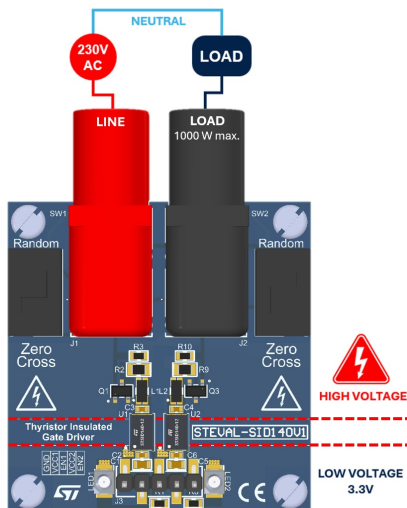


Isolated thyristors driver in AC solid-state-relay



Features

- Isolated thyristor driver STSID140-12
 - 1250 V RMS of insulation barrier (V_{ISO})
 - 40 mA output current for thyristor gate
 - Power transfer from low voltage
 - Direct MCU driving with I/O at 3.3 V
- Compact AC solid state-relay
 - Up to 4 Amps AC load driving
 - TN5015H-8G high temperature 50 Amps 800 V
 - SCRs in back-to-back
 - Compact D2PAK SMD package
- AC main zeros cross-triggering option
- 5-pins LV connectors for MCU control
- Two HV connectors for load and line connection

Description

The [STEVAL-SID140V1](#) allows to evaluate insulated control of thyristors SCRs with the [STSID140-12](#) driver.

The [STSID140-12](#) driver has a 40 mA of output current capability to drive SCR gate easily without any additional power supply in high voltage.

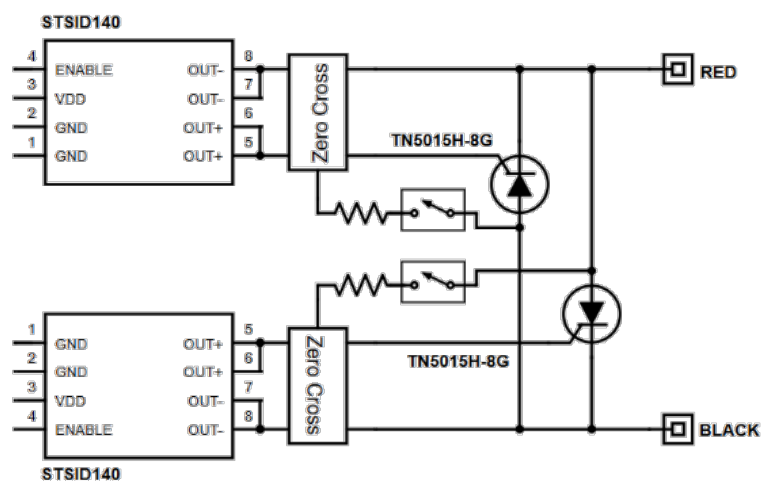
The galvanic-insulated inductive barrier allows a 1250 V rms rating-insulated voltage, compliant for the application of functional insulation, and with a high creepage distance at 3.9 mm.

Based on two [TN5015H-8G](#) SCR in back-to-back, this evaluation board is able to drive AC load connected on line up 4 Amps.

Product summary	
Isolated thyristors driver in AC solid-state-relay	STEVAL-SID140V1
Surface Mount Isolated Thyristor Driver	STSID140-12
50 A 800 V High Temperature SCR in D2PAK package	TN5015H-8G
Applications	Heating control Induction motor control Residential smart plug

1 Block diagram

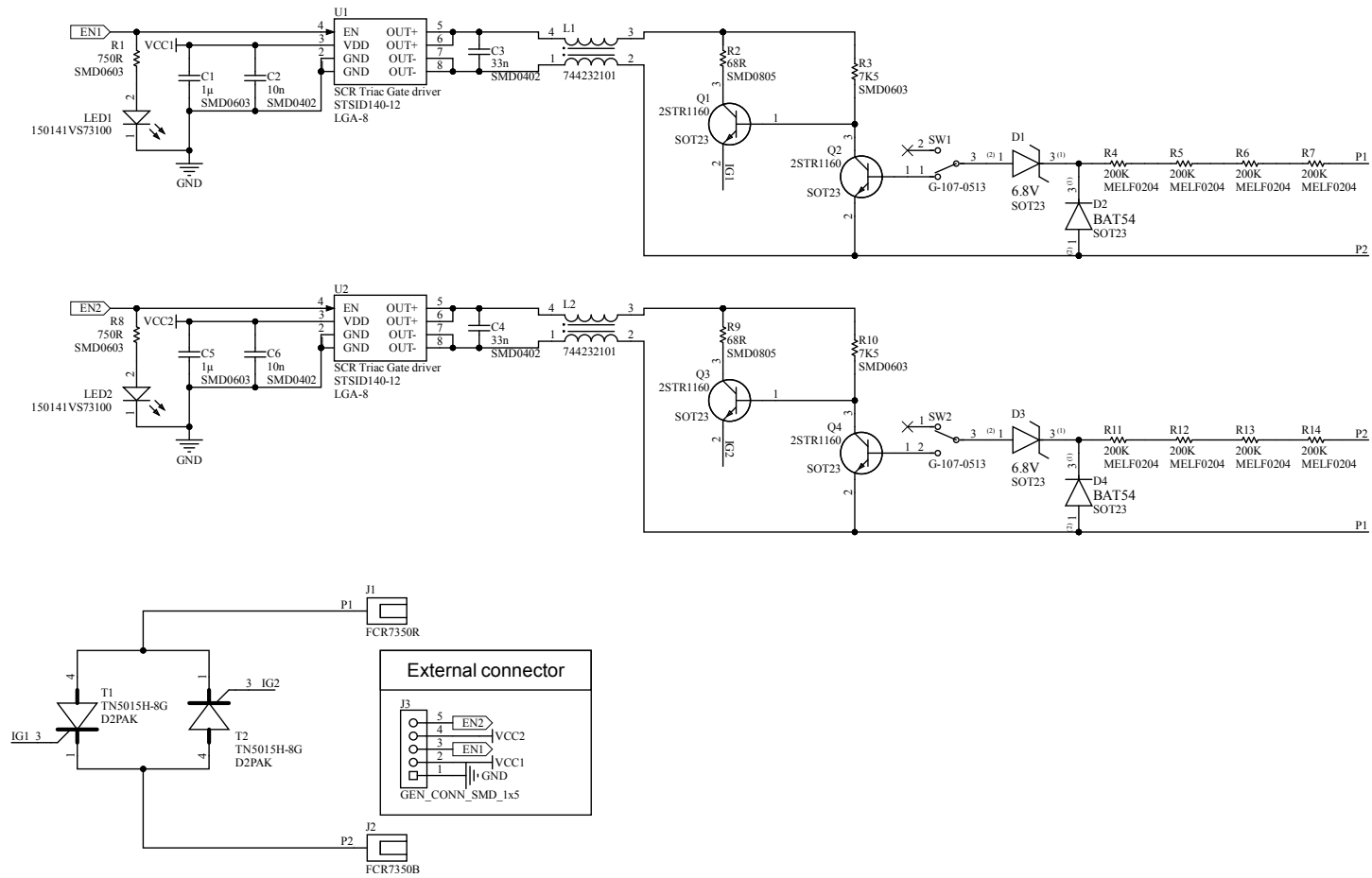
Figure 1. Block diagram



2

Schematic diagrams

Figure 2. STEVAL-SID140V1 circuit schematic



3 Board versions

Table 1. STEVAL-SID140V1 versions

Finished good	Schematic diagrams	Bill of materials
STV\$SID140V1A ⁽¹⁾	STV\$SID140V1A schematic diagrams	STV\$SID140V1A bill of materials

1. This code identifies the STEVAL-SID140V1 evaluation board first version.

Revision history

Table 2. Document revision history

Date	Revision	Changes
24-Sep-2025	1	Initial release.
15-Sep-2026	2	Updated Cover image and Section 2: Schematic diagrams . Added Section 1: Block diagram .

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