# EDLC 2.5V 1F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	13.0	0.6	3.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 105 QG	2.5	1.	400.00	600.00	0.5	0.002	3.1	8.0 x 13.0	1.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 3.3F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm					
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5		
Ф8.0	20.0	0.6	3.5		

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 335 QG	2.5	3.3	220.00	370.00	1.5	0.007	10.3	8.0 x 20.0	1.7
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm					
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5		
Ф8.0	25.0	0.6	3.5		

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 505 QA	2.5	5.	120.00	200.00	3.	0.010	15.6	8.0 x 25.0	1.9
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap $ ≤ 10% of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 505 QG	2.5	5.	150.00	220.00	3.	0.010	15.6	10.0 x 20.0	2.2
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 7F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 705 QG	2.5	7.	175.00	290.00	3.	0.014	21.9	10.0 x 20.0	2.4
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 10F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



	Dimensic	ons in mm	
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5
Φ10.0	25.0	Ф0.6	5.0

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 106 QA	2.5	10.	120.00	205.00	4.	0.020	31.3	10.0 x 25.0	2.8
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-25 ~ +70 ℃	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	<b>-40 ~ 70</b> ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	$ \Delta cap  \le 10\%$ of initial value at 25 °C $ \Delta ESR  \le 50\%$ of specified value at 25 °C Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



	Dimensio	ons in mm	
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5
Φ10.0	30.0	Ф0.6	5.0

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 106 QG	2.5	10.	70.00	100.00	6.	0.020	31.3	10.0 x 30.0	3.4
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 °C
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 15F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф13.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 156 QG	2.5	15.	70.00	100.00	7.5	0.030	46.9	13.0 x 25.0	4.7
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  ≤ 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 25F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ16.0	25.0	Ф0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 256 QG	2.5	25.	40.00	60.00	13.	0.050	78.1	16.0 x 25.0	7.9
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-25 ~ +70 ℃	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	<b>-40 ~ 70</b> ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	$ \Delta cap  \le 10\%$ of initial value at 25 °C $ \Delta ESR  \le 50\%$ of specified value at 25 °C Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 30F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф16.0	30.0	Ф0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 306 QG	2.5	30.	30.00	45.00	15.	0.060	93.8	16.0 x 30.0	10.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 50F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Ф0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 506 QG	2.5	50.	25.00	40.00	20.5	0.100	156.3	18.0 x 40.0	14.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
( Thin That/		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	-40 ~ 70 ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 60F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Φ0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 606 QG	2.5	60.	25.00	40.00	22.	0.120	187.5	18.0 x 40.0	15.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-25 ~ +70 ℃	$ \Delta cap  ≤ 30\%$ of initial value at 25 °C $ \Delta ESR  ≤ 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	<b>-40 ~ 70</b> ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	Δcap  ≤ 10% of initial value at 25 ℃  ΔESR  ≤ 50% of specified value at 25 ℃ Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 120F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 2-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф22.0	45.0	6.0	10.0			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 127 QG	2.5	120.	18.00	30.00	32.	0.240	375.0	22.0 x 45.0	22.5
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 220F

#### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 2-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф25.0	60.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 227 QG	2.5	220.	14.00	22.00	47.	0.440	687.5	25.0 x 60.0	38.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(Train ~ Trace)	<b>-25 ~ +70</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	-40 ~ 70 ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.5V 360F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	62.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 367 QG	2.5	360.	6.00	10.00	97.	0.720	1,125.0	35.0 x 62.0	71.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-25 ~ +70</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 2.5V 400F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	72.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 407 QG	2.5	400.	6.00	10.00	100.	0.800	1,250.0	35.0 x 72.0	76.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-25 ~ +70 ℃	$ \Delta cap  ≤ 30\%$ of initial value at 25 °C $ \Delta ESR  ≤ 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	<b>-40 ~ 70</b> ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	$ \Delta cap  \le 10\%$ of initial value at 25 °C $ \Delta ESR  \le 50\%$ of specified value at 25 °C Without electrical charge under T <sub>max</sub>







# EDLC 2.5V 500F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm					
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2		
Ф35.0	82.0	6.0	10.0		

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R5 507 QG	2.5	500.	5.00	9.00	110.	1.000	1,562.5	35.0 x 82.0	83.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.5V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-25 ~ +70℃	$ \Delta cap  ≤ 30\%$ of initial value at 25 °C $ \Delta ESR  ≤ 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	-40 ~ 70 ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	Δcap  ≤ 10% of initial value at 25 ℃  ΔESR  ≤ 50% of specified value at 25 ℃ Without electrical charge under T <sub>max</sub>





# EDLC 2.7V 1F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm					
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5		
Ф8.0	13.0	0.6	3.5		

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 105 QG	2.7	1.	130.00	195.00	1.	0.002	3.6	8.0 x 13.0	1.1
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 3.3F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	20.0	0.6	3.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 335 QG	2.7	3.3	55.00	95.00	3.	0.007	12.0	8.0 x 20.0	1.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm					
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5		
Ф8.0	25.0	0.6	3.5		

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 505 QA	2.7	5.	35.00	60.00	5.	0.010	18.2	8.0 x 25.0	1.8
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 505 QG	2.7	5.	55.00	85.00	4.5	0.010	18.2	10.0 x 20.0	2.1
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 7F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	30.0	0.6	3.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 705 QD	2.7	7.	30.00	50.00	6.5	0.014	25.5	8.0 x 30.0	2.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
( Thin That		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 7F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 705 QG	2.7	7.	55.00	95.00	5.5	0.014	25.5	10.0 x 20.0	2.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 2.7V 7F

# Hy/Cap

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ10.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 705 QA	2.7	7.	25.00	40.00	7.	0.014	25.5	10.0 x 25.0	2.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  ≤ 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



# EDLC 2.7V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ10.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 106 QA	2.7	10.	30.00	45.00	9.	0.020	36.5	10.0 x 25.0	2.8
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ10.0	30.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 106 QG	2.7	10.	25.00	35.00	10.	0.020	36.5	10.0 x 30.0	3.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф13.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 106 QC	2.7	10.	35.00	55.00	8.5	0.020	36.5	13.0 x 20.0	3.4
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 15F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ13.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 156 QG	2.7	15.	25.00	40.00	12.5	0.030	54.7	13.0 x 25.0	4.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 18F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ13.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 186 QC	2.7	18.	25.00	40.00	14.	0.036	65.6	13.0 x 25.0	4.8
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 25F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф16.0	25.0	Ф0.8	7.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 256 QG	2.7	25.	17.00	26.00	20.	0.050	91.1	16.0 x 25.0	6.8
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 34F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф18.0	30.0	Ф0.8	7.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 346 QG	2.7	34.	15.00	23.00	25.5	0.680	123.9	18.0 x 30.0	9.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 50F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Ф0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 506 QG	2.7	50.	11.00	17.00	36.5	0.100	182.3	18.0 x 40.0	12.5
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 60F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Φ0.8	7.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 606 QG	2.7	60.	11.00	17.00	40.	0.120	218.7	18.0 x 40.0	13.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 100F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	59.0	Ф0.8	7.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 107 QD	2.7	100.	10.00	16.00	51.	0.200	364.5	18.0 x 59.0	17.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 100F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 2-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф22.0	45.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 107 QG	2.7	100.	6.00	10.00	65.	0.200	364.5	22.0 x 45.0	20.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 220F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 2-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Φ25.0	70.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 227 QG	2.7	220.	4.50	7.00	115.	0.440	801.9	25.0 x 70.0	38.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
( Thin That		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 2.7V 360F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	62.0	6.0	23.0			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 367 QG	2.7	360.	3.00	4.50	185.	0.720	1,312.2	35.0 x 62.0	70.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 2.7V 400F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	72.0	6.0	23.0			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 407 QG	2.7	400.	3.00	4.50	190.	0.800	1,458.0	35.0 x 72.0	80.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
( Thin That		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 2.7V 500F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	82.0	6.0	23.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 2R7 507 QG	2.7	500.	3.00	4.50	205.	1.000	1,822.5	35.0 x 82.0	96.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	2.7V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ℃
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 1F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	13.0	0.6	3.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 105 QG	3.0	1.	145.00	220.00	1.	0.003	4.5	8.0 x 13.0	1.1
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25°C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 3.3F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	20.0	0.6	3.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 335 QG	3.0	3.3	70.00	105.00	3.5	0.010	14.9	8.0 x 20.0	1.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type-p8

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	Z ± 0.1	P ± 0.5			
Ф8.0	25.0	0.6	3.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 505 QD	3.0	5.	40.00	70.00	5.5	0.015	22.5	8.0 x 25.0	1.8
* Maximum Current: 1 second discharge to 1/2·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
Operating Temperature (T <sub>min</sub> ~ T <sub>max</sub> )	-40 ~ +65 ℃	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C After 1,000 hours application of V <sub>R</sub> at T <sub>max</sub>
Storage Temperature	<b>-40 ~ 70</b> ℃	
Cycle Life	500,000 cycles	$ \Delta cap  \le 30\%$ of initial value at 25 °C $ \Delta ESR  \le 100\%$ of specified value at 25 °C Cycles from V <sub>R</sub> to ½·V <sub>R</sub> under constant current at 25°C
Shelf Life	2 years	$ \Delta cap  \le 10\%$ of initial value at 25 °C $ \Delta ESR  \le 50\%$ of specified value at 25 °C Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 5F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 505 QG	3.0	5.	65.00	100.00	5.	0.015	22.5	10.0 x 20.0	2.1
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  ≤ 30\%$ of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 7F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 705 QG	3.0	7.	65.00	110.00	5.5	0.021	31.5	10.0 x 20.0	2.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф10.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 106 QA	3.0	10.	35.00	60.00	9.	0.030	45.0	10.0 x 25.0	2.6
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ୯
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ10.0	30.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 106 QG	3.0	10.	25.00	40.00	10.	0.030	45.0	10.0 x 30.0	3.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 10F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф13.0	20.0	Ф0.6	5.0			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 106 QD	3.0	10.	40.00	60.00	9.	0.030	45.0	13.0 x 20.0	3.6
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 15F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф13.0	25.0	Ф0.6	5.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 156 QG	3.0	15.	30.00	45.00	13.	0.045	67.5	13.0 x 25.0	4.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 25F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

### DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Ф16.0	25.0	Φ0.8	7.5			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 256 QG	3.0	25.	20.00	30.00	21.	0.075	112.5	16.0 x 25.0	7.2
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
( Thin That/		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	-40 ~ 70 ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		$ \Delta cap $ ≤ 10% of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  ≤ 50\%$ of specified value at 25 °C
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 50F

### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Φ0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 506 QG	3.0	50.	12.50	19.00	38.	0.150	225.0	18.0 x 40.0	12.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
( Thin That/		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	-40 ~ 70 ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 °C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		$ \Delta cap $ ≤ 10% of initial value at 25 °C
Shelf Life	2 years	$ \Delta ESR  ≤ 50\%$ of specified value at 25 °C
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 60F

### FEATURES

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with lead terminal type

## DIMENSIONS



Dimensions in mm						
D +1.0 Max	L ± 1.5	d ± 0.1	P ± 0.5			
Φ18.0	40.0	Φ0.8	7.5			

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 606 QG	3.0	60.	12.50	19.00	42.	0.180	270.0	18.0 x 40.0	13.5
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ୯
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>



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# EDLC 3.0V 100F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 2-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф22.0	45.0	6.0	10.0			

This drawing is not to be scaled.

### SPECIFICATIONS

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 107 QG	3.0	100.	6.00	10.00	75.	0.300	450.0	22.0 x 45.0	20.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ୯
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 360F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



	Dimensio	ons in mm	
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2
Ф35.0	62.0	6.0	23.0

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 367 QG	3.0	360.	3.00	4.50	200.	1.080	1,620.0	35.0 x 62.0	70.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
$(T_{min} \sim T_{max})$	-40 ~ +65 ℃	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR $ ≤ 100% of specified value at 25 $^{\circ}$ C
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ ·V <sub>R</sub> under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^\circ C$
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 400F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



Dimensions in mm						
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2			
Ф35.0	72.0	6.0	23.0			

This drawing is not to be scaled.

#### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 407 QG	3.0	400.	3.00	4.50	210.	1.200	1,800.0	35.0 x 72.0	80.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

Item	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	-40 ~ +65 ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap $ ≤ 30% of initial value at 25 °C
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from $V_R$ to $\frac{1}{2} \cdot V_R$ under constant current at 25°C
		$ \Delta cap  \le 10\%$ of initial value at 25 $^{\circ}C$
Shelf Life	2 years	$ \Delta ESR  ≤ 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>







# EDLC 3.0V 500F

#### **FEATURES**

Electric double layer capacitor Higher power density with ultra low ESR Semi-permanent, quick charge and discharge than batteries Suitable for short-term peak power assistance application UL and ISO/TS certificated, RoHS compliant Radial design with 4-pin snap-in terminal type

### DIMENSIONS



	Dimensic	ons in mm	
D +1.5 Max	L ± 2.0	Z ± 1.0	P ± 0.2
Ф35.0	82.0	6.0	23.0

This drawing is not to be scaled.

### **SPECIFICATIONS**

Part Number	Rated Voltage, V <sub>R</sub>	Rated Capacitance	AC ESR 1kHz	DC IR	Maximum Current	Leakage Current	Stored Energy	Dimension D x L	Weight
	(V)	(F)	(mΩ)	(mΩ)	(A)	(mA)	(J)	(mm)	(g)
VEC 3R0 507 QG	3.0	500.	3.00	4.50	230.	1.500	2,250.0	35.0 x 82.0	96.0
* Maximum Current: 1 second discharge to ½·V <sub>R</sub>									

\* Leakage Current: After 72hours at  $V_R$  and 25 °C

ltem	Characteristics	Remarks
Rated Voltage(V <sub>R</sub> )	3.0V	
Capacitance Tolerance	-10 ~ 30%	
o : -		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
(T <sub>min</sub> ~ T <sub>mov</sub> )	<b>-40 ~ +65</b> ℃	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		After 1,000 hours application of $V_R$ at $T_{max}$
Storage Temperature	<b>-40 ~ 70</b> ℃	
		$ \Delta cap  \le 30\%$ of initial value at 25 $^{\circ}C$
Cycle Life	500,000 cycles	$ \Delta ESR  \le 100\%$ of specified value at 25 $^\circ C$
		Cycles from V <sub>R</sub> to $\frac{1}{2}$ V <sub>R</sub> under constant current at 25°C
		∆cap  ≤ 10% of initial value at 25 ୯
Shelf Life	2 years	$ \Delta ESR  \le 50\%$ of specified value at 25 $^{\circ}$ C
		Without electrical charge under T <sub>max</sub>





