

# STGAP2HD & STGAP2SICD



## Galvanic isolated 4 A dual-channel gate drivers



**Optimize and simplify SiC and IGBT switching circuits with maximum robustness and best-in-class power stage control**

STGAP2HD for IGBTs and STGAP2SICD for SiC MOSFETs leverage ST's latest 6kV galvanic-isolation technology in a SO-36W wide-body package.

Transient immunity of  $\pm 100\text{V/ns}$  prevents spurious switching in electrically noisy operating conditions. For both the channels, the devices can deliver a powerful gate-control signal of up to 4A, with dual output pins for extra flexibility in gate driving. The active Miller clamp prevent gate spikes during fast commutation in half-bridge topologies.

### KEY FEATURES & BENEFITS

- On-chip 6 kV galvanic isolation
- Optimized Under Voltage Lock Out for SiC version
- High-voltage rail up to 1200 V
- 3.3 to 5 V TTL/ CMOS inputs with hysteresis
- Gate driving voltage up to 26 V
- 4 A sink / source driver current capability
- Separate sink and source for easy gate driving
- 4 A Miller clamp
- Propagation delay of 75 ns
- Stand-by function
- Configurable interlocking function
- Shut-down pin

- Transient immunity  $\pm 100\text{V/ns}$
- Watchdog function
- Temperature shut-down protection

### KEY APPLICATIONS

- Switch-mode power supplies
- Industrial drives
- Fans
- Factory automation
- 600/1200 V inverters
- Battery chargers
- Welding
- Home appliances
- Induction heating
- PFC controllers
- DC-DC converters
- UPS

## Highly robust gate driving with flexibility and best-in-class power stage control

### The two new dual-channel galvanically-isolated gate drivers for IGBTs and silicon-carbide (SiC)

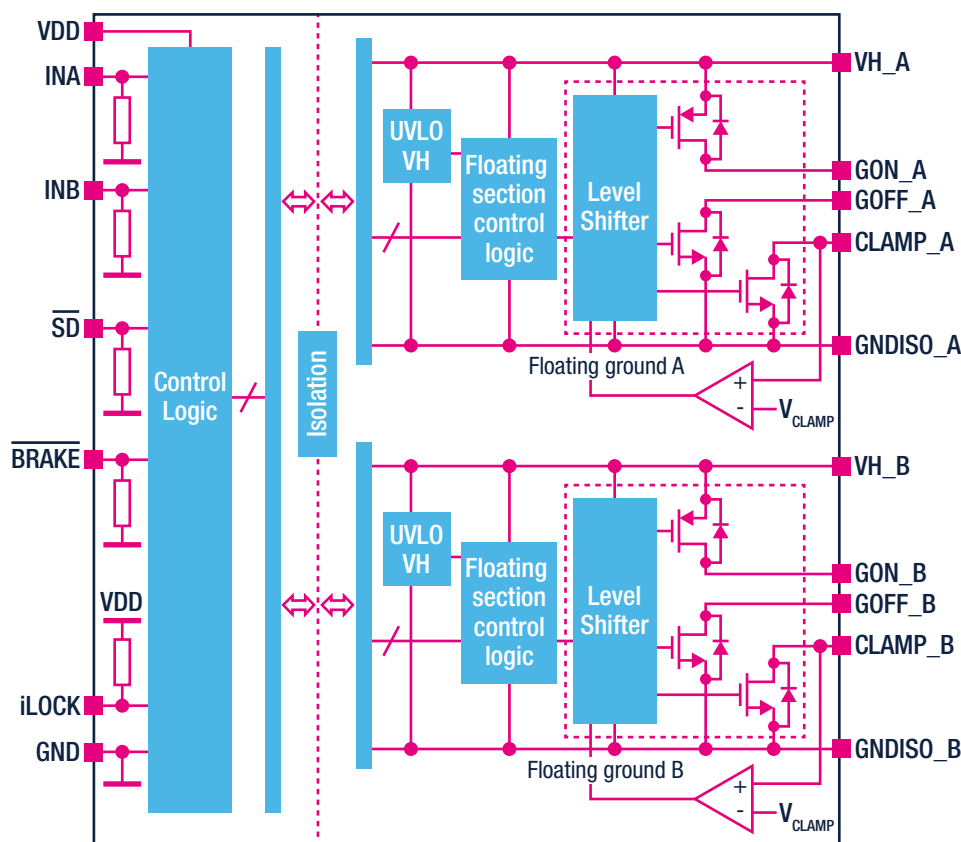
Save space and ease circuit design in high-voltage power conversion and industrial applications.

The STGAP2HD for IGBTs and STGAP2SICD for SiC MOSFETs provide galvanic isolation between each gate driving channel and the low voltage control and interface circuitry. The gate drivers are characterized by 4 A current capability and rail-to-rail outputs, making it suitable for mid and high-power applications such as power conversion and industrial motor drive inverters. The separated output pins allow to independently optimize turn-on and turn-off by using dedicated gate resistors, while the Miller clamp prevents gate spikes during fast commutations in half-bridge topologies.

Circuit protection features include thermal protection, a watchdog for safe operation, and under-voltage lockout (UVLO) for each channel to prevent working in a dangerous low-efficiency mode.

The interlocking prevents shoot-through currents in conventional half-bridge circuits. In dual low-side and asymmetrical half-bridge applications the iLOCK disables the interlocking function and allows to turn on both channels simultaneously.

### STGAP2HD & STGAP2SICD block diagram



EVALSTGAP2SICD



### Devices summary

Order code	Description	Package	Packing	Evaluation board
STGAP2HDM	Galvanically isolated 4 A dual gate driver for IGBTs and SiC MOSFETs	SO-36W	Tube	EVALSTGAP2HDM
STGAP2HDMTR			Tape and Reel	
STGAP2SICD			Tube	EVALSTGAP2SICD
STGAP2SICDTR			Tape and Reel	



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