MP602030 LFP 50

50 Ah LFP Lithium Ion Battery Cell

Medium Power Cell
3.2 V / 160 Wh

The lithium iron phosphate battery cell **MP602030 LFP 50** is ideally suited for applications both requiring power and energy density, high charge and discharge rates and very safe operation.

Features and Benefits

- Very safe cell chemistry
- Robust stainless-steel casing avoids corrosion and provides shock resistance for harsh environment applications
- M12 terminals for easy assembly and low resistance interfaces
- Suitable for low temperature operation
- Made in Germany
- UN 38.3 certified

Mechanical Characteristics

Diameter	60	mm
Length	232	mm
Length without terminals	203	mm
Weight	1.35	kg
Volume	0.57	l

Chemical Characteristics

Cathode	Lithium Iron Phosphate (LFP)
Anode	Graphite

Electrical Characteristics

Maximum capacity @ 0.5 C @ 25 °C	53	Ah
Nominal capacity @ 0.5 C @ 25 °C	50	Ah
Nominal operating voltage	3.2	V
Charging voltage	3.5	V
Recommended cut-off discharge voltage	2.5	V
Energy	160	Wh
Discharge current @ 25 °C		
Recommended	50	A (1 C)
Maximum continuous	250	A (5 C)
Maximum pulse (2 s)	500	A (10 C)
Low temperature performance	See Chart	
AC impedance (1 kHz)	< 0.6	mΩ
DC resistance (2 s pulse @ 10 C / 50 % SoC)	< 1.1	mΩ
Specific energy	118	Wh/kg
Energy density	280	Wh/l
Specific power		
Continuous discharge @ 5 C / 50 % SoC	540	W/kg
2 s pulse discharge @ 10 C / 50 % SoC	1,030	W/kg
Power density		
Continuous discharge @ 5 C / 50 % SoC	1,290	W/l
2 s pulse discharge @ 10 C / 50 % SoC	2,450	W/l

Applications and Markets

- Hybrid electric drives
- Electric drives
- Load leveling and peak shaving
- Boosting and range extension
- Space
- Aerospace
- Defense
- Marine
- Heavy duty vehicles
- Off-Road vehicles
- Rail and transport
- Mining

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Operating Conditions

Recommended charging method	Constant Current/ Constant Voltage
Recommended charging voltage	3.5 V (max. 3.6 V)
Recommended continuous charging current	25 A (0.5 C)
Maximum continuous charging current	50 A (1 C)
Maximum pulse charge current (15 s)	
(max. 70 % SoC, average current < 50 A)	100 A (2 C)
Absolute lower voltage limit for discharge	
Continuous @ 5 C (-30 °C to 60 °C)	2.0 V
Pulse @ 10 C (-30 °C to 60 °C)	1.5 V
Storage and transport conditions	25 to 50 % SoC
Maximum temperature range	-40 °C to 60 °C
Recommended temperature range	10 °C to 25 °C
Operating temperature	
Discharge	-30 °C to 60 °C
Charge (recommended)	-10 °C to 40 °C
Cycle life @ 20 °C (EoL @ 80 % of nominal capacity)	
100 % DoD, 0.5 C	> 5,000 cycles
80 % DoD, 0.5 C	> 6,250 cycles