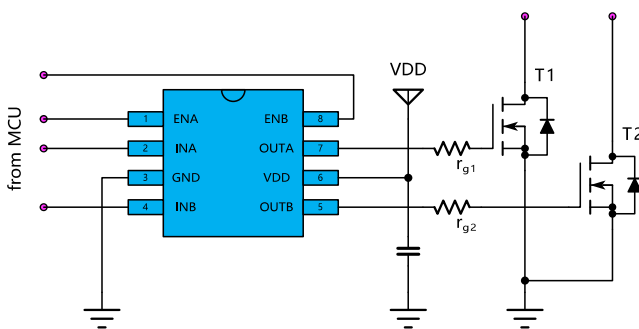


### FEATURES

- Typical 5-A peak source and sink drive current for each channel
- Input and enable pins capable of handling -12 V
- Output capable of handling -2 V transients
- Absolute maximum VDD voltage: 35 V
- Wide VDD operating range from 4.5 V to 30 V with UVLO
- Two independent gate drive channels
- Independent enable function for each output
- Hysteretic-logic thresholds for high noise immunity
- VDD independent input thresholds (TTL compatible)
- Fast propagation delays (22-ns typical)
- Fast rise and fall times (6-ns and 9-ns typical)
- 1-ns typical delay matching between the two channels
- Two channels can be paralleled for higher drive current
- SOP-8L and DFN2X2-8L package options
- Operating junction temperature range of -40 °C to 150 °C

### APPLICATIONS

- Switch-mode power-supplies (SMPS)
- Power factor correction (PFC) circuits
- DC-DC converter
- Motor drives
- Solar power supplies
- Pulse transformer driver



Typical Application Circuit

### GENERAL DESCRIPTION

The HP3000 is a dual-channel, high-speed, low-side gate driver that effectively drives MOSFET, IGBT, SiC, and GaN power switches. It has a typical peak drive strength of 5 A which reduces rise and fall times of the power switches, lowers switching losses, and increases efficiency. The fast propagation delay (22-ns typical) yields better power stage efficiency by improving the dead time optimization, pulse width utilization, control loop response, and transient performance of the system.

HP3000 can handle -12 V at its inputs, which improves robustness in systems with moderate ground bouncing. The inputs are independent of supply voltage and can be connected to most controller outputs for maximum control flexibility. An independent enable signal allows the power stage to be controlled independently of main control logic. In the event of a system fault, the gate driver can quickly shut-off by pulling enable low. Many high-frequency switching power supplies exhibit noise at the gate of the power device, which can get injected into the output pin on the gate driver and can cause the driver to malfunction. The HP3000's transient reverse current and reverse voltage capability allow it to tolerate noise on the gate of the power device or pulse-transformer and avoid driver malfunction.

The HP3000 also features under voltage lockout (UVLO) for improved system robustness. When there is not enough bias voltage to fully enhance the power device, the gate driver output is held low by the strong internal pull down MOSFET.

### Device Information

PART NUMBER	PACKAGE	BODY SIZE
HP3000	SOP-8L	4.90 mm × 3.90 mm
HP3000	DFN2X2-8L	2.00 mm × 2.00 mm

- (1) For all available packages, see the orderable addendum at the end of the data sheet.