RICOH

R5432V Series

Li-ion/polymer 3/4/5Cell Batteries protector

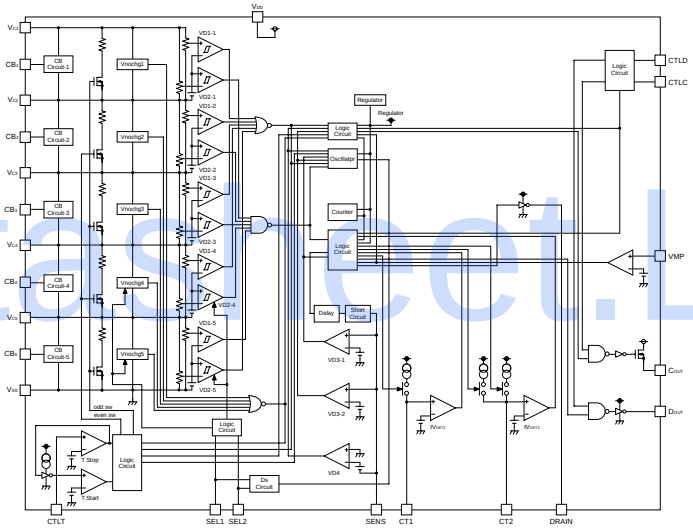
The R5432V Series are high voltage CMOS-based protection ICs for over-charge/discharge of rechargeable 3/4/5cell Li-ion/Lithium polymer battery. Each of these ICs is composed of voltage detectors, reference units, a delay circuit, a short circuit protector, an oscillator, a counter, and logic circuits. A more than 6 Cells battery is available by Cascade connection. Disconnection detection and cell-balance function, which can reduce cell-unbalance, are available. SSOP-24 package is available.

FEATURES

- Supply Voltage (V_{DD}) ····· 30V (Absolute Maximum Rating)
- Charger Negative Input Voltage (V-) ····· 30V (Absolute Maximum Rating)
- Operating Input Voltage Range (V_{DD}) ····· Max. 25.0V
- Supply Current (I_{DD}) ····· Typ.12.0μA
- Over-charge (V_{DET1})
  - Detector Threshold Range ····· 3.6V to 4.5V (0.005V Steps)
  - Voltage Accuracy ····· ±25mV
  - Output Delay Time (tV_{DET1}) ···· 1.0s
- Over-discharge (V_{DET2})
  - Detector Threshold Range ···· 2.0 to 3.0V (0.1V Steps)
  - Voltage Accuracy ····· ±2.5%
  - Output Delay Time (tV_{DET2}) ···· Settable by outside capacitance1
- Excess discharge-current (V_{DET3})
  - Detector Threshold Voltage1 ····· 0.1V to 0.3V (0.01V Steps)
  - Detector Threshold Voltage2 ····· 0.6V
  - Voltage Accuracy1 ····· ±20mV
  - Voltage Accuracy2 ····· ±0.1V
  - Output Delay Time (tV_{DET3-1}) ····· Settable by outside capacitance2
  - Output Delay Time (tV_{DET3-2}) ····· Settable by outside capacitance2
- Excess charge-current (V_{DET4})
  - Detector Threshold ····· -0.05V, -0.1V, -0.2V,-0.4V
  - Voltage Accuracy ····· ±30mV (at -0.05V, -0.1V, -0.2V) ±40mV (at -0.4V)
- Cell-balance
  - Detector Threshold Range ···· 3.45V to 4.45V (0.005V Steps)
- Short Protection
  - Output Delay Time (tV_{DET4}) ····· 8ms
  - Detector Threshold (V_{short}) ··· 1.0V
  - Output Delay Time ····· 300μs
- 0V-battery charge ····· Available
- Packages ····· SSOP-24

BLOCK DIAGRAMS

R5432V



SELECTION GUIDE

Halogen Free	Package	Quantity per Reel	Part No.
H/F	SSOP-24	3,000pcs	R5432Vxxx$✱ -E2-FE

xxx: Serial Number for the R5432V Series designing input four threshold for over-charge, over-discharge, excess discharge-current and excess charge-current detectors.

$: Designation of Output delay option of excess charge-current, excess discharge-current and short circuit.

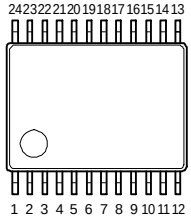
(B) tV_{DET1} : 1s, tV_{DET2} : 38.8×C1(nF), tV_{DET3-1} : 32.6×C2(nF), tV_{DET3-2} : tV_{DET31}/6, tV_{DET4} : 8ms, tShort : 300μ

✱: Designation of protection type.

(A) Auto release after Over-charge and Over-discharge. 0V battery is available.

PACKAGE

SSOP-24



1	CTLC	9	V_{SS}	17	V_{C4}
2	CTLD	10	CT_1	18	CB_3
3	C_{OUT}	11	CT_2	19	V_{C3}
4	VMP	12	SEL_1	20	CB_2
5	DRAIN	13	SEL_2	21	V_{C2}
6	D_{OUT}	14	CB_5	22	CB_1
7	SENS	15	V_{C5}	23	V_{C1}
8	CTLT	16	CB_4	24	V_{DD}

APPLICATIONS

- Li-ion/Li polymer protector of over-charge, over-discharge, excess discharge-current, excess charge-current for battery pack
- Over-charge, discharge and current protections for notebook PCs, power tools, and any other gadgets using on board Li-ion/Li Polymer battery.

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RICOH COMPANY., LTD. Electronic Devices Company

■Ricoh presented with the Japan Management Quality Award for 1999.
Ricoh continually strives to promote customer satisfaction, and shares the achievements of its management quality improvement program with people and society.

■Ricoh awarded ISO 14001 certification.
The Ricoh Group was awarded ISO 14001 certification, which is an international standard for environmental management systems, at both its domestic and overseas production facilities. Our current aim is to obtain ISO 14001 certification for all of our business offices.

RoHS Compliant
Ricoh completed the organization of the Lead-free production for all of our products. After Apr. 1, 2006, we will ship out the lead free products only. Thus, all products that will be shipped from now on comply with RoHS Directive.

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