

## MM3625 Series

2023/07/20

### Outline

The MM3625 series are secondary protection IC using high voltage CMOS process for overcharge protection of the rechargeable lithium-ion or lithium-polymer battery. The high accuracy overcharge detection of each cell of the rechargeable 3,4 cell Lithium-ion or Lithium-polymer battery is possible. The IC has a regulator and it is possible to stop regulator by detected overdischarge. The internal circuit of IC is composed by the voltage detector, the reference voltage source, delay time control circuit, the logical circuit, and regulator circuit etc.

### Product Series

For 3 to 4 cells secondary protection

### Features

(1) Range and accuracy of detection/release voltage

- Overcharge detection voltage 3.6V to 4.5V, 5mV steps Accuracy±25mV
- Overcharge release voltage 3.4V to 4.5V, 50mV steps Accuracy±50mV
- VOU OFF voltage 2.1V to 3.2V, 10mV steps Accuracy±50mV

(2) Range and accuracy of detection/release delay time

- Overcharge detection delay time  $1\text{ms}$  to  $(1\text{ms} \times 2^{n1}) + (1\text{ms} \times 2^{n2}) + (1\text{ms} \times 2^{n3})$  Accuracy±25%
- Overcharge release delay time  $1\text{ms}$  to  $(1\text{ms} \times 2^{n1})$  Accuracy±25%
- VOUT OFF delay time  $1\text{ms}$  to  $(1\text{ms} \times 2^{n1}) + (1\text{ms} \times 2^{n2}) + (1\text{ms} \times 2^{n3})$  Accuracy±25%

\* $n1, n2$  and  $n3$  can select arbitrary integers between 0 to 17. (However  $n1 \neq n2 \neq n3$ )

(3) Range and accuracy of regulator output voltage

- VOUT pin output voltage 1.8V to 5.0V, 50mV steps Accuracy±100mV

(4) The setting for three cell and for four cell protection can be set with the SEL pin

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(5) Regulator output can be control with the EN pin

(6) FUSE pin can control with the CTL pin

(7) Low current consumption

- Current consumption1(VDD pin) Vcell=3.5V Typ. 4.5μA Max. 6.5μA
- Current consumption1(VDD pin) Vcell=2.5V Max. 0.1μA(When starting conditions of VOUT are EN pin.)  
Max. 1.0μA(When starting conditions of VOUT are cell voltage.)

## Specifications

Product name	Package	Latch function	Overcharge detection voltage [V]	Overcharge release voltage [V]	VOUT OFF voltage [V]	VOUT pin output voltage [V]
MM3625A01RRE	PLP-10A	○	4.425		2.750	2.900
MM3625A02RRE	PLP-10A	○	4.300		2.500	3.300
MM3625B02RRE	PLP-10A		4.450	4.250	2.500	3.300
MM3625B03RRE	PLP-10A		4.450	4.250	2.750	3.300
MM3625B04RRE	PLP-10A		4.500	4.300	2.750	3.300
MM3625Y01RRE	PLP-10A	○	4.425		2.750	2.900
MM3625Z01RRE	PLP-10A	○	4.425		2.750	2.900

Product name	Overcharge detection delay time [s]	Overcharge release delay time [ms]
MM3625A01RRE	4.100	
MM3625A02RRE	4.100	
MM3625B02RRE	4.100	16.0
MM3625B03RRE	7.170	16.0
MM3625B04RRE	7.170	16.0
MM3625Y01RRE	4.100	
MM3625Z01RRE	4.100	

## Package

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PLP-10A