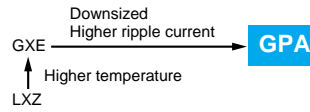


GPA Series

- Downsized, low impedance and high-ripple current version of GXE series
- For automobile modules and other high temperature applications
- Endurance with ripple current : 3,000 to 5,000 hours at 125°C
- Solvent resistant type
- RoHS Compliant

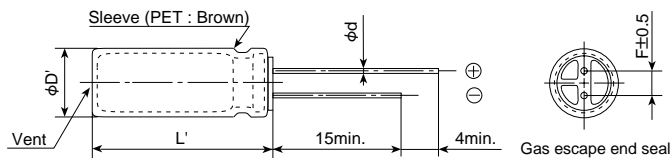


◆ SPECIFICATIONS

| Items | Characteristics | | | |
|--|---|--------------------------------------|------|------|
| Category | -40 to +125°C | | | |
| Temperature Range | -40 to +125°C | | | |
| Rated Voltage Range | 25 to 50V _{dc} | | | |
| Capacitance Tolerance | ±20% (M) (at 20°C, 120Hz) | | | |
| Leakage Current | I = 0.03CV or 4μA, whichever is greater. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C, 1 minute) | | | |
| Dissipation Factor (tanδ) | Rated voltage (V _{dc}) | 25 | 35 | 50 |
| | tanδ (Max.) | 0.14 | 0.12 | 0.10 |
| | 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 _{dc}) | 25 | 35 | 50 |
| | Z(-25°C)/Z(+20°C) | 2 | 2 | 2 |
| | Z(-40°C)/Z(+20°C) | 4 | 4 | 4 |
| 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 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 | | |

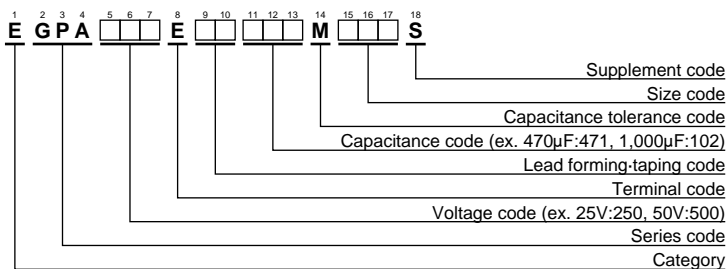
◆ DIMENSIONS [mm]

- 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)"

◆STANDARD RATINGS

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

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

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

| Capacitance(μF) | Frequency(Hz) | | | |
|-----------------|---------------|------|------|------|
| | 120 | 1k | 10k | 100k |
| 470 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 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.