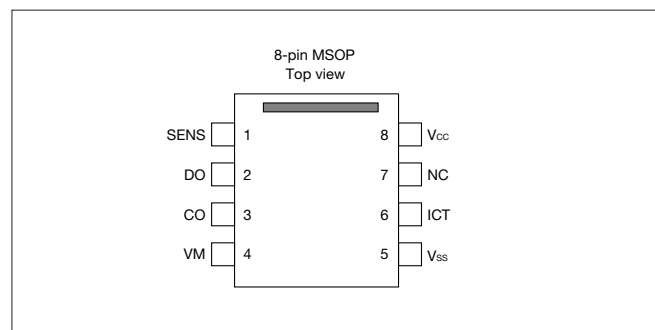


The 8231 is a series of lithium-ion rechargeable battery protection ICs incorporating high-accuracy voltage detection circuits and delay circuits.

It is suitable for a single-cell lithium-ion battery pack.

PIN CONFIGURATIONS



SELECTION GUIDE

Model/Item	Over charge detection voltage (V)	Over charge release voltage (V)	Over discharge detection voltage (V)	Over discharge release voltage (V)	Over current detection voltage	Over charge detection delay (C=0.047μF)(Sec)	OV battery charging function	Final over charge magnification
A Series	±25mV accuracy	±50mV accuracy	±80mV accuracy	±100mV accuracy	±20mV accuracy			
S-8231AAFN-CAA-T2	4.25	4.05	2.30	2.70	0.100	1.0	Available	1.24
S-8231ABFN-CAB-T2	4.35	4.10	2.30	3.00	0.100	1.0	Available	1.24
S-8231ACFN-CAC-T2	4.25	4.05	2.30	2.50	0.120	0.5	Unavailable	1.24
S-8231ADFN-CAD-T2	4.25	4.05	2.30	2.50	0.240	0.5	Unavailable	1.24
S-8231AEFN-CAE-T2	4.25	3.95	2.30	3.00	0.100	1.0	Available	1.24
S-8231AGFN-CAG-T2	4.25	4.05	2.30	2.70	0.150	1.0	Available	1.24
S-8231AHFN-CAH-T2	4.35	4.28	2.30	2.80	0.100	1.0	Available	1.24
S-8231AIFN-CAI-T2	4.25	4.05 *2	2.30	2.70	0.150	1.0	Available	1.24
S-8231AJFN-CAJ-T2	4.25	4.05	2.30	2.50	0.120	0.5	Available	1.24
S-8231AKFN-CAK-T2	4.25	4.05	2.30	2.50	0.240	0.5	Available	1.24
S-8231ALFN-CAL-T2	4.295	4.20	2.50	3.00	0.150	1.0	Unavailable	1.10
S-8231AMFN-CAM-T2	4.25	4.05	2.30	2.70	0.130	1.0	Unavailable	1.24
S-8231ANFN-CAN-T2	4.35	4.10	2.30	3.00	0.100	0.5	Unavailable	1.24
S-8231AOFN-CAO-T2	4.295	4.295 *1	2.30	3.00	0.300	1.0	Unavailable	1.10
S-8231AQFN-CAQ-T2	4.20	4.10	2.30	2.50	0.200	1.0	Unavailable	1.24
S-8231ARFN-CAR-T2	4.20	4.10	2.30	2.50	0.100	1.0	Unavailable	1.24
S-8231ASFN-CAS-T2	4.12	4.12 *1	2.30	2.50	0.200	1.0	Unavailable	1.10
S-8231ATFN-CAT-T2	4.35	4.10	2.30	3.00	0.250	1.0	Available	1.24
S-8231AUFN-CAU-T2	4.28	4.05	2.30	2.70	0.130	1.0	Available	1.24
S-8231AVFN-CAV-T2	4.28	4.05	2.30	2.70	0.130	1.0	Unavailable	1.24
S-8231AWFN-CAW-T2	4.28	4.18	2.30	2.90	0.080	1.0	Unavailable	1.24
S-8231AXFN-CAX-T2	4.295	4.295 *1	2.30	3.00	0.300	1.0	Unavailable	Unavailable
S-8231AYFN-CAY-T2	4.35	4.28	2.30	2.80	0.100	1.0	Available	Unavailable
B Series	Accuracy differs depending on products.	±50mV accuracy	±80mV accuracy	±100mV accuracy	±20mV accuracy			
S-8231BAFN-CCA-T2	4.18 *3	3.98	2.60	2.90	0.110	1.0	Available	1.24
S-8231BBFN-CCB-T2	4.18 *3	4.08	2.30	2.90	0.110	1.0	Available	1.24

FEATURES

- Internal high-accuracy voltage detection circuit
 - Over charge detection voltage $4.00\text{ V} \pm 25\text{ mV}$ to $4.60\text{ V} \pm 25\text{ mV}$
5 mV- step
 - Over charge release voltage $3.70\text{ V} \pm 50\text{ mV}$ to $4.60\text{ V} \pm 50\text{ mV}$
5 mV- step

(The over charge release voltage can be selected within the range where the difference from over charge detection voltage is 0 to 0.3 V)

 - Over discharge detection voltage $1.70\text{ V} \pm 80\text{ mV}$ to $2.50\text{ V} \pm 80\text{ mV}$
50 mV- step
 - Over discharge release voltage $1.70\text{ V} \pm 100\text{ mV}$ to $3.50\text{ V} \pm 100\text{ mV}$
50 mV - step
- (The over discharge release voltage can be selected within the range where a difference from over discharge detection voltage is 0 to 1.0V)
- Over current detection voltage 1 $0.06\text{ V} \pm 20\text{ mV}$ to $0.30\text{ V} \pm 20\text{ mV}$
5 mV-step
 - High input-voltage device (absolute maximum rating: 18 V)
 - Wide operating voltage range: 1.5 V to 16 V
 - The delay time for every detection can be set via an external capacitor.
Each delay time for Over charge detection, Over discharge detection, Over current detection are " Proportion of hundred to ten to One. " or " Proportion of fifty to ten to One. "
 - Two over current detection levels (protection for short-circuiting)
 - Internal auxiliary over voltage detection circuit (Fail safe for over voltage)
 - Internal charge circuit for 0V battery (Unavailable is option)
 - Low current consumption
 - Operation 7.5 μA typ. 13.7 μA max. (-40 to +85 °C)
 - Power-down mode 0.2 nA typ. 0.14 μA max. (-40 to +85 °C)
 - MSOP package (8-pin) 4.0 mm x 2.95 mm

*1) Without over charge detection / release hysteresis.

*2) Both charging and discharging will be unable when over charge detected. (Over charge lock type)

*3) In the range between 0°C and 50°C, an accuracy of detection voltage is assured as $\pm 30\text{ mV}$.

Change in the detection voltage is available in products other than the above listed ones. Contact the SII Semiconductor Products Sales Department.

* Please design all applications of S-8231A/B Series with safety in mind.