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Half-Bridge And High-Side/Low-Side Gate Drivers Are Tailored For Fast Switching

[Infineon Technologies](#) has broadened its EiceDRIVER portfolio with the additions of the 2ED2103S06F and 2ED2104S06F 650-V half-bridge gate drivers (Fig. 1) and the 2ED2110S06M (Fig 2.) and 2ED2101S06F (Fig. 3) 650-V high- and low-side gate drivers. The devices are based on the company's silicon-on-insulator (SOI) technology. According to the vendor, they provide leading negative VS transient voltage immunity and monolithic integration of real bootstrap diodes.

These features reduce BOM and enable more robust designs with MOSFETs and IGBTs in a compact form factor. The fast level-shift (FLS) family is tailored for high-frequency applications like SMPS and UPS as well as industrial drives and embedded inverters, home appliances, power tools, and motor control for fans and pumps.

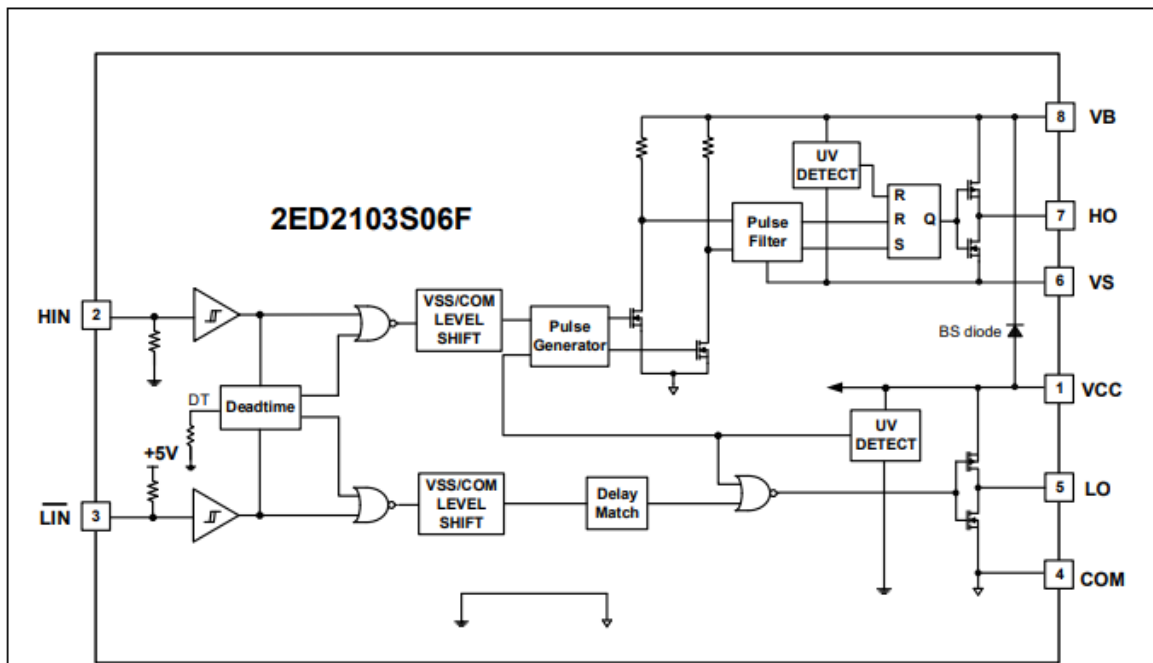
The EiceDRIVER 2ED2110S06M is a 2.5-A high-current driver, while EiceDRIVER 2ED2101/03/04 are 0.7-A low-current drivers. The low-current devices are available in DSO-8 packages, while the 2.5-A driver comes in a DSO-16W package. With 90-ns propagation delays and tight 10-ns maximum delay matching, they support high-frequency switching in the 500-kHz range as well as traditional motor control applications.

In addition, the 2ED2110S06M supports shutdown functionality, separate logic and power ground. The integrated bootstrap diode offers ultra-fast reverse recovery with a typical 30-Ω on-resistance. The 2ED2104S06F also supports shutdown functionality.

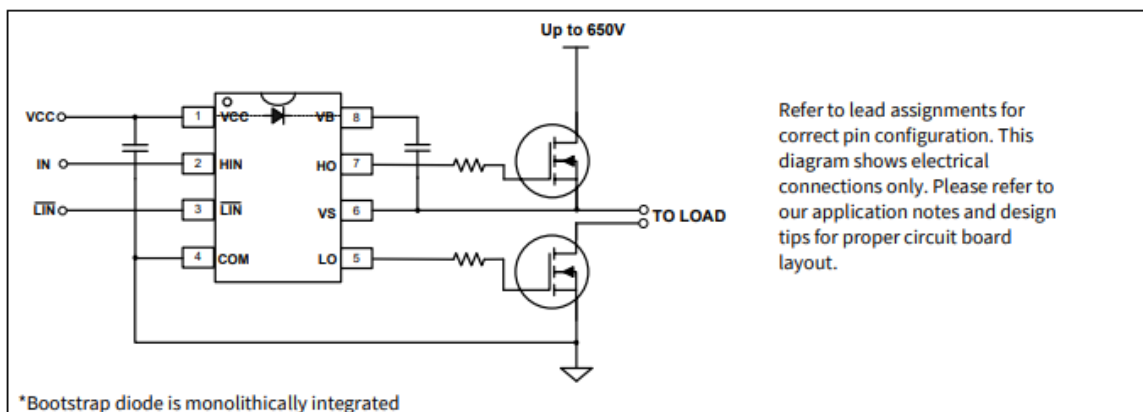
Negative VS transient voltage immunity of -100 V with repeating 300-ns wide pulses supports superior robustness and reliable operation. Integrated deadtime with cross-conduction logic and independent undervoltage lockout (UVLO) for high- and low-side voltage supplies provide safe operation.

According to the vendor, the EiceDRIVER 2ED2110S06M and 2ED2101/03/04 S06F ICs can easily replace earlier generation IR(S)2110/2113S and IR(S)2101/03/04S devices.

The EiceDRIVER 2ED2110S and 2ED2101/03/04 can be ordered now. More information is available at www.infineon.com/SOI. This link directs to additional product details, including data sheets and pricing.

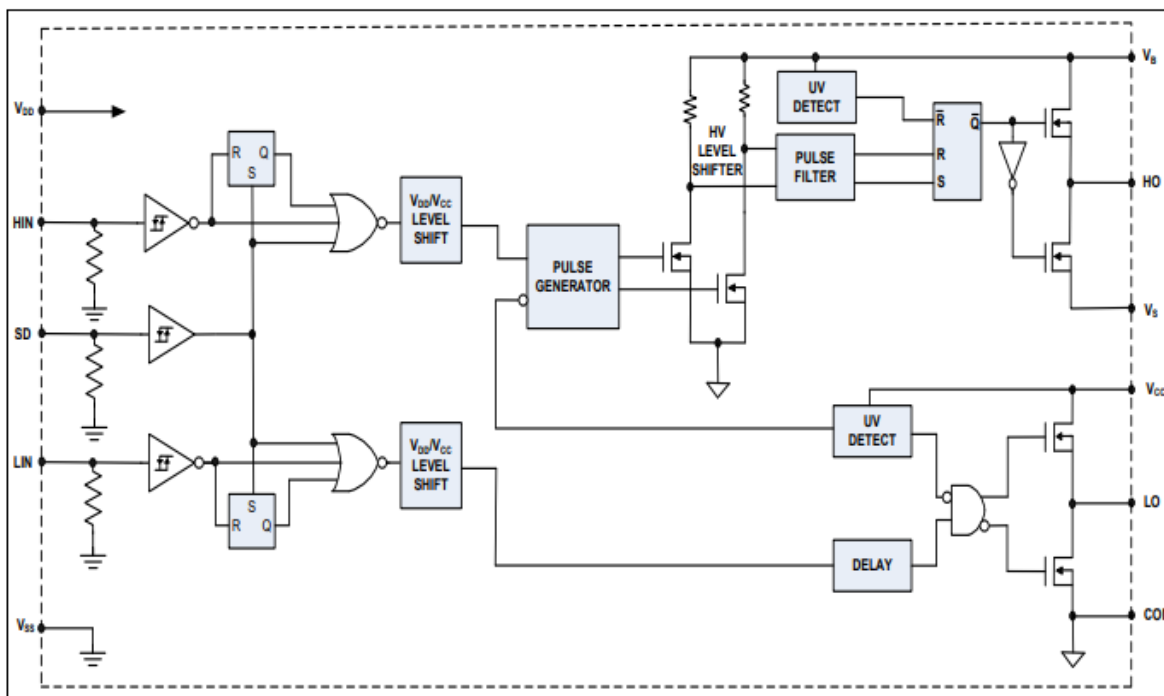


(a)

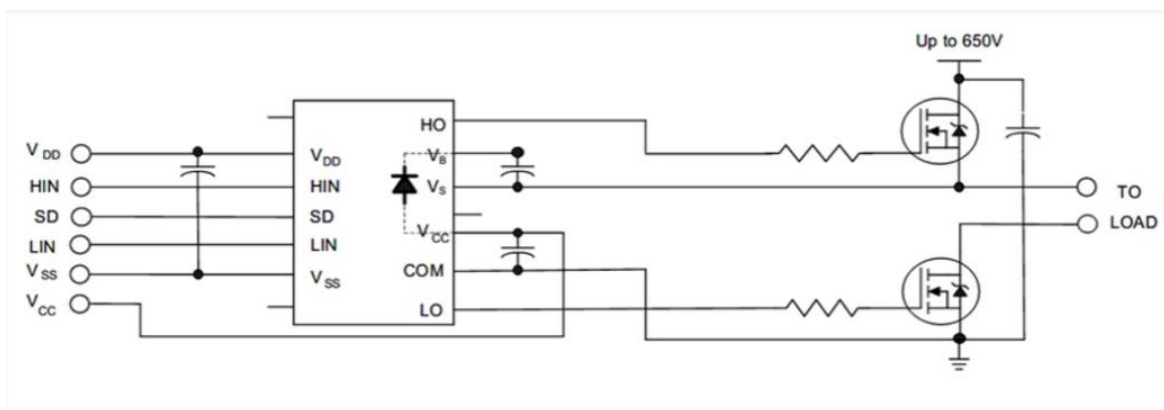


(b)

Fig. 1. Internal block diagram (a) of the 2ED2103S06F 650-V half-bridge gate driver with integrated bootstrap diode and its typical application circuit (b). The diagrams are similar for the 2ED2104S06F, except the '2104 adds a shutdown input which turns off both channels.

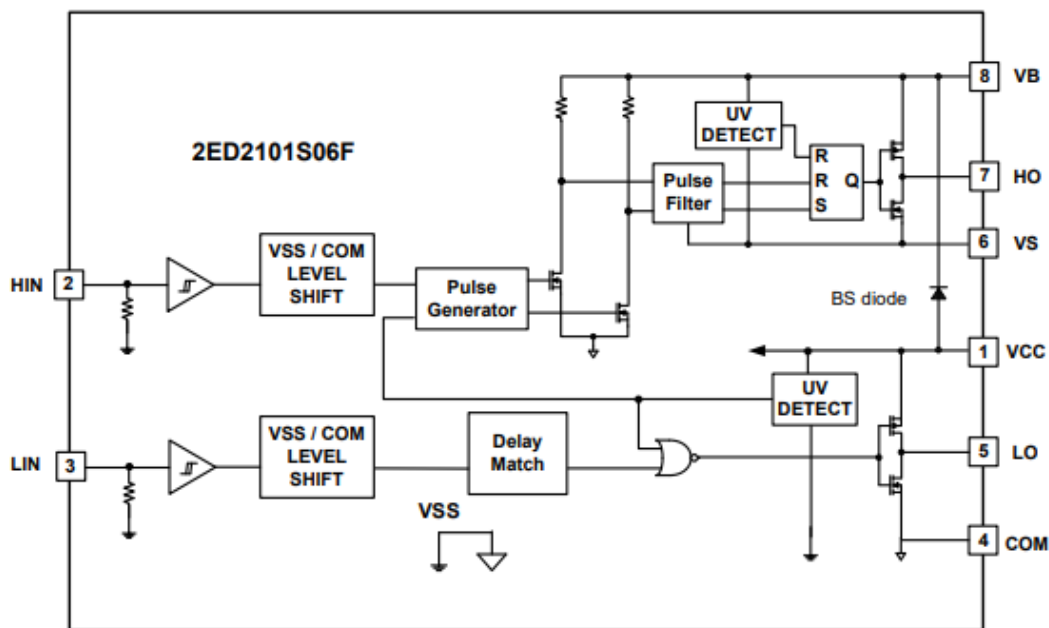


(a)

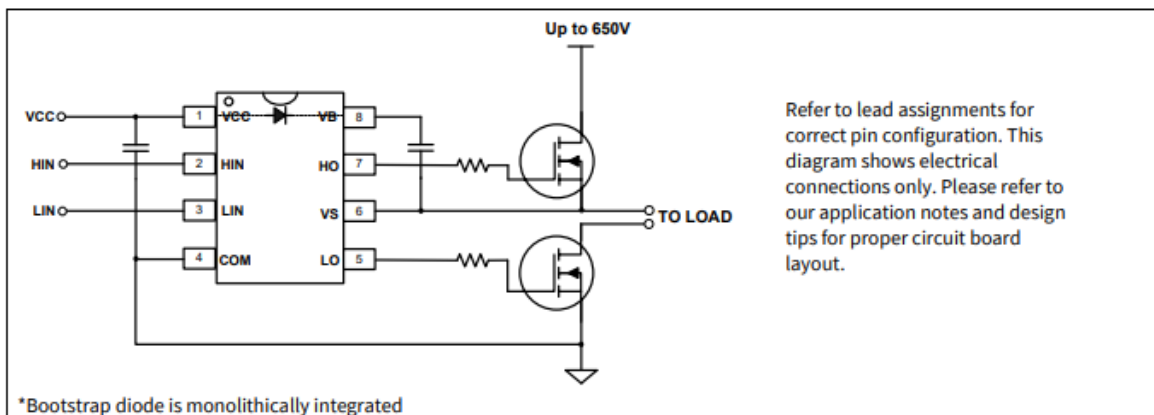


(b)

Fig. 2. Internal block diagram (a) of the 2ED2110S06M 650-V high- and low-side gate driver with integrated bootstrap diode and its typical application circuit (b). This is a 2.5-A high-current driver, while the functionally similar 2ED2101S06F pictured in Fig 3 is a 0.7-A low-current driver. The 2ED2110S06M also adds a shutdown input which turns off both channels.



(a)



(b)

Fig. 3. Internal block diagram (a) of the 2ED2101S06F 650-V high- and low-side gate driver with integrated bootstrap diode and its typical application circuit (b). This is the low-current version of the 2ED2110S06M pictured in Fig. 2.