IGBT DRIVER FOR SPARK PLUG COILS

E525.01

PRODUCT PREVIEW, SEP 27, 2010

Features

- Slew controlled gate drive of IGBT
- Soft switch-on of primary coil current
- Self timed soft shut-down to prevent destruction of coil or IGBT due erroneous control input
- Ground shift tolerant input: ± 1.5 V
- Supply voltage: 5.5V ... 28V
- Compact assembly close to pencil coil due to few components
- Qualified according to AEC-Q100

Applications

- Ignition control for petrol engines

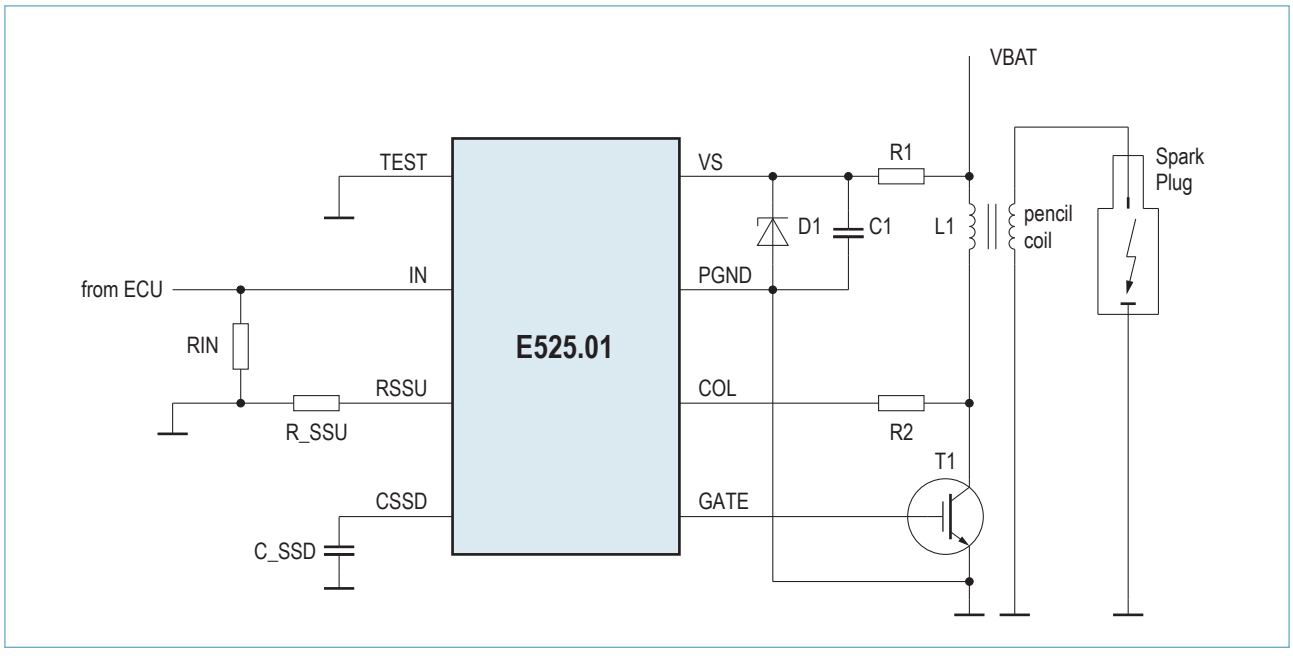
Ordering Information

Product ID	Temp. Range	Package
E525.01	-40°C to +140°C	SOIC8N

General Description

The E525.01 is a low-cost control IC for use in a spark plug ignition circuit for petrol engines. Together with an insulated gate bipolar transistor (IGBT) the IC controls the energy in a pencil coil used to trigger the ignition spark. Only a few external components are needed for the complete electronic circuit, which can be closely integrated to the spark plug device by this. The IC is controlled by a digital signal at IN coming from an ECU. The device provides the gate drive current to the IGBT and the necessary protection at output GATE. Additional protection features of this IC include “soft start-up” (SSU) and “soft shut-down” (SSD).

SSU limits the rate of change of the IGBT collector current during increase of magnetic energy in the primary coil. This measure will avoid unwanted ignition sparks due to too high voltage induction during current ramp-up. It allows for saving of high voltage protection diodes in the (secondary) output branch of the ignition coil. SSD is a protection function which allows to shut-off smoothly the collector current without inducing high voltage for spark generation in the secondary coil, in case no switch-off command was received at IN from the ECU after an allowed maximum on-time.



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