

# Stereax® P180 – Solid State Battery Prototype - Operates up to + 150°C

## Features

- ▲ Operates in Commercial, Industrial, Extended and Automotive Temperature Ranges
- ▲ Thin Form factor
- ▲ All Solid-State Construction
- ▲ Fast Charge
- ▲ High Current Pulses
- ▲ High Energy Density per Footprint
- ▲ Thousands of Cycles
- ▲ Low Self-discharge
- ▲ No Free Lithium
- ▲ Eco-friendly



Stereax P180 solid state batteries deposited on 6" wafer

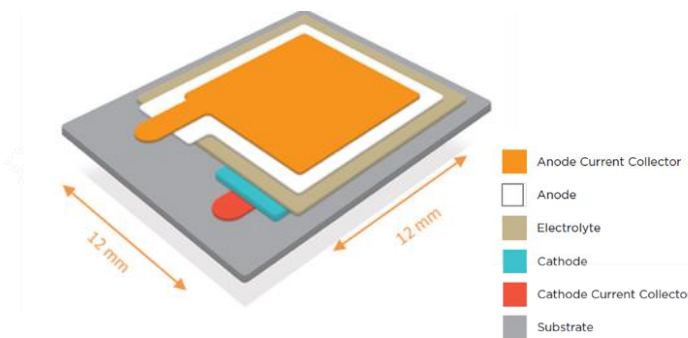
## Physical Properties

Active Area:	12 mm x 12 mm
Battery Footprint:	18 mm x 20 mm
Thickness:	1.0 mm
Mass:	620 mg
Operating temperature:	Up to +150°C

## Electrical Properties at +150 °C

Output Voltage (nominal):	3.4 V
Capacity (nominal):	180 μAh
Charging Source:	3.8 V
Charging time to 90%:	<1 minute
Charge/discharge cycles <sup>a</sup> :	Up to 4,000
Peak current:	18 mA

a: 5% DoD; continuous charging/discharging at 150°C; temperature variations will de-rate battery performance, please contact us for more info at [info@ilika.com](mailto:info@ilika.com)



Stereax P180 construction diagram

## General Description

The Stereax P180 is a prototype solid state battery that can operate and be stored up to 150°C. Ultra-thin, it can be integrated in devices where size and form factor are important. The Stereax P180's peak current is sufficient to power BLE or related communication protocols when your application needs data transfer at high temperatures. Suggested applications include sensor wafers for the semi-conductor and MEMS industries and high temperature sensing and condition monitoring applications. Available for testing on evaluation PCB.



Stereax P180 solid state batteries on evaluation PCB

## Specifications

Operation	Parameter	Test conditions	Value	Unit
Charging and Discharging at +150°C	Capacity	1C	180	μAh
		10C	100	μAh
		50C	40	μAh
	Minimum Voltage		3	V
	Max Continuous Current	50C	9	mA
	Standard Discharge Current	1C	180	μA
	Cycle life	5% DoD; to 80% of rated capacity; 1C	4000	Cycles
		100% DoD to 80% of rated capacity; 1C	200	Cycles
	Internal Resistance	Charge Cycle 1, 100% SoC	15	Ω
	Pulse Current	0.5 ms, every second	18	mA

Note: All specifications contained within this document are subject to change without notice.

P180 has been designed for constant, continuous operation at 150°C, and specifications are provided for this use case only. All other use cases, including repeated temperature ramps between room temperature (25°C) and 150°C, or use of the battery at room temperature will significantly de-rate the battery performance, in particular its cycle life and available capacity. Please contact us for more information, [info@ilika.com](mailto:info@ilika.com)

P180 is a prototype battery intended to use for development and evaluation only.

Shelf life is dictated by P180 leakage current: Please contact us for more information

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