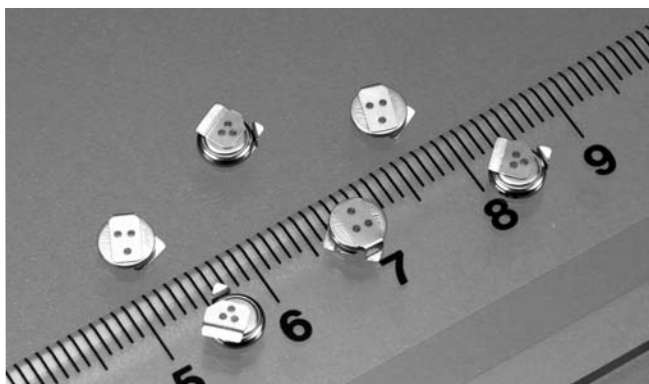


# XH-HG Capacitor

Pb-free reflowable

## XH414HG/ XH409HG (Under development)



The XH-HG is a capacitor with an excellent large current discharge characteristic at least 3 V, compared to its predecessor (XH414H). It is an environmentally friendly product that is reflow mounted by Pb-free soldering. It features high capacity, and long-term reliability, as well as a wide operating voltage range. It is thus suitable for backup power supply of clock and memory functions of mobile and information devices.

### FEATURES

- Pb-free reflowable:  
Superior heat resistance (260°C peak) allows reflow soldering by Pb-free solder
- Wide operating voltage range from 0V to 3.3V
- High capacity: 0.08F with "414" size
- Long Cycle Life:  
At least 10,000 times of charge/discharge
- Simple charging circuit (constant voltage charging)
- Wide operating temperature range:  
Operating temperature range: -20°C to +60°C

### APPLICATIONS

Backup power supply for memory and clock functions of cellphone, PHS, cordless phone, digital still camera, PDA, MD player, game machine, and printer, etc.

### SPECIFICATIONS

| Type                        | Electrical Specifications (Normal Temperature) <sup>*1</sup> |                 |                                      | Size          |             | Weight (g) |
|-----------------------------|--|-----------------|--------------------------------------|---------------|-------------|------------|
|                             | Maximum Use Voltage (V)                                      | Capacitance (F) | Internal Impedance <sup>*2</sup> (Ω) | Diameter (mm) | Height (mm) |            |
| XH414HG                     | 3.3  | 0.08            | 100                                  | 4.8           | 1.4         | 0.06       |
| XH409HG (under development) | 3.3  | (0.05)          | (100)                                | 4.8           | 0.9         | 0.05       |

\*1. Normal temperature: 23°C ± 3°C. Electrical characteristics and aging degradation of the products depend on temperature.

\*2. Value measured using AC (Alternating Current) method at the fully charged state.

#### <APPLICATION NOTES>

##### • Prohibition ripple charging

A ripple (high frequency fluctuation of voltage) in the charge voltage extremely lowers the capacitor performance. Be sure to charge capacitors with a stable voltage.

##### • Charge voltage

The age deterioration of the capacitor depends on the charge voltage. The age deterioration is accelerated as charge voltage goes higher.

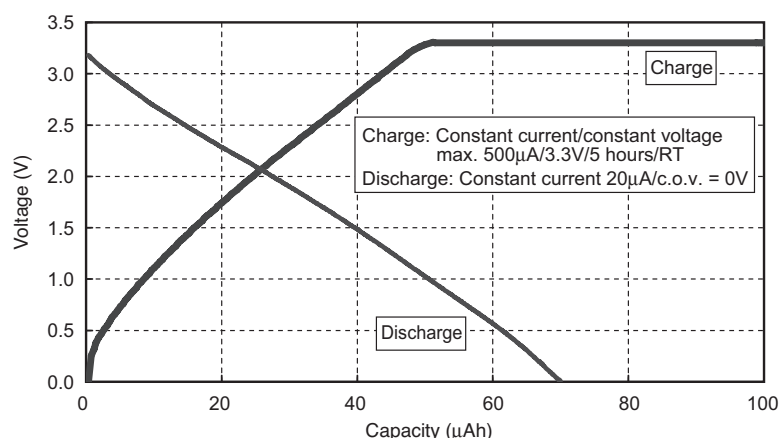
##### • Usage environment

Aging degradation of the capacitor varies depending on the usage environment (temperature and humidity). Contact us for further details.

### CHARACTERISTICS

#### Charge/discharge characteristics

##### XH414HG

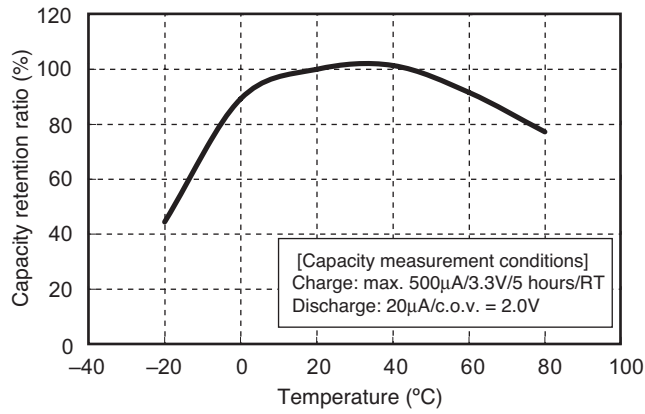


**CHARACTERISTICS**

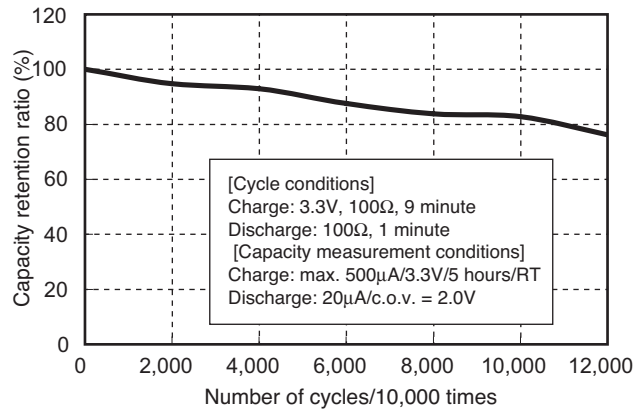
**Storage and other characteristics**

**XH414HG**

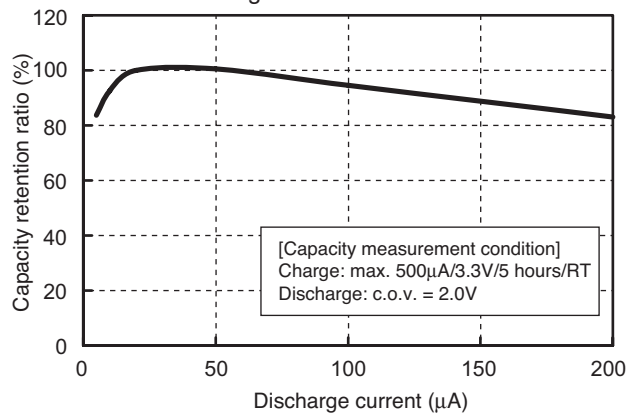
Temperature Characteristics



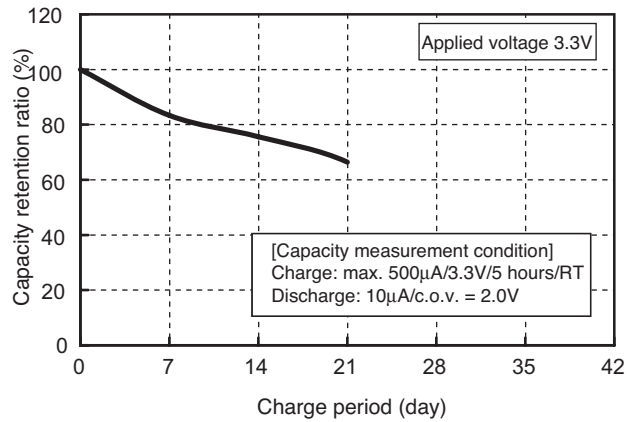
Charge/discharge Cycle Characteristics



Discharge Current Characteristics

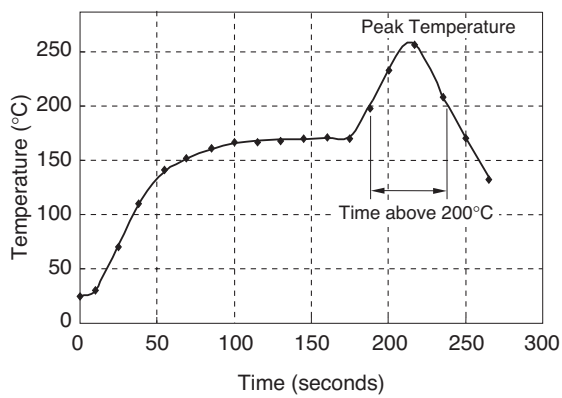


Floating Characteristics (70°C, 50%RH)

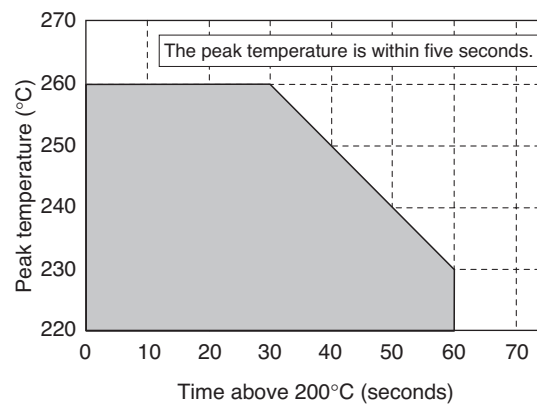


**REFLOW SOLDERING CONDITIONS**

Reflow Profile Example



Recommended Reflow Condition

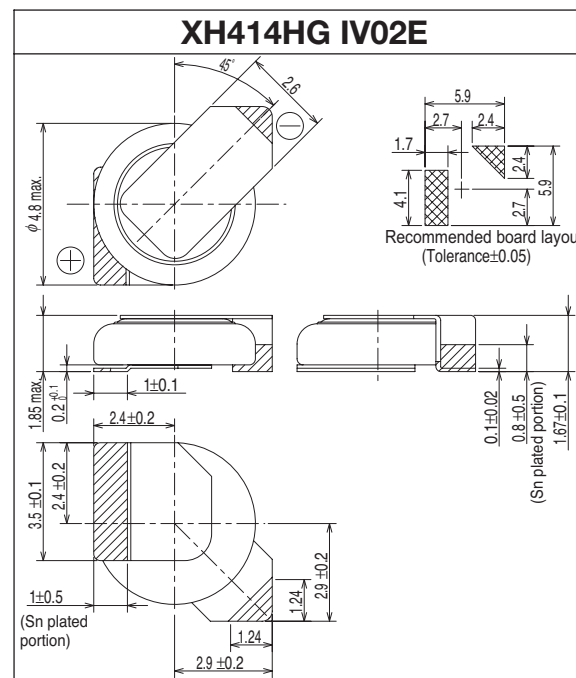
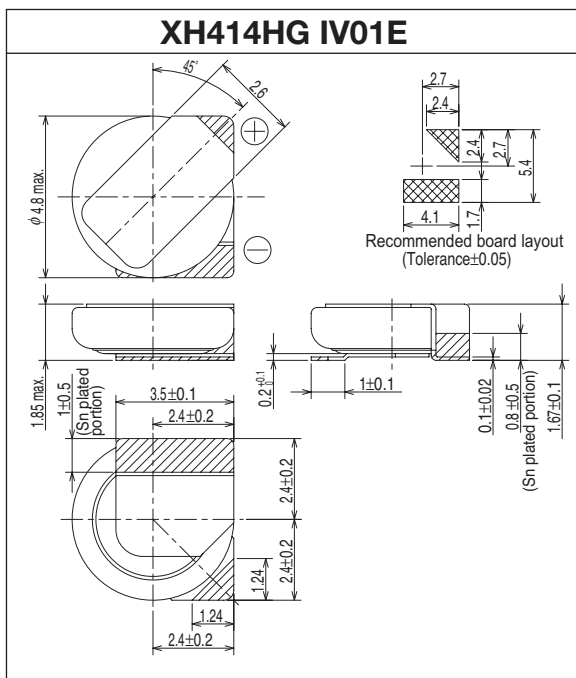
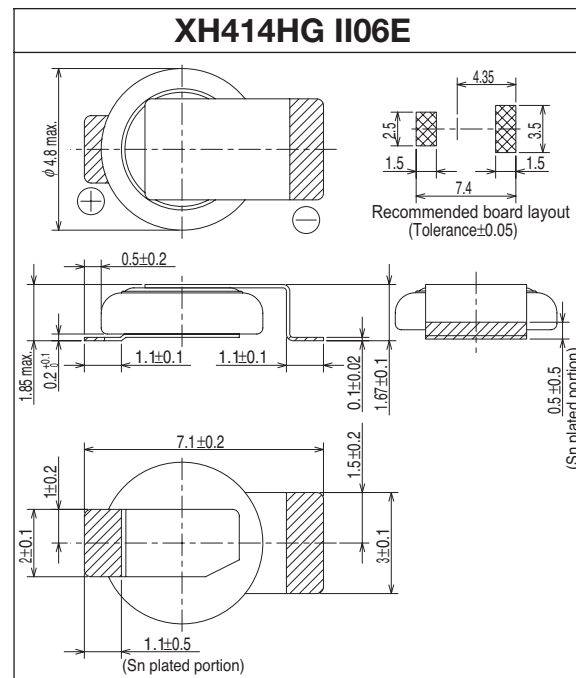
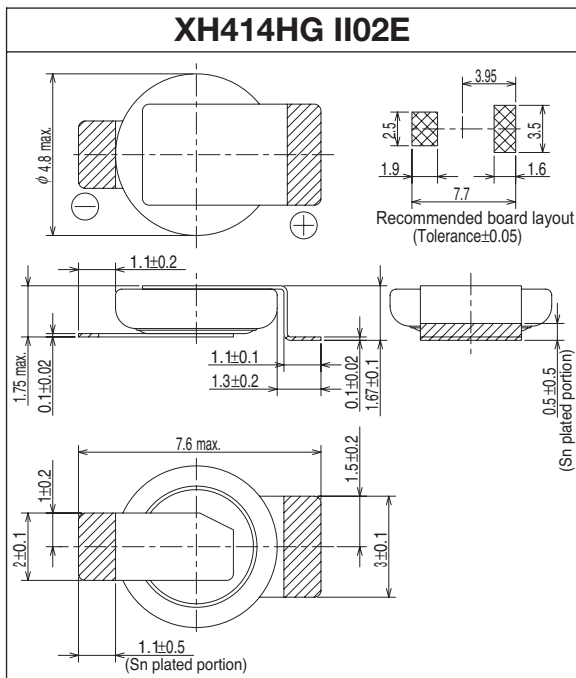


The times of repeated reflow soldering must be two times or less.  
The Temperature must be measured at top of the cell.

# XH-HG Capacitor

Pb-free reflowable

## STANDARD TERMINALS



- Contact Seiko Instruments Inc. for batteries with terminals other than the above shapes.
- Units: mm
- The hatched parts are tin plated (Sn: 100%).

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[DGH155Q5R5](#)