

## 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

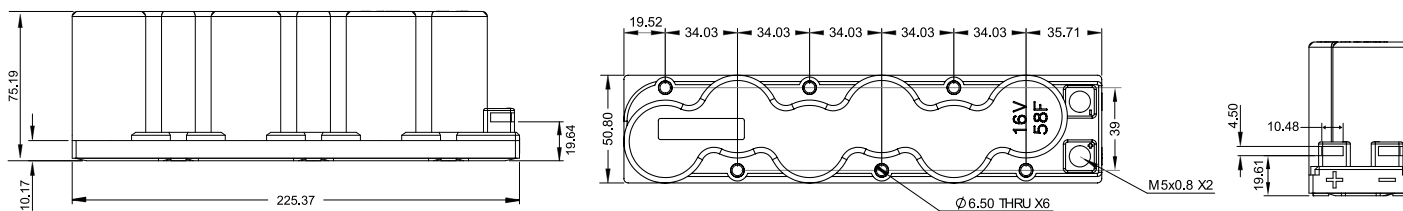


## Part Number System

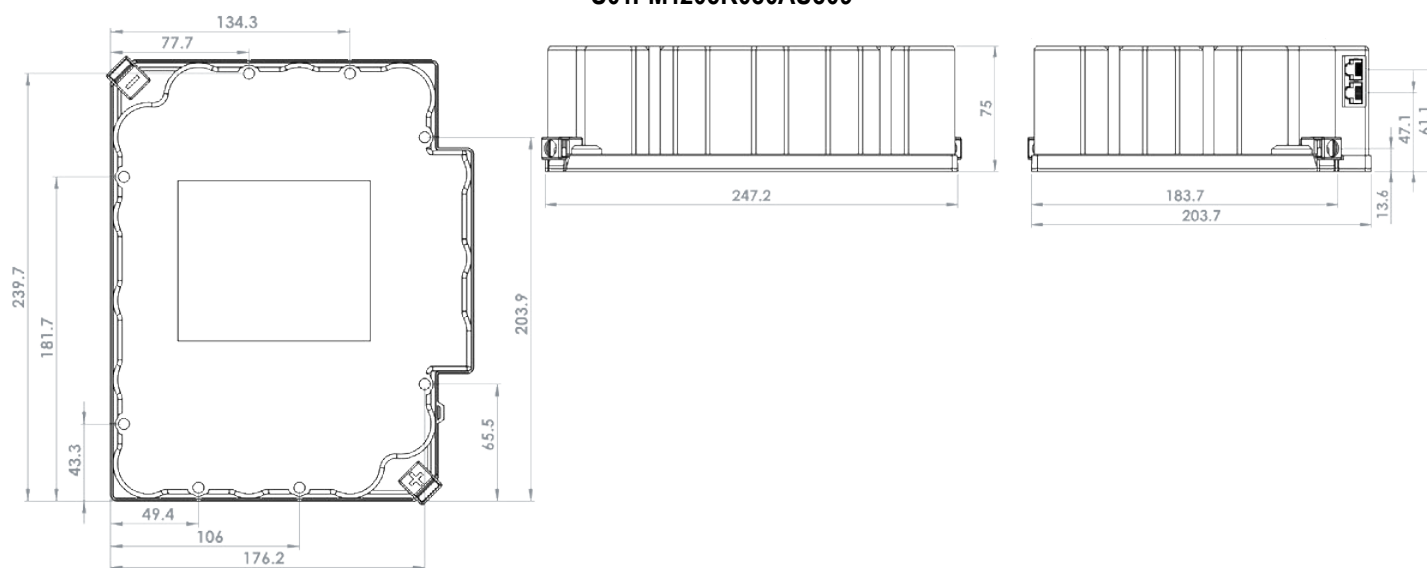
S01	P	M	5805	K	16	A	Uxxx
Series	Configuration Code Balancing	Configuration Code Capacitor Type	Capacitance Code (μF)	Capacitance Tolerance	Rated Voltage (VDC)	Termination Code	C-Spec
Supercapacitor, Bank Module, Molded Plastic Holder	P = Passive without clamping	M = Snap-in, multi-pin style	First three 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		W		H	
	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
Temperature Characteristics	Capacitance Change: Within ±5% of initial specified value
	Internal Resistance (ESR): Within 100% of initial specified value
Life, DC	10 years, rated voltage, 25°C
	Δ C < 30% decrease, ESR < 100% increase
Life, Endurance	1,000 hours, rated voltage, 65°C
	Δ C < 30% decrease, ESR < 100% increase
Life, Shelf	1,000 hours, no voltage, 70°C
	Δ C < 20% decrease, ESR < 100% increase
Life, Cycle	> 500,000 cycles, rated to half rated voltage, 25°C
	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)
S01PM5805K016A	Vibration	IEC 60068-2-6	January 2011
	Mechanical shock	IEC 60068-2-27	
	Underwriters Laboratory	UL810A	March 2011
	SAE Safety And Abuse	SAE J2464	pending Q1 2014
S01PM1205R080A S01PM1205R080AU809 S02AT5006R016AU808 S02AT1656R048AU808	pending		pending Q1 2014

## Environmental Compliance

All KEMET supercapacitors are RoHS Compliant.



RoHS Compliant

### Table 1 – Ratings & Part Number Reference

Part Number	S01PM5805K016A	S01PM1205R080A <sup>1</sup>	S01PM1205R080AU809 <sup>1</sup>
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 Monitor	No	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)	7.4	2.3	2.3
Maximum Power (kW/kg)	1.8	3	3
Physical			
Configuration Code	PM	PM	PM
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

<sup>1</sup>Preliminary (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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