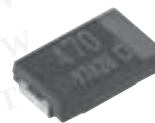


Surface Mount Type

SP-Cap

Series: **GX** (Super Low ESR Products)



■ Features

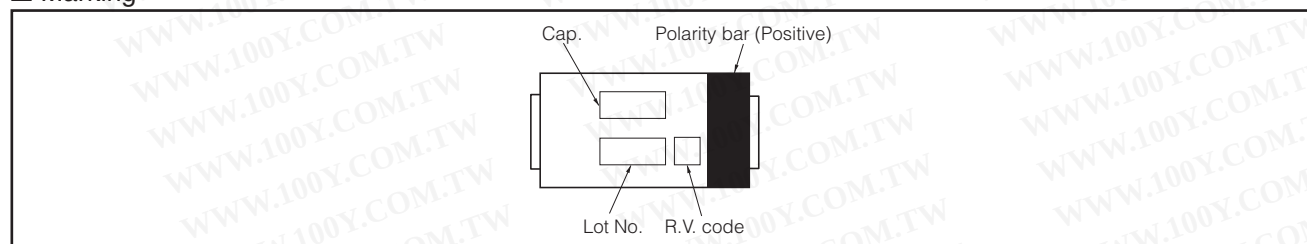
- Large capacitance (560  $\mu\text{F}$  max.)
- Super Low ESR (3  $\text{m}\Omega$ )
- Low ESL ( 3-terminals : 50 % less than 2-terminals) [Suffix : L]
- RoHS directive compliant

■ Specifications

|                       |                                                                                                                                                   |                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Series & Size Code    | GX                                                                                                                                                |                                         |
| Category Temp. Range  | -55 °C to +105 °C                                                                                                                                 |                                         |
| Rated Voltage Range   | 2 V.DC to 2.5 V.DC                                                                                                                                |                                         |
| Nominal Cap.Range     | 330 $\mu\text{F}$ to 560 $\mu\text{F}$                                                                                                            |                                         |
| Capacitance Tolerance | $\pm 20\%$ (120 Hz/+20 °C)                                                                                                                        |                                         |
| DC Leakage Current    | $I \leq 0.1 \text{ CV}$ ( $\mu\text{A}$ ) 2 minutes                                                                                               |                                         |
| $\tan \delta$         | $\leq 0.06$ (120 Hz/+20 °C)                                                                                                                       |                                         |
| Surge Voltage         | Rated Voltage $\times 1.25$ (15 °C to 35 °C)                                                                                                      |                                         |
| Endurance             | After applying rated voltage for 2000 hours at 105 °C $\pm 2$ °C, and then being stabilized at +20 °C, capacitor shall meet the following limits. |                                         |
|                       | Capacitance change                                                                                                                                | $\pm 20\%$ of initial measured value    |
|                       | $\tan \delta$                                                                                                                                     | $\leq 200\%$ of initial specified value |
|                       | DC leakage current                                                                                                                                | $\leq 300\%$ of initial specified value |
| Moisture resistance   | After storing for 500 hours at 60 °C, 90 %                                                                                                        |                                         |
|                       | Capacitance change of initial measured value                                                                                                      | 2 V.DC to 2.5 V.DC<br>$+70, -20\%$      |
|                       | $\tan \delta$                                                                                                                                     | $\leq 200\%$ of initial specified value |
|                       | DC leakage current                                                                                                                                | $\leq$ Initial specified value          |

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■ Marking



■ Dimensions in mm(not to scale)

(Unit : mm)

(Unit : mm)

|                                          |              |              |             |             |
|------------------------------------------|--------------|--------------|-------------|-------------|
| 2 terminals                              |              |              |             |             |
|                                          |              |              |             |             |
| $L \pm 0.2$                              | $W1 \pm 0.2$ | $W2 \pm 0.1$ | $H \pm 0.1$ | $P \pm 0.3$ |
| 7.3                                      | 4.3          | 2.4          | 1.9         | 1.3         |
| * Externals of figure are the reference. |              |              |             |             |

|                                          |              |              |             |              |              |              |              |
|------------------------------------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|
| 3 terminals                              |              |              |             |              |              |              |              |
|                                          |              |              |             |              |              |              |              |
| $L \pm 0.2$                              | $W1 \pm 0.2$ | $W2 \pm 0.1$ | $H \pm 0.1$ | $P1 \pm 0.3$ | $P2 \pm 0.1$ | $P3 \pm 0.2$ | $P4 \pm 0.2$ |
| 7.3                                      | 4.3          | 2.4          | 1.9         | 1.3          | 1.1          | 0.7          | 1.4          |
| * Externals of figure are the reference. |              |              |             |              |              |              |              |

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
 Should a safety concern arise regarding this product, please be sure to contact us immediately.

## ■ Standard Products

Reflow \*3

&lt;Standard&gt;

| Series &<br>Size Code | Rated<br>Voltage<br>(V.DC) | Capaci-<br>tance<br>(±20 %)<br>(μF) | Case Size |           |           | Specification                        |                        | The number<br>of<br>terminals |   | Part number | *4<br>Min.<br>Packaging<br>Q'ty<br>(pcs) |
|-----------------------|----------------------------|-------------------------------------|-----------|-----------|-----------|--------------------------------------|------------------------|-------------------------------|---|-------------|------------------------------------------|
|                       |                            |                                     | L<br>(mm) | W<br>(mm) | H<br>(mm) | *1<br>Ripple<br>current<br>(Ar.m.s.) | *2<br>ESR<br>(mΩ max.) |                               |   |             |                                          |
| GX                    | 2                          | 330                                 | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      | ○                             |   | EEFGX0D331R | 3500                                     |
|                       |                            | 470                                 | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      | ○                             |   | EEFGX0D471R | 3500                                     |
|                       |                            |                                     | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      |                               | ○ | EEFGX0D471L | 3500                                     |
|                       |                            | 560                                 | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      | ○                             |   | EEFGX0D561R | 3500                                     |
|                       |                            |                                     | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      |                               | ○ | EEFGX0D561L | 3500                                     |
|                       | 2.5                        | 470                                 | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      | ○                             |   | EEFGX0E471R | 3500                                     |
|                       |                            |                                     | 7.3       | 4.3       | 1.9       | 10.2                                 | 3                      |                               | ○ | EEFGX0E471L | 3500                                     |

\*1: Ripple current (100 kHz/ +45 °C), \*2: ESR (100 kHz/+20 °C)

\*3: Please refer to the page of "Mounting Specifications".

\*4: Please contact us when 500 pcs packing is necessary.

## Temperature Compensation Multipliers for Ripple Current

| $T \leq 45\text{ °C}$ | $45\text{ °C} < T \leq 85\text{ °C}$ | $85\text{ °C} < T \leq 105\text{ °C}$ |
|-----------------------|--------------------------------------|---------------------------------------|
| 1.0                   | 0.7                                  | 0.25                                  |

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