MM3766 Series

2023/07/20

Outline

The MM3766 series are protection IC using high voltage CMOS process for overcharge, overdischarge and overcurrent protection
of the rechargeable Lithium-ion or Lithium-polymer battery. The overcharge, overdischarge, discharging rechargeable two cells
Lithium-ion or Lithium-polymer battery can be detected. Each of these IC composed of four voltage detectors, short detection circuit,
reference voltage sources, oscillator, counter circuit and logical circuits.

Product Series

For 2-cells

Features

(1) Range and accuracy of detection and release voltage

- Overcharge detection voltage　3.6V to 4.5V, 5mV Step ±15mV
- Overcharge release voltage　3.4V to 4.5V, 50mV Step　±30mV
- Overdischarge detection voltage　2.0V to 3.0V, 50mV Step　±35mV
- Overdischarge release voltage　2.0V to 3.5V, 50mV Step　±50mV
- Discharging overcurrent detection voltage 1　20mV to 300mV, 5mV Step　±ΔV　※1
- Discharging overcurrent detection voltage 2 40mV to 600mV, 10mV Step　±ΔV　※1
- Short detection voltage　Selection from 0.7V, 0.8V, 0.9V　±300mV
- Charging overcurrent detection voltage　-300mV to -40mV, 5mV Step　±ΔV　※1

(2) Range of detection delay time

- Overcharge detection delay time Selection from 256ms to 4.6s
- Overdischarge detection delay time　Selection from 8ms to 2s
- Discharging overcurrent detection delay time 1　Selection from 8ms to 512ms
- Discharging overcurrent detection delay time 2　Selection from 0.5ms to 6ms

- Charging overcurrent detection delay time　Selection from 4ms to 64ms
- Short detection delay time　300usec fixed

(3) 0V battery Charge functionSelectable "Permission" or "inhibition"

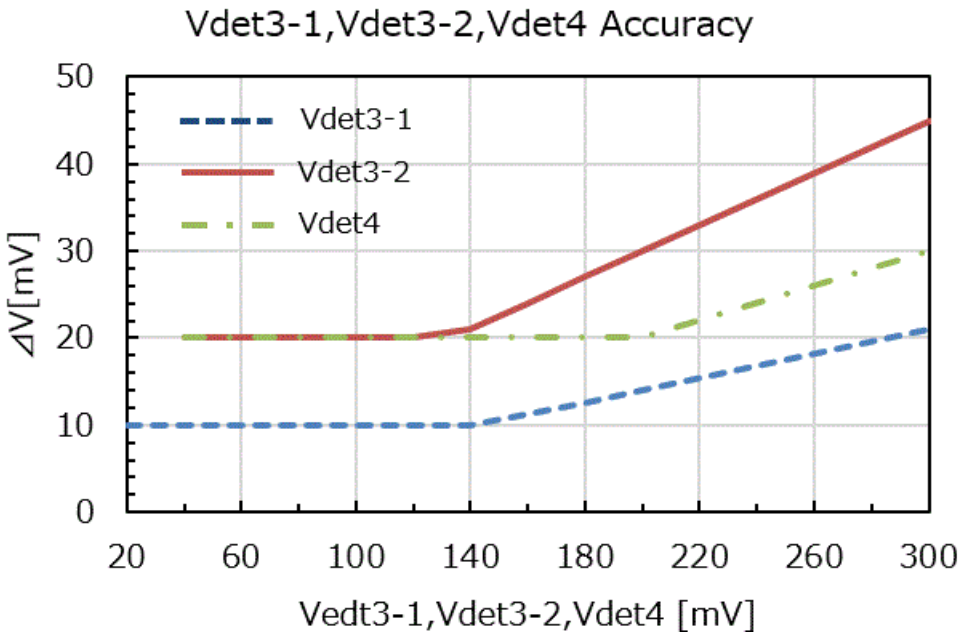
(4) Current consumption

- Current consumption of VDD pin(Vcell=4.0V)　Typ. 4.0uA Max. 8.0uA
- Current consumption of VDD pin(Vcell=2.0V)　Max. 0.1uA（In case Overdischarge latch function Enable.）

Max. 2.5uA（In case Overdischarge latch function Disable.）

- Current consumption of VBL pin (Vcell=4.0V)　Min. -0.3uA, Max. 0.3uA

*1 Accuracy of overcurrent detection voltage



Specifications

					Overcharge

MM3766 Series

2023/07/20

Product name	Package	0V battery charge function	Overcharge release function	Overdischarge release function	Discharging overcurrent release function	detection voltage [V]
MM3766A01NRH	SOT-26B	Permission	Latch	Latch	voltage	4.250
MM3766C01NRH	SOT-26B	Permission	voltage	Latch	voltage	4.300
MM3766C02NRH	SOT-26B	Permission	voltage	Latch	voltage	4.425
MM3766C03NRH	SOT-26B	Permission	voltage	Latch	voltage	4.250
MM3766C11NRH	SOT-26B	Prohibition	voltage	Latch	voltage	4.250
MM3766D01NRH	SOT-26B	Permission	voltage	Latch	voltage	4.250

Product name	Overcharge release voltage [V]	Overdischarge detection voltage [V]	Overdischarge release voltage [V]	Discharging overcurrent detection voltage1 [V]	Charging overcurrent detection voltage [V]	Short detection voltage [V]	Overcha detecti delay ti [s]
MM3766A01NRH	4.050	2.800	3.000	0.1000	-0.1000	1.000	1.024
MM3766C01NRH	4.150	2.800	3.000	0.1500	-0.1500	0.500	1.024
MM3766C02NRH	4.225	2.750	3.050	0.1500	-0.1000	0.500	1.024
MM3766C03NRH	4.050	2.400	3.000	0.2000	-0.2000	1.100	1.024
MM3766C11NRH	4.100	2.500	3.000	0.2000	-0.1000	0.500	1.024
MM3766D01NRH	4.100	3.000	3.000	0.2000	-0.2000	0.500	1.024

Product name	Overcharge release delay time [ms]	Overdischarge detection delay time [ms]	Overdischarge release delay time [ms]	Discharging overcurrent detection delay time 1 [ms]	Discharging overcurrent release delay time [ms]	Charging overcurrent detection delay time [ms]	Char overcu rele delay [m
MM3766A01NRH	16.0	96.0	1.0	10.0	1.00	6.0	1.0
MM3766C01NRH	16.0	128.0	1.0	8.0	1.00	8.0	1.0
MM3766C02NRH	16.0	128.0	1.0	8.0	1.00	8.0	1.0
MM3766C03NRH	16.0	128.0	1.0	12.0	1.00	8.0	1.0
MM3766C11NRH	16.0	128.0	1.0	8.0	1.00	8.0	1.0
MM3766D01NRH	16.0	128.0	1.0	8.0	1.00	8.0	1.0

Product name	Short detection delay time [ms]

MM3766 Series

2023/07/20

MM3766A01NRH	0.300
MM3766C01NRH	0.300
MM3766C02NRH	0.300
MM3766C03NRH	0.300
MM3766C11NRH	0.300
MM3766D01NRH	0.300

Package

SOT-26B