NT1724

Battery Protection IC for 2-Cell
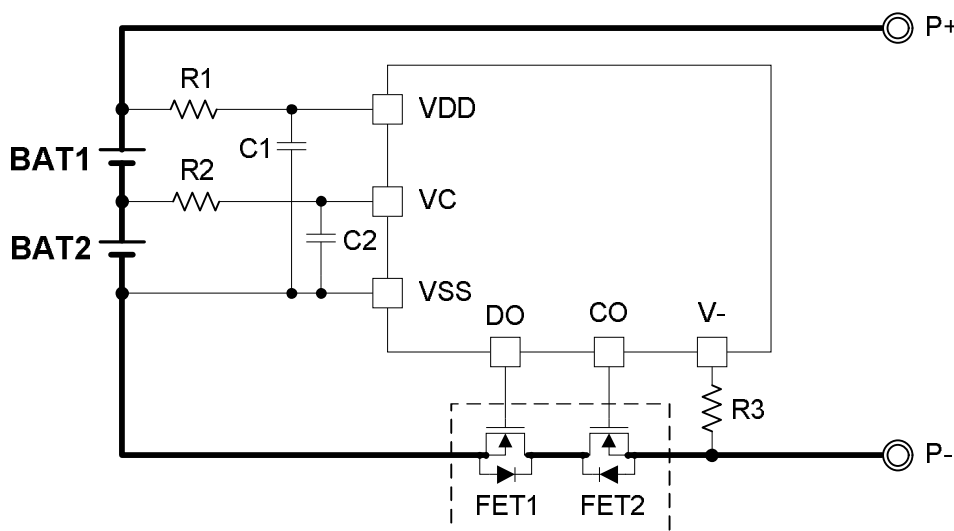
Features

- High Accuracy
  - Over-charge Detection : ±20mV
  - Over-discharge Detection : ±50mV
  - Discharge over-current Detection : ±10mV
  - Charge over-current Detection : ±20mV
  - Load short-circuiting Detection : ±20%
- High withstand voltage
  - Absolute Maximum Rating: 40V
  - Operating voltage range: 2.5V to 10V
- Low power consumption:
  - Supply current : 3.2uA typ. (Ta=+25℃)
  - Power-down current: 0.1uA max. (Ta=+25℃)
- Delay times are generated by an internal circuit.
- Power-down function "available" / "unavailable" is selectable.
- 0 V battery charging function "available" / "unavailable" is selectable.
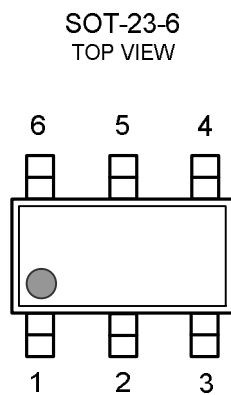- Package: SOT-23-6

Applications

- Lithium-ion rechargeable battery pack
- Lithium-polymer rechargeable battery pack

Description

The NT1724 series are the 2-cell protection IC for lithium-ion/lithium-polymer rechargeable battery pack. The high accuracy voltage, current detector and delay time circuit are built in NT1724 series with state-of-art design and process.

To minimize power consumption, NT1724 series activates power-down function when an over-discharge event is detected (for power-down function "available" version). Besides, NT1724 series performs protection functions with six external components for miniaturized PCB.
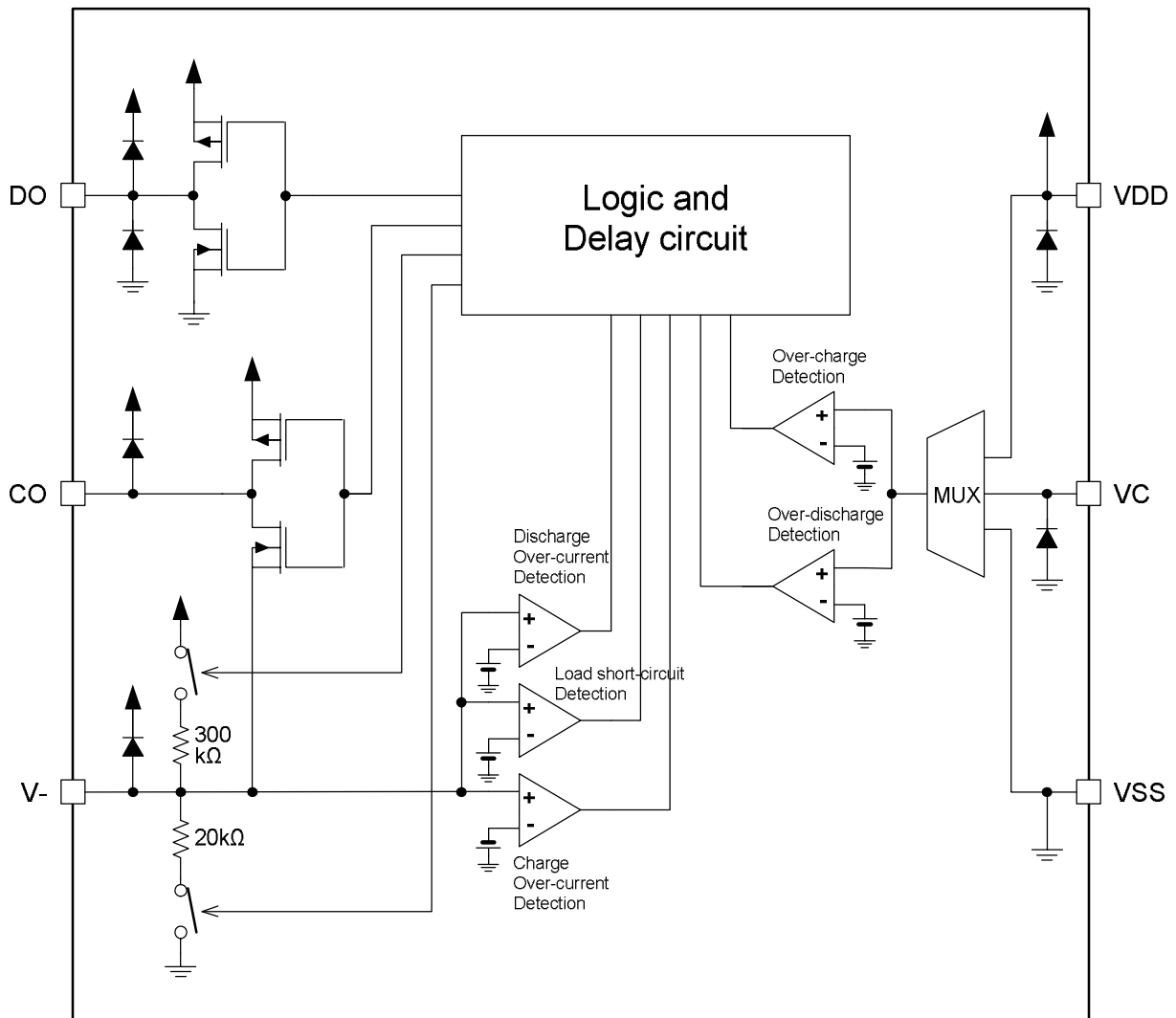
Typical Application Circuit

These devices have limited build-in ESD protection. The leads must be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.
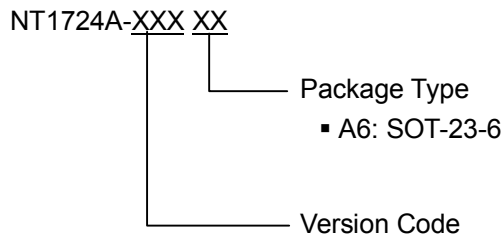
NT1724A DS V1.05

Package and Pin Configurations

SOT-23-6
TOP VIEW

Pin No.	Symbol	Pin description
1	DO	Connection pin of discharge control FET gate
2	CO	Connection pin of charge control FET gate
3	V-	Voltage detection between V- pin and VSS pin (Power-down and Load Detector pin)
4	VC	Connection pin for negative voltage of battery 1 and connection pin for positive voltage of battery 2.
5	VDD	Connection pin for positive power supply input and connection pin for positive voltage of battery 1
6	VSS	Connection pin for negative power supply input and connection pin for negative voltage of battery 2

Block Diagram

Ordering Information

NT1724A-<u>XXX</u> <u>XX</u>

Package Type
- A6: SOT-23-6

Version Code

Product version code:

Table1: Detection threshold level table

Product Name	Version Code	Package Type	Over-charge Detection Voltage $V_{DET1}(V)$	Over-charge Hysteresis Voltage $V_{REL1}(V)$	Over-Discharge detection voltage $V_{DET2}(V)$	Over-Discharge release voltage $V_{REL2}(V)$	Discharge over-current detection voltage $V_{DET3}(V)$	Charge over-current detection voltage $V_{DET4}(V)$	Load short-circuiting detection voltage $V_{SHORT}(V)$	0V Battery Charge Function	Power-down Function	Auto Over-discharge Recovery Function
NT1724A	EMA	A6	4.225	4.050	2.600	3.000	0.150	-0.150	0.5	Available	Yes	No
NT1724A	FHA	A6	4.250	4.050	2.400	3.000	0.200	-0.200	1.1	Available	Yes	No
NT1724A	FKA	A6	4.250	4.050	2.500	3.000	0.200	-0.200	0.5	Available	Yes	No
NT1724A	HHA	A6	4.280	4.130	2.400	2.900	0.150	-0.150	0.5	Unavailable	Yes	No
NT1724A	HHB	A6	4.280	4.130	2.400	2.900	0.100	-0.100	0.5	Unavailable	Yes	No
NT1724A	HQA	A6	4.280	4.080	2.800	3.000	0.200	-0.200	1.1	Available	Yes	No
NT1724A	LFA	A6	4.350	4.150	2.300	3.000	0.200	-0.200	1.1	Available	Yes	No
NT1724A	MKA	A6	4.400	4.250	2.500	2.900	0.150	-0.100	0.5	Available	Yes	No
NT1724A	NKA	A6	4.425	4.250	2.500	2.900	0.120	-0.100	0.5	Available	Yes	No

Remark: Please contact our sales for the products with detection voltage value other than those specified above.

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