Supercapacitor Development Balancing Kit

Overview

The KEMET Supercapacitor Development Kit includes a two-stage active balancing circuit to complement the S301 Screw Terminal Supercapacitor Series. Each kit contains enough balancing cards, bus bars, screws, washers and wire to assemble six S301 60 mm diameter cells (sold separately).

Applications

Typical applications include medical, aerospace, defense, transportation, telecommunications, product validation, prototyping, low volume production and custom configurations.

Benefits

- High frequency capacitance retention
- High energy delivery capability
- High reliability
- Bus bars for module flexibility
- Positive tab connection termination
- Operating temperature range of -40°C to +105°C
- Two-stage balancing
- Overvoltage protection
- RoHS compliant

Characteristics

Physical		
Required Cell Diameter	60 mm (nominal)	
Cell Orientation	0°, 30°, 60°, 90°	
Cells Available	1,200 F	3,000 F

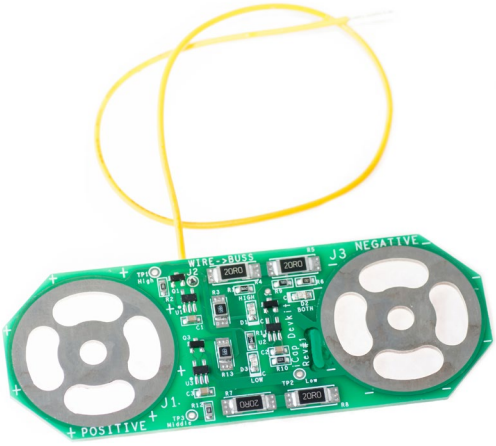
Management	
Individual Balancing	2.0 V for each cell
Cell Orientation	5.4 V for cell pair

Operations		
Configurations	Must be used in even numbers	Housing or other voltage isolation is the responsibility of the customer
Current	Bus bars designed for sub 1,000 A operation	

Ordering Information

KEMET Part Number: S0KMOD0001

Kit Contents



Balancing cards x 3

Bus bars x 6

Terminal bars x 2

Rivets x 3

Spring washers x 24

6 mm cap screws x 24

Additional Hardware Required:

Six (6) KEMET S301 Screw Terminal Supercapacitors, 60 mm cell diameter only.

Environmental Compliance

All KEMET supercapacitors and accesories are RoHS Compliant.

Installation

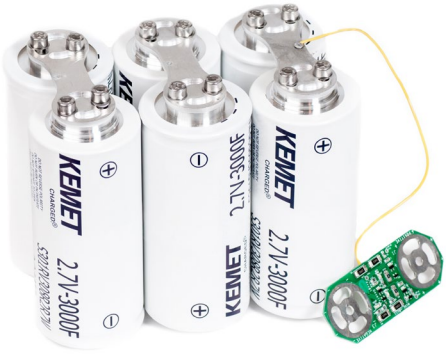
1. Ensure that all cells are discharged to 0 ±0.1 volts before proceeding.

2. Stand cells on end in alternating positive/negative orientation.

3. Apply aluminum anti-oxidazing (No-Al-Ox or equivlent) agent to the cell side surface of each bus bar. Be sure to clean excess anti-oxidation agent from all surfaces and hands.

4. Place bus bars on top of the cells, aligning the threaded holes in the cells with the slots in the bus bars. Install screws through spring washers and bus bars into the cells. Tighten but do not torque at this point.

5. Rivet each balancing card flying lead to the remaining bus bars using the supplied rivets.



Installation (cont'd)

6. Flip cells over and install bus bars on remaining terminals, connecting only negative to positive terminals.

7. Only use terminal end bus bars on the first and last cell in a series chain.

8. Lay the balancing cards over the bus bars in the indicated direction (negative on the board should be connected to a negative terminal). Ensure that the wire from each balancing card is riveted to the corresponding bus bar on the opposite end of the cells. Secure the balancing cards with screws and washers.

9. Torque screws to 4 – 5 Nm.

10. Please note that this is representative of the process only and this process may be completed many ways. For instance, cells may be staggered up to 60°.

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