UNITRODE

Design Note

UCC3952 Demonstration Board Schematic and List of Materials

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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 ±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 5µA (typical)
- Low Sleep mode current of 1.5µA (typical)

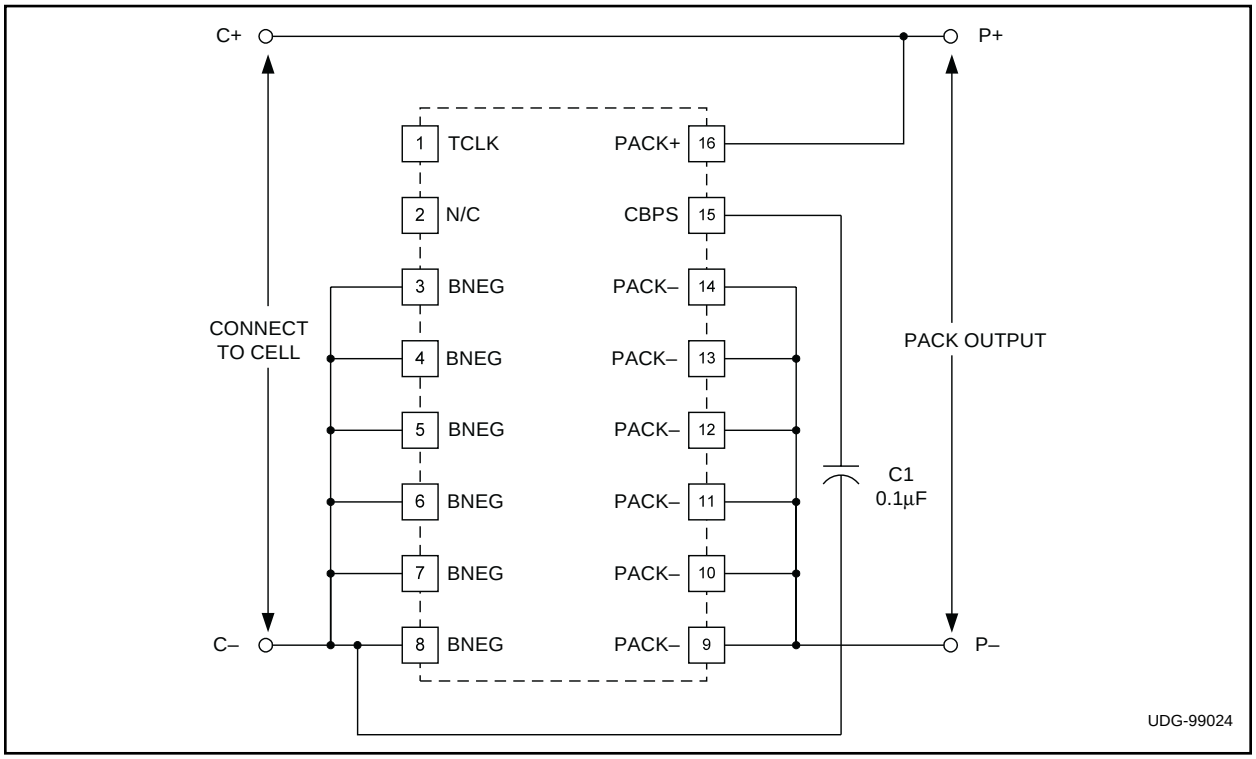

Figure 1. Application schematic

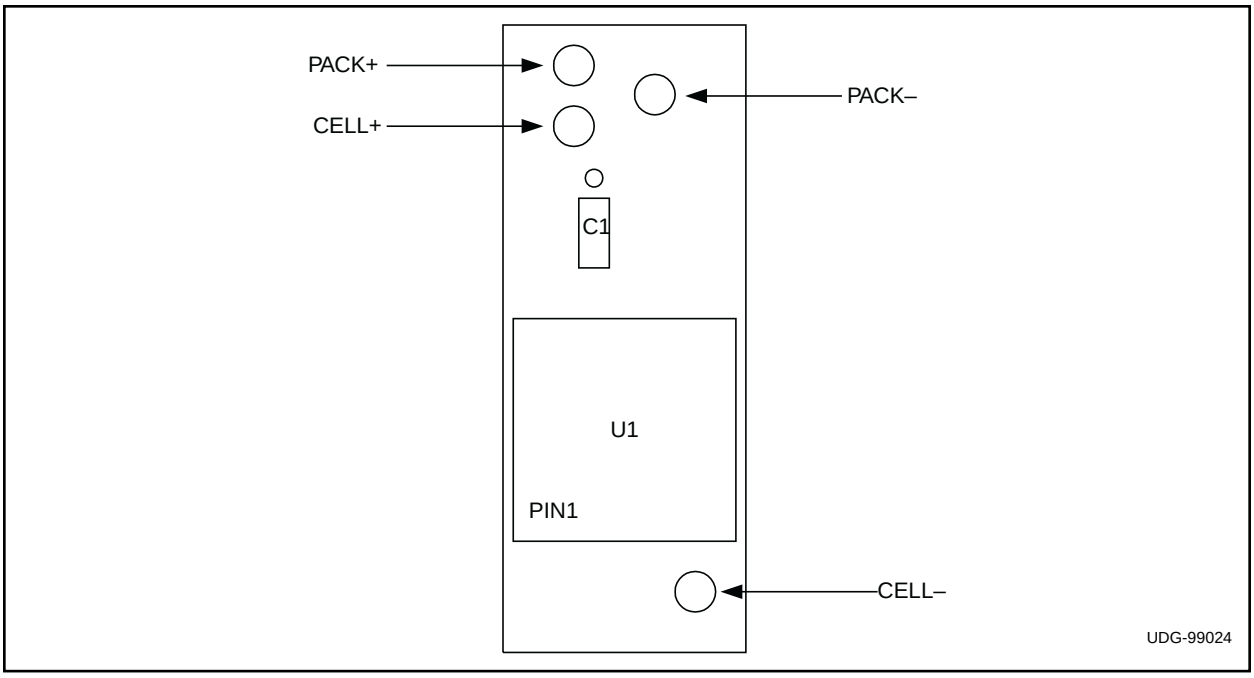

Figure 2. Component layout and connection points.

Table I. Evaluation board list of materials

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

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