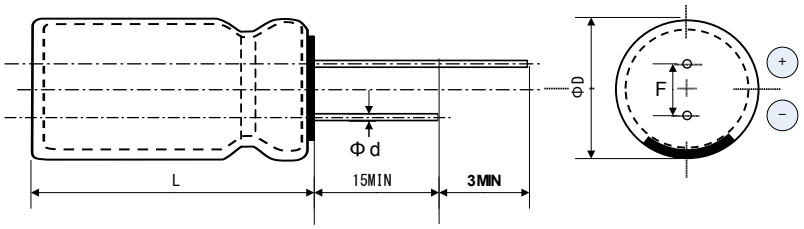
Spec Sheet

Part No. : VLCRS3R8206MG



Part No.	Part Dimension(mm)			
	ϕ D	L	ϕ d	F
VLCRS3R8206MG	φ10.0±0.5	30±2	φ0.6±0.05	5.0±0.5

Products characteristics table

Nominal Capacitance	20F
Max. Usable Voltage1	3.8V(at -30 to +70℃)
Max. Usable Voltage2	3.5V(at -30 to +85℃)
Min. Operating Voltage1	2.2V(at -30 to +70℃)
Min. Operating Voltage2	2.5V(at -30 to +85℃)
Initial Internal Resistance(DCR)	250mΩ Max
Initial Capacitance	20F ±15%
Operating Temp. Range1	-30 to +70℃
Operating Temp. Range2	-30 to +85℃
Soldering	Manual

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Technical Data of VLCRS3R8206MG

·Specification Chart

Table 1 - Specification
Measurement

·Performance

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Temperature characteristics
- Capacitance — Fig. 2
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Floating charge characteristics
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Cycle characteristics
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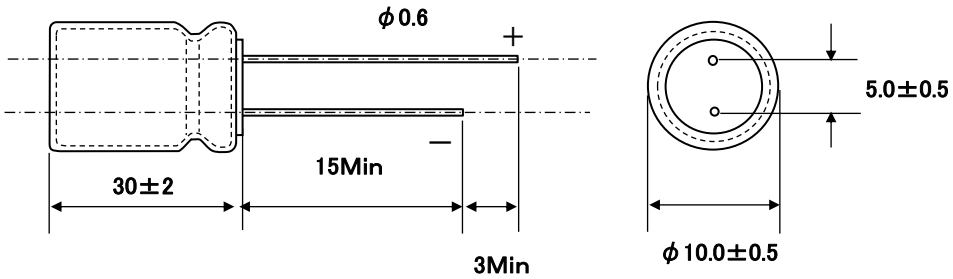
27 Jul. 2017
VINATech Co., Ltd.

Table-1 VLCRS3R8206MG Specification

	Items		Specification	Test condition
1	Usable temperature range		-30～+85℃	
2	Upper limit operating voltage		3.8V	Within the range of usable temperature (3.5V when over 70℃)
3	Lower limit operating voltage		2.2V	Within the range of usable temperature (2.5V when over 70℃)
4	Initial characteristics	Capacitance	17F to 23F	Charge : 3.8VDC-30min, Max0.2A Discharge : 0.02A Calculate by Wh of 3.8V-2.2V discharge
		DCR	Under 250mΩ	Charge : 3.8V 30min, 0.22A Discharge : 0.22A Calculate from the voltage values of 3.8 sec. and 7.6 sec. after the discharge starts by calculation formula.
5	Temperature characteristics	-30℃ Capacitance	Over 10.2F	After keeping a cell with 2hr or more each temperature. (3.5V when over 70℃)
		DCR	Under 4000mΩ	
		70℃,85℃ Capacitance	Over 17F	
		DCR	Under 250mΩ	
6	Floating charge characteristics	Capacitance	Over 13.6F	Temperature : 70±2℃ Voltage : 3.8V Measure at normal temperature and normal humidity after 1000 hours
		DCR	Under 375mΩ	
7	Floating charge characteristics	Capacitance	Over 13.6F	Temperature : 85±2℃ voltage : 3.5V Measure at normal temperature and normal humidity after 1000 hours
		DCR	Under 375mΩ	
8	Heat cycle characteristics	Capacitance	Over 13.6F	Leave the capacitor in below condition. Temperature : 85±2°C, -40±2°C Duration : 30 min Cycle Numbers : 100 cycles
		DCR	Under 375mΩ	
9	Floating charge characteristics in high temperature and high humidity	Capacitance	Over 13.6F	Temperature : 60±2°C Humidity : 90～95%RH Applied Voltage : 3.8V Duration : 500hours
		DCR	Under 375mΩ	

[Measurement]



※This material publishing data is a standard measurement example and not a guaranteed value. Please refer as a reference value.
There is no previous notice and the design and the specification might be changed.

VLCRS3R8206MG Initial discharge characteristics

Test condition

Ambient Temp. : 25±5℃

Charge : 3.8V-30minutes　Max　0.2A

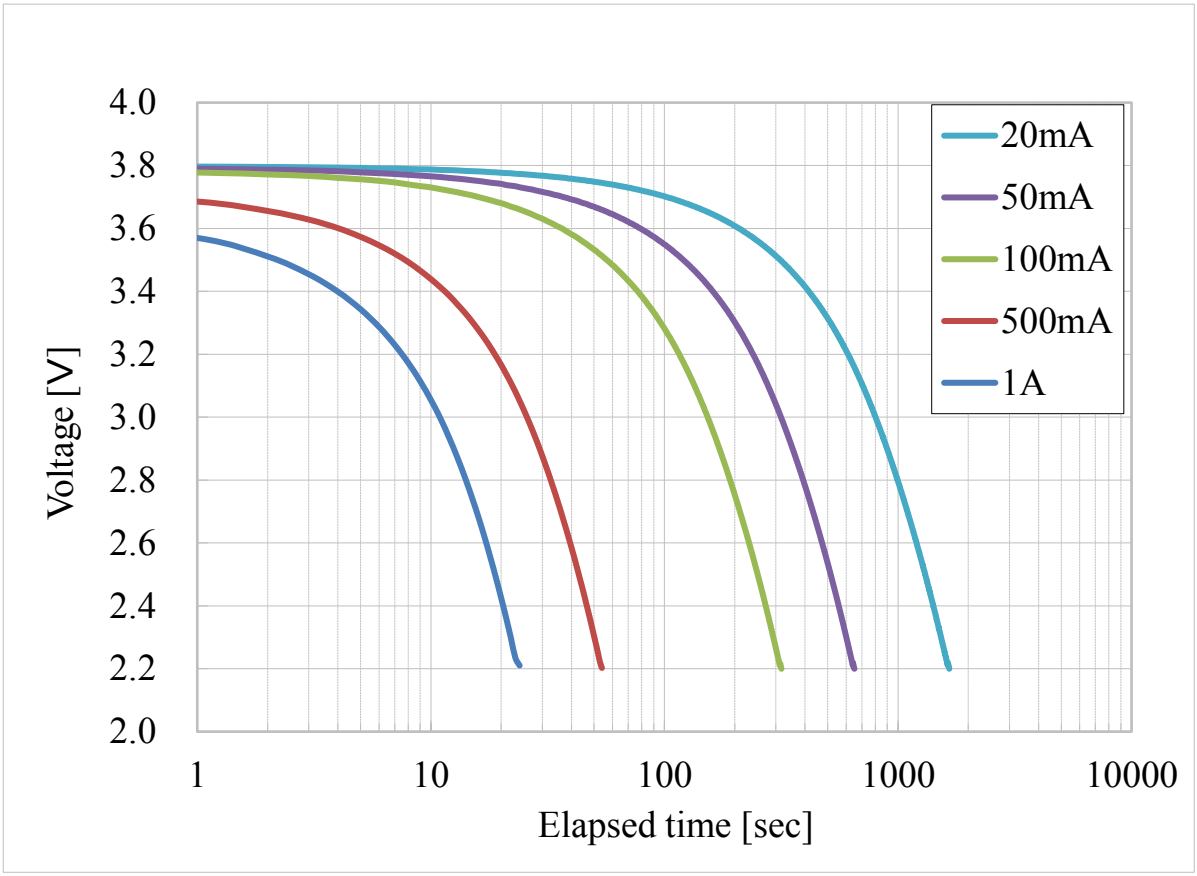


Fig.1 Initial discharge characteristics

VLCRS3R8206MG Temperature characteristics

Items		Specifications	Test condition
-30℃	Capacitance	Over 10.2F	After keeping a cell with 2hr or more each temperature. (3.5V when over 70℃)
	DCR	Under 4000mΩ	
70℃, 85℃	Capacitance	Over 17F	
	DCR	Under 250mΩ	

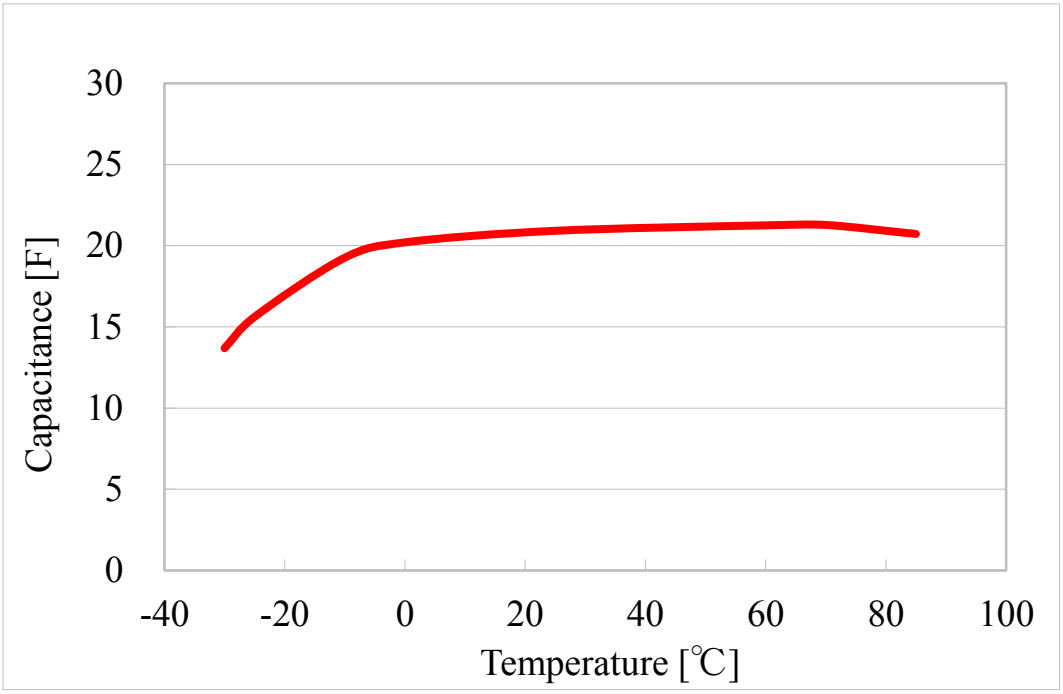


Fig. 2 Temperature characteristics (Capacitance change)

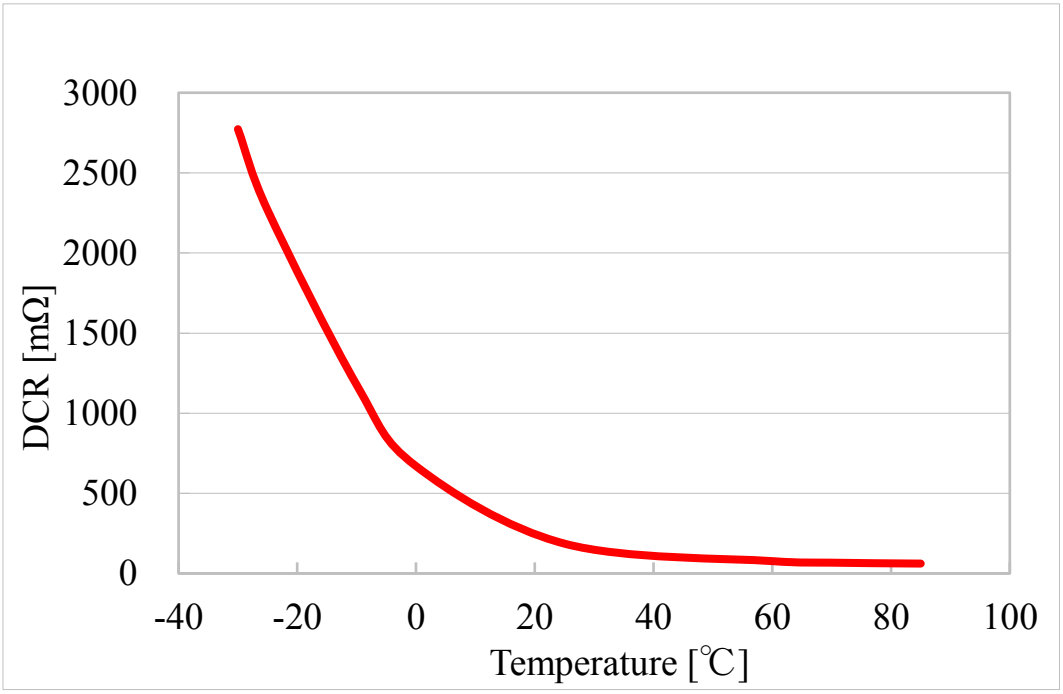


Fig. 3 Temperature characteristics (DCR change)

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There is no previous notice and the design and the specification might be changed.

VLCRS3R8206MG Floating charge characteristics

Items	Floating specification	Test condition
Capacitance	Over 13.6F	Temperature : 70±2℃ Measure at normal temperature and normal humidity after apply 3.8V for 1000 hours
DCR	Under 375mΩ	
Appearance	No significant defect	

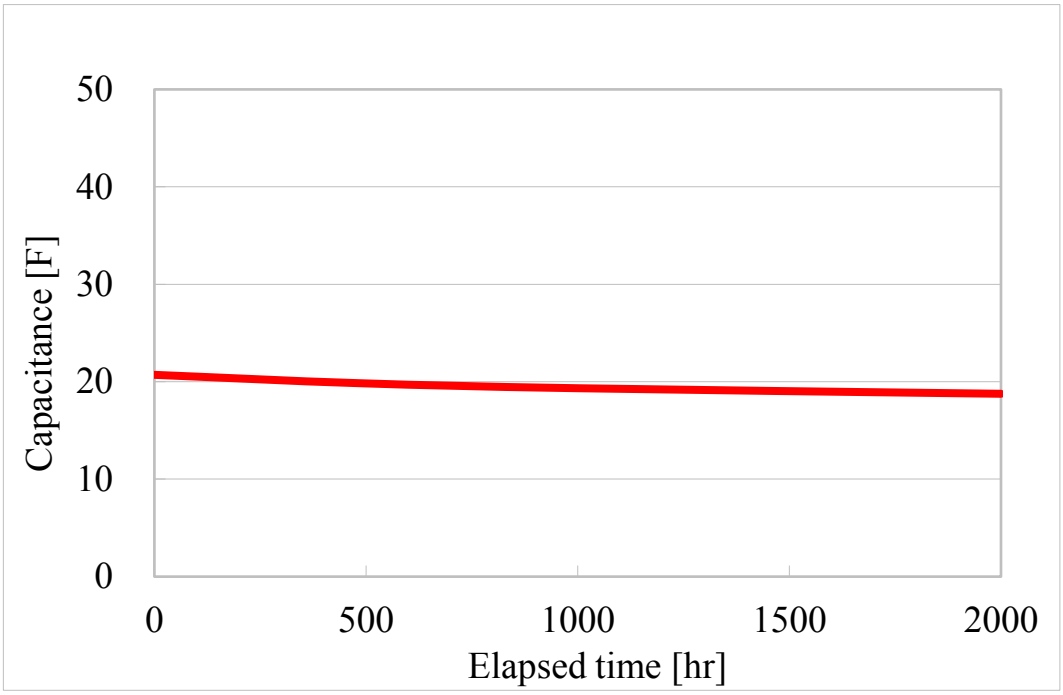

Fig. 4 Floating charge characteristics (Capacitance change)

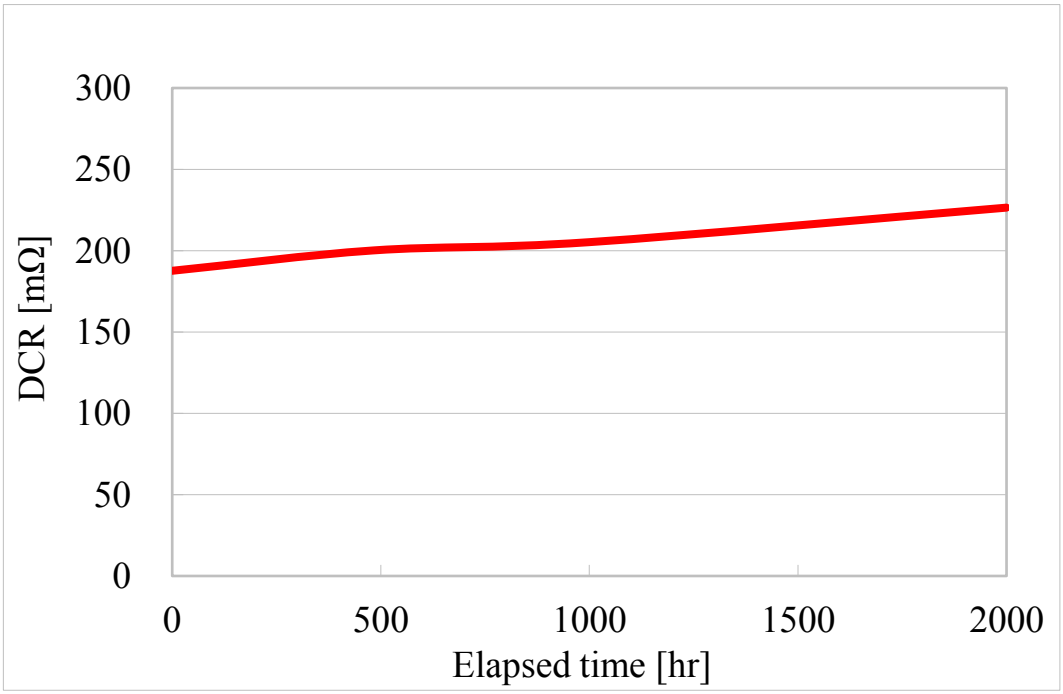

Fig. 5 Floating charge characteristics (DCR change)

VLCRS3R8206MG Charge/Discharge cycle characteristics

※This item is not a guaranty item.

Items	Cycle specification	Test condition
Capacitance		Ambient temp. : 25±5℃ Charge/Discharge cycle : 10000Times Charge : 3.8V-60sec Max 1A Discharge : 1A Cut off Volt. 2.2V
DCR		
Appearance		

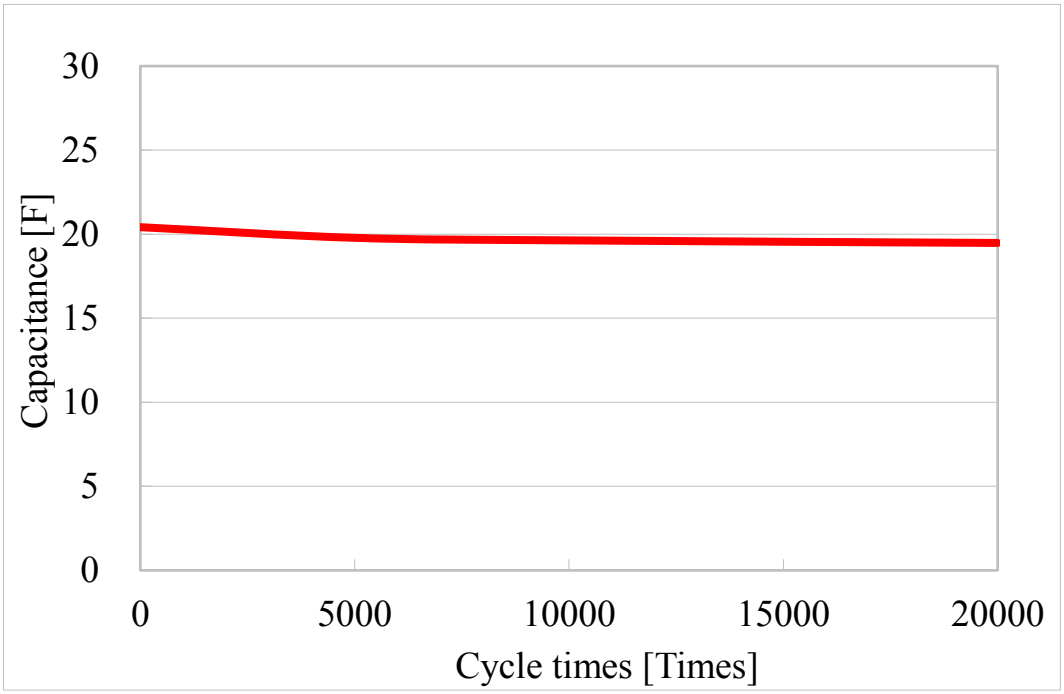

Fig. 6 Charge/Discharge cycle characteristics (Capacitance change)

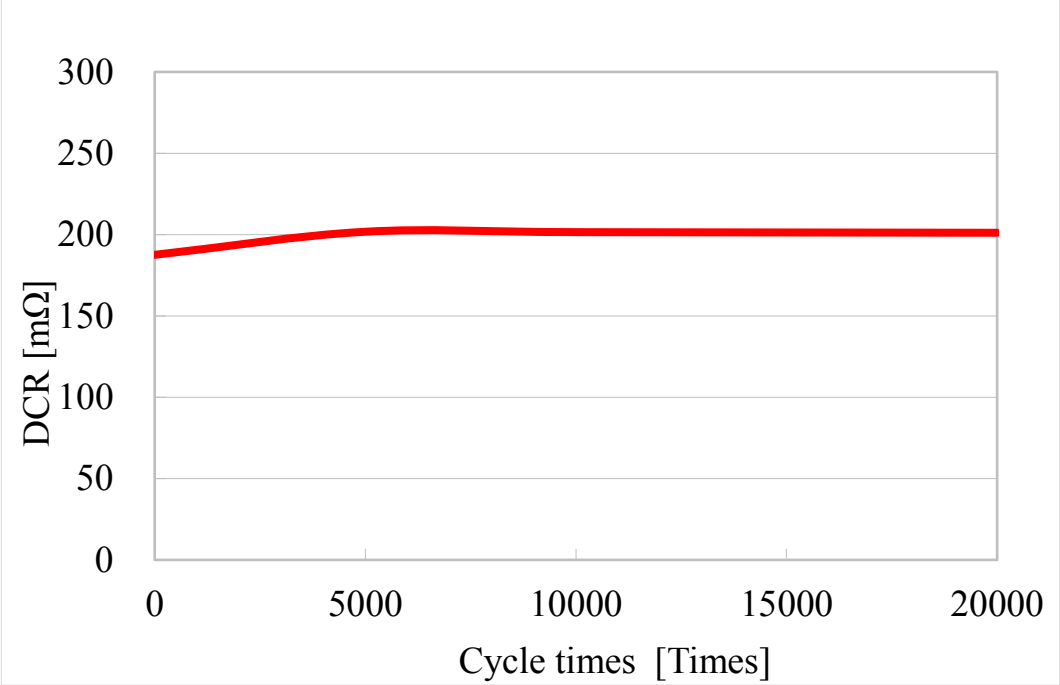

Fig. 7 Charge/Discharge cycle characteristics (DCR change)

VLCRS3R8206MG Self discharge / Leak current

※This item is not a guaranty item.

Test Condition : Charge 25℃ 3.8V 24hr

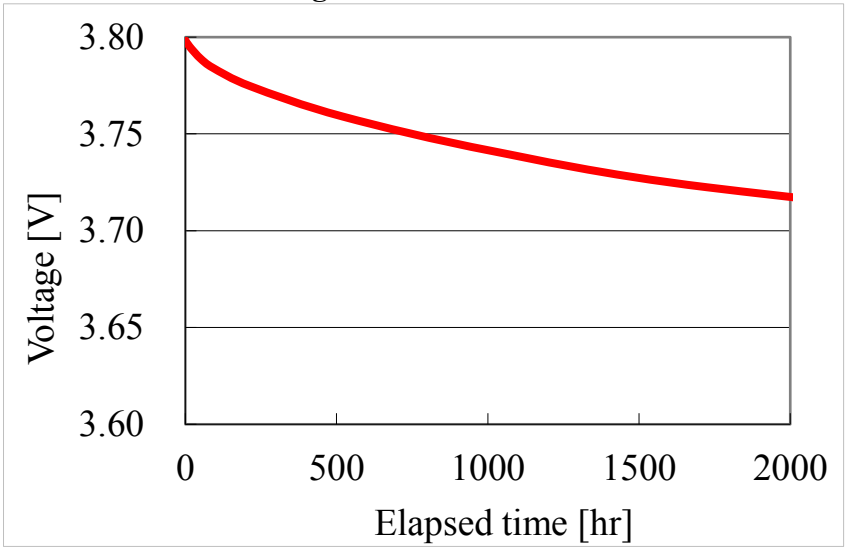

Fig. 8 Self discharge characteristics (Voltage change)

Test condition：Follow JIS C5160-1, 3.8V 25℃

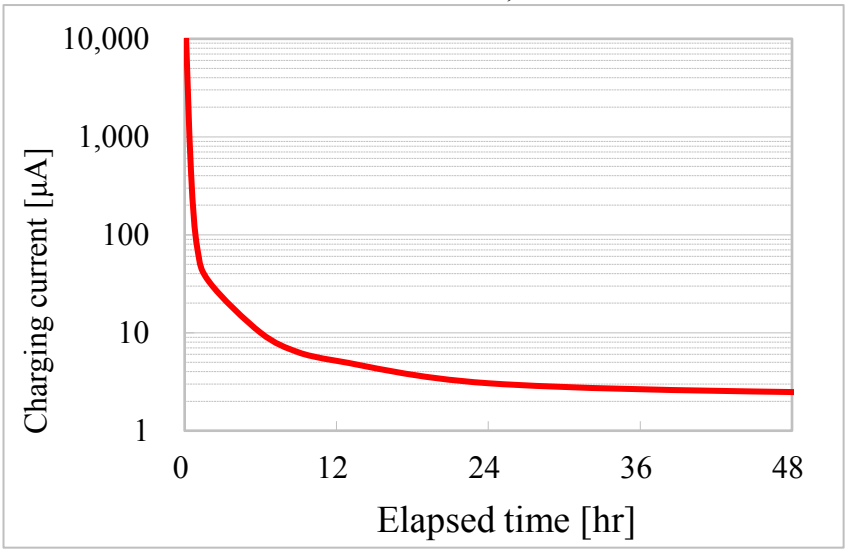

Fig.9 Leak current