

## High voltage bidirectional current sense amplifier evaluation kit based on the TSC2011



### Features

- Wide common mode voltage range:  $-20$  to  $70 V_{AC}$
- Offset voltage:  $\pm 200 \mu V$  max.
- 2.7 to 5.5 V supply voltage
- Quiescent current: 20  $\mu A$  in Shutdown mode
- RoHS compliant

### Description

The STEVAL-AETKT1V1 evaluation kit implements a bidirectional current sense amplifier consisting of a sense resistor placed either on the high side or the low side. The kit consists of a main board and a daughter board with TSC2011 high voltage, bidirectional, current sense amplifier providing a fixed gain of 60.

The TSC2011 device implements a thin film resistor for extremely precise gain and very high common-mode rejection ratio (CMRR) performance, even in high frequency ranges. The device can work with an input common mode voltage well beyond the power supply  $V_{CC}$  range (2.7 V to 5.5 V), which is ideal for automotive and similar applications requiring reverse battery support without consequent damage. It also works with 48 V battery applications, as the device can support and measure the current on line at voltages up to 70 V, no additional protective components are required in that range. Moreover, the ability to fix the output common mode voltage means that the device can be either used as unidirectional or bidirectional current sensing amplifier.

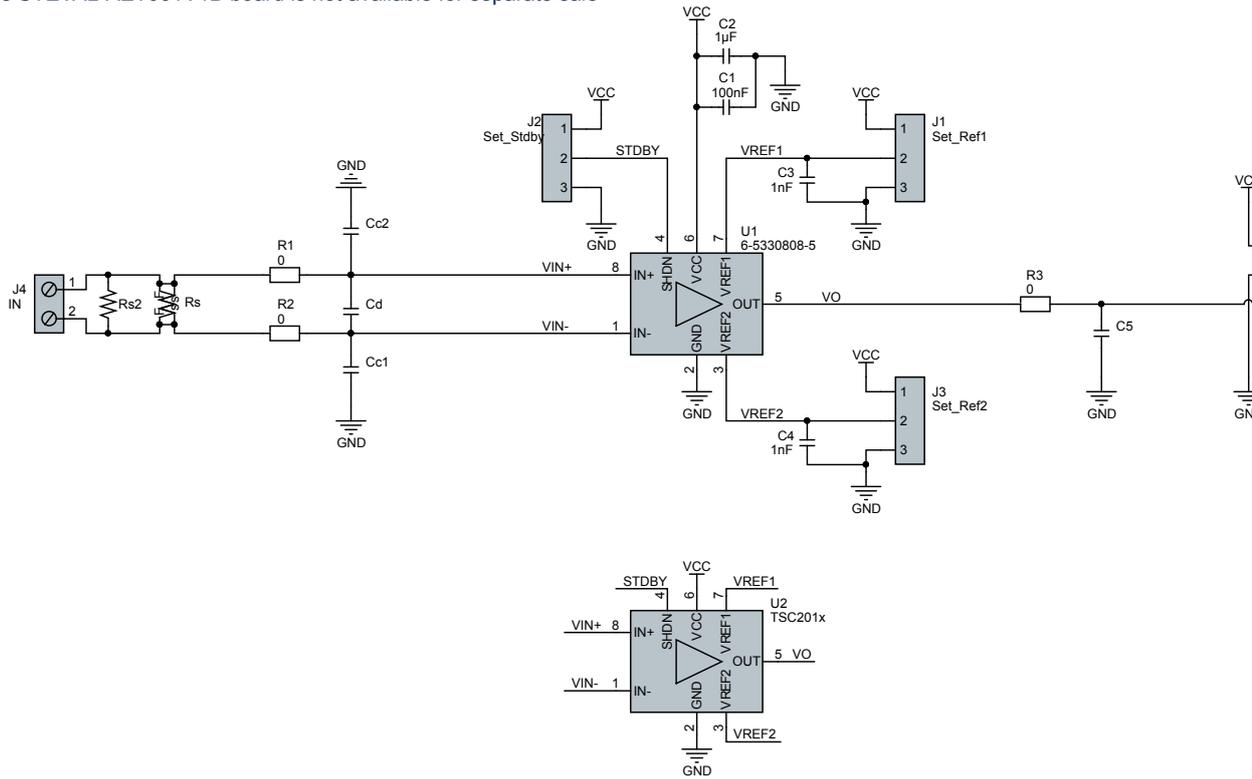
The main board in the kit can accommodate other daughter boards with TSC201x current sense amplifiers to allow testing and evaluation of different gain configurations.

| Product summary  |  |
|--|--|
| evaluation kit for TSC2011 bidirectional current sense amplifier | STEVAL-AETKT1V1  |
| high voltage, precision, bidirectional current sense amplifier   | TSC2011  |
| Applications   | Automotive Motor Control<br>Electro-Mobility<br>Factory Automation<br>Industrial Power and Tools |

# 1 Schematic diagrams

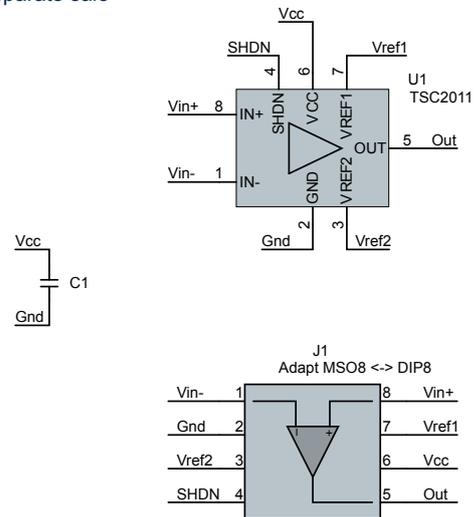
**Figure 1. STEVAL-AETKT1V1 main board (STEVAL-AET001V1B) schematic diagram**

The STEVAL-AET001V1B board is not available for separate sale



**Figure 2. STEVAL-AETKT1V1 daughter board (STEVAL-AET002V1B) schematic diagram**

The STEVAL-AET002V1B board is not available for separate sale



## Revision history

**Table 1. Document revision history**

| Date        | Version | Changes          |
|-------------|---------|------------------|
| 02-Mar-2020 | 1       | Initial release. |

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