

## Technical Note

# Differences between the Gate Drivers 1SD418FI and 1SD418F2

### Basics

The 1SD418FI gate driver is not recommended for new designs and is only made to order. It has been developed for 2-level converter topologies.

The recent 1SD418F2 supports 2-level as well as 3-level and multilevel-topologies.

### Compatibility

Both drivers are mechanically fully compatible (incl. interfaces/connectors).

The 1SD418F2 can be set functionally compatible to the 1SD418FI. That requires a jumper J1 position connecting pins 1-2, which is the default setting.

Funktion of jumper J1:

- J1 → 1-2 = 2-level mode
- J1 → 2-3 = 3-level and multilevel mode

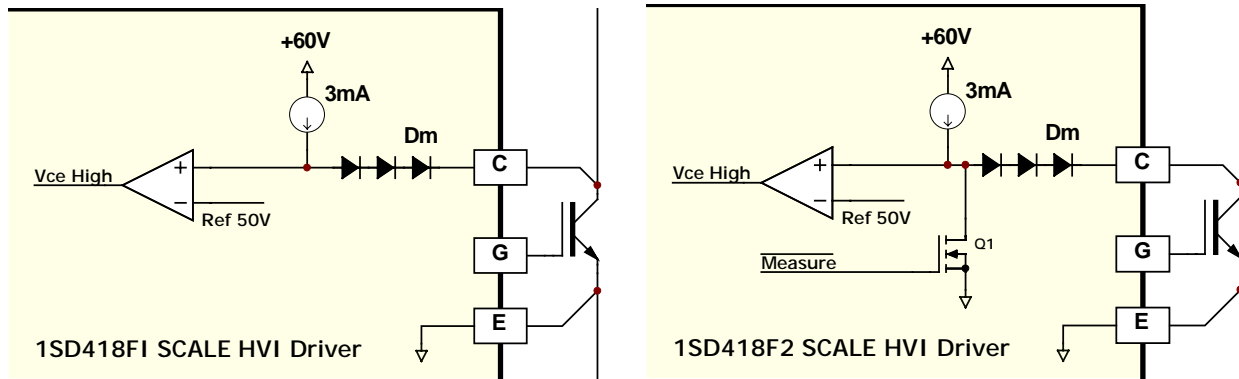
### Differences

For further information about 2-level or 3-level and multilevel operation modes, refer to the "Description and Application Manual for 1SD418F2 SCALE High Voltage IGBT Drivers".

Furthermore, the Vce desaturation monitoring circuitry of the 1SD418FI may charge the DC link capacitors via a current of approx. 3mA up to a voltage of 120V (for a halfbridge). This is particularly true for the case that no symmetrizing resistors are connected in parallel to the DC link capacitors, and the DC link supply is switched off. This might be a disadvantage in some applications. The 1SD418F2 does not show this effect.

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Fig. 1 shows the different concepts of Vce desaturation monitoring. During IGBT off-state, the additional transistor Q2 (right) is bypassing the before mentioned current to avoid charging the DC link.



*Fig. 1 Vce-desaturation monitoring 1SD418FI (left) and 1SD418F2 (right)*

Nevertheless, the 1SD418FI and 1SD418F2 can be considered as fully functionally compatible for 2-level mode.

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