

Overview

KEMET S01 Series Supercapacitors are bank modules in which the cells are encased in a plastic holder.

Applications

Typical applications include wind turbine pitch control, starting systems, automotive subsystems, backup power/UPS, ride through/power conditioning, and renewable energy systems.

Benefits

- 16 80 V working voltage
- · Individually balanced cells
- IP-54 rated
- · Threaded, protected terminals
- Operating temperature range of -40°C to +65°C
- · Optional voltage and over temperature signal
- Cycle life > 500,000 cycles
- RoHS Compliant
- Made in USA



Part Number System

S01	Р	М	5805	K	16	Α	Uxxx
Series	Configuration Code Balancing	Configuration Code Capacitor Type	Capacitance Code (µF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code	C-Spec
Supercapacitor, Bank Module, Molded Plastic Holder	P = Passive without clamping	M = Snap-in, multi-pin style	First three digits represent significant figures. Fourth digit specifies number of zeros.	K = ±10% R = -0%	016 = 16 V 080 = 80 V	A = The first mechanical configuration of a particular part number	Blank = No monitor U808 = Digital Overvoltage and analog over temperature monitor U809 = Digital Overvoltage and digital over temperature monitor U810 = Overvoltage and Overtemperature monitor through CAN Bus



Dimensions – Millimeters

S01PM5805K016A



S01PM1205R080A S01PM1205R080AU809



Part Number	L		۷	V	Н		
Part Number	Nominal	Tolerance	Nominal	Tolerance	Nominal	Tolerance	
S01PM5805K016A	225.37	+/-1.0	50.8	+/-1.0	75.19	+/-1.0	
S01PM1205R080A	238	+/-1.0	247	+/-1.0	74	+/-1.0	
S01PM1205R080AU809	238	+/-1.0	247	+/-1.0	74	+/-1.0	



Performance Characteristics

Item	Performance Characteristics				
Rated Voltage	16 – 81 VDC				
Surge Voltage	17 – 85 VDC				
Isolation Voltage/High Potential	2,500 V				
Capacitance Range	12 – 58 F				
Capacitance Tolerance	±10%, -0%				
Temperature Range	-40°C to +65°C				
Storage Temperature Range	-40°C to +70°C				
Tomocrature Characteristics	Capacitance Change: Within ±5% of initial specified value				
Temperature Characteristics	Internal Resistance (ESR): Within 100% of initial specified value				
	10 years, rated voltage, 25°C				
Life, DC	Δ C < 30% decrease, ESR < 100% increase				
Life Endurance	1,000 hours, rated voltage, 65°C				
Life, Endurance	Δ C < 30% decrease, ESR < 100% increase				
Life Chalf	1,000 hours, no voltage, 70°C				
Life, Shelf	Δ C < 20% decrease, ESR < 100% increase				
Life Ovela	> 500,000 cycles, rated to half rated voltage, 25°C				
Life, Cycle	Δ C < 30% decrease, ESR < 100% increase				
Maximum Number in Series	40 (750 V)				
Standards Compliance	RoHS, UL810a				

Approvals

Series / Partnumber	Test Type	Test Standard	Date completed (or estimated)	
	Vibration	IEC 60068-2-6	Jonuary 2011	
S01PM5805K016A	Mechanical shock	IEC 60068-2-27	January 2011	
SUTPINISOUSKUTOA	Underwriters Laboratory	UL810A	March 2011	
	SAE Safety And Abuse	SAE J2464	pending Q1 2014	
S01PM1205R080A S01PM1205R080AU809 S02AT5006R016AU808 S02AT1656R048AU808	pen	pending Q1 2014		



Environmental Compliance

All KEMET supercapacitors are RoHS Compliant.



Table 1 – Ratings & Part Number Reference

Part Number	S01PM5805K016A	S01PM1205R080A ¹	S01PM1205R080AU809 ¹				
Parameter							
Capacitance (F)	58	11.6	11.6				
Capacitance Tolerance	±10%	-0%	-0%				
Rated Voltage (V)	16	81	81				
Surge Voltage (V)	17	85	85				
Impedance [AC 1 kHz] (mΩ)	≤15	≤80	≤80				
ESR [DC] (mΩ)	≤23	≤90	≤90				
Leakage Current [72 h] (mA)	<25	125	125				
Continuous Current Rating (A)	19	10	10				
Maximum Peak Current 1 s (A)	200	200	200				
Short Circuit Peak Current (A)	1,000	700	700				
Cell Management	Passive	Passive	Passive				
Overvoltage & Over Temperature No Monitor		No	Yes				
	Energy	/Power					
Maximum Stored Energy (Wh)	2.1	10.6	10.6				
Energy Density (Wh/kg)	2.8	2.7	2.7				
Energy Density (Wh/L)	3.6	3.5	3.5				
Power Density (kW/kg)	5.8	6.3	6.3				
Power Density (kW/L)	Power Density (kW/L) 7.4		2.3				
Maximum Power (kW/kg)	1.8	3	3				
Physical							
Configuration Code	PM	РМ	РМ				
L x W x H (mm)	225 x 51 x 76	238 x 247 x 74	238 x 247 x 74				
Weight (kg)	0.76	3	3				
Volume (ml)	594	3900	3900				

¹Preliminary (See Prototype Sample Disclaimer)



Mounting

Specific users guide with mounting instructions ship with module.

Packaging Quantities

Part Number	Capacitance (F)	Rated Voltage	Package Type	Package Quantity	Box Weight	Box Length	Box Width	Box Height
S01PM5805K016A	58	16	Box	1	2 lbs (0.9 kgs)	10.0" (254 mm)	6.0" (153 mm)	3.5" (89 mm)
S01PM1205R080A	12	80	Carton	1	7 lbs (3.2 kgs)	11.0" (279 mm)	8.5" (216 mm)	3.5" (89 mm)
S01PM1205R080AU809	12	80	Carton	1	7 lbs (3.2 kgs)	11.0" (279 mm)	8.5" (216 mm)	3.5" (89 mm)

Standard Marking

- KEMET logo
- Rated voltage
- Rated capacitance
- Terminal markings



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