
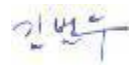


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	Written by	Checked by	Approved by
Position	Manager	General Manager	Executive Director
Name	B.J. Lee	S.G. Kim	B.S.Kim
Signature			

STANDARD SPECIFICATION

ELECTRIC DOUBLE LAYER CAPACITOR

VSCS 2R7 256



2	08/Dec/2014	B.J. Lee
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STANDARD SPECIFICATION

VSCS 2R7 256

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VSCS 2R7 256

PRODUCT NUMBER SYSTEM

VSCS 002R7 256 S T 2

↓

Internal code

Special code	S : Standard, U : Unique, etc
Terminal type	S : Snap in, C : Screw, T : Lead, W : Welding, etc.
Terminal number	2 or 4 PIN
Internal code	A, B, C : module terminal type A : active balance, P : passive balance

→ **Nominal Capacitance**

Capacitance	Symbol	Capacitance	Symbol
3F	305	50F	506
5F	505	100F	107
10F	106	120F	127
25F	256	350F	357

→ **Rated Voltage**

Rated Voltage	5.4V	12.5V	100V
Symbol	005R4	012R5	100R0

→ **Serial Name**

V	Simplified form of V itzro
S	S : Standard, H : High temp., P : High power, L : Leakage intension
C	C : Cylindrical, P : Prismatic, H : Pouch, N : Coin etc.
M	Cell(S) or Module(M)

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VSCS 2R7 256

TYPICAL VALUES

Model Name	VSCS 2R7 256
Rated Voltage	2.7 V (surge : 2.85V) at 65°C Max. 2.3 V at 85°C
Rated Capacitance	25 F (CC :10 mA/F at 25°C, Voltage from 2.16V to 1.08V)
Internal Resistance	AC : max. 20 mΩ at 1kHz DC : max. 25 mΩ
Maximum Current	20.7 A (to discharge within 1sec from V_R to $V_R/2$)
Rated current	6.0 A (to discharge within 5sec from V_R to $V_R/2$)
Leakage current	0.068mA (after 72hrs holding at V_R .)
Power density (max.)	10,720 W/kg
Energy density (max.)	3.7 Wh/kg
Operating Temperature Range	-40 ~ 65 °C
Type	Radial, 2-lead terminal
Size (mm) ; D X L	16 X 25
Typical Weight	6.8 g

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TYPICAL VALUES

Capacitance Tolerance	-10 % to +30 % (at 25°C)
Endurance (After 1,000 hours at rated voltage loaded at +65°C, the capacitor shall meet the specified endurance limits)	Capacitance Change : ≤ 30% of initial value Internal resistance : ≤ 2 times of specified value
Temperature characteristics (Measured at - 40, +25, +65°C)	Capacitance Change : ≤ ±5 % of initial value Internal resistance : ≤ ±2 times of specified value
Cycle Life Characteristics (500,000 cycles)	Capacitance Change : ≤ 30 % of initial value Internal resistance : ≤ 2 times of specified value

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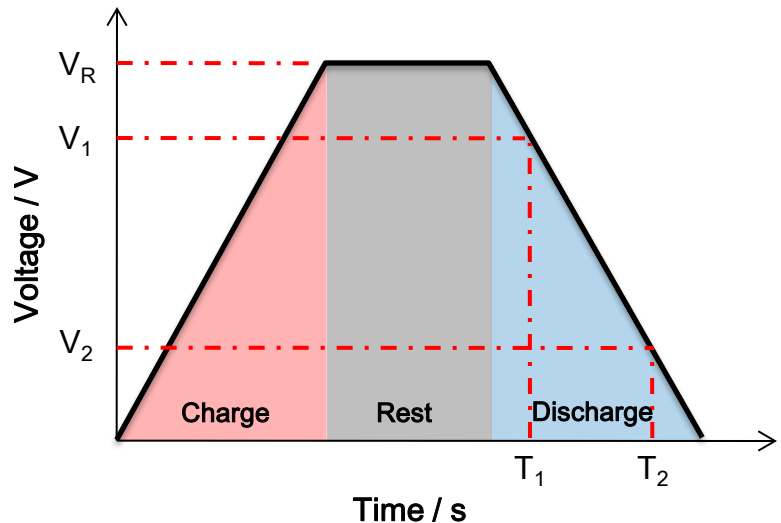
VSCS 2R7 256

VISUAL ASPECT

When inspected with naked eyes, there should be no electrolyte leakage or swelling and no case scratch. Negative mark should be aligned with negative terminal. Marking should be readable.

TESTS (Electrical)

Capacitance (F)



$$C = \frac{dQ}{dV} = \frac{CC \times (T_2 - T_1)}{V_1 - V_2}$$

CC (A) : Constant current ; discharge (10mA/F)

V_1 (V) : $V_R \times 0.8$

V_2 (V) : $V_R \times 0.4$

T_1 (s) : Time at V_1

T_2 (s) : Time at V_2

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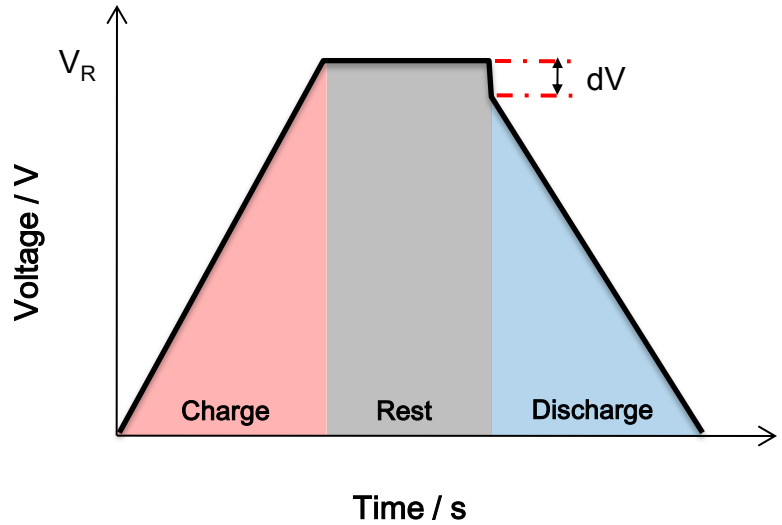
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Internal resistance
ACR (mΩ)

ACR is measured by contact resistance meter with following condition.

- : Amplitude 5mV
- : Frequency 1kHz

DCR (mΩ)



$$R_{DC} = \frac{dV}{I}$$

dV (V) : Voltage drop during 10 ms

I (A) : Discharge current (10mA/F)

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Maximum current (A)

Maximum current is the current taking 1 sec to discharge from V_R to $V_R/2$, and calculated by following equation.

$$I_{MAX.} = \frac{V_R / 2}{1s / C + R_{DC}}$$

Rated current (A)

Rated current is the current taking 5 sec to discharge from V_R to $V_R/2$, and calculated by following equation.

$$I_{RAT.} = \frac{V_R / 2}{5s / C + R_{DC}}$$

Leakage current (mA)

Leakage current is measured by LC tester at 25°C. (after holding 72hrs at V_R)

Power density (W/kg)

Power density is calculated by following equation.

$$P_{MAX.} = \frac{V_R^2}{4R_{DC} * wt.}$$

Energy density (Wh/kg)

Energy density is calculated by following equation.

$$E = \frac{CV_R^2 / 2}{3,600 * wt.}$$

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TESTS (Mechanical)

Vibration

Initial specified values should be equal to them after the vibration test under following conditions.
 Also there should be no leakage and break after test.

- Direction : X, Y, Z each 2hrs, total 6hrs
- Frequency range : 10 ~ 55Hz
- Amplitude : 1.5 mm

STORAGE

Condition

Should be stored in dry and cool conditions.
 Keep away from heat and flame.

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WARNING

Safety

- Confirm the polarities of the cell before use
- Do not use over the rated voltage and maximum current.
- Do not open, disassemble, crush and burn.
- In case of exposure to internal contents, wash for at least 15 minutes with water and seek medical attention.

Soldering

Initial specified values should be equal to them after the soldering under following conditions.

- Solder temp. : 260 ± 5 °C
- Immersion depth : 1.6 mm
- Immersion time : 10 ± 1 sec

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OUTGOING INSPECTION

Sampling

Vitzrocell carries out the sampling inspection as per the following standard.

- Visual aspect
- Capacitance
- ESR
- Dimension

- Sampling standard
 - KS Q ISO 2859

- Acceptable Quality Levels (AQL)
 - Sampling Level : S-3
 - AQL : 1.0%

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PACKING

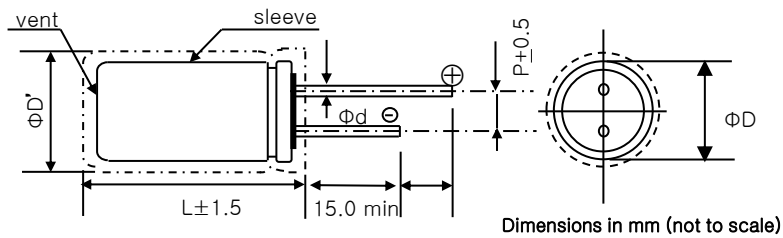
Inner

Unit/Type	Quantity (EA)	Net Weight (g)
6 sealed vinyl bag	750	5,100

Outer

Unit	Q'ty (EA)	Net Wt. (kg)	Gross Wt. (kg)	Dimension (mm)
2 inner box	1,500	10.2	11.6	404×300×220

VITZROCAP DIMENSION



D	P	d
16	8.0	0.8

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VSCS 2R7 256

PRODUCT INFORMATION

Manufacturer	VITZROCELL Co., Ltd. 256-41, Dugok-Li, Shinam-Myon, Yesan-Gun Chung-Nam, 340-861, KOREA Tel: 82-41-332-8642 Fax: 82-41-330-0190
Product	VITZROCAP (EDLC)
Model	VSCS 2R7 series ; VSCS 2R7 256
Product components	Activated carbon electrode, and some polymer binder, Cellulose paper, Quaternary ammonium salt and organic solvent(AcN) Aluminum case and rubber pad, PET tube

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