LICAP

120V, 15F Ultracapacitor Module

SM0015-120-PTH

APPLICATIONS

- Wind Pitch Control
- UPS Systems
- Voltage Sag Protection
- Industrial Equipment

FEATURES & ADVANTAGES

- One Million Cycles Lifetime
- High Power Density
- 10-15 Year Life
- Temperature Monitor

Specifications

Capacitance	Rated[1]	15F
	Tolerance	-0/+20%
Voltage	Rated	120V DC
	Surge[2]	137V DC
ESR	ESR (DC) - maximum initial	100mΩ
Current	Maximum leakage[3]	100mA
	Maximum peak	360A
	Maximum continuous	30A RMS
Energy Storage	Maximum energy[4]	30Wh
	Usable energy[5]	22.5Wh
	Volumetric energy density[6]	1.7Wh/L
	Gravametric energy density[7]	2.3Wh/kg
Power	Power density[8]	1329W/kg

Temperature

Temperature Characteristics	Operating temperature range	-40°C to +65°C
	Storage temperature range	-40°C to +70°C

Monitor and Control

Alarm Monitor	Over voltage	YES
	Temperature sensor	YES

Safety

Safety	Short circuit current	1200A
	500V DC Insulation resistance	≥100MΩ
	5600V DC Leakage current	≤10mA
	Environmental ingress protection	IP54

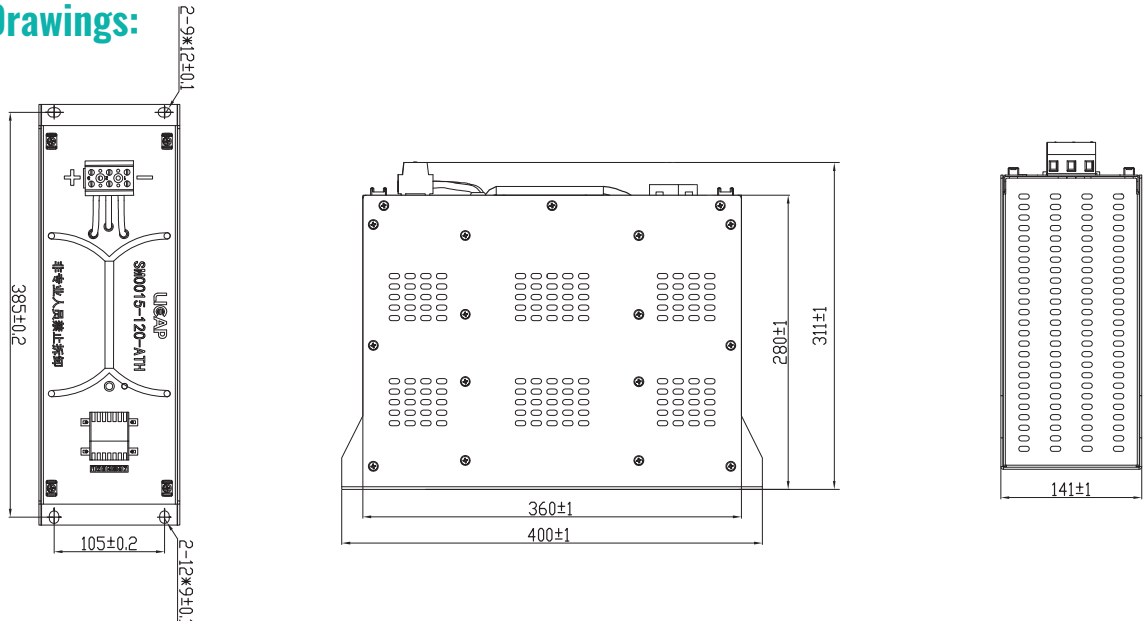
Service Lifetime

Endurance	**Product held at rated voltage in 65°C environment for 1500 hours**	
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
DC Life	**Product held at rated voltage in 25°C environment**	
	Life (projected)	10+ years
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Cycle Life	**Cycling from rated voltage to 50% voltage under constant current in 25°C environment**	
	Life (projected)	1,000,000 cycles
	Change in capacitance (% drop from rated)	≤20%
	Change in ESR (% increase from maximum initial)	≤100%
Storage	**Stored uncharged in original packaging in 25°C environment**	
	Life	4 years

Physical Characteristics

Mechanical	Vibration	GB/T 11287-2000
	Transportation vibration	GB/T 4798.2-2008
	Shock	GB/T 14537-1993

Outline Drawings:



Weight and Size:

Weight: ≤13 kg | **Size:** (Typical value): 400*141*311 (L*W*H) mm

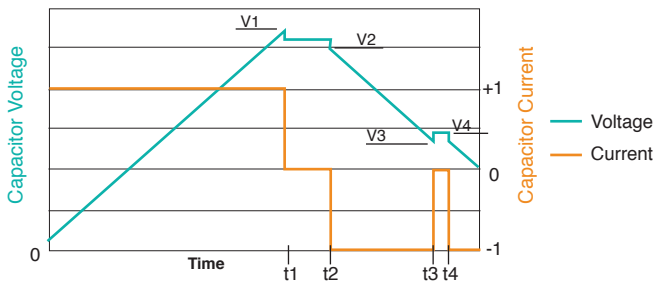
Naming Rules:

Type		Capacaitance	Dash	Rated Voltage	Dash	CMS - Capacitor Management/Monitoring
SM	Supercapacitor Module	0015 = 15F	-	120 =120V	-	PTH = Passive with temp and OV monitor

Notes:

1. Measure capacitance and DC internal resistance at 25°C under specified test current per Figure 1
2. Maximum voltage is non-repeatable and duration cannot exceed 1s
3. Corresponding current value after 72 hours of rated voltage at 25°C
4. $0.5C(V_{nom}{}^2)/3600$
5. $0.5C(V_{nom}{}^2 - 0.5V_{nom}{}^2)/3600$
6. Max energy (Wh)/$\left(\frac{L \times W \times H\ (mm)}{1 \times 10^6}\right)$
7. Max energy (Wh)/Weight (kg)
8. Per IEC62391-2, $P_d = \frac{0.12V^2}{ESR_{DC} \times Weight(kg)}$

CAP/ESR Measurement Waveform



$V1 = V_{rated}$ t2 - t1 = 15 seconds Capacitance = I x (t3-t2)/(V2-V3)

$V3 = 0.5 \times V_{rated}$ t4 - t3 = 5 seconds ESR = (V4 - V3)/I

Figure 1

Precautions:

- This product may vent or rupture if overcharged, reverse charged,incinerated or heated above 100°C
- Do not crush, mutilate, or disassemble
- Do not dispose of unit in trash

Specifications are subject to change without notice.

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