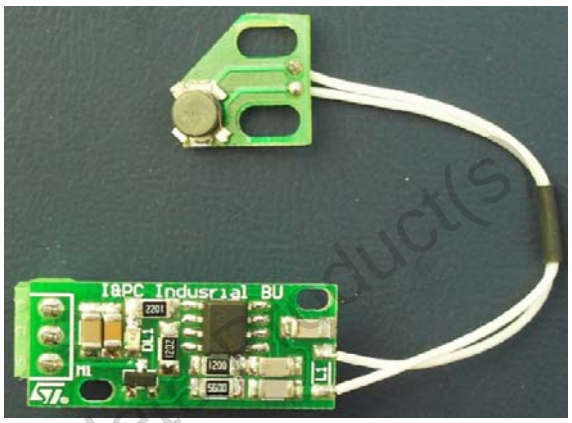
STEVAL-IFS005V1

Metal body proximity detector based on the TDA0161

Data Brief

Features

- 10 mA output current
- Supply voltage +4 V to +35 V
- Oscillator frequency 10 MHz



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Description

This evaluation board is based on the TDA0161, a monolithic integrated circuit designed for metallic body detection by sensing variations in high frequency eddy current losses. Using an externally-tuned circuit, device acts as an oscillator. The output signal level is altered by an approaching metallic object.

The output signal is determined by supply current changes. Independent of the supply voltage, this current is high or low, depending on the proximity of a metallic object.

1 Bill of material and electrical schematic

1.1 Bill of material

Table 1. BOM list

Component	Value	Description
C1	470pF	SMD capacitor 1206 size
C2	470 pF	SMD capacitor 1206 size
C3	1nF LV	SMD capacitor 1206 size
C4	0.1ìF 50V	SMD capacitor 1206 size
C5	1ìF 50V	SMD capacitor 1206 size
DL1	LED diode	LED diode 0805 size
IC1	TDA0161	TDA0161FP SO-8 package
L1	330µH	EPCOS B82462-A4334K (1)
M1	Screw plug 3 position	Sub miniaturization plug
Q1	MMBT3904	NPN transistor in SOT-23
R1	18kΩ	SMD resistor 1206 size
R2	120Ω	SMD resistor 1206 size
R3	560Ω	SMD resistor 1206 size
R4	2.2kΩ	SMD resistor 1206 size

1. This component must be assembled on an external support PCB

1.2 Electrical schematics

Figure 1. Schematic

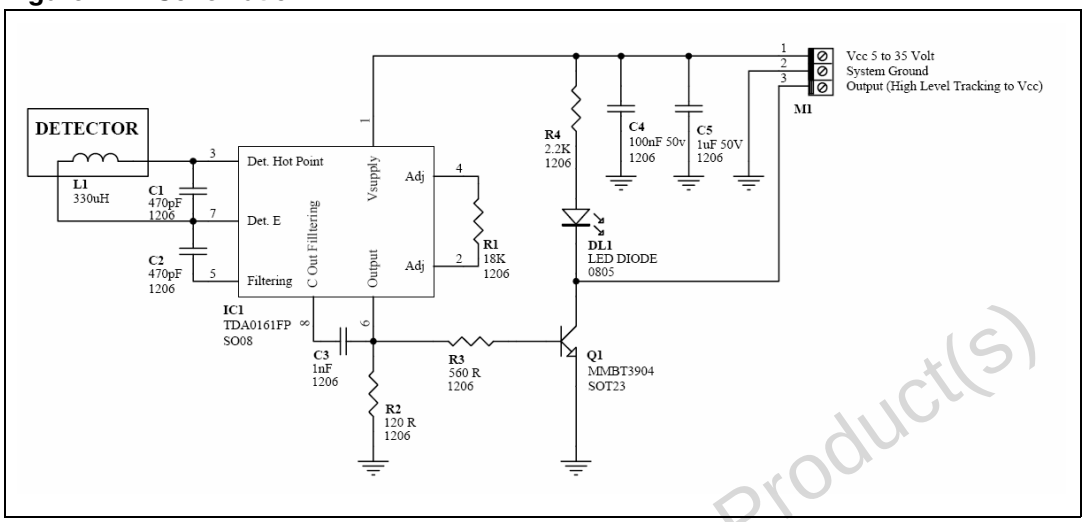


Figure 2. Top overlay (not to scale)

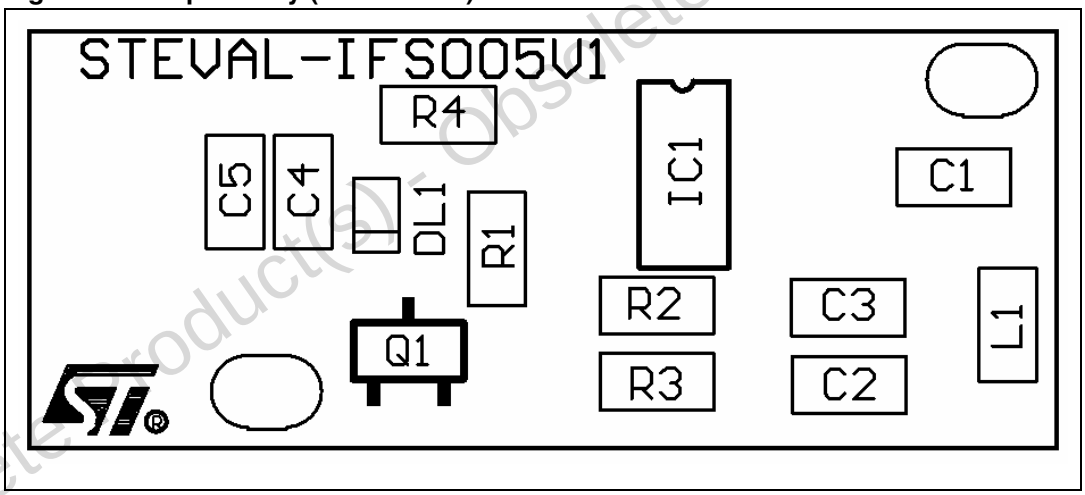
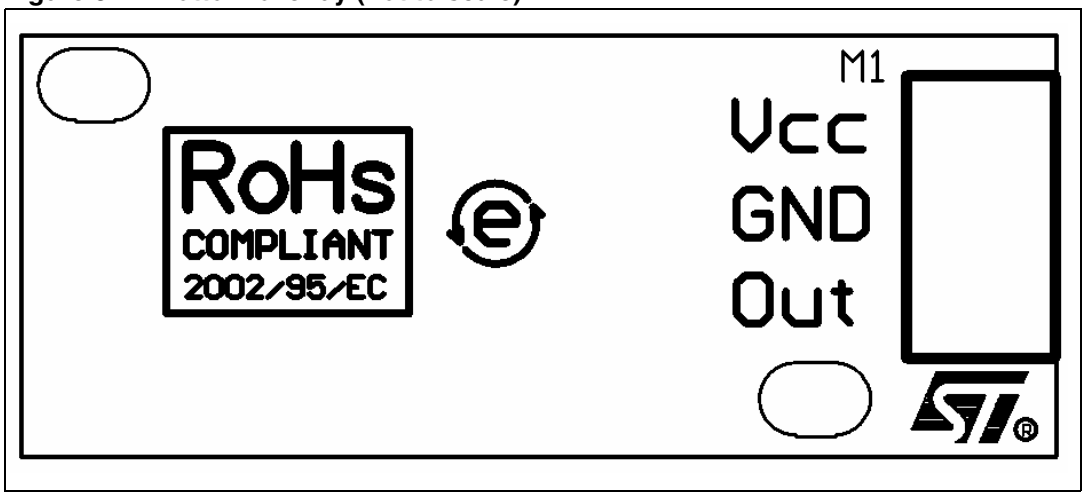


Figure 3. Bottom overlay (not to scale)



2 Revision history

Table 2. Document revision history

Date	Revision	Changes
02-Apr-2008	1	Initial release

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