

Lithium-polymer rechargeable battery (accumulator)

Electrical characteristics

Parameter		Condition	T _A	Min	Typ	Max	Unit
Un	Nominal voltage		25°		3,7		V
Qn	Nominal capacity	discharge 0,2 x I _{d,max}	25°	665	700		mAh
Ri	Impedance	f _{mess} =1kHz	25°			180	mΩ
Ucp	Over charge protection voltage		25°	4,22	4,25	4,28	V
Ic	Charge current	U < Ucp	25°		600		mA
Udc	Discharge cut-off voltage		25°			3,0	V
Udp	Over discharge protection voltage		25°	2,4	2,5	2,6	V
I _d	Discharge current		25°		150	750 (Peak 3000)	mA

Performance characteristics

Parameter		Condition	T _A	Min	Typ	Max	Unit
tdc	Charge time	0,2 x I _{c,max}	25°		6	7	h
		I _{c,max}			3	4	
n	Load life cycles (Q _n ≥ 80%)	charge 0,2 x I _{c,max} to Ucp	25°	300			cyl.
		discharge 0,2 x I _{d,max} to Udc					
Capacity variation		discharge 0,2 x I _{d,max} to Udc	-20°C	50			%
			25°C	100			
			55°C	85			
Self discharge		after 28 days	25°C			10	%

Physical characteristics

Parameter	Condition	T _A	Min	Typ	Max	Unit
θ _o Operating temperature	charging		0		40	°C
	discharging		-20		60	
θ _s Storage temperature	< 1 month		-20		60	°C
	< 3 month		-20		45	
	< 1 year		-20		20	
φ _s Storage humidity		0..25°C	35		85	%
m Weight				tbd		g

Mechanical characteristics

Parameter	Condition	Tol.	Min	Typ	Max	Unit
Length		+1 -1		63		mm
Height		+0,1 -0,2		6		mm
Width		+0,6 -0,2		22		mm
Cable length	without connector	+1,6 -1,6		39		mm

Housing characteristics

Component	Material
Protective foil	PVC black 0,1 mm, Printed with Labels
Chasis	ABS or PC, black (UL94 V-0)

Connector characteristics

Component	Type	Condition	Parts
Cable	AWG28	Pin1: (+) red	1
		Pin2: (-) black	1
Housing	Molex	87439-0200	1
Terminal	Molex	87421-0000	2

Legal requirements

- RoHS 2011/65/EU Restriction of Hazardous Substances
- REACH (EG) Nr. 1907/2006 Declaration of e.g.: 1,2-Dimethoxyethan, 1,3-Propanol
- DIN EN 62133-2:2017-11 → CB report
- DIN EN 62620-(VDE 0510-35):2015-09
- DIN EN 61960-3:2017-12 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications (IEC 61960:2011);
- DIN EN 61429/A11:2000-01 Marking of secondary cells and batteries with the international recycling symbol ISO 7000-1135 and indications regarding directives 93/86/EEC and 91/157/EEC;
- DIN EN 62619 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications (IEC 21A/529/CD:2013-10)
- DIN EN 60068-2-30; 2008 (Environmental testing)
- IATA Lithium Battery Guidance Document – 2020

Expected documentation

- UN 3480 Dangerous goods indicator, Lithium Ion Battery
- CB report → IEC 62133
- UN38.3 Report Lithium Battery Test Report
- 1.2M Report Lithium Drop Test Report
- MSDS Report Material Safety Data Sheet

Expected battery delivery charge state

- Limited to a maximum of $0,3 \times Q_n$

Expected protection

- Over charge
- Over discharge
- Short protection