



DLCAP™ **Electric Double Layer Capacitors**

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DLCAP™ **Electric Double Layer Capacitors**

Electric Double Layer Capacitors DLCAP™

FEATURES

- High capacitance: 300 to 3,000F (single cell)
- Low internal resistance 0.8 mΩ (2,700F)
- Excellent charge and discharge efficiency
- Capable over 1 million times charge and discharge
- Capable charge and discharge at low temperature (-25°C)
- Environmental friendly design:
 - Pb-free, Cd-free and non-acetonitrile electrolyte
- DLCAP™ bank module is available (5 to over 500V)



Electric Double Layer Capacitor

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Energy density has been Upgraded!



- High energy density by the original electrode process.
- Excellent discharge/charge efficiency.
- Clean-energy with the activated carbon.
- Suitable for electric power storage, battery assistance ,etc.

◆SPECIFICATIONS

Items	Specifications	
Operating Temperature	-25°C to +60°C	
Rated Voltage	2.3, 2.5Vdc	
Capacitance Tolerance	±20% (M) (at 20°C)	
Temperature Characteristics	Capacitance change	≤±30% of the initial measured value at +20°C
	Internal resistance	≤600% of the value given in the Ratings Tables (at -25°C)
Load Life Test	After the capacitors are subjected to the rated DC voltage at 60°C for 2,000 hours, the following specifications shall be satisfied when the capacitors are restored to 20°C.	
	Capacitance change	≤±30% of the initial measured value
	Internal Resistance	≤200% of the value given in the Ratings Tables
Bias Humidity Test	After the capacitors are subjected to the rated DC voltage at 40°C and 90 to 95%RH for 500 hours, the following specifications shall be satisfied when restoring to 20°C.	
	Capacitance change	≤±30% of the initial measured value
	Internal Resistance	≤200% of the value given in the Ratings Tables

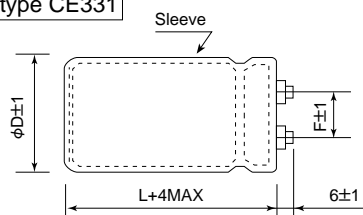
◆STANDARD RATINGS

	Rated Voltage [V]	Case Size		F [mm]	Power Type			Energy Type		
		φD [mm]	L [mm]		Capacitance [F]	Internal Resistance* [mΩ]	Weight** [g]	Capacitance [F]	Internal Resistance* [mΩ]	Weight** [g]
STANDARD	2.5	35	65	12.7	300	15	90	350	40	90
			105		600	6	150	700	20	150
			135		800	5	190	1,000	15	190
		50	105	22.4				1,500	10	270
			135					2,000	7	375
UPGRADE	2.3	35	65	12.7	400	15	90	450	40	90
			105		800	6	150	950	20	150
			135		1,100	5	190	1,300	15	190
		50	105	22.4				2,000	10	270
			135					3,000	7	375

* typical data (at 20°C)
** reference value

◆DIMENSIONS [mm]

Terminal type CE331



<Screw specifications>

Plus hexagon-headed screw: M5×0.8×10

Maximum screw tightening torque: 3.23N·m

Special designs are available on requests.

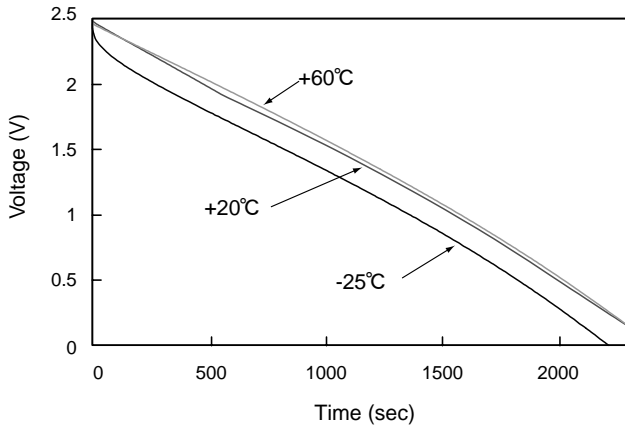
The specifications are subject to change without notice.

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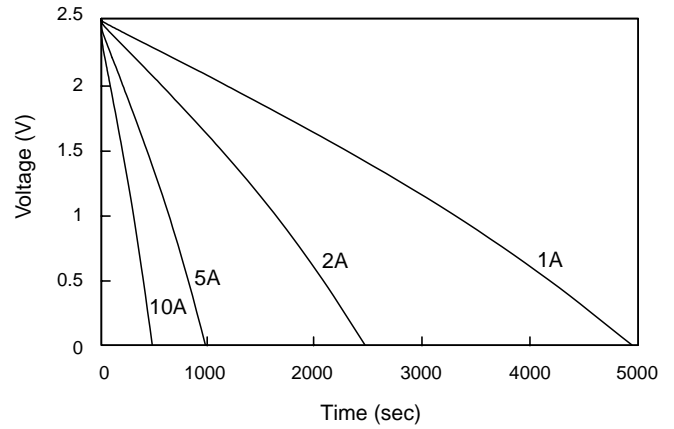
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◆CHARACTERISTICS DATA $\phi 50 \times 135L$ (2.5V 2000F)

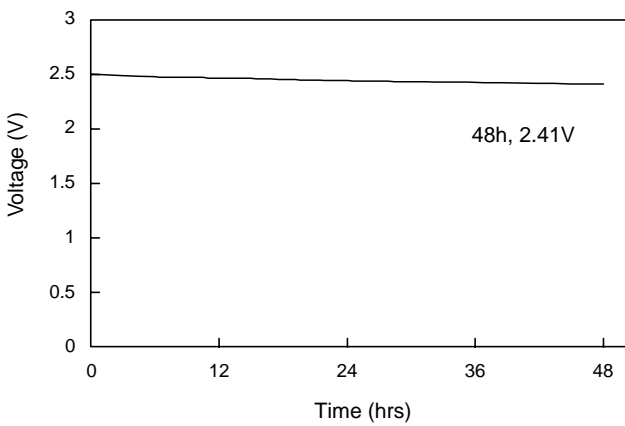
Temperature Characteristics (Discharge 2A)



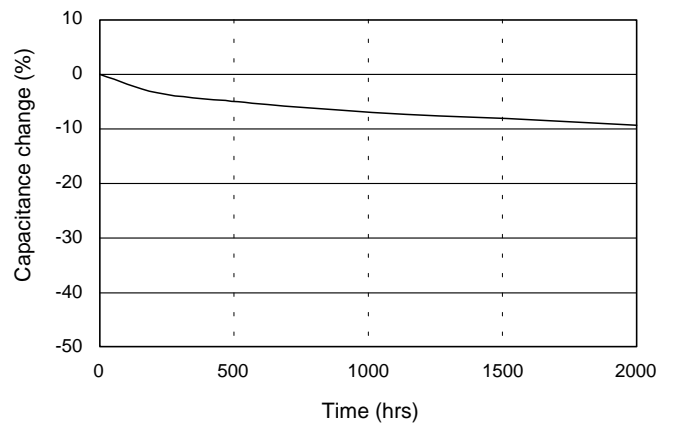
Current vs. Duration (at 20°C)



Self discharge (at 20°C)



Load Life (at 60°C 2.5V)



The data shown on this data sheet are actually measured values for reference purpose only.

Note : The specifications are subject to change without notice.

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- High energy density by the original electrode process.
- Excellent discharge/charge efficiency.
- Clean-energy with the activated carbon.
- Suitable for HEV, FCEV, electric power storage, battery assistance, etc

◆SPECIFICATIONS

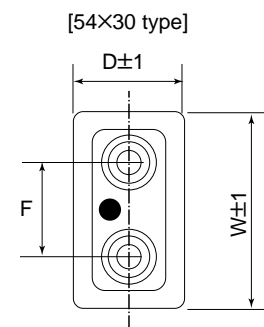
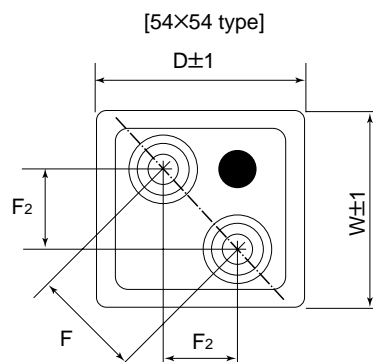
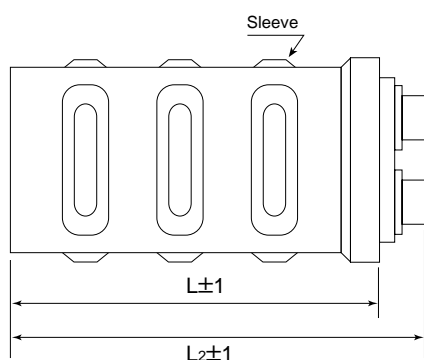
Items	Specifications	
Operating Temperature	-30°C to +60°C	
Rated Voltage	2.3, 2.5Vdc	
Capacitance Tolerance	±20% (M) (at 20°C)	
Temperature Characteristics	Capacitance change	≤±20% of the initial measured value at +20°C
	Internal resistance	≤600% of the value given in the Ratings Tables (at -30°C)
Load Life Test	After the capacitors are subjected to the rated DC voltage at 60°C for 2,000 hours, the following specifications shall be satisfied when the capacitors are restored to 20°C.	
	Capacitance change	≤±30% of the initial measured value
	Internal Resistance	≤200% of the value given in the Ratings Tables
Bias Humidity Test	After the capacitors are subjected to the rated DC voltage at 40°C and 90 to 95%RH for 500 hours, the following specifications shall be satisfied when restoring to 20°C.	
	Capacitance change	≤±30% of the initial measured value
	Internal Resistance	≤200% of the value given in the Ratings Tables

◆STANDARD RATINGS

Rated Voltage [V]	Nominal Capacitance [F]	Case Size			F [mm]	F ₂ [mm]	Internal Resistance* [mΩ]	Weight** [g]
		W × D [mm]	L [mm]	L ₂ [mm]				
2.5	1,500	54 × 54	98	109	27.15	19.2	1.0	395
	2,000		128	139			0.8	505
	750	54 × 30	98	107	27.4	-	2.0	210
	1,000		128	135			1.6	275
2.3	2,000	54 × 54	98	109	27.15	19.2	1.0	395
	2,700		128	139			0.8	505
	1,000	54 × 30	98	107	27.4	-	2.0	210
	1,350		128	135			1.6	275

* typical data (at 20°C)
** reference value

◆DIMENSIONS [mm]



<Screw specifications>

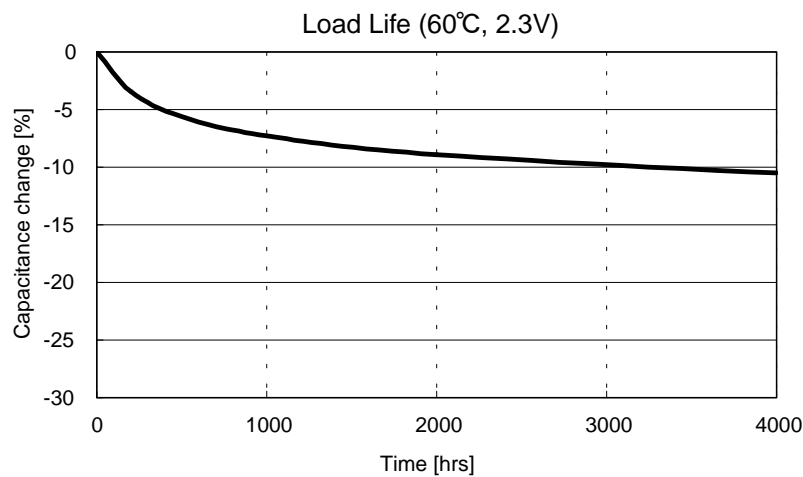
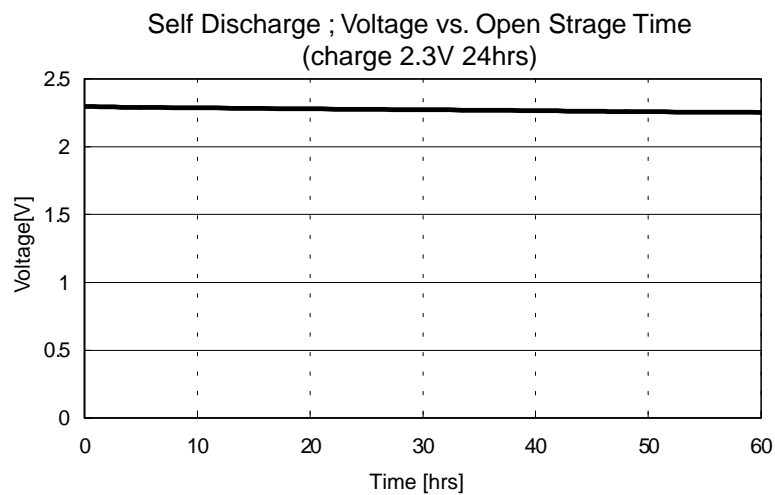
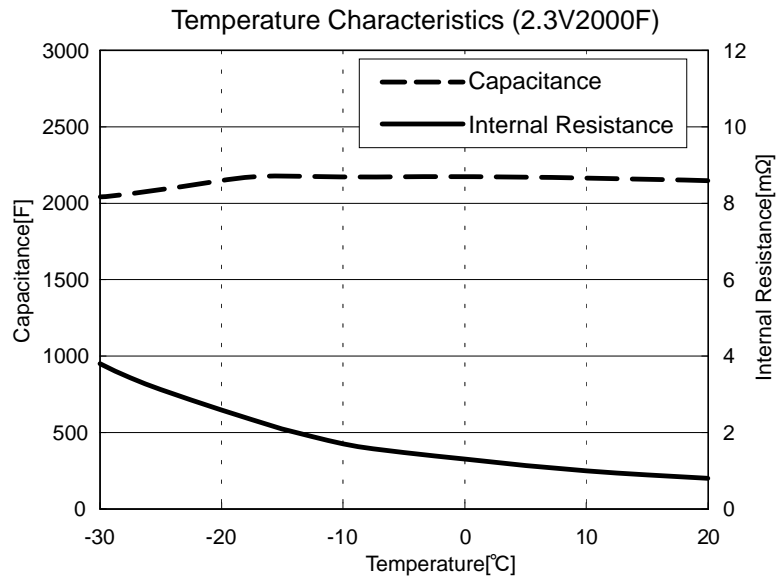
Plus hexagon-headed screw:
54×54 type M6×1.0×12
54×30 type M5×0.8×10

Maximum screw tightening torque: 3.23N·m

Note : The specifications are subject to change without notice.

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◆CHARACTERISTICS DATA 2.3V2000F (□54×98L)



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