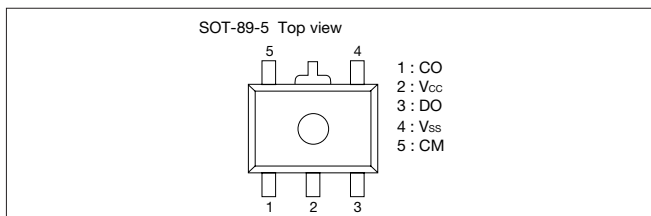


LITHIUM-ION BATTERY PROTECTION IC (FOR 1-CELL)

S-8491 Series

The S-8491 Series is a series of lithium-ion rechargeable battery protection ICs incorporating high-accuracy voltage detectors and a delay circuit. This series is suitable for protecting a single-cell pack.

PIN CONFIGURATIONS



SPECIFICATIONS

Model No.	Excess charge detection voltage	Excess charge release voltage	Excess discharge release voltage
S-8491AUP-DKA-T2	4.30 ± 0.05V	4.00 ± 0.13V	3.00 ± 0.15V
S-8491BUP-DKB-T2	4.35 ± 0.05V	4.10 ± 0.13V	3.00 ± 0.15V
S-8491CUP-DKC-T2	4.25 ± 0.05V	4.05 ± 0.13V	2.70 ± 0.15V
S-8491DUP-DKD-T2	4.25 ± 0.05V	4.05 ± 0.13V	2.40 ± 0.15V
S-8491EUP-DKE-T2	4.25 ± 0.05V	3.95 ± 0.13V	3.00 ± 0.15V

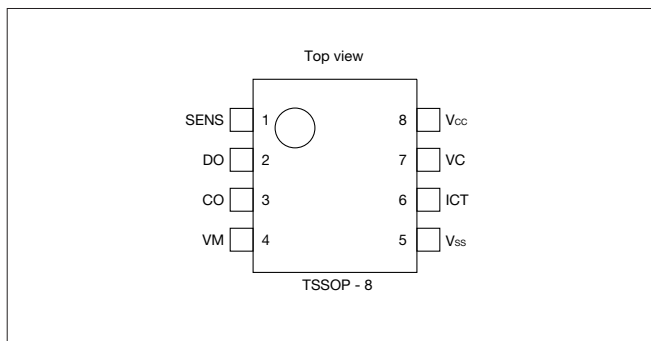
* Please design all applications of the S-8491 Series with safety in mind.

LITHIUM-ION BATTERY PROTECTION IC (FOR 2-CELL)

S-8232 Series

The S-8232 is a series of lithium-ion rechargeable battery protection ICs incorporating high-accuracy voltage detection circuits and delay circuits. It is suitable for a 2-serial-cell lithium-ion battery pack.

PIN CONFIGURATIONS



SELECTION GUIDE

Model/item	Over charge detection voltage	Over charge release voltage	Over discharge detection voltage	Over discharge release voltage	Over current detection voltage 1	Over charge detection delay (C3=0.22μF)	0V battery charging function
S-8232AAFT-T2	4.25V±25mV	4.05V±50mV	2.40V±80mV	3.00V±100mV	0.150V±20mV	1.0 sec	Available
S-8232ABFT-T2	4.35V±25mV	4.15V±50mV	2.30V±80mV	3.00V±100mV	0.300V±20mV	1.0 sec	Available
S-8232ACFT-T2	4.35V±25mV	4.15V±50mV	2.30V±80mV	3.00V±100mV	0.300V±20mV	1.0 sec	Unavailable
S-8232AEFT-T2	4.35V±25mV	4.28V±50mV	2.15V±80mV	2.80V±100mV	0.100V±20mV	1.0 sec	Available
S-8232AFFT-T2	4.25V±25mV	4.05V±50mV	2.30V±80mV	2.70V±100mV	0.300V±20mV	1.0 sec	Available
S-8232AGFT-T2	4.25V±25mV	4.05V±50mV	2.20V±80mV	2.40V±100mV	0.200V±20mV	1.0 sec	Available
S-8232AHFT-T2	4.25V±25mV	4.05V±50mV	2.20V±80mV	2.40V±100mV	0.300V±20mV	1.0 sec	Available
S-8232AIFT-T2	4.325V±25mV	4.325V *1,2	2.40V±80mV	3.00V±100mV	0.300V±20mV	1.0 sec	Unavailable
S-8232AJFT-T2	4.25V±25mV	4.05V±50mV	2.40V±80mV	3.00V±100mV	0.150V±20mV	1.0 sec	Unavailable
S-8232AKFT-T2	4.20V±25mV	4.00V±50mV	2.30V±80mV	2.90V±100mV	0.200V±20mV	1.0 sec	Available
S-8232ALFT-T2	4.30V±25mV	4.05V±50mV	2.00V±80mV	3.00V±100mV	0.200V±20mV	1.0 sec	Available
S-8232AMFT-T2	4.19V±25mV	4.19V *1	2.00V±80mV	3.00V±100mV	0.190V±20mV	1.0 sec	Available
S-8232ANFT-T2	4.325V±25mV	4.325V *1,3	2.40V±80mV	3.00V±100mV	0.300V±20mV	1.0 sec	Unavailable
S-8232AOFT-T2	4.30V±25mV	4.05V±50mV	2.00V±80mV	3.00V±100mV	0.230V±20mV	1.0 sec	Available
S-8232APFT-T2	4.28V±25mV	4.05V±50mV	2.30V±80mV	2.90V±100mV	0.100V±20mV	1.0 sec	Unavailable

*1) Without over charge detection/release hysteresis.

*2) Final over charge magnification: x 1.11. The others: x 1.25.

*3) Without Final over charge function

Change in the detection voltage is available in products other than the above listed ones. Please contact with our sales division.

FEATURES

- Built-in high-accuracy voltage detection circuits
 - Excess charge detection voltage : 4.30 ± 0.05V (S-8491AUP)
 - Excess charge release voltage : 4.00 ± 0.13V (S-8491AUP)
 - Excess discharge detection voltage : 2.30 ± 0.10V
 - Excess discharge release voltage : 3.00 ± 0.15V (S-8491AUP)
 - Excess current detection voltage : 0.20 ± 0.06V
- Built-in delay circuit
 - The excess charge, excess discharge or excess current is detected with delay.
- Ultra-low current consumption
 - Operation : 15.0 μA max. (+25°C)
 - Power down : 0.48 μA max. (+25°C)
- SOT-89-5 package

FEATURES

- Internal high-accuracy voltage detection circuit
 - Over charge detection voltage : 3.90 V ± 25 mV to 4.60 V ± 25 mV
5 m V - step
 - Over charge release voltage : 3.60 V ± 50 mV to 4.60 V ± 50 mV
5 m V - step
(The Over charge release voltage can be selected within the range where a difference from Over charge detection voltage is 0 to 0.3 V)
 - Over discharge detection voltage : 1.70 V ± 80 mV to 2.60 V ± 80 mV
50 mV - step
 - Over discharge release voltage : 1.70 V ± 100 mV to 3.80 V ± 100 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 1.2V)
 - Over current detection voltage 1 : 0.07 V ± 20 mV to 0.30 V ± 20 mV
5 mV-step
- High input-voltage device (absolute maximum rating: 18 V)
- Wide operating voltage range: 2.0 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."
- 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. 14.2 μA max (-40 to +85 °C)
 - Power-down mode : 0.2 nA typ. 0.1 μA max (-40 to +85 °C)
- TSSOP package (8-pin) 6.4 mm x 3.1 mm