# Product Overview

## LC06511DMX: Battery Protection IC, OTP Function, Sense Resistor type, 1-Cell Lithium-Ion Battery

For complete documentation, see the data sheet.

LC06511DMX is a protection IC for 1 cell lithium-ion or lithium-polymer battery with built-in OTP. It provides highly accurate adjustable over-charge, over-discharge, over-current protection with adjustable detection delay by OTP. Current is detected by high precision external chip resistor. Which realizes accurate current detection over temperature.

## Features

- Highly accurate detection voltage/current
- Built in OTP functuin
- Small package
- Over charge detection voltage 4.1V to 4.55V (5mV steps)
- Over charge release hysteresis 0V to 0.2V (0V,0.1V,0.15V,0.2V)
- Over discharge detection voltage 2.0V to 3.3V (50mV step)
- Over discharge release hysteresis2 0V,0.2V,0.3V,0.4V
- Discharge Over current detection voltage1 3mV to 70mV (1mV step)
- Discharge Over current detection voltage2 3mV to 70mV (1mV step)
- Short current detection voltage 50mV to 150mV (10mV step)

For more features, see the data sheet

## Benefits

- Prevention of fire, over heating Follow UL standard of 8A limit.
- Short term for providing samples
- Reduce the space of PCB

## Applications

- 1-cell Lithium-ion Batteries Protection

## End Products

- Smart phone
- Tablet
- Wearable device

## Part Electrical Specifications

| Product | Pricing ($/Unit) | Compliance | Status | $V_{ov}$ Typ. (mV) | $V_{uv}$ Typ. (mV) | $I_{oc}$ Typ. (A) | $V_{oc}$ Typ. (mV) | $I_{och}$ Typ. (A) | $V_{och}$ Typ. (mV) | $I_{oc2}$ Typ. (A) | $V_{oc2}$ Typ. (mV) | Rss(on) typ @ $V_{gs}$=4.5 V (mΩ) | Auto Wake Up Enable (Yes/No) | 0 V Battery Charge Enable (Yes/No) | Package Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LC06511D01MXTAG | 0.2667 | Pb-free<br>Halide free | Active | 4475 | 2600 | - | 40 | - | -30 | - | 150 | - | Yes | Yes | X2DFN6 1.4x1.4, 0.5P |
| LC06511D02MXTAG | 0.2667 | Pb-free<br>Halide free | Active | 4225 | 2500 | - | 18 | - | -12 | - | 60 | - | Yes | Yes | X2DFN6 1.4x1.4, 0.5P |
| LC06511D04MXTAG | 0.2667 | Pb-free<br>Halide free | Active | 4430 | 2800 | - | 24 | - | -12 | - | 50 | - | Yes | Yes | X2DFN6 1.4x1.4, 0.5P |
| LC06514D01MXTAG | 0.2667 | Pb-free<br>Halide free | NEW | 4550 | 2600 | - | 35 | - | -40 | - | 120 | - | Yes | No | X2DFN6 1.4x1.4, 0.5P |

## Application Diagram

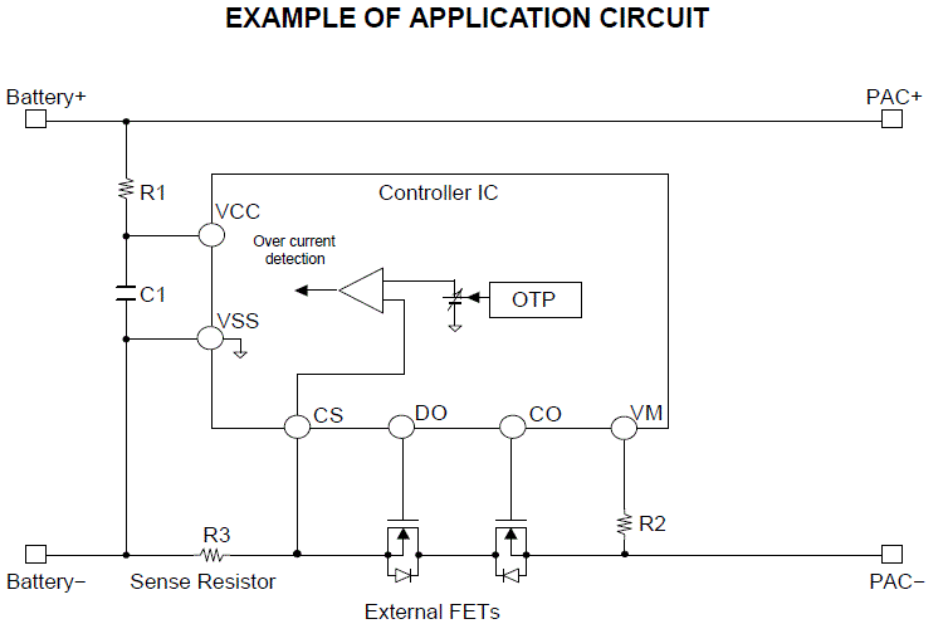


**Figure 1. Example of Application Circuit**

**Table 2.**

| Components | Min | Recommended Value | Max | Unit | Description |
|---|---|---|---|---|---|
| R1 | 0.1 | 0.33 | 1 | kΩ | Battery+ is filtered to VCC by R1 and C1 |
| R2 | 0.1 | 1 | 2 | kΩ | Protection from reverse connection of charger |
| C1 | 0.01 | 0.1 | 1.0 | μF | Battery+ is filtered to VCC by R1 and C1 |
| R3 | 1 | | 20 | mΩ | Sence resistor for over−current detection |

For more information please contact your local sales support at www.onsemi.com.

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