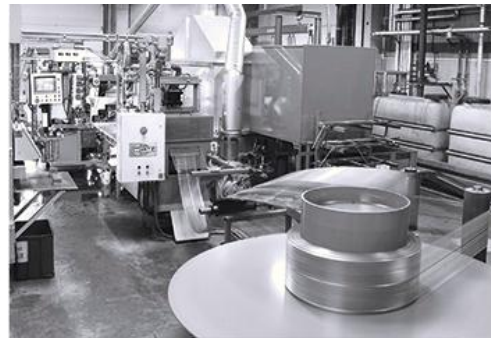


Benchmark Analysis of Commercially Available 12V SIB

ALBA 2026 Mainz

Markus Föhlisch



Battery 1

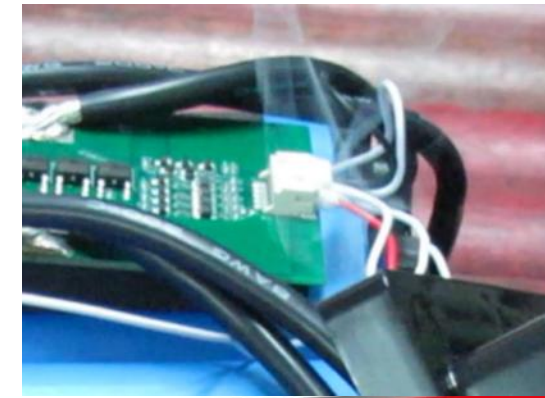
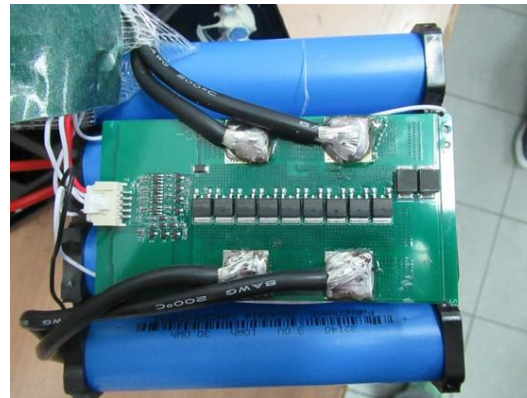
- Manufacturer current specifications:

- Continuous Discharge 450A
- Starting Current 675A
- Peak Current 1350A

15s 450A

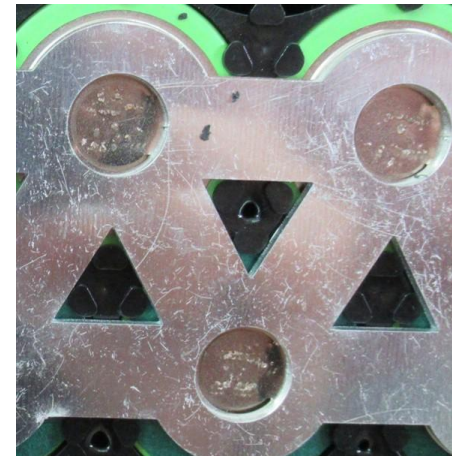
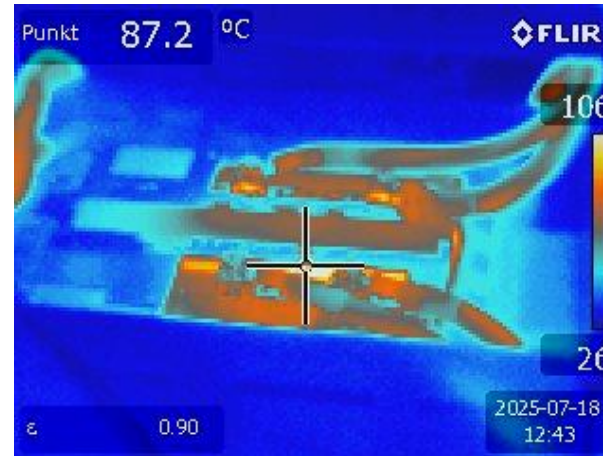
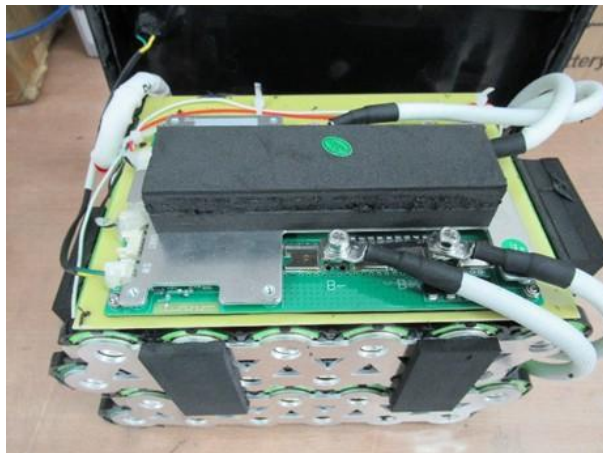
→ PCB far over 200°C

→ Smoke evolution



Battery 2

- Manufacturer current specifications:
 - Starting Current 900A



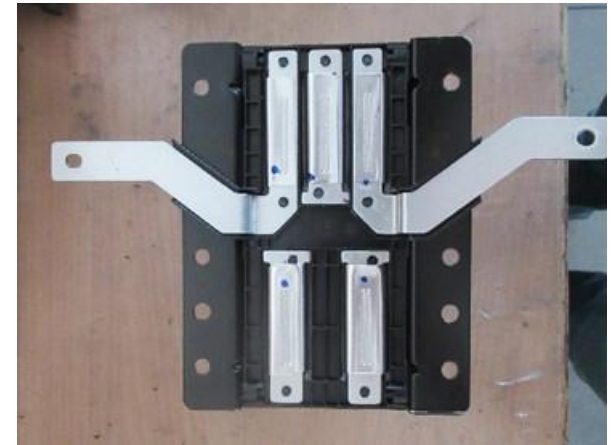
600A, 15s → >100°C

Temperature gradient charging solution

	SOC	Temperature gradient						
		-20°C--10°C	-10°C-0°C	0°C-10°C	10°C-20°C	20°C-45°C	45°C-55°C	55°C-70°C
Max. charging rate	100%	/	/	0.05	0.05	0.05	0.05	/
	90%	/	0.05	0.20	0.75	0.50	0.50	0.50
	80%	0.05	0.20	0.50	0.75	3.00	1.00	0.50
	70%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	60%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	50%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	40%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	30%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	20%	0.10	0.20	0.50	0.75	3.00	1.00	0.50
	10%	0.10	0.20	0.50	0.75	0.75	0.50	0.50
	0	0.10	0.20	0.50	0.50	0.50	0.50	0.50

Battery 3

- Manufacturer current specifications:
 - Starting current SLI 450A
 - Starting current EFB 550A



- No BMS
- No safety features
- No cell protection

