Low-Side Switch Shield with BTF3050TE for Arduino

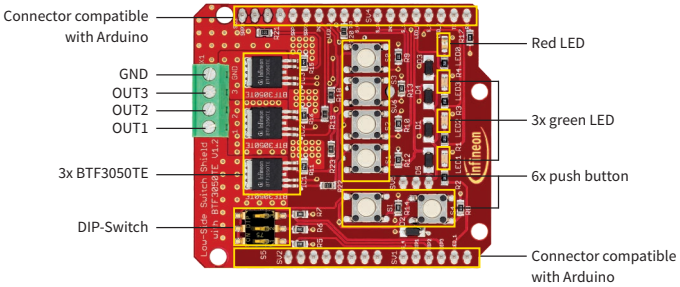
Quick start guide

The Low-Side Switch Shield from Infineon consists out of three BTF3050TE low-side switches of the HITFET™+ family providing three independent power channels that can be controlled via the input pins.

The shield is compatible with microcontroller boards using the Arduino form factor for example the corresponding ARM® powered XMC™ microcontroller kits from Infineon and supports fast and easy prototyping of applications with BTF3050TE.

With a nominal load current of 3 A the BTF3050TE is able to drive resistive, inductive and capacitive loads. Furthermore the smart low-side switch provides diagnosis and protection features (e.g. overtemperature, overcurrent).

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Getting started

STEP 1

Choose up to three appropriate loads

› For example valves can be used

› Nominal current at 3 A (typ.) DC for each channel

STEP 2

Connect the Low-Side Switch Shield to microcontroller board e.g.

› Arduino Uno R3

› XMC1100 Boot Kit

NOTE:
Find source code at:
www.infineon.com/shields-for-arduino

STEP 3

Supply the microcontroller board

› Arduino Uno R3 can be supplied via USB type-B

› XMC1100 Boot Kit can be supplied via micro-USB

STEP 4

Program the controller board

› Find source code at www.infineon.com/shields-for-arduino

STEP 5

Connect the ground and the loads

› Connect the ground of the shield to the power supply

› Connect the loads between the desired output and the power supply

STEP 6

Turn on the power

Benefits

- Fast and inexpensive prototyping of a wide range of applications
- Easy testing of low-side switch configuration
- Latched and stable fault signal independent of the input pin
- Overtemperature shut down with autorestart behavior
- Double current limitation for inrush current
- Easy control of the PWM's duty cycle

Features

- PWM up to 14 kHz (10% duty cycle)
- Driver circuit with logic level inputs
- Fault feedback
- Protection e.g. against overtemperature and overcurrent
- Compatible with microcontroller boards using the Arduino form factor, e.g. the corresponding Infineon XMC™ kits

Applications

- Able to switch all kinds of loads
- Nominal voltage range 8 – 18 V
- Nominal current 3 A (typ.) DC

Useful links

www.infineon.com/shields-for-arduino
www.infineon.com/hitfet
www.infineon.com/xmc

Product summary

Type	Description	Ordering code (OPN)
SHIELD_BTF3050TE	Low-Side Switch Shield with three protected HITFET™+ low-side switches BTF3050TE compatible with microcontroller boards using the Arduino form factor.	SHIELDBTF3050TETOBO1
BTF3050TE	The BTF3050TE is a 50 mΩ single channel smart low-side power switch in a TO252-5 package providing embedded protective functions. The power transistor is built by a N-channel vertical power MOSFET. The device is monolithically integrated. The BTF3050TE is automotive qualified and is optimized for 12 V automotive and industrial applications.	BTF3050TEATMA1

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This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



Manufactured in PRC.
CAN ICES-3 (B)/NMB-3(B)

Order number: SHIELDBTF3050TETOBO1

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