SEC-B80-8A 'Reboost'

80V, 8A Open-source smart DC/DC Converter

SEC-B80-8A is a smart DC/DC designed for Maximum Power Point Tracking and battery charge applications in electric vehicles.

- High efficiency
- 80V, 8A Boost or Buck topology
- Isolated CAN-bus interface
- Fast Maximum Power Point Tracking
- Battery charge control

Features

- Open-source Hardware and Software
- High efficiency, high bandwidth Hardware
- Maximum power point tracking
- Battery charge controller
- Isolated CAN-bus interface
- Over current and over voltage protection
- Integrated fuse
- Easy integration with tool for editing settings

Electrical Specifications

Parameter		Value	Unit
Output voltage range	V_{out}	15 - 80	V
Absolute maximum voltage		100	V
Input Voltage range	V_{in}	2-V_{out}	V
Input Power Range	P_{in}	700	Watt
Input Current Range	I_{in}	0-8	A
Power losses	$I_{in} < 5A$	< 2	Watt
Small signal bandwidth		1.8	kHz
Slew rate		10	Vms^{-1}
Quiescent current	$V_{in} = 30V$	157	μA
	$V_{in} = 60V$	350	μA
CAN supply voltage	V_{can}	6-48	V
CAN power usage		0.10	Watt
CAN Speed		125-1000	kbps
Weight		160	Gram
Operating temperature		0-80	°C
Relative Humidity		<95	%
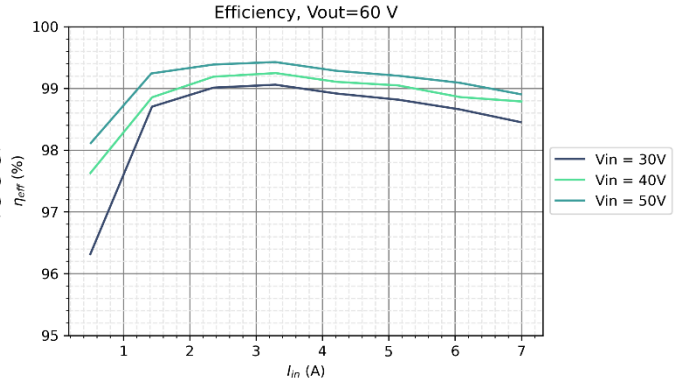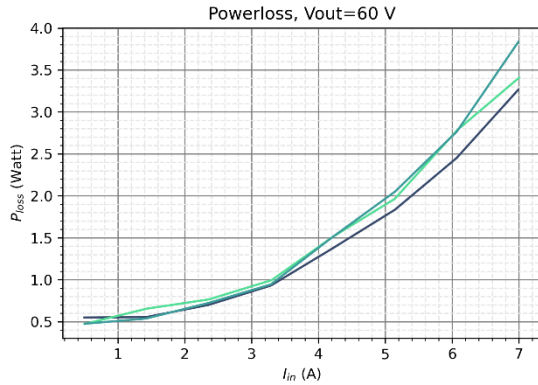
Connectors

Connector	Pin	Name	Description
CAN (2x)	1	Vcan+	CAN-bus supply voltage
Molex Micro-Fit 3.0	2	CAN_H	CAN high signal
MPN: 430450602	3	CAN_L	CAN low signal
(or similar)	4	Vcan-	CAN ground
	5	N.C	No internal connection
	6	N.C.	Is passed through to second connector.
Power	1	V_l-	Negative low side (PV)
Phenix contact	2	Vl+	Positive low side (PV)
MPN: PC 4/ 4-G-7,62	3	V_h+	Positive high side (Battery)
	4	V_h-	Negative high side (Battery)

Name convention

SEC-	B	80	-8A
Smart Energy Converter	Bi-directional	High side voltage	8 Ampere current rating

Document history

Revision	Changes
1	Initial release