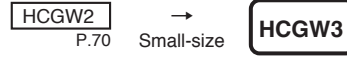


# HCGW3 Series Useful of 4,000 hours at 70°C

- Conform RoHS

## Features

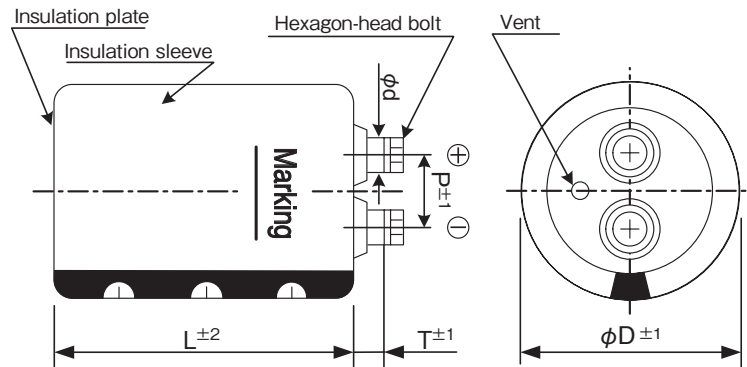
- Product primarily designed for circuits requiring large energy momentarily like those for the uninterruptible power supply (UPS) and X-ray power supply.
- Capacitance improved by 30%, comparison with the HCGW2 series (smallest series).



## Product Specifications

| Items                      | Specifications  |
|----------------------------|---|
| Temperature range          | -10°C ~ +70°C   |
| Rated voltage              | 350 ~ 500V.DC   |
| Capacitance tolerance      | ±20% (20°C, 120Hz)  |
| Leakage current            | 0.01CV (µA) or 7mA, whichever is smaller or less (20°C, after 5 minutes)<br>[C = nominal capacitance (µF), V = rated voltage (V)]   |
| Dissipation factor         | Less than the value specified in the standard products table. (20°C, 120Hz)   |
| Permissible ripple current | As specified in the standard products table. (70°C, 120Hz)  |
| Endurance                  | After the rated voltage with specified ripple current is applied at 70°C for 2,000 hours :<br>Capacitance change : Within ±15% of the initial value measured<br>Dissipation factor : 175% or less than the initial value specified<br>Leakage current : Less than or equal to the initial value specified   |
| Shelf life                 | The following specification shall be meet when the capacitor are restored to 20°C after storage of 500 hours at 70°C with no voltage applied. Before the measurement, the capacitor shall be preconditioned by applying the voltage treatment according to Item 4.1 of JIS C 5101-4.<br>Capacitance change : Within ±15% of the initial value measured<br>Dissipation factor : 175% or less than the initial value specified<br>Leakage current : Less than or equal to the initial value specified |
| Others                     | JIS C 5101-4  |

## Dimensions



(unit : mm)

| φD | P    | T   | φd   | Hexagon-head bolt | Cap material |
|----|------|-----|------|-------------------|--------------|
| 77 | 31.5 | 9.0 | 12.0 | M6×12             | Phenol resin |
| 90 | 31.5 | 8.0 | 12.0 | M6×12             | Phenol resin |

## Ripple current correction coefficient

|                        |      |      |      |      |
|------------------------|------|------|------|------|
| Temperature (°C)       | 40   | 60   | 70   |      |
| Correction coefficient | 2.2  | 1.7  | 1.0  |      |
| Frequency (Hz)         | 120  | 300  | 1k   | ≥10k |
| Correction coefficient | 1.00 | 1.05 | 1.10 | 1.35 |

Terminal permissible currents : 100Arms for M6.  
Please use this type of capacitor at a terminal current below the permissible.

## Product code

(Example) HCGW3 Series 400V 16,000 µF ±20%

**HCGW3 2G 163 Y E 148**

- HCGW3: Type of series
- 2G: Case height code
- 163: Case dia code
- Y: Type of bracket code
- E: Capacitance code
- 148: Rated voltage code

Refer to page 19 for product code.

### Bracket

- Refer to page 20-21 for shapes and dimensions.
- Product names in the Standard Products Table correspond to the bracket for Type Y, but Type I bracket may be used (Type of bracket code = I).
- If bracket are not necessary, enter "N" for type of bracket code.
- Bracket will be delivered separately.

Standard Products Table

| Rated Voltage (V. DC) | Capacitance (μF) | Case size φD×L(mm) | tanδ 20°C, 120Hz | Ripple current (Arms) 70°C, 120Hz | ESR(typ.) (mΩ) 20°C, 100Hz | Z max (mΩ) 20°C, 10kHz | ESL(typ.) (nH) | Product name    |
|-----------------------|------------------|--------------------|------------------|-----------------------------------|----------------------------|------------------------|----------------|-----------------|
| 350                   | 19,000           | 77×148             | 0.70             | 15.8                              | 18                         | 19                     | 24             | HCGW32V193YE148 |
|                       | 21,000           | 77×165             | 0.70             | 17.3                              | 16                         | 17                     | 24             | HCGW32V213YE165 |
|                       | 25,000           | 77×188             | 0.70             | 19.4                              | 14                         | 15                     | 24             | HCGW32V253YE188 |
|                       | 28,000           | 90×150             | 0.70             | 20.4                              | 12                         | 13                     | 24             | HCGW32V283YF150 |
|                       | 30,000           | 90×167             | 0.70             | 22.0                              | 12                         | 13                     | 24             | HCGW32V303YF167 |
|                       | 31,000           | 77×228             | 0.70             | 23.4                              | 11                         | 12                     | 24             | HCGW32V313YE228 |
|                       | 35,000           | 90×190             | 0.70             | 24.3                              | 10                         | 11                     | 24             | HCGW32V353YF190 |
|                       | 44,000           | 90×230             | 0.70             | 29.5                              | 8                          | 9                      | 24             | HCGW32V443YF230 |
| 400                   | 16,000           | 77×148             | 0.70             | 14.5                              | 21                         | 22                     | 24             | HCGW32G163YE148 |
|                       | 17,000           | 77×165             | 0.70             | 15.6                              | 20                         | 21                     | 24             | HCGW32G173YE165 |
|                       | 20,000           | 77×188             | 0.70             | 17.4                              | 17                         | 18                     | 24             | HCGW32G203YE188 |
|                       | 22,000           | 90×150             | 0.70             | 18.2                              | 16                         | 17                     | 24             | HCGW32G223YF150 |
|                       | 24,000           | 90×167             | 0.70             | 19.7                              | 14                         | 15                     | 24             | HCGW32G243YF167 |
|                       | 25,000           | 77×228             | 0.70             | 21.0                              | 14                         | 15                     | 24             | HCGW32G253YE228 |
|                       | 29,000           | 90×190             | 0.70             | 22.1                              | 12                         | 13                     | 24             | HCGW32G293YF190 |
|                       | 36,000           | 90×230             | 0.70             | 26.8                              | 10                         | 11                     | 24             | HCGW32G363YF230 |
| 450                   | 13,000           | 77×148             | 0.70             | 12.5                              | 31                         | 32                     | 24             | HCGW32W133YE148 |
|                       | 15,000           | 77×165             | 0.70             | 14.0                              | 27                         | 28                     | 24             | HCGW32W153YE165 |
|                       | 17,000           | 77×188             | 0.70             | 15.3                              | 23                         | 25                     | 24             | HCGW32W173YE188 |
|                       | 18,000           | 90×150             | 0.70             | 15.7                              | 22                         | 23                     | 24             | HCGW32W183YF150 |
|                       | 21,000           | 90×167             | 0.70             | 17.6                              | 19                         | 20                     | 24             | HCGW32W213YF167 |
|                       | 22,000           | 77×228             | 0.70             | 18.8                              | 18                         | 19                     | 24             | HCGW32W223YE228 |
|                       | 25,000           | 90×190             | 0.70             | 19.6                              | 16                         | 17                     | 24             | HCGW32W253YF190 |
|                       | 32,000           | 90×230             | 0.70             | 24.1                              | 12                         | 13                     | 24             | HCGW32W323YF230 |
| 500                   | 10,000           | 77×148             | 0.70             | 11.0                              | 36                         | 37                     | 24             | HCGW32H103YE148 |
|                       | 12,000           | 77×165             | 0.70             | 12.5                              | 30                         | 31                     | 24             | HCGW32H123YE165 |
|                       | 14,000           | 77×188             | 0.70             | 13.9                              | 26                         | 27                     | 24             | HCGW32H143YE188 |
|                       | 15,000           | 90×150             | 0.70             | 14.3                              | 24                         | 25                     | 24             | HCGW32H153YF150 |
|                       | 17,000           | 77×228             | 0.70             | 16.5                              | 21                         | 22                     | 24             | HCGW32H173YE228 |
|                       | 17,000           | 90×167             | 0.70             | 15.9                              | 21                         | 22                     | 24             | HCGW32H173YF167 |
|                       | 20,000           | 90×190             | 0.70             | 17.6                              | 18                         | 19                     | 24             | HCGW32H203YF190 |
|                       | 25,000           | 90×230             | 0.70             | 21.4                              | 15                         | 15                     | 24             | HCGW32H253YF230 |

ALUMINUM ELECTROLYTIC CAPACITORS

### Life time graph

Useful life depending on ambient temperature Ta and ripple current operating conditions Ir versus rated ripple current at 70°C, 120Hz

