
|   | Capacitance change  | ≤ ±30% of the initial value           |      |      |      |      |      |
|   | D.F. (tanδ)   | ≤ 300% 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 1,000 hours at 125°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  | ≤ ±30% of the initial value           |      |      |      |      |      |
|   | D.F. (tanδ)   | ≤ 300% of the initial specified value |      |      |      |      |      |
|   | Leakage current   | ≤ The initial specified value         |      |      |      |      |      |

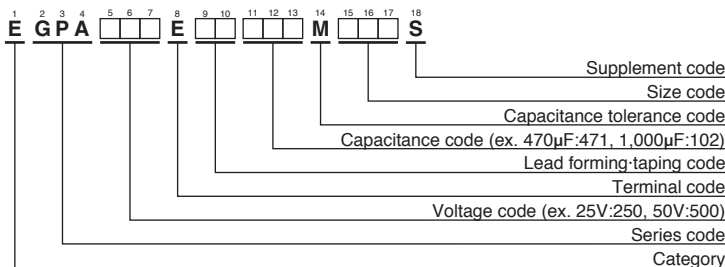
◆ DIMENSIONS [mm]

● Terminal Code : E



|     |            |      |     |     |
|-----|------------|------|-----|-----|
| φD  | 12.5       | 14.5 | 16  | 18  |
| φd  | 0.6        | 0.8  | 0.8 | 0.8 |
| F   | 5.0        | 7.5  | 7.5 | 7.5 |
| φD' | φD+0.5max. |      |     |     |
| L'  | L+1.5max.  |      |     |     |

◆ PART NUMBERING SYSTEM



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



Upgrade!

GPA Series

◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φ D×L(mm) | ESR (Initial) (Ω max/100kHz) |       | ESR (End of Life) (Ω max/100kHz) |       | Rated ripple current (mArms/125°C,100kHz) | Part No.           |
|----------|----------|---------------------|------------------------------|-------|----------------------------------|-------|---|--------------------|
|          |          |                     | 20°C                         | -40°C | 20°C                             | -40°C |   |                    |
| 25       | 1,200    | 12.5×20             | 0.044                        | 0.22  | 0.18                             | 2.2   | 1,820                                     | EGPA250E□□122MK20S |
|          | 1,500    | 14.5×20             | 0.037                        | 0.19  | 0.11                             | 1.3   | 2,100                                     | EGPA250E□□152MU20S |
|          | 1,800    | 12.5×25             | 0.033                        | 0.17  | 0.13                             | 1.6   | 2,280                                     | EGPA250E□□182MK25S |
|          | 1,800    | 16×20               | 0.034                        | 0.17  | 0.10                             | 1.3   | 2,280                                     | EGPA250E□□182ML20S |
|          | 2,200    | 12.5×30             | 0.029                        | 0.13  | 0.11                             | 1.3   | 2,560                                     | EGPA250E□□222MK30S |
|          | 2,200    | 14.5×25             | 0.028                        | 0.14  | 0.080                            | 0.90  | 2,620                                     | EGPA250E□□222MU25S |
|          | 2,700    | 12.5×35             | 0.024                        | 0.11  | 0.090                            | 0.80  | 2,970                                     | EGPA250E□□272MK35S |
|          | 2,700    | 14.5×30             | 0.023                        | 0.10  | 0.070                            | 0.70  | 3,060                                     | EGPA250E□□272MU30S |
|          | 2,700    | 16×25               | 0.026                        | 0.13  | 0.080                            | 1.1   | 2,860                                     | EGPA250E□□272ML25S |
|          | 2,700    | 18×20               | 0.032                        | 0.16  | 0.090                            | 0.60  | 2,490                                     | EGPA250E□□272MM20S |
|          | 3,300    | 12.5×40             | 0.021                        | 0.095 | 0.080                            | 0.50  | 3,340                                     | EGPA250E□□332MK40S |
|          | 3,300    | 14.5×35             | 0.021                        | 0.095 | 0.060                            | 0.70  | 3,380                                     | EGPA250E□□332MU35S |
|          | 3,300    | 16×30               | 0.023                        | 0.10  | 0.070                            | 0.90  | 3,160                                     | EGPA250E□□332ML30S |
|          | 3,900    | 16×35               | 0.020                        | 0.090 | 0.060                            | 0.70  | 3,590                                     | EGPA250E□□392ML35S |
|          | 3,900    | 18×25               | 0.024                        | 0.12  | 0.070                            | 0.50  | 3,010                                     | EGPA250E□□392MM25S |
|          | 4,700    | 14.5×40             | 0.018                        | 0.081 | 0.050                            | 0.50  | 3,730                                     | EGPA250E□□472MU40S |
|          | 4,700    | 18×30               | 0.022                        | 0.099 | 0.080                            | 0.60  | 3,390                                     | EGPA250E□□472MM30S |
|          | 5,600    | 16×40               | 0.017                        | 0.077 | 0.040                            | 0.60  | 3,970                                     | EGPA250E□□562ML40S |
| 5,600    | 18×35    | 0.019               | 0.086                        | 0.070 | 0.50                             | 3,840 | EGPA250E□□562MM35S                        |                    |
| 6,800    | 18×40    | 0.016               | 0.072                        | 0.030 | 0.40                             | 4,230 | EGPA250E□□682MM40S                        |                    |
| 35       | 680      | 12.5×20             | 0.044                        | 0.22  | 0.18                             | 2.2   | 1,820                                     | EGPA350E□□681MK20S |
|          | 1,000    | 12.5×25             | 0.033                        | 0.17  | 0.13                             | 1.6   | 2,280                                     | EGPA350E□□102MK25S |
|          | 1,000    | 14.5×20             | 0.037                        | 0.19  | 0.11                             | 1.3   | 2,100                                     | EGPA350E□□102MU20S |
|          | 1,200    | 12.5×30             | 0.029                        | 0.13  | 0.11                             | 1.3   | 2,560                                     | EGPA350E□□122MK30S |
|          | 1,200    | 16×20               | 0.034                        | 0.17  | 0.10                             | 1.3   | 2,280                                     | EGPA350E□□122ML20S |
|          | 1,200    | 14.5×25             | 0.028                        | 0.14  | 0.080                            | 0.90  | 2,620                                     | EGPA350E□□122MU25S |
|          | 1,500    | 12.5×35             | 0.024                        | 0.11  | 0.090                            | 0.80  | 2,970                                     | EGPA350E□□152MK35S |
|          | 1,500    | 14.5×30             | 0.023                        | 0.10  | 0.070                            | 0.70  | 3,060                                     | EGPA350E□□152MU30S |
|          | 1,500    | 18×20               | 0.032                        | 0.16  | 0.090                            | 0.60  | 2,490                                     | EGPA350E□□152MM20S |
|          | 1,800    | 12.5×40             | 0.021                        | 0.095 | 0.080                            | 0.50  | 3,340                                     | EGPA350E□□182MK40S |
|          | 1,800    | 16×25               | 0.026                        | 0.13  | 0.080                            | 1.1   | 2,860                                     | EGPA350E□□182ML25S |
|          | 2,200    | 14.5×35             | 0.021                        | 0.095 | 0.060                            | 0.70  | 3,380                                     | EGPA350E□□222MU35S |
|          | 2,200    | 16×30               | 0.023                        | 0.10  | 0.070                            | 0.90  | 3,160                                     | EGPA350E□□222ML30S |
|          | 2,200    | 18×25               | 0.024                        | 0.12  | 0.070                            | 0.50  | 3,010                                     | EGPA350E□□222MM25S |
|          | 2,700    | 14.5×40             | 0.018                        | 0.081 | 0.050                            | 0.50  | 3,730                                     | EGPA350E□□272MU40S |
|          | 2,700    | 16×35               | 0.020                        | 0.090 | 0.060                            | 0.70  | 3,590                                     | EGPA350E□□272ML35S |
|          | 2,700    | 18×30               | 0.022                        | 0.099 | 0.080                            | 0.60  | 3,390                                     | EGPA350E□□272MM30S |
|          | 3,300    | 16×40               | 0.017                        | 0.077 | 0.040                            | 0.60  | 3,970                                     | EGPA350E□□332ML40S |
| 3,300    | 18×35    | 0.019               | 0.086                        | 0.070 | 0.50                             | 3,840 | EGPA350E□□332MM35S                        |                    |
| 4,700    | 18×40    | 0.016               | 0.072                        | 0.030 | 0.40                             | 4,230 | EGPA350E□□472MM40S                        |                    |
| 50       | 470      | 12.5×20             | 0.065                        | 0.33  | 0.18                             | 2.2   | 1,500                                     | EGPA500E□□471MK20S |
|          | 560      | 14.5×20             | 0.055                        | 0.28  | 0.11                             | 1.3   | 1,740                                     | EGPA500E□□561MU20S |
|          | 680      | 12.5×25             | 0.048                        | 0.24  | 0.13                             | 1.6   | 1,900                                     | EGPA500E□□681MK25S |
|          | 680      | 16×20               | 0.043                        | 0.22  | 0.10                             | 1.3   | 2,040                                     | EGPA500E□□681ML20S |
|          | 820      | 12.5×30             | 0.041                        | 0.18  | 0.11                             | 1.3   | 2,150                                     | EGPA500E□□821MK30S |
|          | 820      | 14.5×25             | 0.040                        | 0.20  | 0.080                            | 0.90  | 2,190                                     | EGPA500E□□821MU25S |
|          | 1,000    | 12.5×35             | 0.034                        | 0.15  | 0.090                            | 0.80  | 2,510                                     | EGPA500E□□102MK35S |
|          | 1,000    | 14.5×30             | 0.036                        | 0.16  | 0.070                            | 0.70  | 2,470                                     | EGPA500E□□102MU30S |
|          | 1,000    | 16×25               | 0.031                        | 0.16  | 0.080                            | 1.1   | 2,620                                     | EGPA500E□□102ML25S |
|          | 1,000    | 18×20               | 0.039                        | 0.20  | 0.090                            | 0.60  | 2,240                                     | EGPA500E□□102MM20S |
|          | 1,200    | 12.5×40             | 0.028                        | 0.13  | 0.080                            | 0.50  | 2,870                                     | EGPA500E□□122MK40S |
|          | 1,200    | 14.5×35             | 0.029                        | 0.13  | 0.060                            | 0.70  | 2,840                                     | EGPA500E□□122MU35S |
|          | 1,200    | 16×30               | 0.027                        | 0.13  | 0.070                            | 0.90  | 2,940                                     | EGPA500E□□122ML30S |
|          | 1,200    | 18×25               | 0.029                        | 0.15  | 0.070                            | 0.50  | 2,750                                     | EGPA500E□□122MM25S |
|          | 1,500    | 16×35               | 0.023                        | 0.10  | 0.060                            | 0.70  | 3,300                                     | EGPA500E□□152ML35S |
|          | 1,800    | 14.5×40             | 0.024                        | 0.11  | 0.050                            | 0.50  | 3,230                                     | EGPA500E□□182MU40S |
|          | 1,800    | 18×30               | 0.026                        | 0.12  | 0.080                            | 0.60  | 3,140                                     | EGPA500E□□182MM30S |
|          | 2,200    | 16×40               | 0.020                        | 0.090 | 0.040                            | 0.60  | 3,720                                     | EGPA500E□□222ML40S |
| 2,200    | 18×35    | 0.022               | 0.10                         | 0.070 | 0.50                             | 3,510 | EGPA500E□□222MM35S                        |                    |
| 2,700    | 18×40    | 0.018               | 0.080                        | 0.030 | 0.40                             | 3,940 | EGPA500E□□272MM40S                        |                    |

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

Upgrade!

**GPA** Series

### ◆STANDARD RATINGS

| WV (Vdc) | Cap (μF) | Case size φD×L(mm) | ESR (Initial) (Ω max/100kHz) |       | ESR (End of Life) (Ω max/100kHz) |       | Rated ripple current (mArms/125°C,100kHz) | Part No.           |
|----------|----------|--------------------|------------------------------|-------|----------------------------------|-------|---|--------------------|
|          |          |                    | 20°C                         | -40°C | 20°C                             | -40°C |   |                    |
| 63       | 470      | 16×20              | 0.085                        | 0.58  | 0.19                             | 3.0   | 1,790                                     | EGPA630E□□471ML20S |
|          | 680      | 16×25              | 0.061                        | 0.48  | 0.14                             | 2.0   | 2,030                                     | EGPA630E□□681ML25S |
|          | 680      | 18×20              | 0.070                        | 0.49  | 0.19                             | 3.0   | 1,910                                     | EGPA630E□□681MM20S |
|          | 820      | 16×30              | 0.053                        | 0.41  | 0.090                            | 1.3   | 2,330                                     | EGPA630E□□821ML30S |
|          | 1,000    | 16×35              | 0.044                        | 0.33  | 0.070                            | 0.90  | 2,580                                     | EGPA630E□□102ML35S |
|          | 1,000    | 18×25              | 0.049                        | 0.34  | 0.14                             | 2.0   | 2,280                                     | EGPA630E□□102MM25S |
|          | 1,200    | 16×40              | 0.036                        | 0.26  | 0.060                            | 0.80  | 2,900                                     | EGPA630E□□122ML40S |
|          | 1,200    | 18×30              | 0.041                        | 0.26  | 0.090                            | 1.3   | 2,580                                     | EGPA630E□□122MM30S |
|          | 1,500    | 18×35              | 0.035                        | 0.21  | 0.070                            | 0.90  | 2,890                                     | EGPA630E□□152MM35S |
|          | 1,800    | 18×40              | 0.030                        | 0.18  | 0.060                            | 0.80  | 3,210                                     | EGPA630E□□182MM40S |
| 80       | 330      | 16×20              | 0.085                        | 0.58  | 0.19                             | 3.0   | 1,790                                     | EGPA800E□□331ML20S |
|          | 470      | 16×25              | 0.061                        | 0.48  | 0.14                             | 2.0   | 2,030                                     | EGPA800E□□471ML25S |
|          | 470      | 18×20              | 0.070                        | 0.49  | 0.19                             | 3.0   | 1,910                                     | EGPA800E□□471MM20S |
|          | 560      | 16×30              | 0.053                        | 0.41  | 0.090                            | 1.3   | 2,330                                     | EGPA800E□□561ML30S |
|          | 560      | 18×25              | 0.049                        | 0.34  | 0.14                             | 2.0   | 2,280                                     | EGPA800E□□561MM25S |
|          | 680      | 16×35              | 0.044                        | 0.33  | 0.070                            | 0.90  | 2,580                                     | EGPA800E□□681ML35S |
|          | 680      | 18×30              | 0.041                        | 0.26  | 0.090                            | 1.3   | 2,580                                     | EGPA800E□□681MM30S |
|          | 820      | 16×40              | 0.036                        | 0.26  | 0.060                            | 0.80  | 2,900                                     | EGPA800E□□821ML40S |
|          | 820      | 18×35              | 0.035                        | 0.21  | 0.070                            | 0.90  | 2,890                                     | EGPA800E□□821MM35S |
|          | 1,200    | 18×40              | 0.030                        | 0.18  | 0.060                            | 0.80  | 3,210                                     | EGPA800E□□122MM40S |
| 100      | 200      | 16×20              | 0.11                         | 0.88  | 0.25                             | 3.9   | 1,580                                     | EGPA101E□□201ML20S |
|          | 270      | 18×20              | 0.091                        | 0.73  | 0.22                             | 3.9   | 1,690                                     | EGPA101E□□271MM20S |
|          | 300      | 16×25              | 0.079                        | 0.72  | 0.18                             | 2.7   | 1,990                                     | EGPA101E□□301ML25S |
|          | 360      | 16×30              | 0.068                        | 0.62  | 0.13                             | 1.9   | 2,250                                     | EGPA101E□□361ML30S |
|          | 390      | 18×25              | 0.064                        | 0.50  | 0.15                             | 2.7   | 2,110                                     | EGPA101E□□391MM25S |
|          | 470      | 16×35              | 0.056                        | 0.50  | 0.090                            | 1.3   | 2,500                                     | EGPA101E□□471ML35S |
|          | 510      | 18×30              | 0.054                        | 0.39  | 0.13                             | 1.9   | 2,410                                     | EGPA101E□□511MM30S |
|          | 560      | 16×40              | 0.046                        | 0.39  | 0.080                            | 1.1   | 2,700                                     | EGPA101E□□561ML40S |
|          | 620      | 18×35              | 0.044                        | 0.32  | 0.090                            | 1.3   | 2,690                                     | EGPA101E□□621MM35S |
|          | 750      | 18×40              | 0.039                        | 0.27  | 0.080                            | 1.1   | 2,880                                     | EGPA101E□□751MM40S |

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

### ◆RATED RIPPLE CURRENT MULTIPLIERS

#### ●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) |      |      |      |
|-----------------|---------------|------|------|------|
|                 | 120           | 1k   | 10k  | 100k |
| 200             | 0.40          | 0.82 | 0.93 | 1.00 |
| 270 to 560      | 0.50          | 0.85 | 0.94 | 1.00 |
| 620 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 6,800  | 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.

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View EGPA800ELL471MM20S on WIN SOURCE](#)
- ⊖ [United Chemi-Con Information](#)

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