

Design Note
UCC3952 Demonstration Board Schematic and List of Materials

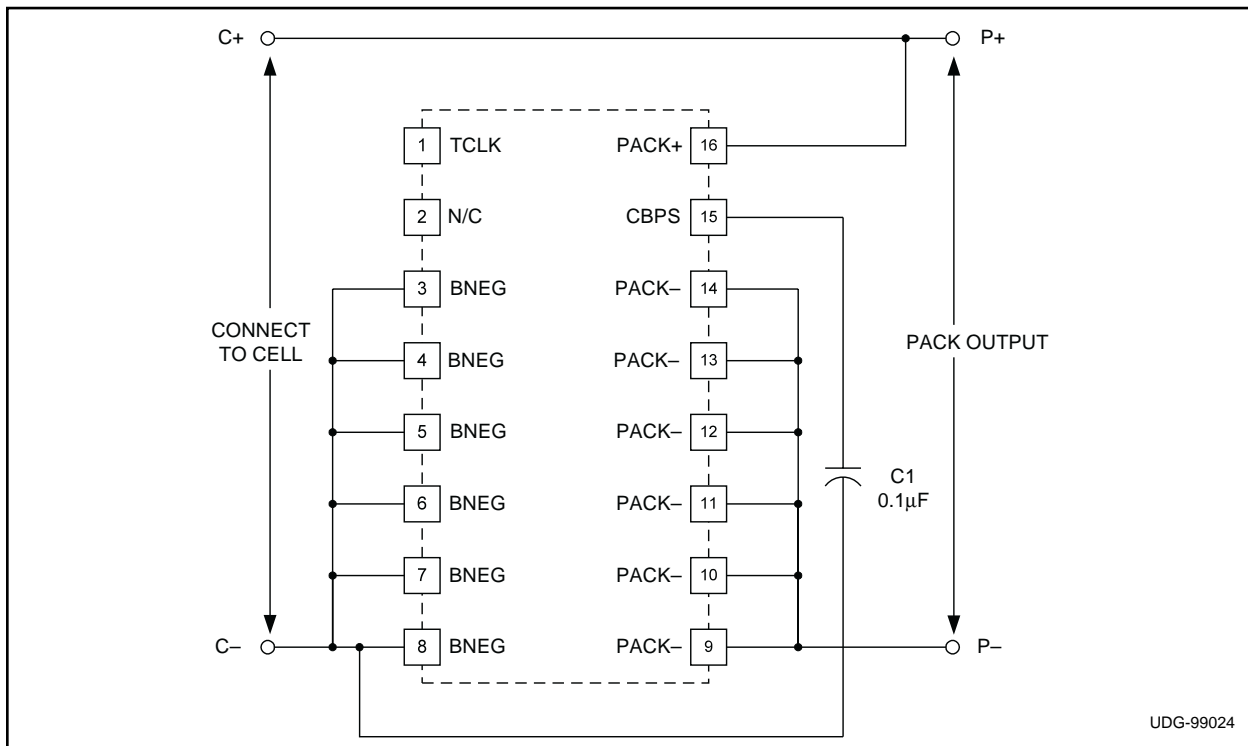
By David Salerno

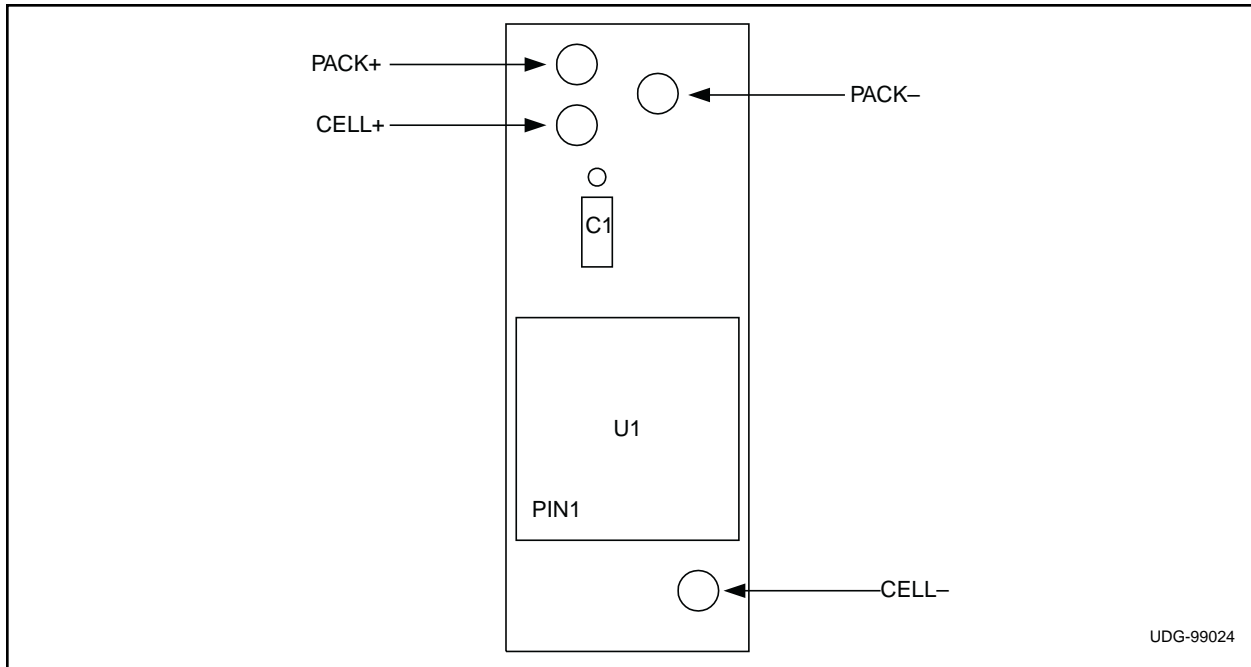
INTRODUCTION

The UCC3952 demo board provides complete protection for a single Lithium-ion cell, including Overcharge, Over-discharge and short circuit protection. The application schematic is shown in Fig. 1 and a component placement is shown in Fig. 2. A list of materials, giving the component part numbers and case sizes is given in Table 1. Note that the UCC3952, using an internal MOSFET switch, requires only a single external decoupling capacitor to provide a complete protection solution.

DEMO BOARD FEATURES

- Small (5.5mm x 22.5mm) two sided board with only two components.
- Integrated low impedance MOSFET switch and current sensor (50mΩ typical)
- Overcharge protection, with built-in 1.5 second time delay (typical)
- High accuracy $\pm 1.0\%$ tolerance on Overcharge threshold (over temperature)
- Four standard Overcharge thresholds are available (4.20, 4.25, 4.30 4.35V)
- Over-discharge protection, with built-in 15msec time delay (typical)
- Overload/short circuit protection with built-in 1.5msec time delay (typical)
- Automatic recovery from short circuit when load is removed
- Reverse charger protection (up to $-8V$)
- Runaway charger protection (up to $+16V$)
- Overtemp protection
- Low operating current of $5\mu A$ (typical)
- Low Sleep mode current of $1.5\mu A$ (typical)


Figure 1. Application schematic



UDG-99024

Figure 2. Component layout and connection points.

Table I. Evaluation board list of materials

Designator	Description	Part Number
C1	0.1 μ F, 16V ceramic cap (X7R type), 0805 chip	AVX 0805YC104KAT2A
U1	16 pin TSSOP	UCC3952PW – 1/-2/-3/-4