

Model: BPM-SCC60V10F

Power Supply Load Buffer Module



Highlights

- Power supply load buffer, stabilize output voltage
- High reliability, active voltage balance
 - Compatible with BluTek Power, Inc. BPA-PFS series power supply
- Connection to discharge resistor
- Multiple thermal sensor
- Operation status indicator
- Optional customized cable/connection
- Optional anti-reverse protection
- RS485 communication
- Support customization



Application

- Automation
- Medical Equipment
- AMS

Product Overview

The **BPM-SCC60V10F** is a compact highly reliable super capacitor load buffer module. Providing high peak power and back EMF energy absorption. The BPM-SCC60V10F family also includes RS485 interface to monitor and control all essential functions of the load buffer module.

Custom controls available.

Key Specification

Part Number	BPM-SCC60V10F
Input Voltage Range	0-60V
Absolute Max Voltage Range	0-66V
Module Max Current	0-50A max
Capacitance	10F
Dimension	256*140*78mm

Ordering Model Name

<u>BPM-SCC</u>	<u>60V</u>	<u>10F</u>	<u>CA</u>
Series Name	Voltage	Capacitance	Control Code
	60: 60V	10F	BA: Standard Copper bar Model CA: Standard cable connection Model

For any custom design and model name, please consult with BluTek Power, Inc.

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Electrical Specification

Function	Min	Typical	Max	Condition
Capacitance	9F	10F	13F	
Capacitor ESR			300mohm	Including capacitor ESR and module internal connection, 1kHz
Capacitor Peak Current			115A	
Discharge Resistor	5 ohm			Limited by internal switch current
Lifecycle	500,000			From 100% rated voltage to 50% rated voltage, guaranteed by capacitor source

Environmental

Function	Min	Typical	Max	Condition
Operation Temperature	-20°C		45°C	
Operation Humidity	10%RH		90%RH	Non-condensing
Storage Temperature	-40°C		50°C	
Storage Humidity	10%RH		90%RH	Non-condensing
Operation Altitude			5000m or 16,405 feet	
Shock			196m/s2	With Package
Vibration			19.6m/s2	10-55Hz (1 min sweep). 1 Hour for each axis. With package

EMC

Radiated Emissions	EN 55032, Class A
Note: BPM-SCC is an enclosed type PSU as a component intended to be assembled and built inside the system cabinet, PSU normally is to be mounted connecting to an earthed metal plate, all the EMC tests are performed with the PSU and resistive loads plated on a metal plate to simulate the system application. The final system must re-evaluate to confirm it can still meet the EMC directives.	
Electrostatic Discharge	IEC 61000-4-2 Level 4 Criteria A
Radiated Field	IEC 61000-4-3 Criteria A
Electrical Fast Transient / Burst	IEC 61000-4-4 Level 3 (2 kV), Criteria A
Surge	IEC 61000-4-5 Level 3 Criteria A
CS	IEC 61000-4-6 Level 2 (150 kHz-80 MHz, 3 Vrms, 6 Vrms at ISM bands and Amateur radio bands), Criteria A
Power Frequency Magnetic Fields	IEC 61000-4-8 Criteria A, 30 A/m

Safety and Regulation

ITE safety*		EN/IEC 62368-1 UL 62368-1+CAN/CSA C22.2 NO.62368-1
CE*		EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
Dielectric Voltage	Input-Output	Non-isolated
	Input/Output-Earth(Enclosure)	1800Vac

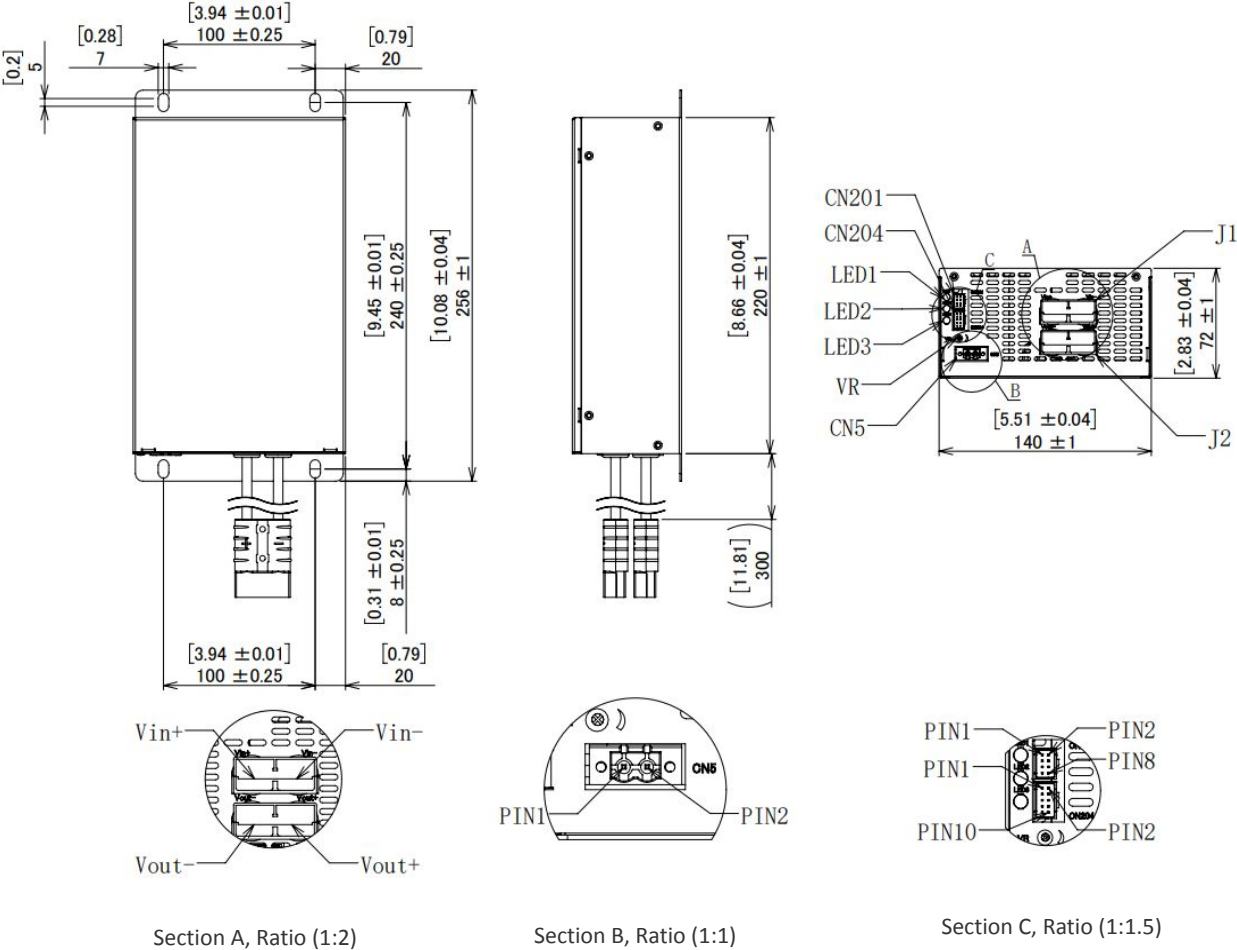
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Mechanical Drawing



Section A, Ratio (1:2)

Section B, Ratio (1:1)

Section C, Ratio (1:1.5)

Position	Connector / Connection		
Input Terminal J1	Use Anderson 50A Plug or equivalent		
	Enclosure Marking	Color	Function
	Vin+	Red	Input +
	Vin-	Black	Input -
Position	Connector / Connection		
Output Terminal J2	Use Anderson 50A Plug or equivalent		
	Enclosure Marking	Color	Function
	Vo+	Red	Output +
	Vo-	Black	Output -
Position	Connector / Connection		
Discharge Resistor Terminal CN5	Use TP508P-00F-2P-GN4-A3 or equivalent		
	Enclosure Marking	Function	
	Vo+	Vo+ Connects to external resistor	
	Vo-	Switch Connects to external resistor	

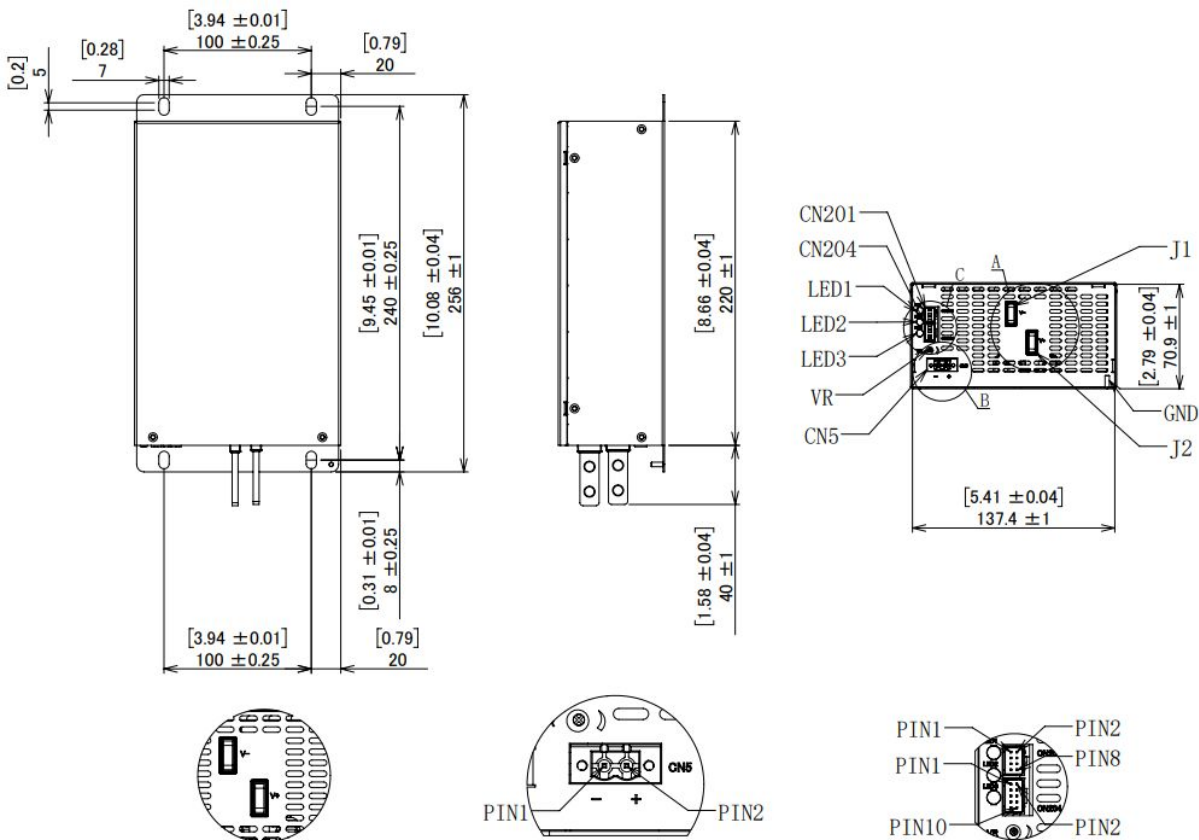
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Mechanical Drawing



Section A, Ratio (1:2)

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Section C, Ratio (1:1.5)

Position	Connector / Connection	
Input Terminal J1	Use Anderson 50A Plug or equivalent	
	Enclosure Marking	Function
	V-	Input -
Position	Connector / Connection	
Output Terminal J2	Use Anderson 50A Plug or equivalent	
	Enclosure Marking	Function
	V+	Output +
Position	Connector / Connection	
Discharge Resistor Terminal CN5	Use TP508P-00F-2P-GN4-A3 or equivalent	
	Enclosure Marking	Function
	Vo+	Vo+ Connects to external resistor
	Vo-	Switch Connects to external resistor

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Control Pin Assignment

Position	Connector / Connection	
CN201 For system use	Mating with CJT A2008H-2X5P or Equivalent	
	Pin	Function
	1.3.4	Reserved
	2	Discharge Fault (Potential to pin6 GND)
	5	Isolated 5V
	6	Isolated 5V GND
	7	RS485 B
	8	RS485 A
Position	Connector / Connection	
CN202 Connects to PFS Series Power Supply Only, otherwise do not use*	Mating with CJT A2008H-2X5P or Equivalent	
	Pin	Function
	1	DC_OK+
	2	DC_OK-
	3	REMOTE ON/OFF+
	4	REMOTE ON/OFF-
	5	NC
	6	NC
	7	CAN_HI
	8	CAN_LO
	9	CAN_5V_GND
	10	CAN_5V

LED Indication

LED Position	LED Status	
LED1	Color	Feature
	Red	CN5 discharging
	Green	Normal operation no discharge
	OFF	Module discharge to below 10V
LED2	Color	Feature
	Red	Module over voltage
	Red Blink	Module over temperature
	Green	Normal operation
LED3	Color	Feature
	Red	Input Error
	Green	Input normal
	OFF	Module discharge to below 10V

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Initial Connection

The capacitor buffer module doesn't support hot-swap function. Please make sure the power supply, this module and load are completely discharge and powered off before making connection, to avoid damaging any components.

Active voltage balance

Since all capacitors are in series, the voltage may not be equally charged due to capacitance deviation. This Power Supply Load Buffer Module includes voltage detection and discharge circuit for each cell. If any single capacitor cell voltage is over preset value, the voltage for this cell will be discharged by a resistor. The discharge will end if this capacitor cell falls to allowed range.

External Discharge

This module provides a connector to connect to external discharge resistor.

This discharge feature is only active when CN202 mating cable is connected to BluTek BPA- PFS series products. If the capacitor module is connected with BluTek BPA-PFS series power supply, the discharge resistor will be on after power supply input AC voltage is off and DC_OK signal is lost on CN202, to speed up the capacitor discharge process.

External Discharge Fault Warning

If the internal discharge circuit has malfunction, the warning signal will pull low. There is 5V pull up and the warning signal will be 5V if there is no malfunction.

Connection to PFS Series PSU

The module also provides a connection to BPA-PFS series power supply. By using this feature, the system can control both BPA-PFS series power supply and this capacitor module. To order connection cable, please connect BluTek Power, Inc.

Communication

The capacitor module provides RS485 communication to system, please contact BluTek Power, Inc. for detailed communication protocol.

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