

Datasheet translated to English by Canada Robotix.

Canada Robotix Item No.:

0252-PRT - Polymer Lithium Ion Battery (3.7V 40mAh)  
0939-PRT - Polymer Lithium Ion Battery (3.7V 110mAh)  
0940-PRT - Polymer Lithium Ion Battery (3.7V 400mAh)  
1191-GEN - Polymer Lithium Ion Battery (3.7V 800mAh)  
0588-GEN - Polymer Lithium Ion Battery (3.7V 1000mAh)  
0589-GEN - Polymer Lithium Ion Battery (3.7V 2000mAh)  
0233-PRT - Polymer Lithium Ion Battery (3.7V 6000mAh)

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- **Lithium batteries are a fire hazard.** They must be charged and stored in a fire proof area. We recommend charging them on concrete a safe distance from any flammable materials. Read and understand the instructions included with your Lithium battery charger before attempting to charge Lithium batteries.
- **Use specific Lithium Polymer charger only. DO NOT use a NiMH or NiCd charger.** Failure to do so may cause a fire, which may result in personal injury and property damage.
- **Never charge batteries unattended.** When charging Lithium batteries you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
- Some Lithium chargers on the market may have technical deficiencies that may cause it to charge the Lithium batteries incorrectly or at an improper rate. It is your responsibility solely to assure the charger you purchased works properly. Always monitor charging process to assure batteries are being charged properly. Failure to do so may result in fire.

## 1. Specification

Charge voltage	4.2V
Max. charge voltage	4.25V
Nominal voltage	3.7V
Nominal capacity	Depending on model
Charge current	Standard Charging: 0.5C Rapid charge: 1.0C
Standard Charging method	0.5C constant current charge until 4.2V, then 4.2V constant voltage charge until charge current decline to $\leq 0.05C$
Charging time	Standard Charging: 3.0 hours (ref.) Rapid charge: 2.0 hours (ref.)

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Max. charge current	1.0C
Max. discharge current	1.0C
Discharge cut-off voltage	2.75V
Operating temperature	Charging: 0°C – 45°C Discharging: -20°C – 60°C
Storage temperature	-0°C – 45°C

**2. Battery Cell Electrical characteristics**

	Test Method and Condition	
Standard Charge	Charging the cell at 0.5C until 4.2V then charge at 4.2V constant voltage until charge current declines to $\leq 0.05C$	
Rated Capacity	Measured with discharge current of 0.2C with a 2.8V cut-off voltage after a standard charge.	Depending on model.
Cycle Life	Test condition: Charge: 0.5C to 4.2V Discharge: 0.5C to 2.8V	> 500
Self-discharge	After standard charging, store cell at $23\pm 5^\circ C$ $65\pm 20\%RH$ for 30 days then measure the capacity with 0.2C discharge till 2.8V.	Residual capacity > 90%
Initial impedance	Internal resistance measured at AC 1kHz after at 50% capacity	$\leq 80m\Omega$
Cell Voltage		3.6V – 3.9V
Temperature Characteristics	Capacity comparison at each temperature, measured with constant discharge current of 0.2C until 2.8V. Percentage given as an index of the capacity compared with operation at $23\pm 5^\circ C$	-20°C: $\geq 65\%$ 23°C: 100% 60°C: $\geq 96\%$
Storage Characteristics	After standard charging, store cell at $60\pm 5^\circ C$ for 3 days then rest at $23\pm 5^\circ C$ for 1 hour then measure the capacity with 0.2C discharge till 2.8V.	Residual capacity > 85%

It should be noted that the cell would become over-discharged by its self-discharge characteristics when the cell is not used for a long period of time. In order to prevent over-discharging, the cell shall be charged periodically to maintain between 3.6V – 3.9V.

Over-discharging may causes loss of cell performance, characteristics, or battery functions.

Use a charger that is equipped with a device to prevent further discharging below the cut-off voltage given in the product specification. Also the charger shall be equipped with a device to control the charging procedures of an over-discharged cell as follows:

1. Start with a low current (0.01C) charge for 15-30 minutes
2. Normal charging shall only be started after the (individual) cell voltage has reached 2.8V within 15-30 minutes

In the event that (individual) cell voltage does not rise to 2.8V within the pre-charging time, the charger shall stop further charging.