

### 概述

3-5 节锂保系列产品是一款高度集成的多串锂离子电池或锂聚合物电池保护芯片，内置有高精度电压检测电路和电流检测电路，通过检测各节电池的电压、充放电电流及温度等信息，实现电池过充、过放、过流、过温等保护功能，可通过外接电容来调节过流保护延时时间。

一、HM8273F系列典型应用

1.1 充放电同口

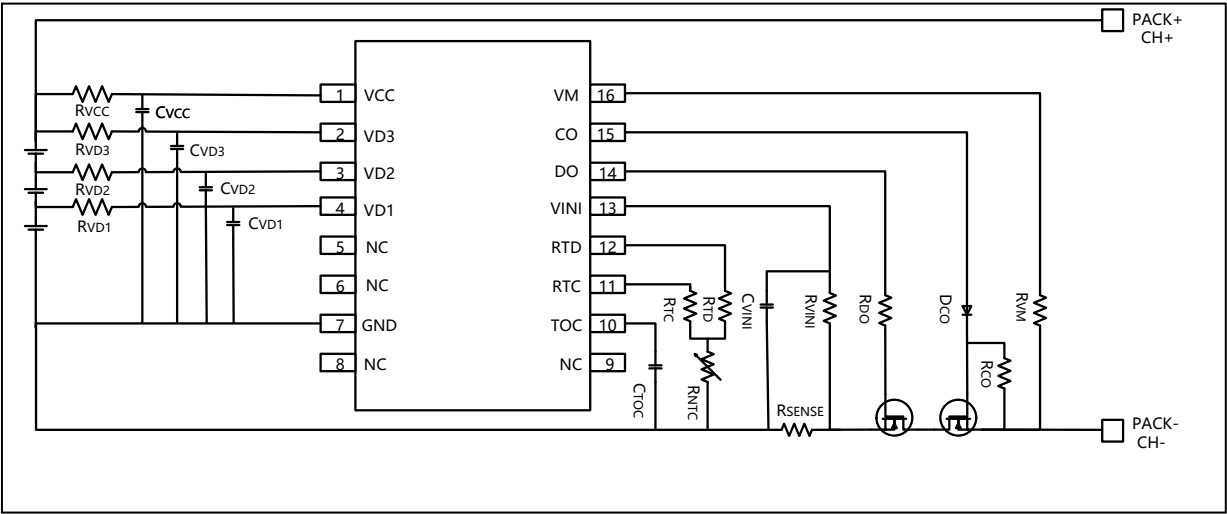


图 1.1 N 充 N 放，支持充电过流保护

1.2 充放电异口

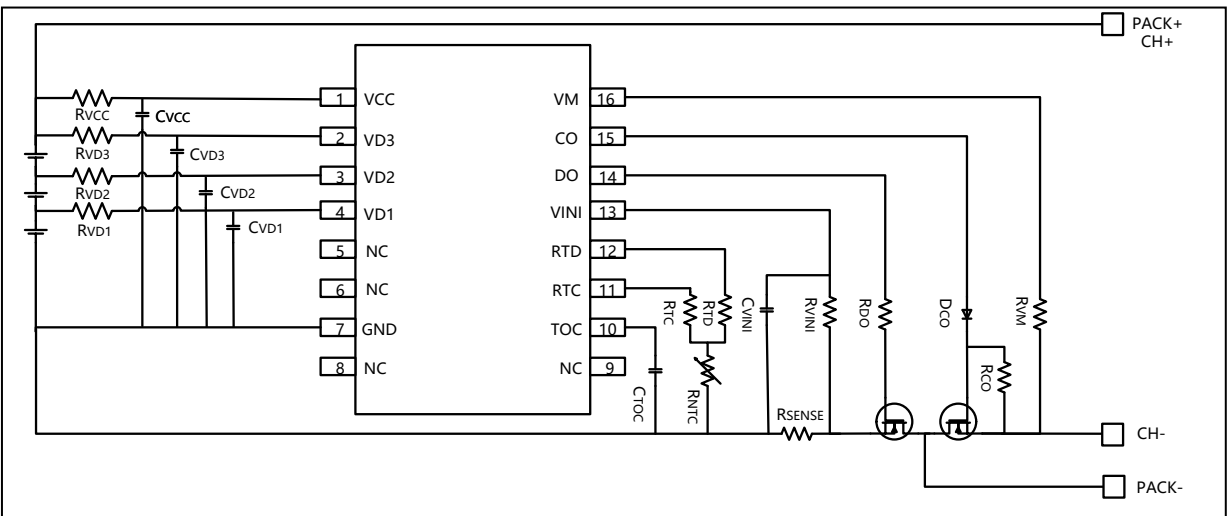


图 1.2 N 充 N 放，支持充电过流保护

表 1.1：典型应用电路器件参数及型号：

器件	典型值	范围	单位	推荐精度	备注
C <sub>VCC</sub>	0.1	0.1-4.7	uF	50V 耐压	建议封装 0805 或以上
C <sub>VDI-CVD3</sub>	0.1	0.1-1	uF	25V 耐压	
C <sub>TOC</sub>	0.1	0.001-10	uF	5%	可根据需要进行调节大小
C <sub>VINI</sub>	0.1	0.001-0.1	uF	5%	可根据需要进行调节大小
R <sub>VCC</sub>	1	0.51-10	kΩ	-	VCC 处 RC 选择根据外部 实际应用情况有所调整
R <sub>VDI-RVD3</sub>	1	0.51-10	kΩ	-	-
R <sub>TC</sub>	35	-	kΩ	1%	充电高温 55℃
R <sub>TD</sub>	22	-	kΩ	1%	放电高温 70℃
R <sub>NTC</sub>	10	-	kΩ	1%	常温（103AT,3435）
R <sub>SENSE</sub>	5	-	mΩ	1%	根据实际应用选择
R <sub>VINI</sub>	1	1-100	kΩ	-	-
R <sub>DO</sub>	1	1-3	kΩ	-	-
R <sub>CO</sub>	10		MΩ	-	-
R <sub>VM</sub>	47	20-100	kΩ	-	-
D <sub>CO</sub>	-	1N4148	-	-	-

注：应用电路及参数仅供参考，实际的应用电路请在充分的实测基础上设定参数。

二、HM8274F系列典型应用

2.1 充放电同口

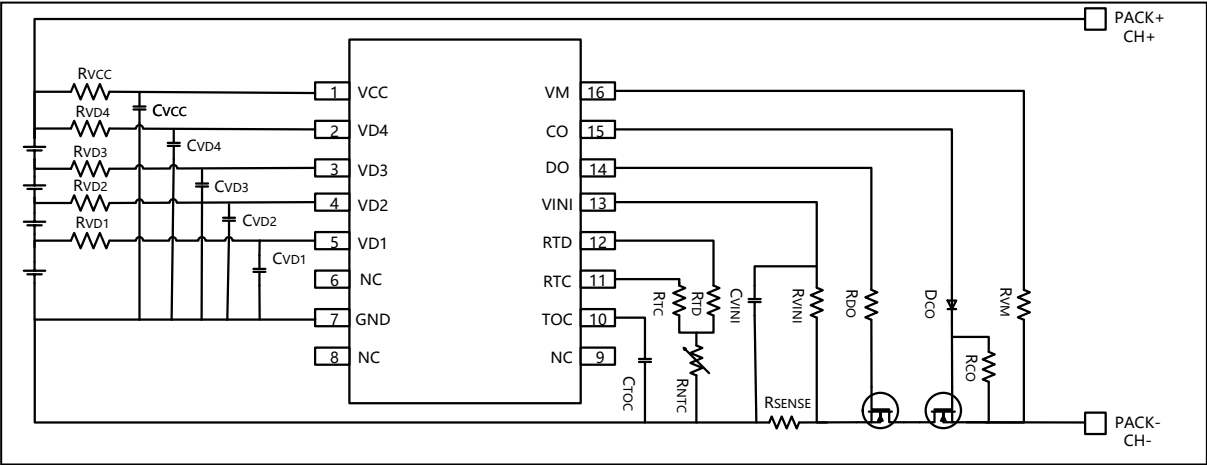


图 2.1 N 充 N 放，支持充电过流保护

2.2 充放电异口

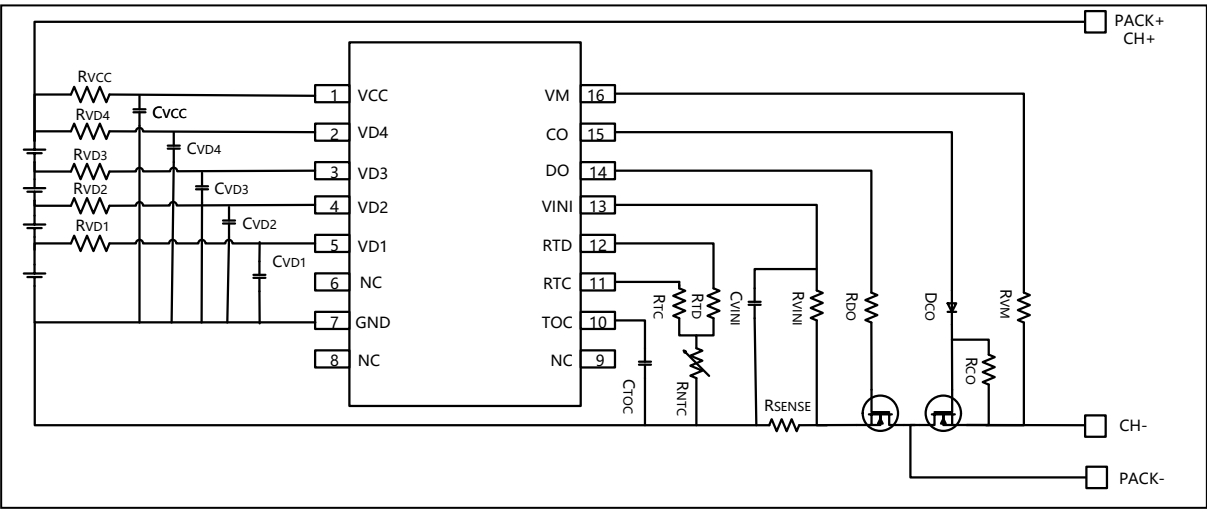


图 2.2 N 充 N 放，支持充电过流保护

表 2.1：典型应用电路器件参数及型号：

器件	典型值	范围	单位	推荐精度	备注
C <sub>VCC</sub>	0.1	0.1-4.7	uF	50V 耐压	建议封装 0805 或以上
C <sub>V<sub>DI</sub></sub> -C <sub>V<sub>D4</sub></sub>	0.1	0.1-1	uF	25V 耐压	
C <sub>TOC</sub>	0.1	0.001-10	uF	5%	可根据需要进行调节大小
C <sub>V<sub>INI</sub></sub>	0.1	0.001-0.1	uF	5%	可根据需要进行调节大小
R <sub>VCC</sub>	1	0.51-10	kΩ	-	VCC 处 RC 选择根据外部 实际应用情况有所调整
R <sub>V<sub>DI</sub></sub> -R <sub>V<sub>D4</sub></sub>	1	0.51-10	kΩ	-	-
R <sub>TC</sub>	35	-	kΩ	1%	充电高温 55℃
R <sub>TD</sub>	22	-	kΩ	1%	放电高温 70℃
R <sub>N<sub>TC</sub></sub>	10	-	kΩ	1%	常温（103AT,3435）
R <sub>SENSE</sub>	5	-	mΩ	1%	根据实际应用选择
R <sub>V<sub>INI</sub></sub>	1	1-100	kΩ	-	-
R <sub>DO</sub>	1	1-3	kΩ	-	-
R <sub>CO</sub>	10		MΩ	-	-
R <sub>VM</sub>	47	20-100	kΩ	-	-
D <sub>CO</sub>	-	1N4148	-	-	-

注：应用电路及参数仅供参考，实际的应用电路请在充分的实测基础上设定参数。

The diagram shows the AD7714 ADC with the following connections:

- Power and Reference:**
  - VCC (Pin 1) is connected to a 3.3V supply.
  - VD5 (Pin 2) is connected to a 1.2V supply.
  - VD4 (Pin 3), VD3 (Pin 4), VD2 (Pin 5), and VD1 (Pin 6) are connected to a 1.2V supply through resistors RVD5, RVD4, RVD3, and RVD2 respectively.
  - GND (Pin 7) is connected to ground.
  - NC (Pin 8) is not connected.
- Capacitors:**
  - CVCC is connected between VCC and GND.
  - CVD5, CVD4, CVD3, and CVD2 are connected between VD5, VD4, VD3, and VD2 respectively and GND.
  - CTOC is connected between NC (Pin 9) and GND.
- Measurement and Control:**
  - VM (Pin 16) is connected to the positive terminal of the battery pack (PACK+ CH+).
  - CO (Pin 15) is connected to the positive terminal of the battery pack.
  - DO (Pin 14) is connected to the positive terminal of the battery pack.
  - VINI (Pin 13) is connected to the positive terminal of the battery pack.
  - RTD (Pin 12) is connected to the positive terminal of the battery pack.
  - RTC (Pin 11) is connected to the positive terminal of the battery pack.
  - TOC (Pin 10) is connected to the positive terminal of the battery pack.
  - NC (Pin 9) is connected to the positive terminal of the battery pack.
- Resistors:**
  - RSENSE is connected between the positive terminal of the battery pack and the negative terminal (PACK- CH-).
  - RVINI is connected between the positive terminal of the battery pack and the negative terminal.
  - RDO is connected between the positive terminal of the battery pack and the negative terminal.
  - RCO is connected between the positive terminal of the battery pack and the negative terminal.
  - RVM is connected between the positive terminal of the battery pack and the negative terminal.
- Diodes:**
  - DCO is connected between the positive terminal of the battery pack and the negative terminal.

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表 3.1：典型应用电路器件参数及型号：

器件	典型值	范围	单位	推荐精度	备注
C <sub>VCC</sub>	0.1	0.1-4.7	uF	50V 耐压	建议封装 0805 或以上
C <sub>VDI-CVD5</sub>	0.1	0.1-1	uF	25V 耐压	
C <sub>TOC</sub>	0.1	0.001-10	uF	5%	可根据需要进行调节大小
C <sub>VINI</sub>	0.1	0.001-0.1	uF	5%	可根据需要进行调节大小
R <sub>VCC</sub>	1	0.51-10	kΩ	-	VCC 处 RC 选择根据外部 实际应用情况有所调整
R <sub>VDI-RVD5</sub>	1	0.51-10	kΩ	-	-
R <sub>TC</sub>	35	-	kΩ	1%	充电高温 55℃
R <sub>TD</sub>	22	-	kΩ	1%	放电高温 70℃
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R <sub>SENSE</sub>	5	-	mΩ	1%	根据实际应用选择
R <sub>VINI</sub>	1	1-100	kΩ	-	-
R <sub>DO</sub>	1	1-3	kΩ	-	-
R <sub>CO</sub>	10		MΩ	-	-
R <sub>VM</sub>	47	20-100	kΩ	-	-
D <sub>CO</sub>	-	1N4148	-	-	-

注：应用电路及参数仅供参考，实际的应用电路请在充分的实测基础上设定参数。