Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Киргизия (996)312-96-26-47
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Россия (495)268-04-70
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
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Саратов (845)249-38-78
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Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Казахстан (772)734-952-31
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

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Технические характеристики на гибридные первичные батареи серии LSP

LSP 33600-20F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V D-size bobbin cell fitted with a 20F LIC

Saft's LSP 33600-20F battery is ideally suited for long life applications (typically from 5 to 10 years), featuring low base currents and periodic high current pulses up to 1.5 A.

Benefits

- High pulse current capability
- High voltage response, stable even after long dormant periods
- Low self-discharge compatible with long operating life (less than 1.5% capacity loss per year after 1 year of stabilization at + 20 °C)
- Wide operating temperature range (-20°C to +70°C)

Key features

- Battery made of Saft's LS 33600 D-size bobbin Li-$SOCl_2$ cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support
- Restricted for transport (class 9)
- Made in EU

Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH12609) and IEC 60086-4 for the LS 33600 cell
- Transport: UN 3090, 3091 & 3499 for components (*assembly under testing*)
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH

Typical applications

- Smart Metering
- Internet of Things
- Tracking systems
- Environment monitoring

Electrical characteristics		
(Typical values related to batteries stored up to one year at + 30 °C max)		
Typical capacity (at 5 mA, +20 °C, 2.0 V cut-off) [1]		17 Ah
Open circuit voltage		3.67 V
Nominal voltage (at 0.7 mA, + 20 °C)		3.6 V
Nominal energy		61.2 Wh
Typical pulse capability [2]		At 20°C pulse 1 A / 3 s

Operating conditions		
Operating temperature range [3]		-20 °C / +70 °C
Storage temperatures	Recommended [4]	+30 °C max.

Physical characteristics		
Length (max)	Design example. For other configurations, please consult Saft	44.0 mm
Width (max)		33.5 mm
Height (max)		62.5 mm
Terminals		Flying leads with optional connectors
Typical battery weight		92 g
Li metal content		approx. 4.5 g

References	
Saft part No.	60090U

[1] Dependent upon current drain, temperature, cut-off and battery orientation.

[2] Typical pulse capability to 2.8V at + 20 °C from fresh battery. The voltage readings may vary according to:
- the pulse characteristics such as intensity, duration and frequency
- the environment's temperature
- the battery's previous history.

Consult Saft for any other pulse conditions.

[3] Operation above or under ambient temperature may lead to reduced capacity and lower voltage readings. Consult Saft.

[4] For more severe conditions, consult Saft.

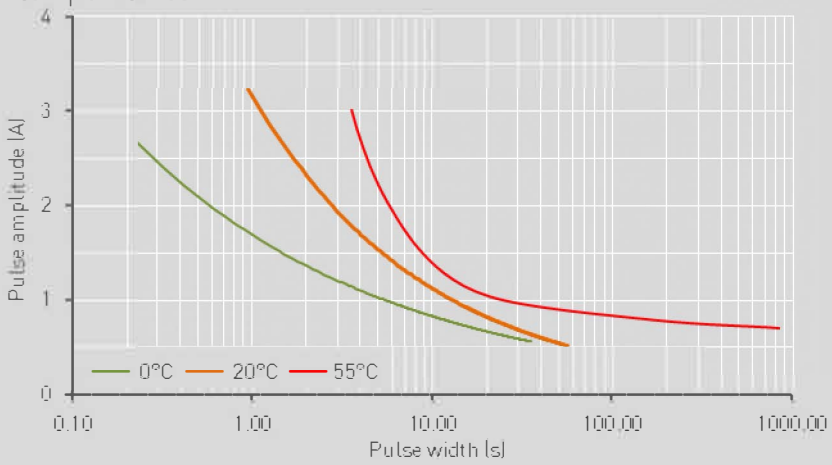
Storage

- The storage area should be clean, cool (preferably not exceeding + 30 °C), dry and ventilated

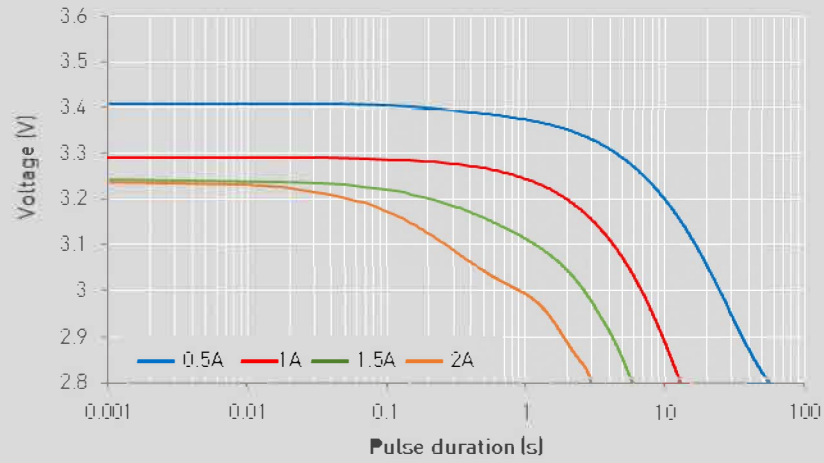
Warning

- Fire, explosion and burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F), incinerate, or expose contents to water
- Do not solder directly to the cell (use tabbed cell versions instead)

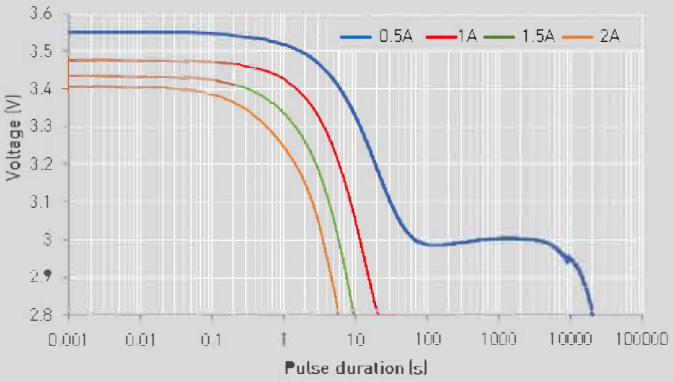
Maximum pulse width from 3,6 V to 2,8 V at various temperatures



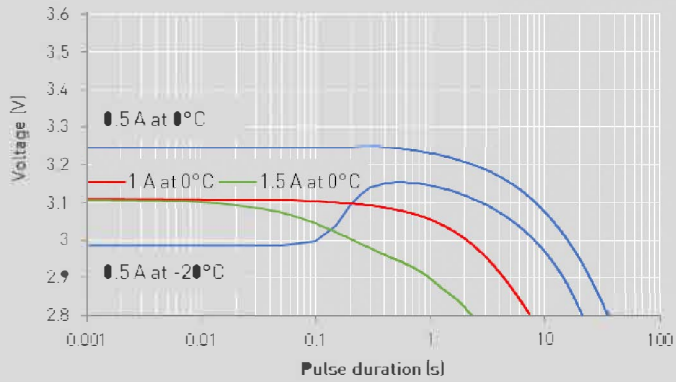
Voltage during a pulse at 20°C



Voltage during a pulse at 55°C



Voltage during a pulse at low temperatures



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LSP 26500-20F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V C-size bobbin cell fitted with a 20F LIC

Saft's LSP 26500-20F battery is ideally suited for long life applications (typically from 5 to 10 years), featuring low base currents and periodic high current pulses up to 1.5 A.

Benefits

- High pulse current capability
- High voltage response, stable even after long dormant periods
- Low self-discharge compatible with long operating life (less than 1.5% after 1 year of storage at + 20 °C)
- Wide operating temperature range (-20°C to +70°C)

Key features

- Battery made of Saft's LS 26500 C-size bobbin Li-$SOCl_2$ cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support
- Restricted for transport (class 9)
- Made in EU

Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH 12609) IEC 60086-4 (*for the Li-SOCl2 cell*)
- Transport: UN 3090, 3091 & 3499 for components (*assembly under testing*)
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Smart Metering
- Internet of Things
- Tracking systems
- Environment monitoring

Electrical characteristics		
(Typical values related to batteries stored up to one year at + 30 °C max)		
Typical capacity (at 4 mA, +20 °C, 2.0 V cut-off) [1]		7.7 Ah
Open circuit voltage		3.67 V
Nominal voltage (at 0.5 mA, + 20 °C)		3.6 V
Nominal energy		27.7 Wh
Typical pulse capability [2]		At 20°C 1 A / 3 s pulses

Operating conditions		
Operating temperature range [3]		-20 °C / +70 °C
Storage temperatures	Recommended [4]	+30 °C max.

Physical characteristics		
Length (max)	Design example.	37 mm
Width (max)	For other configurations,	26.5 mm
Height (max)	please consult Saft	51.5 mm
Terminals (example)		Flying leads with optional connectors
Typical battery weight		52 g
Li metal content		approx. 2 g

References	
Saft part No.	60089T

[1] Dependent upon current drain, temperature, cut-off and battery orientation.

[2] Typical pulse capability to 2.8V at + 20 °C from fresh battery. The voltage readings may vary according to:
- the pulse characteristics such as intensity, duration and frequency
- the environment's temperature
- the battery's previous history.

Consult Saft for any other pulse conditions.

[3] Operation above or under ambient temperature may lead to reduced capacity and lower voltage readings. Consult Saft.

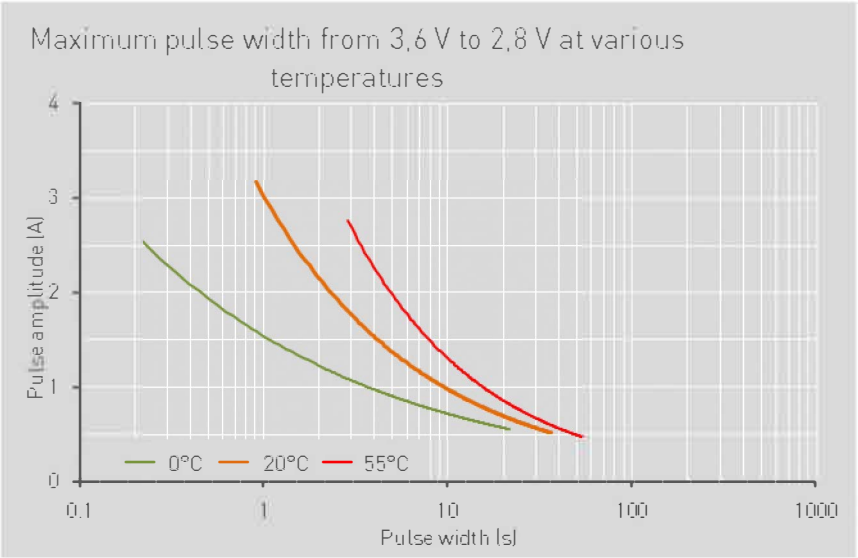
[4] For more severe conditions, consult Saft.

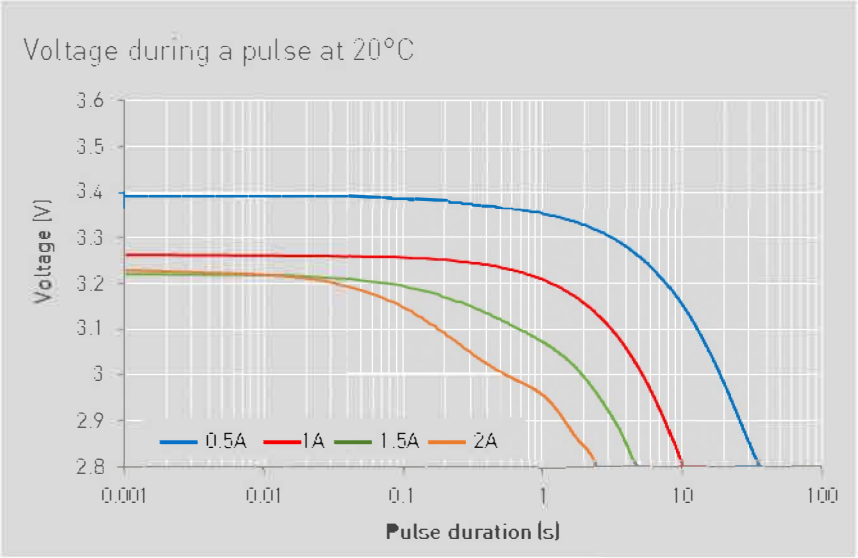
Storage

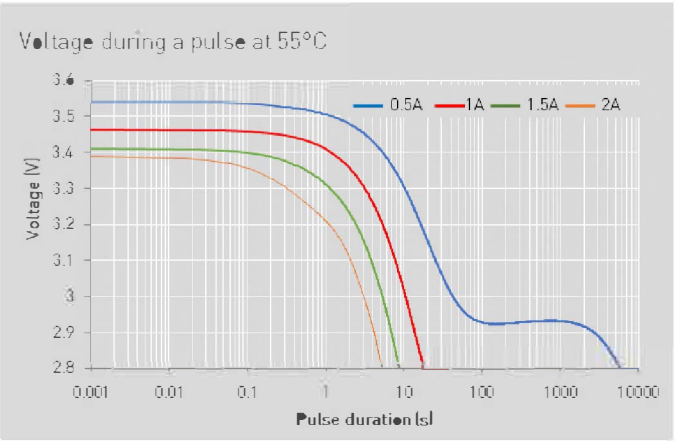
- The storage area should be clean, cool (preferably not exceeding + 30 °C), dry and ventilated

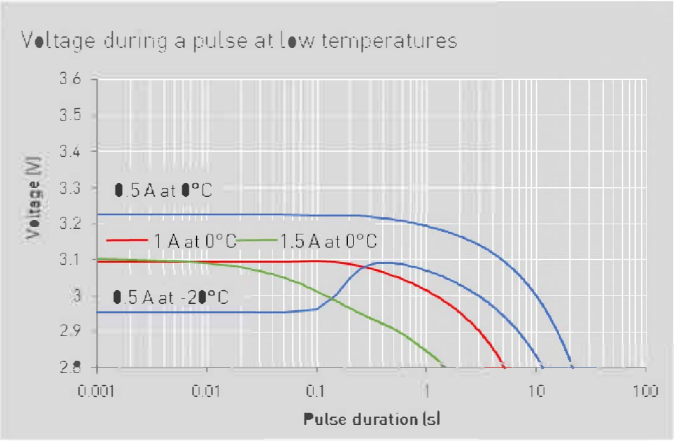
Warning

- Fire, explosion and burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F), incinerate, or expose contents to water
- Do not solder directly to the cell (use tabbed cell versions instead)









LSP 26500-3F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V C-size bobbin cell fitted with a 3F EDLC

Saft's LSP 26500 battery is ideally suited for long life applications (typically from 5 to 10 years), featuring low base currents and periodic high current pulses.

Benefits

- High pulse current capability
- High voltage response, stable even after long dormant periods
- No voltage delay
- High capacity and high energy density (543 Wh/kg)
- Low self-discharge compatible with long operating life (less than 1.5% after 1 year of storage at + 20 °C)
- Wide operating temperature range (-30°C to +60°C)
- Superior resistance to corrosion
- Low magnetic signature

Key features

- Battery made of Saft's LS 26500 C-size bobbin Li-SOCl2 cell fitted with a 3F EDLC (Electrochmical Double Layer Capacitor) in parallel connection for pulse support
- Safe, hermetic and non-pressurized cell construction with glass-to-metal seal, safety vent and stainless steel container
- Restricted for transport (class 9)
- Made in EU

Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH 12609) IEC 60086-4 (*cell*)
- Transport: UN 3090, 3091 & 3499 for components (*assembly under testing*)
- Compliant to ATEX: IEC 60079-11 part 10.5 (*cell*)
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Smart Metering
- Internet of Things
- Tracking systems

Electrical characteristics		
(Typical values related to batteries stored up to one year at + 30 °C max)		
Typical capacity (at 3 mA, +20 °C, 2.0 V cut-off) [1]		7.7 Ah
Open circuit voltage		3.67 V
Nominal voltage (at 0.5 mA, + 20 °C)		3.6 V
Nominal energy		27.7 Wh
Typical pulse capability [2]		At 20°C 2A 1s pulses

Operating conditions		
Operating temperature range [3]		-30 °C / +60 °C
Storage temperatures	Recommended [4]	+30 °C max.

Physical characteristics		
Length (max)	Design example. For other configurations, please consult Saft	35.5 mm
Width (max)		26.5 mm
Height (max)		52 mm
Terminals (example)		Flying leads with optional connectors
Typical battery weight		51 g
Li metal content		approx. 2 g

References	
Saft part No.	60027D

[1] Dependent upon current drain, temperature, cut-off and battery orientation.

[2] Typical pulse capability to 2.8V at + 20 °C from fresh battery. The voltage readings may vary according to:
- the pulse characteristics such as intensity, duration and frequency
- the environment's temperature
- the battery's previous history.

Consult Saft for any other pulse conditions.

[3] Operation above or under ambient temperature may lead to reduced capacity and lower voltage readings. Consult Saft.

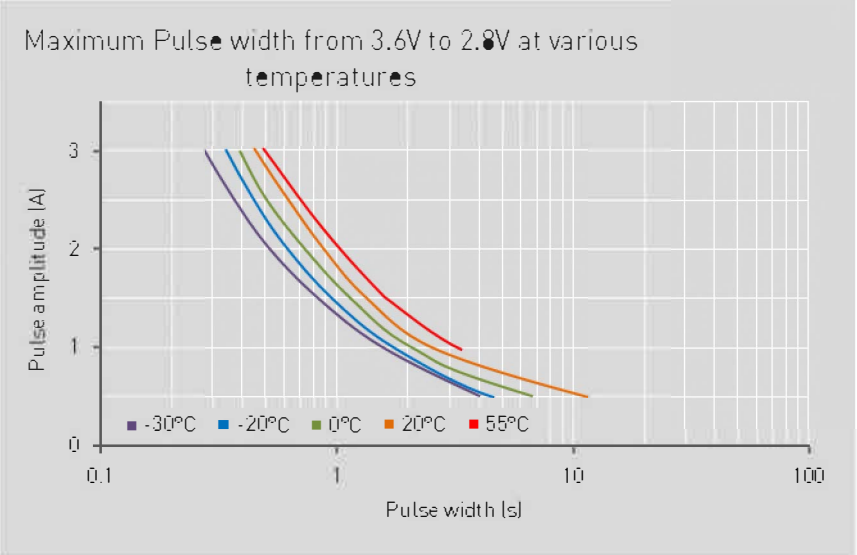
[4] For more severe conditions, consult Saft.

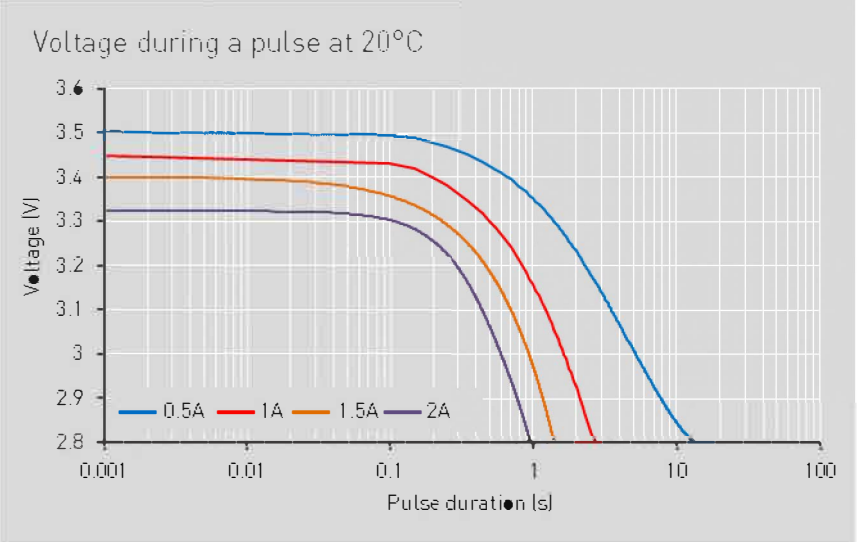
Storage

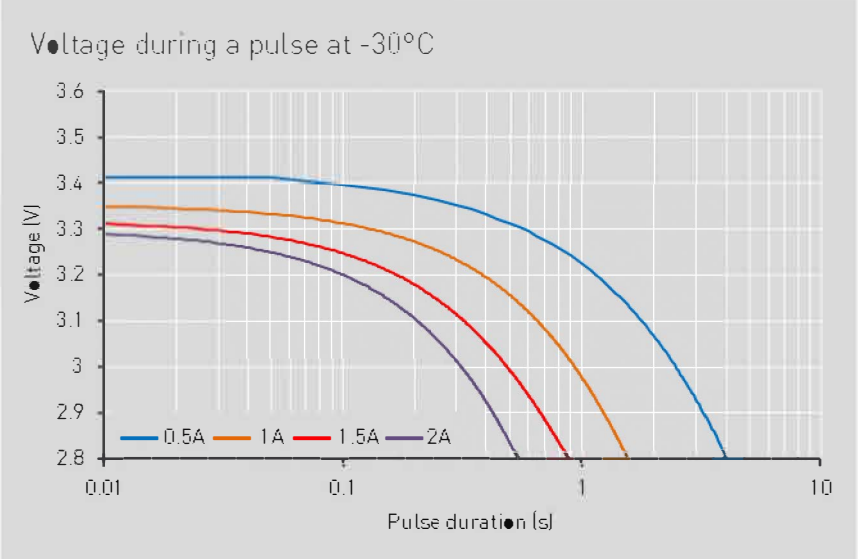
- The storage area should be clean, cool (preferably not exceeding + 30 °C), dry and ventilated

Warning

- Fire, explosion and burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F), incinerate, or expose contents to water
- Do not solder directly to the cell (use tabbed cell versions instead)







LSP 17500-20F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V A-size bobbin cell fitted with a 20F LIC

Saft's LSP 17500-20F battery is ideally suited for long life applications (typically from 5 to 10 years), featuring low base currents and periodic high current pulses up to 1.5 A.

Benefits

- High pulse current capability
- High voltage response, stable even after long dormant periods
- Low self-discharge compatible with long operating life (less than 1.5% after 1 year of storage at + 20 °C)
- Wide operating temperature range (-20°C to +70°C)
- Superior resistance to corrosion

Key features

- Battery made of Saft's LS 17500 A-size bobbin Li-$SOCl_2$ cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support
- Restricted for transport (class 9)
- Made in EU

Designed to meet all major quality, safety and environment standards

- Safety: UL 1642 (File MH 12609) IEC 60086-4 (*for the Li-$SOCl_2$ cell*)
- Transport: UN 3090, 3091 & 3499 for components (*assembly under testing*)
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Smart Metering
- Internet of Things
- Tracking systems
- Environment monitoring

Electrical characteristics		
(Typical values related to batteries stored up to one year at + 30 °C max)		
Typical capacity (at 3 mA, +20 °C, 2.0 V cut-off) [1]		3.6 Ah
Open circuit voltage		3.67 V
Nominal voltage (at 0.5 mA, + 20 °C)		3.6 V
Nominal energy		12.96 Wh
Typical pulse capability [2]		At 20°C 1 A / 3 s pulses

Operating conditions		
Operating temperature range [3]		-20 °C / +70 °C
Storage temperatures	Recommended [4]	+30 °C max.

Physical characteristics		
Length (max)	Design example.	28 mm
Width (max)	For other configurations,	17.5 mm
Height (max)	please consult Saft	52.5 mm
Terminals (example)		Flying leads with optional connectors
Typical battery weight		28 g
Li metal content		approx. 1 g

References	
Saft part No.	60088S

[1] Dependent upon current drain, temperature, cut-off and battery orientation.

[2] Typical pulse capability to 2.8V at + 20 °C from fresh battery. The voltage readings may vary according to:
- the pulse characteristics such as intensity, duration and frequency
- the environment's temperature
- the battery's previous history.

Consult Saft for any other pulse conditions.

[3] Operation above or under ambient temperature may lead to reduced capacity and lower voltage readings. Consult Saft.

[4] For more severe conditions, consult Saft.

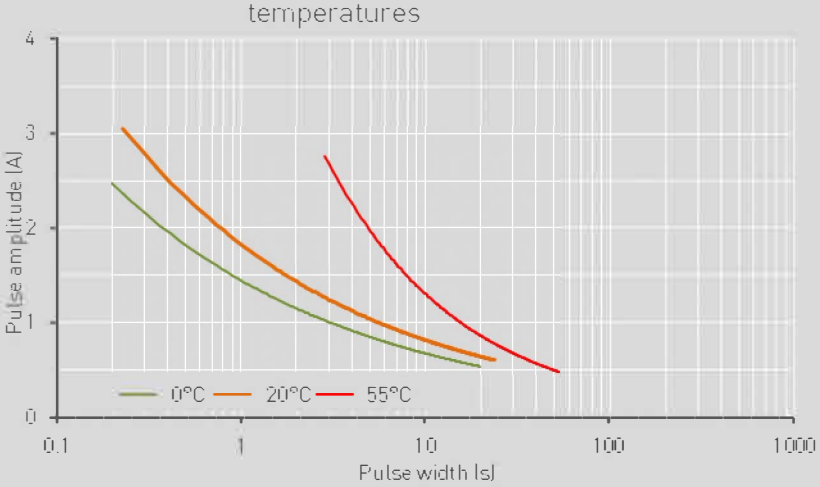
Storage

- The storage area should be clean, cool (preferably not exceeding + 30 °C), dry and ventilated

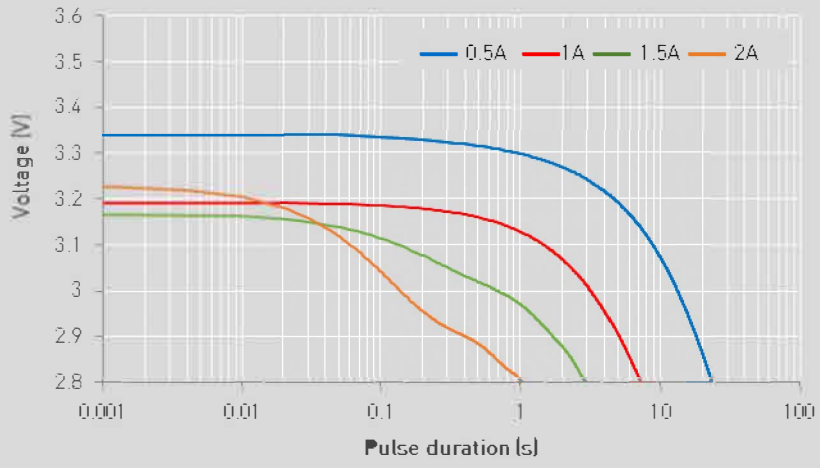
Warning

- Fire, explosion and burn hazard
- Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F), incinerate, or expose contents to water
- Do not solder directly to the cell (use tabbed cell versions instead)

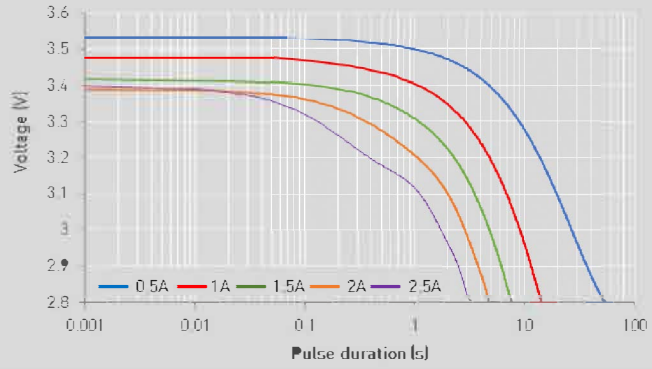
Maximum pulse width from 3,6 V to 2,8 V at various temperatures



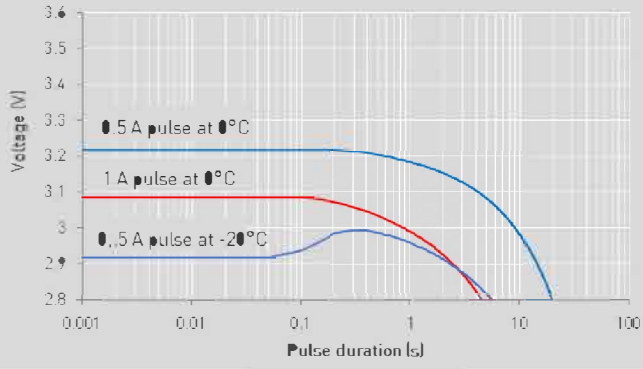
Voltage during a pulse at 20°C



Voltage during a pulse at 55°C



Voltage during a pulse at cold temperatures



LSP 17330-20F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V 2/3 A size bobbin cell fitted with a 20F LIC

Saft's LSP 17330-20F battery is ideally suited for long life applications featuring low base currents and periodic pulses and periodic high current pulses up to 1.0 A.

Benefits

- High pulse capability.
- High voltage response, stable even after long dormant periods.
- Low self-discharge compatible with long operating life (less than 1.5% after 1 year of storage at + 20 °C).
- Wide operating temperature range (-20°C to +70°C).
- Easy integration into systems.

Key features

- Battery made of Saft's LS 17330 2/3 A size bobbin Li-$SOCl_2$ cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support.
- Well controlled passivation.
- Non-flammable electrolyte.
- **Manufactured in the UK.**

Designed to meet all major quality, safety and environmental standards

- Safety: UL 1642, IEC 60086-4 (at cell level)
- Transport: UN 3090, 3091 & 3499 for components and tested to UN 38.3.
- Quality: ISO 9001, Saft World Class program.
- Environment: ISO 14001, RoHS and REACH compliant.

Typical applications

- Smart metering.
- Internet of Things.
- Tracking systems.
- Environmental monitoring.

Electrical characteristics [i]	
Nominal capacity (at 3 mA, +20°C, 2.0 V cut-off) [ii]	2.05 Ah
Open circuit voltage (at + 20°C)	3.67 V
Nominal voltage (under 0.2mA, +20°C)	3.6 V
Nominal energy	7.56 Wh
Typical pulse capability [iii]	At 20°C 1.0 A / 3s pulses
Maximum recommended continuous current [iv]	25 mA

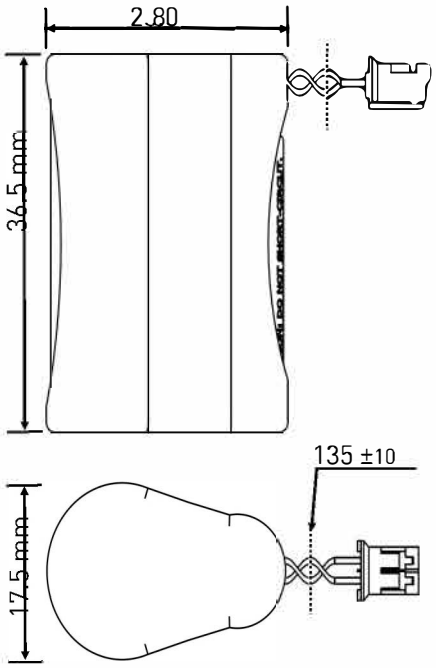
Operating conditions	
Operating temperature range	-20°C to +70°C
Storage temperature recommended [v]	max +30°C

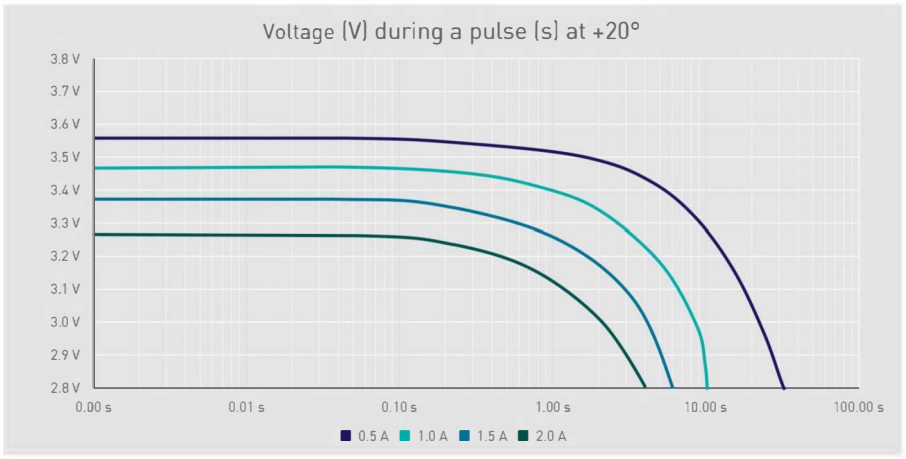
Physical characteristics (sleeved cell)	
Length (max)	28.0 mm
Width (max)	17.5 mm
Height (max)	35.5 mm
Typical weight	20.0 g
Li metal content	(approx.) 0.6 g

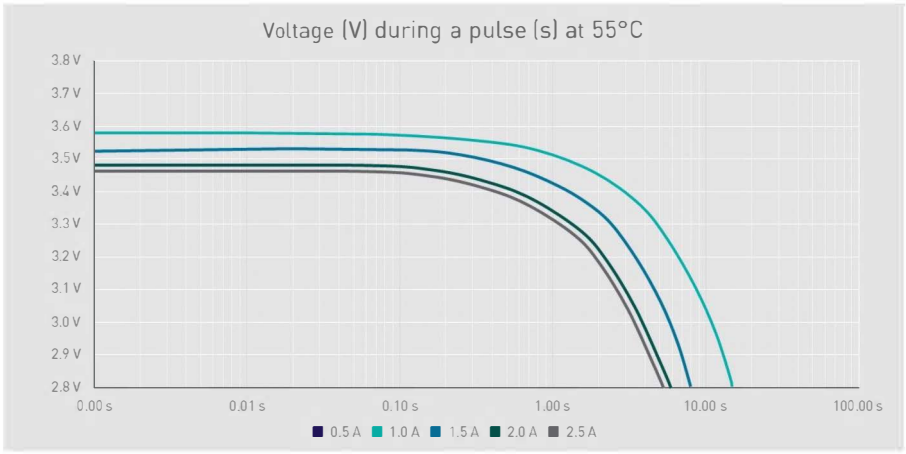
References	
Saft part number	0095-788-019
Battery connector [vi]	JST (PHR-2)

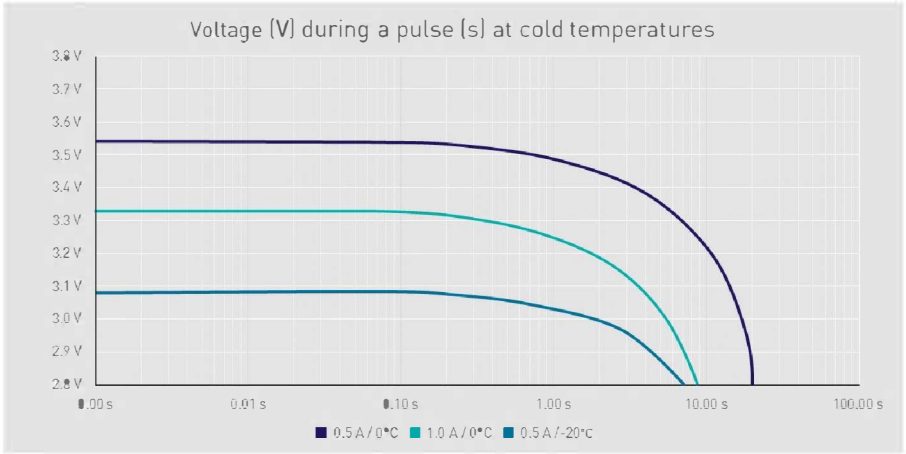
[i] Typical values relative to cells stored up to one year at + 30°C max.
[ii] Dependent upon current drain, temperature, cut-off and cell orientation.
[iii] (TBA). For further details consult Saft.
[iv] Higher currents are possible, consult Saft.
[v] For more severe conditions, consult Saft.
[vi] Other terminations are available, consult Saft.

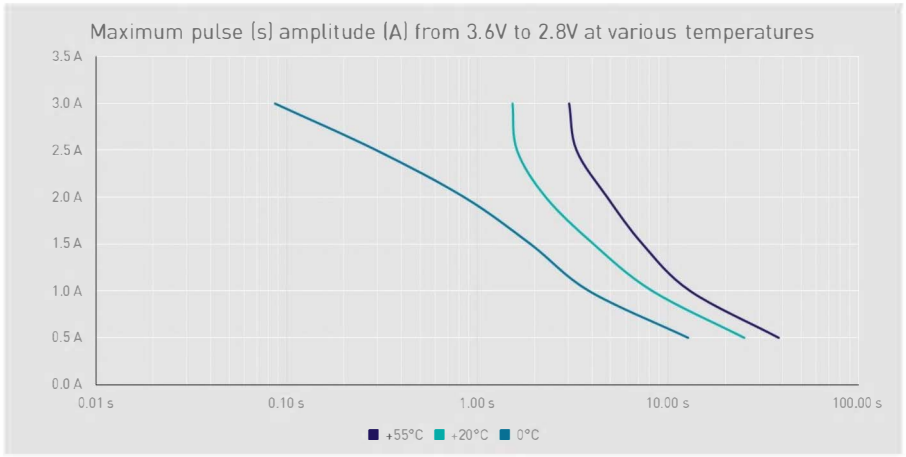
LSP 17330-20F











Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated.

Warning

- Fire, explosion and burn hazard.
- Do not recharge, short circuit, crush, disassemble, heat above 100°C (212°F), incinerate, or expose contents to water.
- Do not solder directly to the battery (use the connector).

LSP 14500-20F

Hybrid Primary Li-$SOCl_2$ battery

3.6 V AA size bobbin cell fitted with a 20F LIC

Saft's LSP 14500-20F battery is ideally suited for long life applications featuring low base currents and periodic pulses and periodic high current pulses up to 1.5 A.

Benefits

- High pulse capability.
- High voltage response, stable even after long dormant periods.
- Low self-discharge compatible with long operating life (less than 1.5% after 1 year of storage at + 20 °C).
- Wide operating temperature range (-20°C to +70°C).
- Easy integration into systems.

Key features

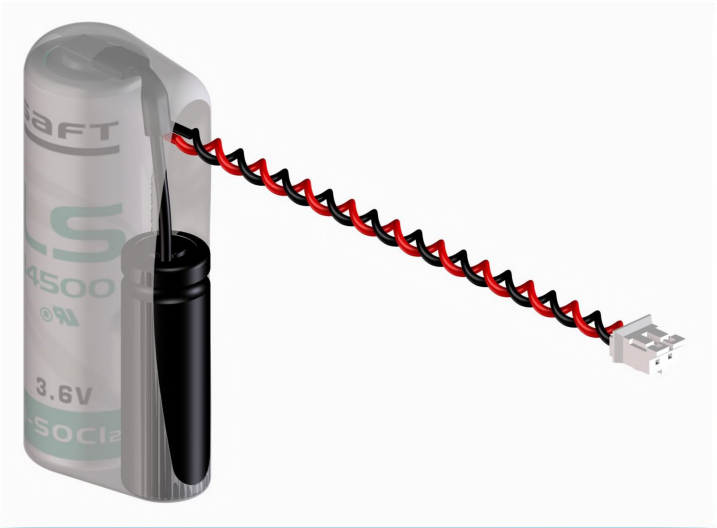
- Battery made of Saft's LS 14500 AA size bobbin Li-$SOCl_2$ cell fitted with a 20 F LIC (Lithium Ion Capacitor) in parallel connection for pulse support.
- Well controlled passivation.
- The cell contains a non-flammable electrolyte.
- **Manufactured in the EU.**

Designed to meet all major quality, safety and environmental standards

- Safety: UL 1642, IEC 60086-4 (at cell level)
- Transport: UN 3090, 3091 & 3499 for components and tested to UN 38.3.
- Quality: ISO 9001, Saft World Class program.
- Environment: ISO 14001, RoHS and REACH compliant.

Typical applications

- Smart metering.
- Internet of Things.
- Tracking systems.
- Environmental monitoring.



Electrical characteristics [i]	
Typical capacity (at 2 mA, +20°C, 2.0 V cut-off) [ii]	2.6 Ah
Open circuit voltage (at + 20°C)	3.67 V
Nominal voltage (under 0.2mA, +20°C)	3.6 V
Nominal energy	9.36 Wh
Typical pulse capability [iii]	At 20°C 1.0 A / 3s pulses
Maximum recommended continuous current [iv]	50 mA

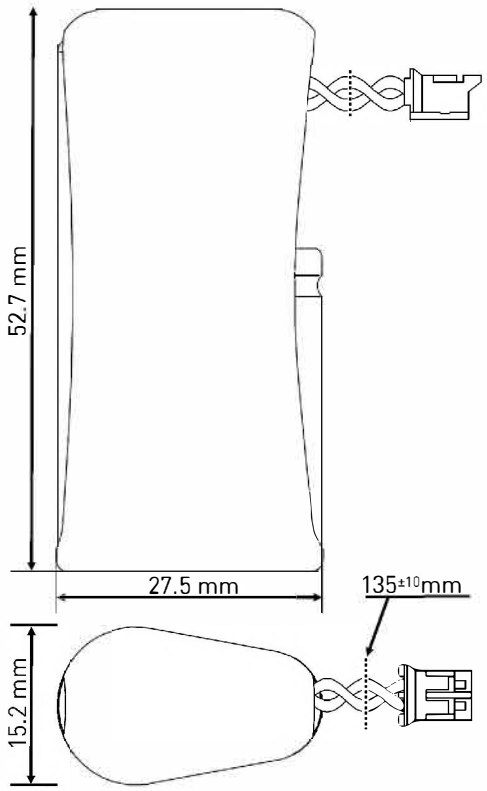
Operating conditions	
Operating temperature range	-20°C to +70°C
Storage temperature recommended [v]	max +30°C

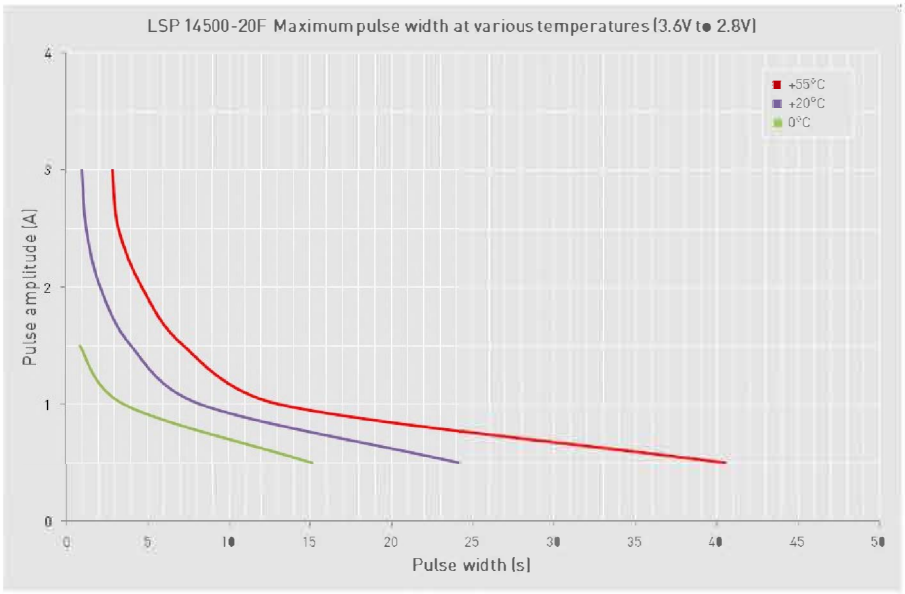
Physical characteristics (sleeved battery)	
Length (max)	25.7 mm
Width (max)	15.2 mm
Height (max)	52.7 mm
Typical weight	22 g
Li metal content	(approx.) 0.7 g

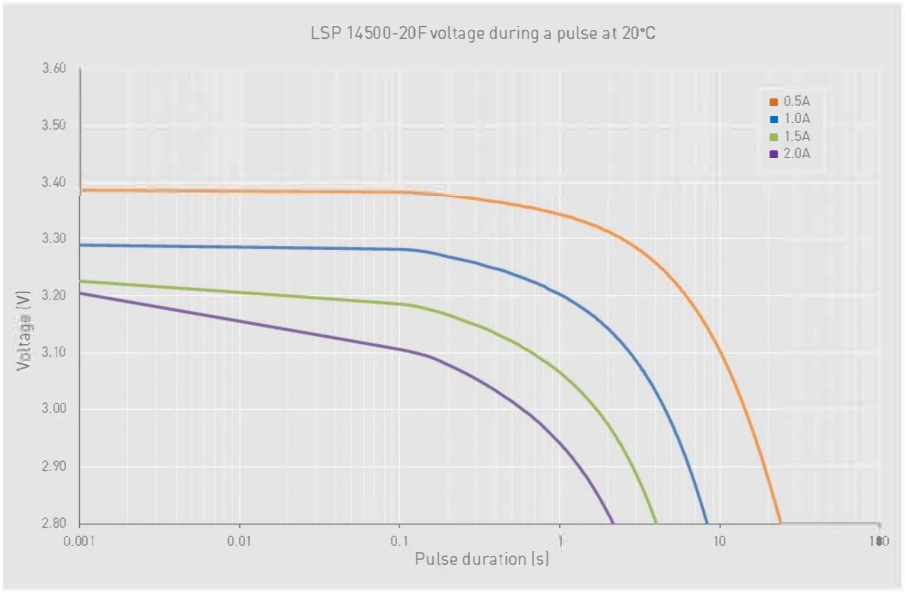
References	
Saft part number	60125F
Battery connector [vi]	JST (PHR-2)

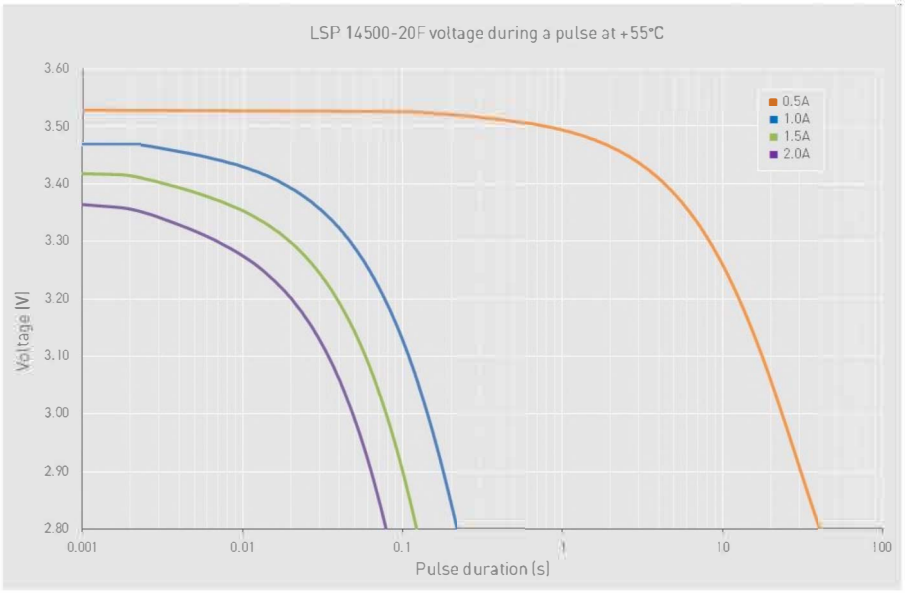
[i] Typical values relative to cells stored up to one year at + 30°C max.
[ii] Dependent upon current drain, temperature, cut-off and battery orientation.
[iii] For further details consult Saft.
[iv] Higher currents are possible, consult Saft.
[v] For more severe conditions, consult Saft.
[vi] Other terminations are available, consult Saft.

LSP 14500-20F









Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated.

Warning

- Fire, explosion and burn hazard.
- Do not recharge, short circuit, crush, disassemble, heat above 100°C (212°F), incinerate, or expose contents to water.
- Do not solder directly to the battery (use the connector).

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