1 Outline

This specification is suitable One-serial-cell Lithium ion Battery Protection circuit

2 Application

Lithium-ion rechargeable battery packs
Lithium-ion polymer battery packs

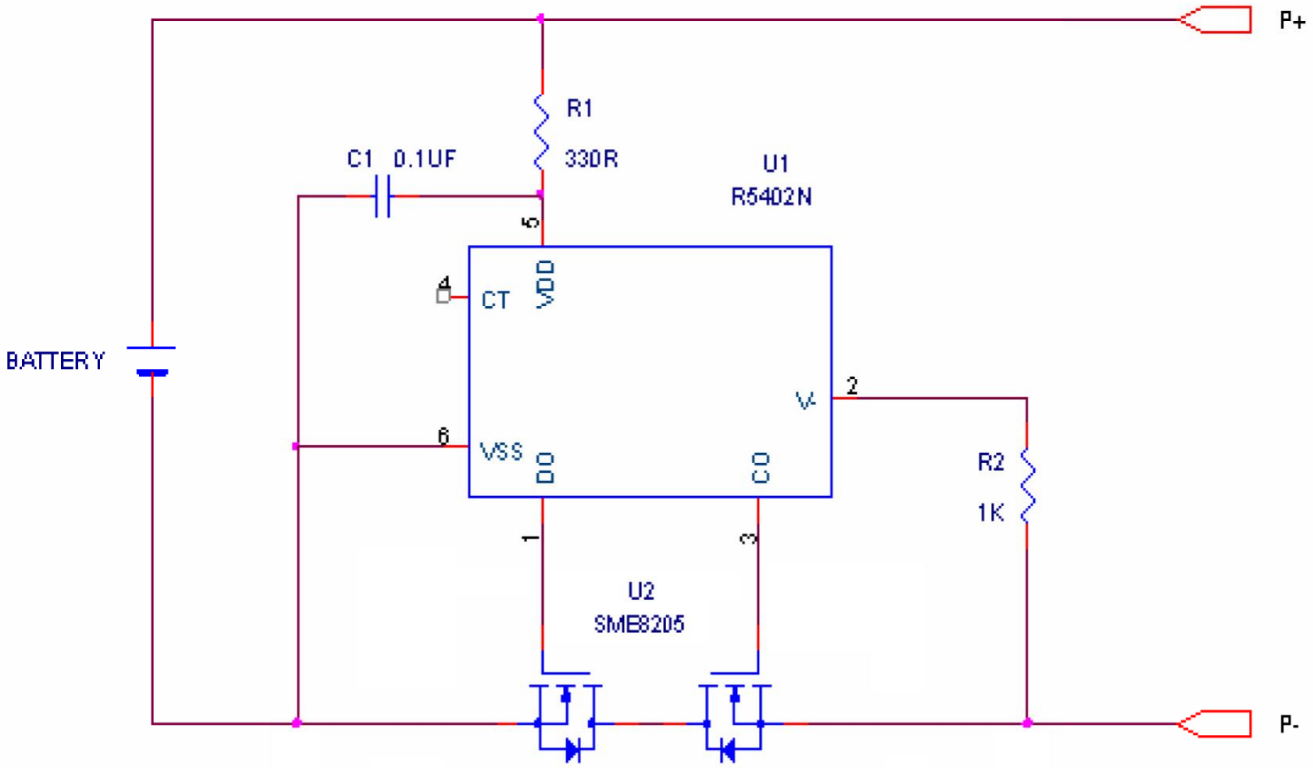
3 Electrical characteristics

Item	Symbol	Content	Criterion
Over charge Protection	V_{DET1}	Over charge detection voltage	4.25±0.05V
	tV_{DET1}	Over charge detection delay time	1.0±0.3S
	V_{REL1}	Over charge release voltage	4.05±0.05V
Over discharge protection	V_{DET2}	Over discharge detection voltage	2.5±0.1V
	tV_{DET2}	Over discharge detection delay time	20±6.0mS
	V_{REL2}	Over discharge release voltage	3.0±0.075V
Over current protection	V_{DET3}	Over current detection voltage	0.2±0.015V
	I_{DP}	Over current detection current	3.0～6.0A
	tV_{DET3}	Detection delay time	12±4.0mS
		Release condition	Cut load
Short protection		Detection condition	Exterior short circuit
	T_{SHORT}	Detection delay time	230～500uS
		Release condition	Cut short circuit
Interior resistance	R_{SS}	Main loop electrify resistance	V_C=4.2V； R_{SS}≤70mΩ
Current consumption	I_{DD}	Current consume in normal operation	4.0μA Type 8.0μA Max

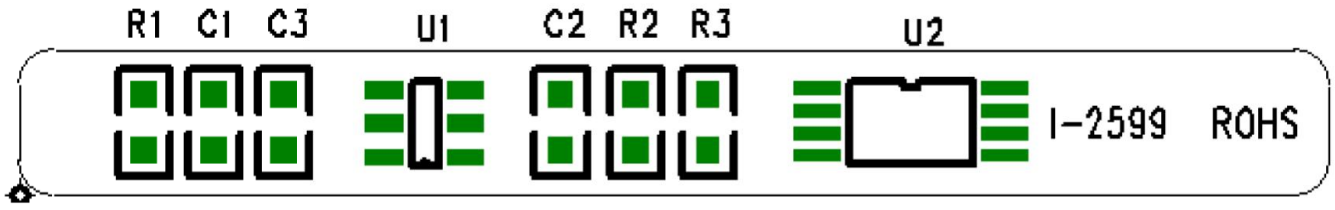
4 Parts list

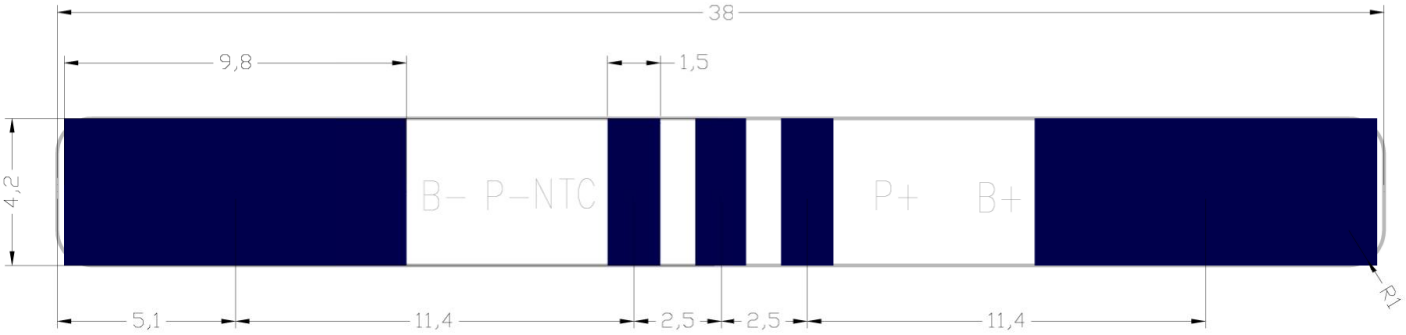
No	Location	Part name	Specification	Pack type	Q'ty	Maker/Remark
1	U1	Battery protection IC	R5402N101KD	SOT-23-6	1	RICOH
2	U2	Silicon MOSFET	SME8205	TSSOP-8	1	SME
3	R1	Resistance	SMD 330Ω±5%	0603	1	YAGEO
4	R2	Resistance	SMD 1KΩ±5%	0603	1	YAGEO
5	C1	Capacitance	SMD 0.1μF	0603	1	YAGEO
6	PCB	Print circuit board	I-2599 38*4.2*0.6		1	AS

5 Application Circuit



6 PCB layout





7 Terminal explanations

7.1 B+: Connected to the battery's positive terminal
7.2 B-: Connected to the battery's negative terminal
7.3 P+: Connected to the battery's output or the charger's positive terminal
7.4 P-: Connected to the battery's output or the charger's negative terminal