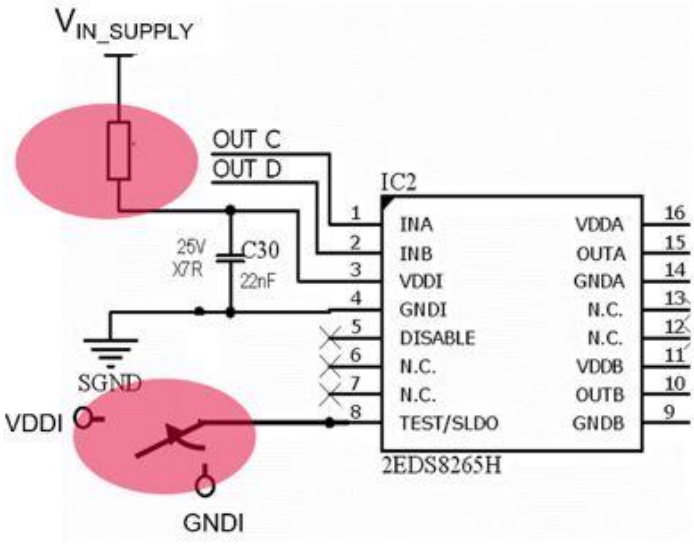
Scenario:

In my new design (in development), I want to test 2EDS as well as other equivalent Infineon competitors. I am using a 5V micro and the datasheet states that, with this VDDI level, I need to activate the 2EDS SLDO (pin 8) connecting it to GND. This is a problem for me since I want to test in the same PCB the 2EDi and other competitors devices but, just for the SLDO pin, the 2EDi is pin-out incompatible. The resistor that I must place on the supply path is not a problem, I planned anyway to put a resistance there for filtering reasons and I can easily change its value when testing the 2EDi. For the pin 8 incompatibility, can you suggest me something?

Solution:

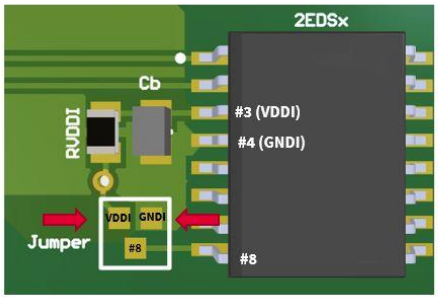
2EDi and competitors products are pin-to-pin compatible except for the SLDO pin (pin #8 for WB DSO-16, NB DSO-16, pin #5 for LGA). In competitors, the SLDO pin is actually a VDDI pin with a maximum applicable voltage of 5.5V. SLDO incompatibility is not an issue in 3.3V microcontroller based designs since the 2EDi SLDO pin is connected to VDDI (SLDO OFF). In designs based on 5V DSP, instead, the 2EDi SLDO is connected to GNDI and this can be annoying when, as in your case, the intention is to compare the different gate drivers on the same PCB.

The recommendation is to integrate in your new design the ‘’jumper solution” below, sometimes also adopted for internal testing.



This is integrating in your gate-driving scheme a jumper option on pin#8 for connection to VDDI or GNDI; it could be a PCB solder jumper or a real jumper (used in the 2EDF and 2EDS kit drivers) as shown below.

Solder jumper option



Real jumper option



Please note that your layout must also contain a 0805 footprint to accommodate a resistance on the input supply path.
When you want to test the 2EDS, you can directly solder the component on the PCB and follow the steps below:

1. Connect driver pin#8 to GNDI (5V microcontroller) using a 0Ω resistance, e.g., to short the related pads if the solder jumper option on the left is used.

2. Solder a proper RVDDI resistance on the supply path to activate the SLDO. Please follows the guidelines given in the 2EDi application note to select the appropriate RVDDI resistance when using 2EDi products (link; Subchapter 3.1).

It is recommended to use resistors in SMD 0805 package with 1 percent tolerance.

Table 1 Suggested shunt resistances

	Switching frequency		
Available supply VDD	**100 KHz**	**1 MHz**	**3 MHz**
5 V	≤732 Ω	≤453 Ω	≤316 Ω
8 V	≤2.15 kΩ	≤1.37 kΩ	≤953 Ω
12 V	≤4.02 kΩ	≤2.61 kΩ	≤1.78 kΩ
15 V	≤5.49 kΩ	≤3.48 kΩ	≤2.43 kΩ

When you want to test competitors' products, you can directly solder the component on the PCB and follows the steps below:

1. Connect driver pin #8 to VDDI using a 0 Ω resistance, e.g., to short the related pads if the solder jumper option on the left is used.

2. Change RVDDI resistance on the input supply path with a 0 Ω resistance or a low resistance (10 Ω e.g.) for filtering purposes.

This simple solution allows you to test the different drivers on the same PCB without drop-in compatibility problems.