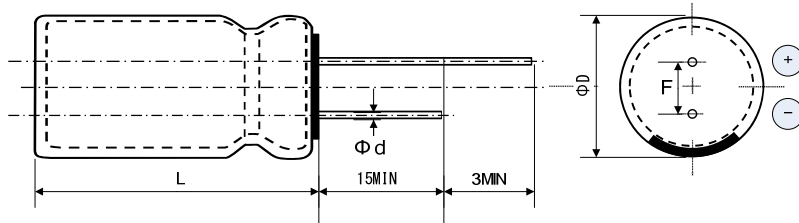


Spec Sheet

Part No. : VLCRS3R8406MG



Part No.	Part Dimension(mm)			
	ϕD	L	F	ϕd
VLCRS3R8406MG	$\phi 12.5 \pm 0.5$	35 ± 2	5.0 ± 0.5	$\phi 0.8 \pm 0.05$

Products characteristics table

Nominal Capacitance	40F
Max. Usable Voltage1	3.8V(at -30 to +70°C)
Max. Usable Voltage2	3.5V(at -30 to +85°C)
Min. Operating Voltage1	2.2V(at -30 to +70°C)
Min. Operating Voltage2	2.5V(at -30 to +85°C)
Initial Internal Resistance(DCR)	125mΩ Max
Initial Capacitance	40F ±15%
Operating Temp. Range1	-30 to +70°C
Operating Temp. Range2	-30 to +85°C
Soldering	Manual

The data is reference only. Electrical characteristics vary depending on environment or measurement condition.
 VINATech Co., Ltd. reserves the right to make change to the data at any time without notice.
 Before making final selection, please check product specification.

Technical Data of VLCRS3R8406MG

•Specification Chart

Table 1 - Specification
Measurement

•Performance

Initial discharging characteristics	Fig.1
Temperature characteristics	
Capacitance	Fig. 2
DCR	Fig. 3
Floating charge characteristics	
Capacitance	Fig. 4
DCR	Fig. 5
Cycle characteristics	
Capacitance	Fig. 6
DCR	Fig. 7
Self discharge characteristics	Fig. 8
Leak current	Fig. 9

18 July 2017
VINATech Co., Ltd.

※This material publishing data is a standard measurement example and not a guaranteed value. Please refer as a reference value.

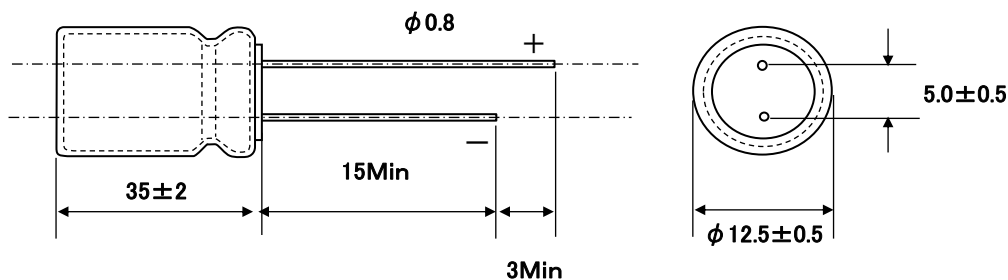
There is no previous notice and the design and the specification might be changed.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.

Table-1 VLCRS3R8406MG Specification

Items		Specification	Test condition
1	Usable temperature range	-30 to +85°C	
2	Upper limit operating voltage	3.8V	Within the range of usable temperature (3.5V when over 70°C)
3	Lower limit operating voltage	2.2V	Within the range of usable temperature (2.5V when over 70°C)
4	Initial characteristics	Capacitance	34F to 46F Charge: 3.8VDC-30min, Max0.4A Discharge: 0.04A Calculate by Wh of 3.8V-2.2V discharge
		DCR	Under 125mΩ Charge: 3.8VDC-30min, Max0.5A Discharge: 0.5A Calculate from the voltage values of 3.5 sec. and 7.0 sec. after the discharge starts by calculation formula.
5	Temperature characteristics	-30°C Capacitance	Over 22F
		DCR	Under 2000mΩ
		70°C,85°C Capacitance	Over 34F
		DCR	Under 125mΩ
6	Floating charge characteristics	Capacitance	Over 27F Temperature: 70±2°C Voltage: 3.8V
		DCR	Under 188mΩ Measure at normal temperature and normal humidity after 1000 hours
7	Floating charge characteristics-2	Capacitance	Over 27F Temperature: 85±2°C Voltage: 3.5V
		DCR	Under 188mΩ Measure at normal temperature and normal humidity after 1000 hours
8	Heat cycle characteristics	Capacitance	Over 27F Leave the capacitor in below condition. Temperature: 85±2°C, -40±2°C
		DCR	Under 188mΩ Duration: 30 min Cycle Numbers: 100 cycles
9	Floating charge characteristics in high temperature and high humidity	Capacitance	Over 27F Temperature: 60±2°C Humidity: 90~95%RH
		DCR	Under 188mΩ Applied Voltage: 3.8V Duration: 500hours

[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.
 This document is VINATech's proprietary material, and the distribution and the presentation excluding the licenser are prohibited.

VLCRS3R8406MG Initial discharge characteristics

Test condition

Ambient Temp. : $25\pm 5^{\circ}\text{C}$

Charge : 3.8V-30minutes Max 0.4A

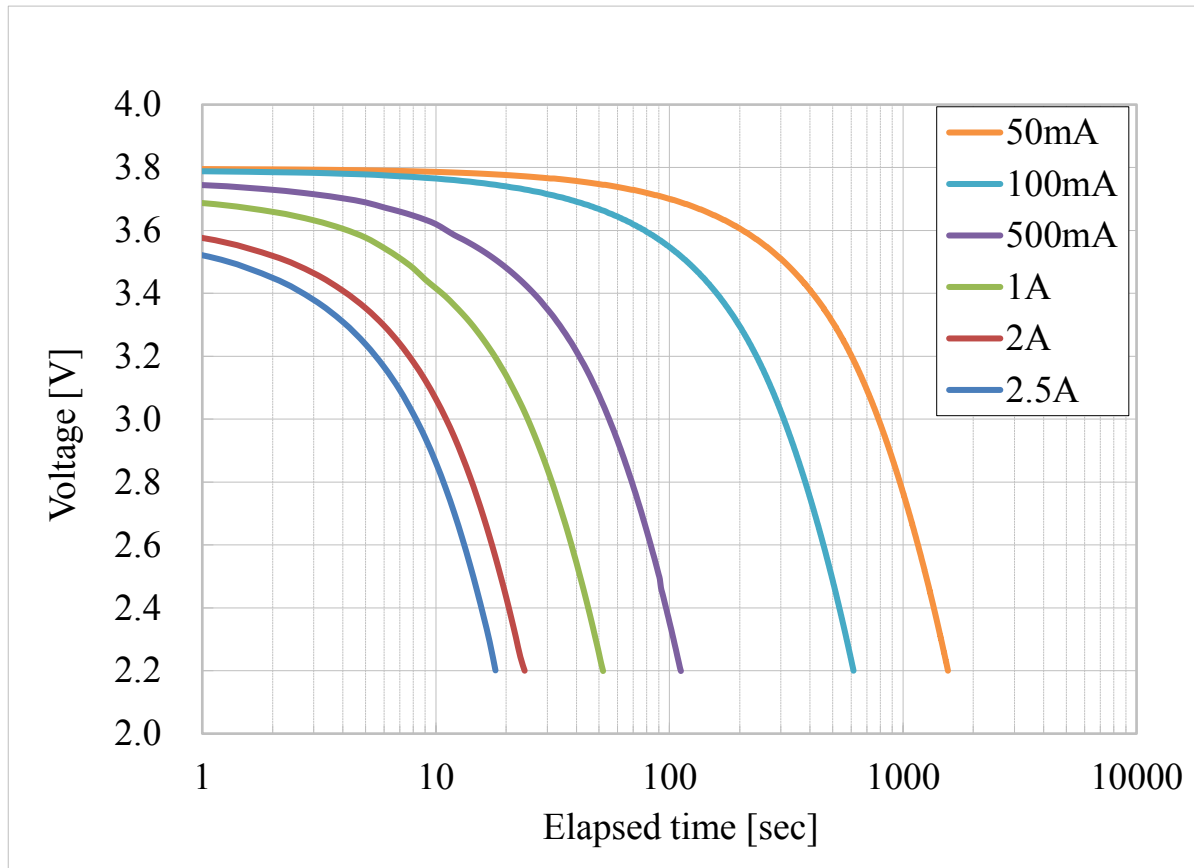


Fig.1 Initial discharge characteristics

※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.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.

VLCRS3R8406MG Temperature characteristics

Items		Specifications	Test condition
-30°C	Capacitance	Over 22F	After keeping a cell with 2hr or more each temperature. (3.5V when over 70°C)
	DCR	Under 2000mΩ	
70°C, 85°C	Capacitance	Over 34F	
	DCR	Under 125mΩ	

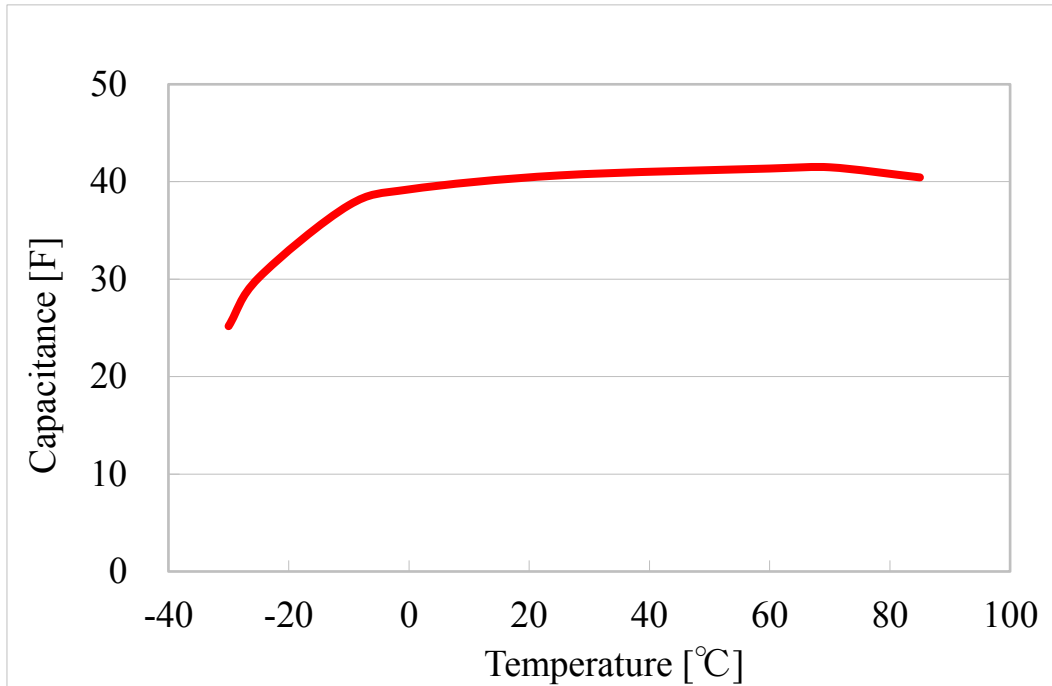


Fig. 2 Temperature characteristics (Capacitance change)

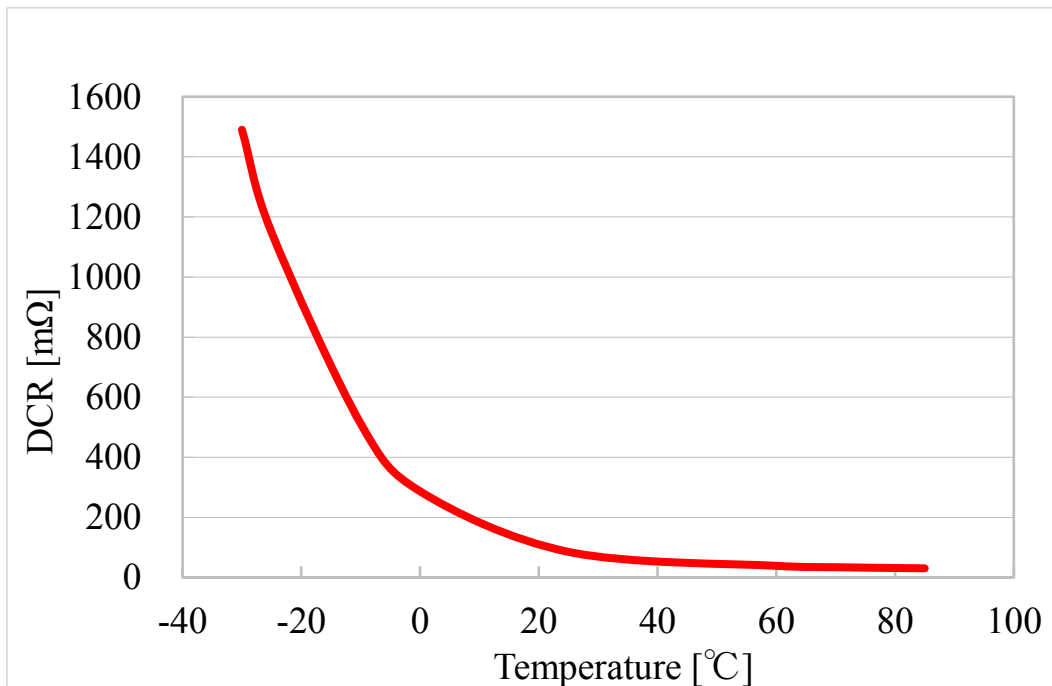


Fig. 3 Temperature characteristics (DCR change)

※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.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.

VLCRS3R8406MG Floating charge characteristics

Items	Floating specification	Test condition
Capacitance	Over 27F	Temperature : $70\pm 2^{\circ}\text{C}$ Measure at normal temperature and normal humidity after apply 3.8V for 1000 hours
DCR	Under $188\text{m}\Omega$	
Appearance	No significant defect	

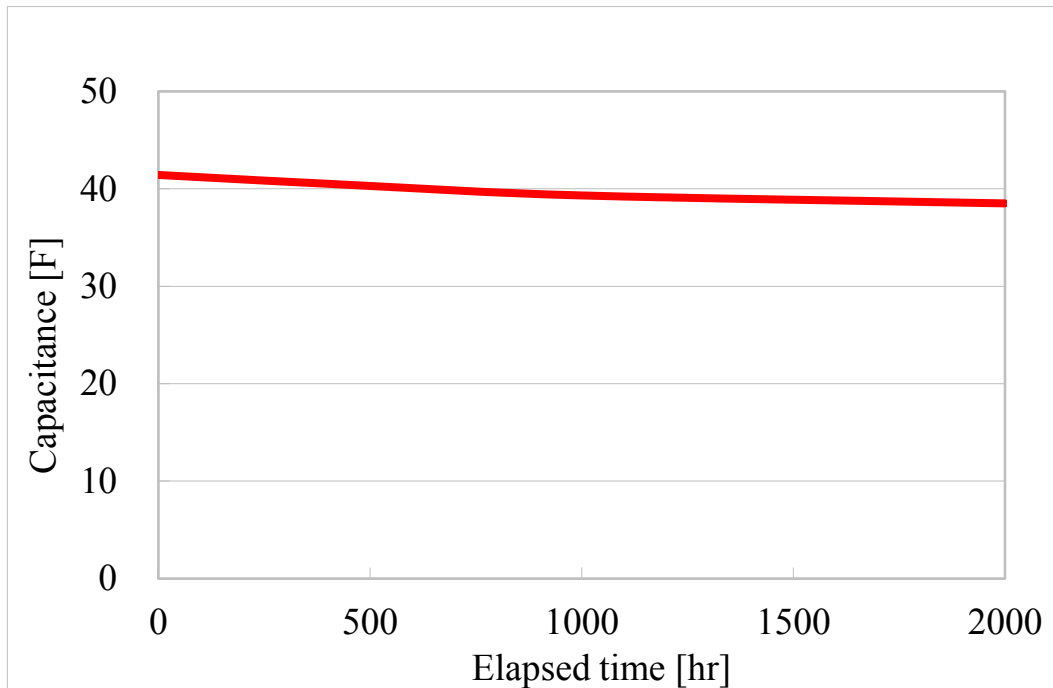


Fig. 4 Floating charge characteristics (Capacitance change)

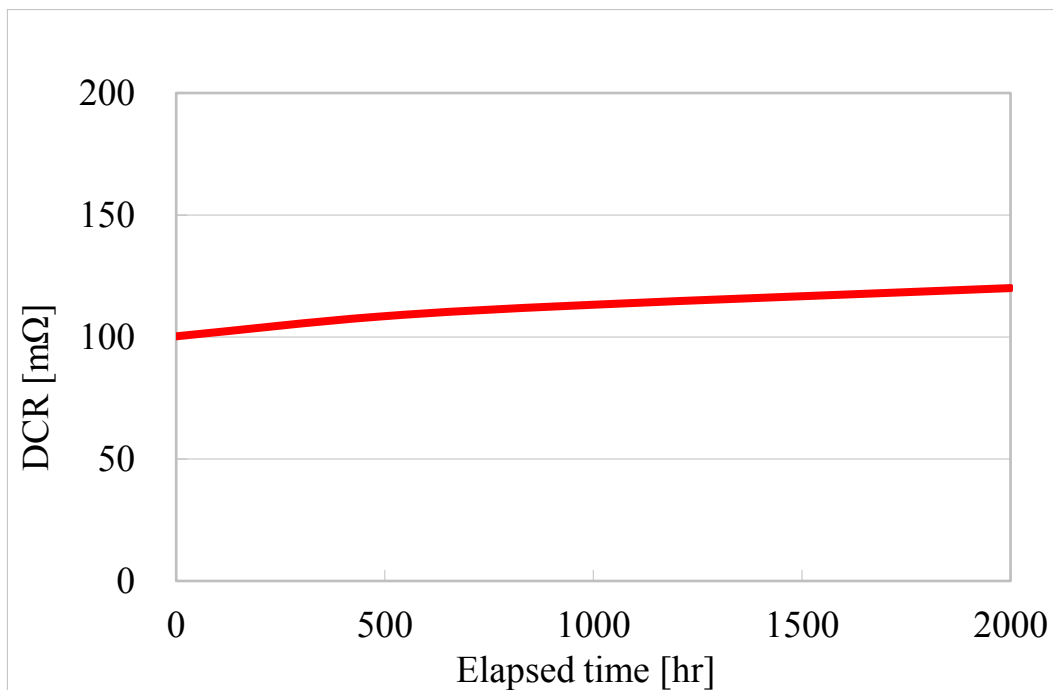


Fig. 5 Floating charge characteristics (DCR change)

※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.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.

VLCRS3R8406MG Charge/Discharge cycle characteristics

※This item is not a guaranty item.

Items	Cycle specification	Test condition
Capacitance		Ambient temp. : 25±5°C
DCR		Charge/Discharge cycle : 10000Times
Appearance		Charge : 3.8V-60sec Max 2A Discharge : 2A Cut off Volt. 2.2V

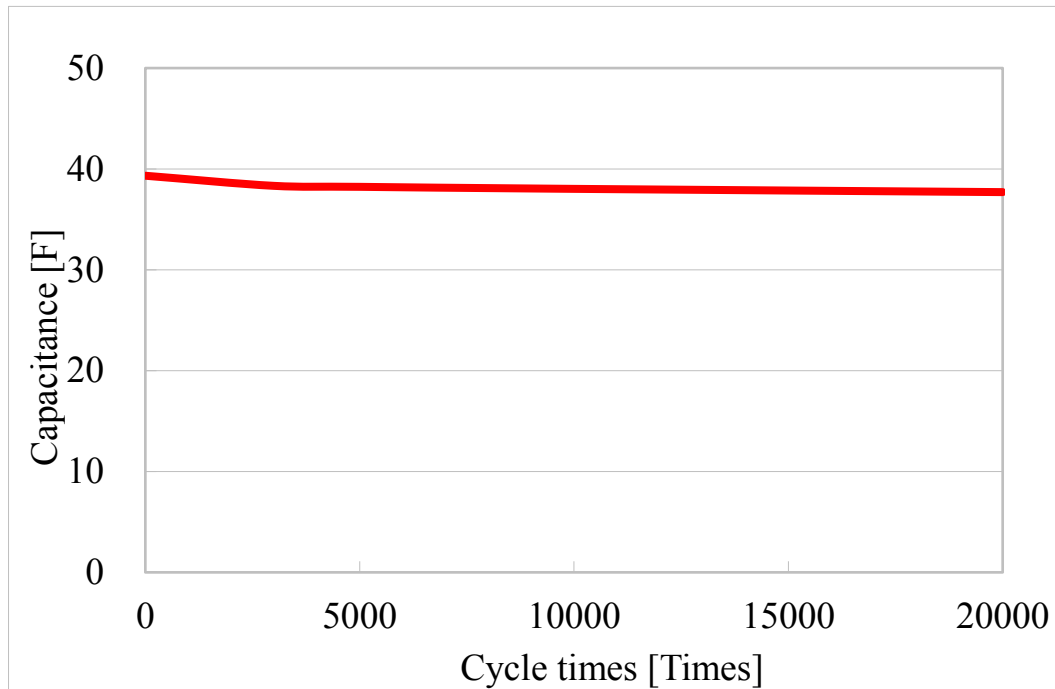


Fig. 6 Charge/Discharge cycle characteristics (Capacitance change)

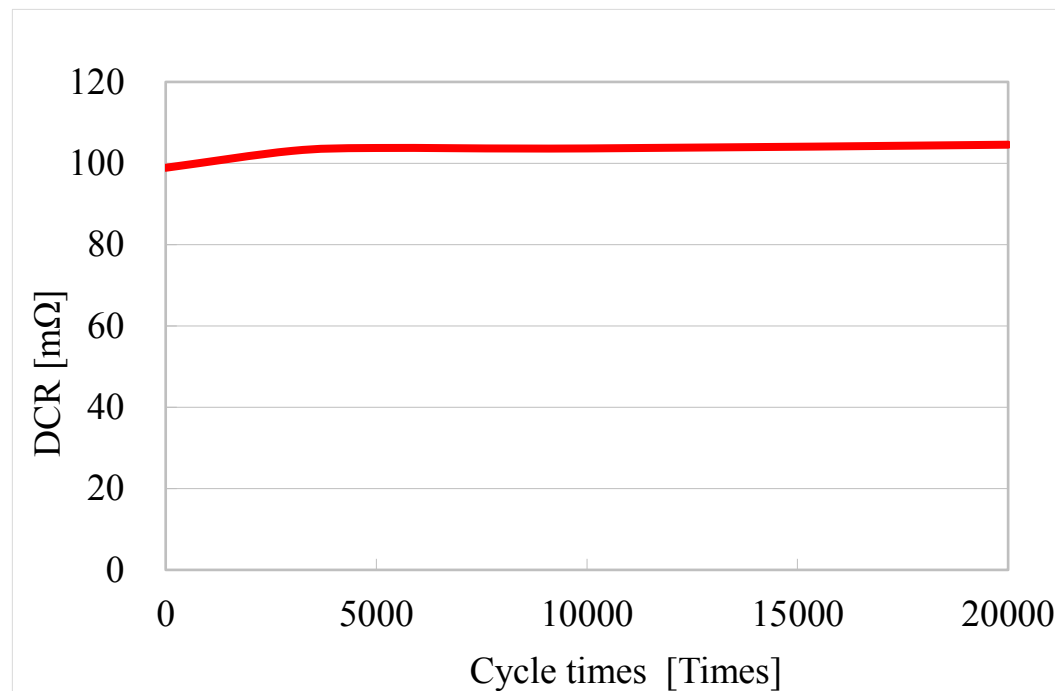


Fig. 7 Charge/Discharge cycle characteristics (DCR change)

※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.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.

VLCRS3R8406MG Self discharge / Leak current

※This item is not a guaranty item.

Test condition : Charge 25°C 3.8V 24hr

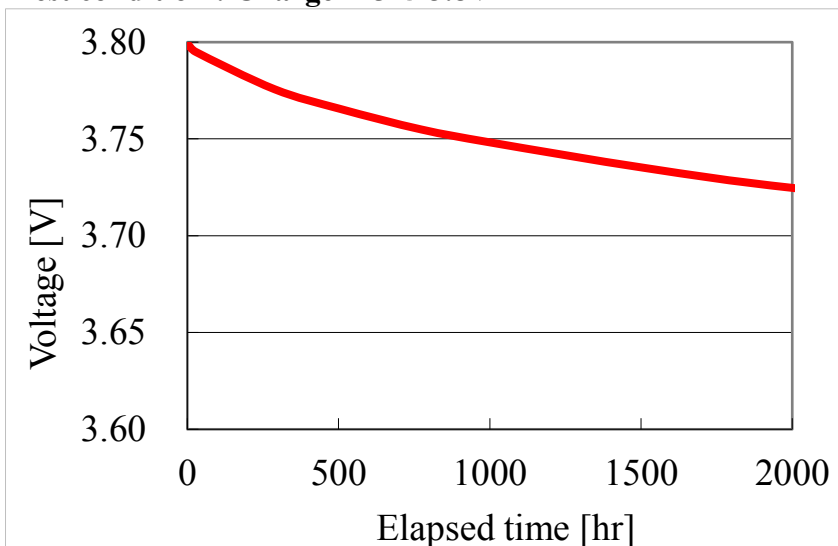


Fig. 8 Self discharge characteristics (Voltage change)

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

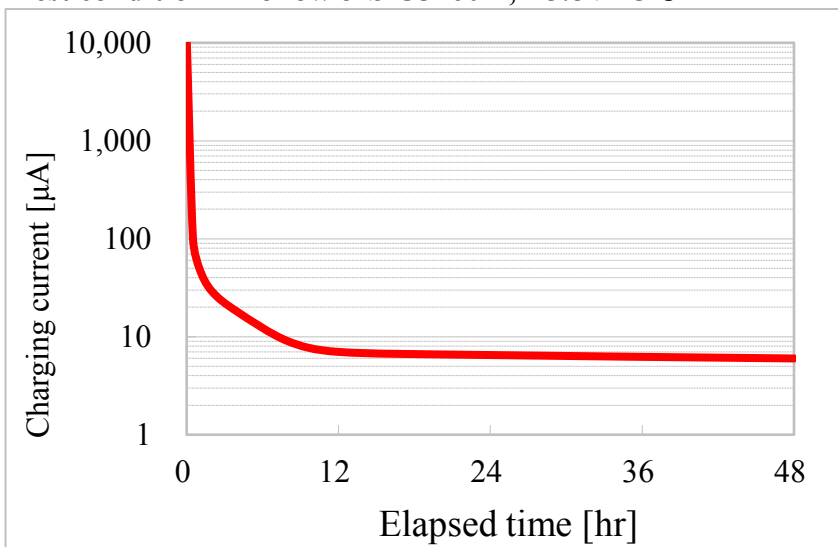


Fig.9 Leak current

※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.

This document is VINATech's proprietary material, and the distribution and the presentation excluding the licensor are prohibited.