

# GXF Series

- Downsizing and high-ripple current version of GXE series
- For automobile modules and networking equipment and other high temperature applications
- Endurance with ripple current : 3,000 hours at 125°C
- Solvent resistant type except 160 to 400V<sub>dc</sub>
- RoHS2 Compliant
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

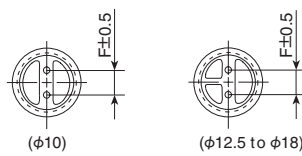
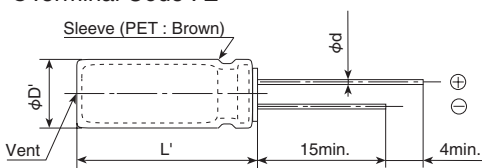


## SPECIFICATIONS

| Items  | Characteristics   |                                      |      |      |                           |                                      |      |             |             |
|--|---|--------------------------------------|------|------|---------------------------|--------------------------------------|------|-------------|-------------|
| Category   | -40 to +125°C   |                                      |      |      |                           |                                      |      |             |             |
| Temperature Range  |   |                                      |      |      |                           |                                      |      |             |             |
| Rated Voltage Range  | 25 to 400V <sub>dc</sub>  |                                      |      |      |                           |                                      |      |             |             |
| Capacitance Tolerance  | ±20%(M) (20°C, 120Hz)   |                                      |      |      |                           |                                      |      |             |             |
| Leakage Current  | 25 to 100V <sub>dc</sub>  |                                      |      |      | 160 to 400V <sub>dc</sub> |                                      |      |             |             |
|  | I=0.03CV or 4µA, whichever is greater.  |                                      |      |      | CV≤1,000 I=0.1CV+40       |                                      |      |             |             |
|  |   |                                      |      |      | CV>1,000 I=0.04CV+100     |                                      |      |             |             |
| Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 1 minute) |   |                                      |      |      |                           |                                      |      |             |             |
| Dissipation Factor (tan δ)   | Rated voltage (V <sub>dc</sub> )  | 25V                                  | 35V  | 50V  | 63V                       | 80V                                  | 100V | 160 to 250V | 350 to 400V |
|  | tan δ (Max.)  | 0.14                                 | 0.12 | 0.10 | 0.10                      | 0.08                                 | 0.08 | 0.15        | 0.20        |
|  | 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> )  | 25V                                  | 35V  | 50V  | 63V                       | 80V                                  | 100V | 160 to 250V | 350 to 400V |
|  | Z(-25°C)/Z(+20°C)   | 2                                    | 2    | 2    | 2                         | 2                                    | 2    | 3           | 6           |
|  | Z(-40°C)/Z(+20°C)   | 4                                    | 4    | 4    | 4                         | 4                                    | 4    | 6           | 12          |
| (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 3,000 hours at 125°C.   |                                      |      |      |                           |                                      |      |             |             |
|  | Rated Voltage   | 25 to 100V <sub>dc</sub>             |      |      |                           | 160 to 400V <sub>dc</sub>            |      |             |             |
|  | Capacitance change  | ≤±30% of the initial value           |      |      |                           | ≤±20% of the initial value           |      |             |             |
|  | D.F. (tan δ)  | ≤300% of the initial specified value |      |      |                           | ≤200% of the initial specified value |      |             |             |
|  | Leakage current   | ≤The initial specified value         |      |      |                           | ≤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 (500hours for 160 to 400V <sub>dc</sub> ) 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. |                                      |      |      |                           |                                      |      |             |             |
|  | Rated Voltage   | 25 to 100V <sub>dc</sub>             |      |      |                           | 160 to 400V <sub>dc</sub>            |      |             |             |
|  | Capacitance change  | ≤±30% of the initial value           |      |      |                           | ≤±20% of the initial value           |      |             |             |
|  | D.F. (tan δ)  | ≤300% of the initial specified value |      |      |                           | ≤200% of the initial specified value |      |             |             |
|  | Leakage current   | ≤The initial specified value         |      |      |                           | ≤500% of the initial specified value |      |             |             |

## DIMENSIONS [mm]

- Terminal Code : E



Gas escape end seal

| ΦD  | 10         | 12.5 | 14.5 | 16  | 18  |
|-----|------------|------|------|-----|-----|
| Φd  | 0.6        | 0.6  | 0.8  | 0.8 | 0.8 |
| F   | 5.0        | 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

□□ is not solvent resistant.

| VV (V <sub>dc</sub> ) | Cap (μF) | Case size φDxL(mm) | ESR (Ωmax./100kHz) |       | Rated ripple current (mA <sub>rms</sub> /125°C, 100kHz) | Part No.           | VV (V <sub>dc</sub> ) | Cap (μF)           | Case size φDxL(mm) | ESR (Ωmax./100kHz) |                    | Rated ripple current (mA <sub>rms</sub> /125°C, 100kHz) | Part No.           |
|-----------------------|----------|--------------------|--------------------|-------|---|--------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|---|--------------------|
|                       |          |                    | 20°C               | -40°C |   |                    |                       |                    |                    | 20°C               | -40°C              |   |                    |
| 100                   | 330      | 16×25              | 0.057              | 0.39  | 2,190   | EGXF101E□□331ML25S | 250                   | 39                 | 10×30              | —                  | —                  | 1,410   | EGXF251E□□390MJ30S |
|                       | 330      | 18×20              | 0.069              | 0.39  | 1,690   | EGXF101E□□331MM20S |                       | 47                 | 10×35              | —                  | —                  | 1,600   | EGXF251E□□470MJ35S |
|                       | 360      | 14.5×30            | 0.050              | 0.40  | 2,620   | EGXF101E□□361MU30S |                       | 51                 | 12.5×25            | —                  | —                  | 1,510   | EGXF251E□□510MK25S |
|                       | 390      | 12.5×40            | 0.044              | 0.33  | 2,970   | EGXF101E□□391MK40S |                       | 51                 | 14.5×20            | —                  | —                  | 1,340   | EGXF251E□□510MU20S |
|                       | 390      | 14.5×35            | 0.044              | 0.33  | 2,850   | EGXF101E□□391MU35S |                       | 56                 | 10×40              | —                  | —                  | 1,790   | EGXF251E□□560MJ40S |
|                       | 390      | 16×30              | 0.044              | 0.33  | 2,770   | EGXF101E□□391ML30S |                       | 62                 | 16×20              | —                  | —                  | 1,500   | EGXF251E□□620ML20S |
|                       | 430      | 18×25              | 0.054              | 0.32  | 2,310   | EGXF101E□□431MM25S |                       | 68                 | 12.5×30            | —                  | —                  | 1,770   | EGXF251E□□680MK30S |
|                       | 510      | 14.5×40            | 0.038              | 0.26  | 3,230   | EGXF101E□□511MU40S |                       | 68                 | 14.5×25            | —                  | —                  | 1,610   | EGXF251E□□680MU25S |
|                       | 510      | 16×35              | 0.037              | 0.26  | 3,010   | EGXF101E□□511ML35S |                       | 82                 | 12.5×35            | —                  | —                  | 1,970   | EGXF251E□□820MK35S |
|                       | 560      | 18×30              | 0.043              | 0.26  | 2,830   | EGXF101E□□561MM30S |                       | 82                 | 18×20              | —                  | —                  | 1,730   | EGXF251E□□820MM20S |
|                       | 620      | 16×40              | 0.032              | 0.21  | 3,320   | EGXF101E□□621ML40S |                       | 91                 | 14.5×30            | —                  | —                  | 1,880   | EGXF251E□□910MU30S |
|                       | 680      | 18×35              | 0.034              | 0.19  | 3,210   | EGXF101E□□681MM35S |                       | 91                 | 16×25              | —                  | —                  | 1,850   | EGXF251E□□910ML25S |
|                       | 820      | 18×40              | 0.029              | 0.16  | 3,410   | EGXF101E□□821MM40S |                       | 100                | 12.5×40            | —                  | —                  | 2,150   | EGXF251E□□101MK40S |
|                       | 160      | 51                 | 10×20              | —     | —   | 900                |                       | EGXF161E□□510MJ20S | 100                | 14.5×35            | —                  | —   | 2,030              |
| 62                    |          | 10×25              | —                  | —     | 1,200   | EGXF161E□□620MJ25S | 120                   | 18×25              | —                  | —                  | 2,050              | EGXF251E□□121MM25S                                      |                    |
| 75                    |          | 12.5×20            | —                  | —     | 1,220   | EGXF161E□□750MK20S | 130                   | 14.5×40            | —                  | —                  | 2,250              | EGXF251E□□131MU40S                                      |                    |
| 82                    |          | 10×30              | —                  | —     | 1,410   | EGXF161E□□820MJ30S | 16                    | 10×20              | —                  | —                  | 460                | EGXF351E□□160MJ20S                                      |                    |
| 100                   |          | 10×35              | —                  | —     | 1,600   | EGXF161E□□101MJ35S | 20                    | 10×25              | —                  | —                  | 610                | EGXF351E□□200MJ25S                                      |                    |
| 100                   |          | 14.5×20            | —                  | —     | 1,340   | EGXF161E□□101MU20S | 24                    | 12.5×20            | —                  | —                  | 680                | EGXF351E□□240MK20S                                      |                    |
| 110                   |          | 12.5×25            | —                  | —     | 1,510   | EGXF161E□□111MK25S | 27                    | 10×30              | —                  | —                  | 720                | EGXF351E□□270MJ30S                                      |                    |
| 120                   |          | 10×40              | —                  | —     | 1,790   | EGXF161E□□121MJ40S | 33                    | 10×35              | —                  | —                  | 820                | EGXF351E□□330MJ35S                                      |                    |
| 130                   |          | 16×20              | —                  | —     | 1,500   | EGXF161E□□131ML20S | 33                    | 14.5×20            | —                  | —                  | 870                | EGXF351E□□330MU20S                                      |                    |
| 150                   |          | 12.5×30            | —                  | —     | 1,770   | EGXF161E□□151MK30S | 36                    | 10×40              | —                  | —                  | 940                | EGXF351E□□360MJ40S                                      |                    |
| 150                   |          | 14.5×25            | —                  | —     | 1,610   | EGXF161E□□151MU25S | 36                    | 12.5×25            | —                  | —                  | 980                | EGXF351E□□360MK25S                                      |                    |
| 180                   |          | 12.5×35            | —                  | —     | 1,970   | EGXF161E□□181MK35S | 43                    | 16×20              | —                  | —                  | 970                | EGXF351E□□430ML20S                                      |                    |
| 180                   |          | 14.5×30            | —                  | —     | 1,880   | EGXF161E□□181MU30S | 47                    | 12.5×30            | —                  | —                  | 1,210              | EGXF351E□□470MK30S                                      |                    |
| 180                   |          | 18×20              | —                  | —     | 1,730   | EGXF161E□□181MM20S | 47                    | 14.5×25            | —                  | —                  | 1,210              | EGXF351E□□470MU25S                                      |                    |
| 200                   | 200      | 12.5×40            | —                  | —     | 2,150   | EGXF161E□□201MK40S | 56                    | 12.5×35            | —                  | —                  | 1,330              | EGXF351E□□560MK35S                                      |                    |
|                       | 200      | 16×25              | —                  | —     | 1,850   | EGXF161E□□201ML25S | 56                    | 16×25              | —                  | —                  | 1,130              | EGXF351E□□560ML25S                                      |                    |
|                       | 220      | 14.5×35            | —                  | —     | 2,030   | EGXF161E□□221MU35S | 56                    | 18×20              | —                  | —                  | 1,060              | EGXF351E□□560MM20S                                      |                    |
|                       | 240      | 18×25              | —                  | —     | 2,050   | EGXF161E□□241MM25S | 62                    | 14.5×30            | —                  | —                  | 1,410              | EGXF351E□□620MU30S                                      |                    |
|                       | 270      | 14.5×40            | —                  | —     | 2,250   | EGXF161E□□271MU40S | 68                    | 12.5×40            | —                  | —                  | 1,450              | EGXF351E□□680MK40S                                      |                    |
|                       | 36       | 10×20              | —                  | —     | 900   | EGXF201E□□360MJ20S | 68                    | 14.5×35            | —                  | —                  | 1,590              | EGXF351E□□680MU35S                                      |                    |
|                       | 43       | 10×25              | —                  | —     | 1,200   | EGXF201E□□430MJ25S | 75                    | 18×25              | —                  | —                  | 1,200              | EGXF351E□□750MM25S                                      |                    |
|                       | 56       | 12.5×20            | —                  | —     | 1,220   | EGXF201E□□560MK20S | 91                    | 14.5×40            | —                  | —                  | 1,820              | EGXF351E□□910MU40S                                      |                    |
|                       | 62       | 10×30              | —                  | —     | 1,410   | EGXF201E□□620MJ30S | 12                    | 10×20              | —                  | —                  | 460                | EGXF401E□□120MJ20S                                      |                    |
|                       | 75       | 10×35              | —                  | —     | 1,600   | EGXF201E□□750MJ35S | 16                    | 10×25              | —                  | —                  | 610                | EGXF401E□□160MJ25S                                      |                    |
|                       | 75       | 14.5×20            | —                  | —     | 1,340   | EGXF201E□□750MU20S | 20                    | 10×30              | —                  | —                  | 720                | EGXF401E□□200MJ30S                                      |                    |
|                       | 82       | 10×40              | —                  | —     | 1,790   | EGXF201E□□820MJ40S | 20                    | 12.5×20            | —                  | —                  | 680                | EGXF401E□□200MK20S                                      |                    |
|                       | 82       | 12.5×25            | —                  | —     | 1,510   | EGXF201E□□820MK25S | 24                    | 10×35              | —                  | —                  | 820                | EGXF401E□□240MJ35S                                      |                    |
|                       | 100      | 12.5×30            | —                  | —     | 1,770   | EGXF201E□□101MK30S | 24                    | 14.5×20            | —                  | —                  | 870                | EGXF401E□□240MU20S                                      |                    |
| 100                   | 16×20    | —                  | —                  | 1,500 | EGXF201E□□101ML20S                                      | 27                 | 12.5×25               | —                  | —                  | 980                | EGXF401E□□270MK25S |   |                    |
| 110                   | 14.5×25  | —                  | —                  | 1,610 | EGXF201E□□111MU25S                                      | 30                 | 10×40                 | —                  | —                  | 940                | EGXF401E□□300MJ40S |   |                    |
| 130                   | 12.5×35  | —                  | —                  | 1,970 | EGXF201E□□131MK35S                                      | 33                 | 16×20                 | —                  | —                  | 970                | EGXF401E□□330ML20S |   |                    |
| 130                   | 14.5×30  | —                  | —                  | 1,880 | EGXF201E□□131MU30S                                      | 36                 | 12.5×30               | —                  | —                  | 1,210              | EGXF401E□□360MK30S |   |                    |
| 130                   | 18×20    | —                  | —                  | 1,730 | EGXF201E□□131MM20S                                      | 36                 | 14.5×25               | —                  | —                  | 1,210              | EGXF401E□□360MU25S |   |                    |
| 150                   | 12.5×40  | —                  | —                  | 2,150 | EGXF201E□□151MK40S                                      | 43                 | 12.5×35               | —                  | —                  | 1,330              | EGXF401E□□430MK35S |   |                    |
| 150                   | 16×25    | —                  | —                  | 1,850 | EGXF201E□□151ML25S                                      | 43                 | 18×20                 | —                  | —                  | 1,060              | EGXF401E□□430MM20S |   |                    |
| 160                   | 14.5×35  | —                  | —                  | 2,030 | EGXF201E□□161MU35S                                      | 47                 | 14.5×30               | —                  | —                  | 1,410              | EGXF401E□□470MU30S |   |                    |
| 180                   | 18×25    | —                  | —                  | 2,050 | EGXF201E□□181MM25S                                      | 47                 | 16×25                 | —                  | —                  | 1,130              | EGXF401E□□470ML25S |   |                    |
| 200                   | 14.5×40  | —                  | —                  | 2,250 | EGXF201E□□201MU40S                                      | 51                 | 12.5×40               | —                  | —                  | 1,450              | EGXF401E□□510MK40S |   |                    |
| 250                   | 24       | 10×20              | —                  | —     | 900   | EGXF251E□□240MJ20S | 56                    | 14.5×35            | —                  | —                  | 1,590              | EGXF401E□□560MU35S                                      |                    |
|                       | 30       | 10×25              | —                  | —     | 1,200   | EGXF251E□□300MJ25S | 62                    | 18×25              | —                  | —                  | 1,200              | EGXF401E□□620MM25S                                      |                    |
|                       | 36       | 12.5×20            | —                  | —     | 1,220   | EGXF251E□□360MK20S | 68                    | 14.5×40            | —                  | —                  | 1,820              | EGXF401E□□680MU40S                                      |                    |

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

◆RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

(25 to 100V<sub>dc</sub>)

| Capacitance(μF) | Frequency(Hz) | 120  | 1k   | 10k  | 100k |
|-----------------|---------------|------|------|------|------|
| 130 to 240      |               | 0.40 | 0.82 | 0.93 | 1.00 |
| 270 to 560      |               | 0.50 | 0.85 | 0.94 | 1.00 |
| 620 to 2,000    |               | 0.60 | 0.87 | 0.95 | 1.00 |
| 2,200 to 4,300  |               | 0.75 | 0.90 | 0.95 | 1.00 |
| 4,700 to 11,000 |               | 0.85 | 0.95 | 0.98 | 1.00 |

(160 to 400V<sub>dc</sub>)

| Capacitance(μF) | Frequency(Hz) | 50   | 120  | 300  | 1k   | 10k  | 100k |
|-----------------|---------------|------|------|------|------|------|------|
| 12 to 33        |               | 0.15 | 0.30 | 0.45 | 0.65 | 0.95 | 1.00 |
| 36 to 270       |               | 0.25 | 0.35 | 0.50 | 0.70 | 0.96 | 1.00 |

Please contact us for lifetime estimation.