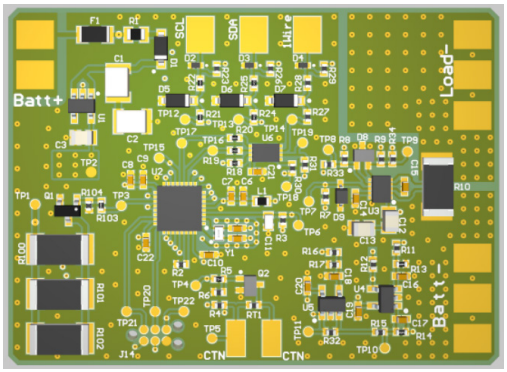
OptiLife

A universal State of Charge for primary batteries

The Saft Universal OptiLife card is specifically designed to **optimize the use of connected objects**, while reducing operating costs through the **optimization and knowledge of the state of charge of the battery.** OptiLife is ideally suited for **all lifetime duration applications** featuring low base currents and periodic pulses. This solution is **designed and patented for Saft primary lithium batteries** to have an accurate estimate of the remaining life.



Benefits

- Accurate State of Charge for primary batteries assemblies based on LS and LSH technology
- Enhanced predictability and fleet optimization thanks to continuous monitoring
- Optimal performance T°C range
- High reliability
- Low current consumption

Key features

- The Saft algorithm is based and patented upon Saft's electrochemistry's ensuring the best possible accuracy by considering self-discharge during storage and usage.
- Very high accuracy in measuring voltage, current, temperature, and capacity.
- NTC integrated into circuit
- Support Two-Wire I²C™ interface communication
- Designed in France

Designed to meet all major quality, safety and environment standards

- Quality: ISO 9001, Saft Excellence System, continuous evaluation program
- Environment: ISO 14001, Compliant RoHS
- EMC: compliant IEC 61000-6-2: 2019 and IEC 61000-6-3: 2020
- Compliant ESD: IEC 61000-4-2: ±4kV in contact and ±8kV in air
- PCB Compliant to UL 94-V0

Electrical characteristics	
Voltage measurement accuracy	< 1%
Capacity (Ah) measurement accuracy	< 5%
Operating conditions	
Supply voltage	4 V to 50.4 V (2 to 14 cells in series)
Current measurement range (continuous)	100mA(1) to 20A
Operating temperature range	-40°C to +85°C
Current consumption	< 50 µA
Absolute maximum ratings	
Supply voltage absolute	4 V to 60 V
Maximum current measurement (pulse)	30A
Maximum and storage temperature	-40°C to +85°C
Absolute battery capacity	38000 Ah
Physical characteristics	
Dimensions L x W x T	55 x 40 x 4.6 mm
Algorithm characteristics	
Includes self discharge during storage & usage	
Compatible Saft cells: SOC accuracy (profile 12A/100 ms – 50 mA/10 s for a battery with LSH20 cell)	<5%(2)

LS14250
LS14500
LS17500
LS26500*plus*
LS33600
LSH20

(1) If below or above please consult Saft.
(2) This value varies according to the typical profile facing a typical cell.

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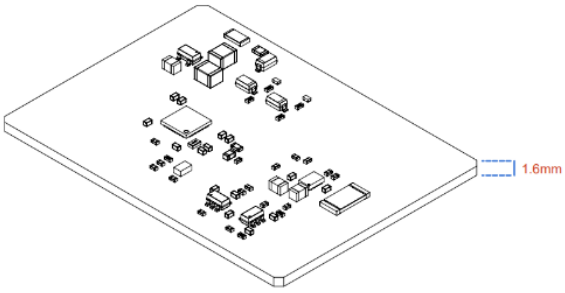
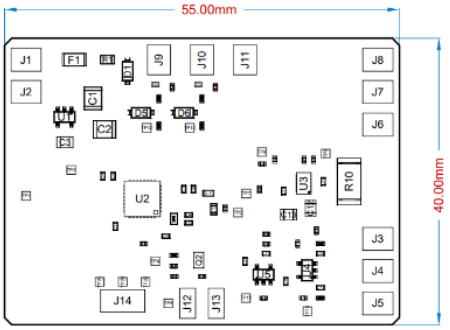


Typical Applications

- Maritime systems
- Connected sensors
- Military market
- Industrial Internet of things market
- Tracking systems
- Robots



Communication

- Two-wire serial communication protocol: I2C
- Voltage: 3.3V

Command	Identifier	Command code	Unit
Battery Voltage	VOLTAGE	0xOE	mV
Battery Current	CURRENT	0x11	µA
Battery average current	CURRENT_AVERAGE	0x26	1/512µA
Peak Current	CURRENT_PEAK	0x27	µA
Battery temperature	TEMPERATURE	0x14	°C
Battery Cut off voltage	CUTOFF_VOLTAGE	0x1F	mV
Battery SOC	SOC	0x2B	%
Remaining lifetime	RMING_LIFETIME	0x2A	Day

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