

## TLE7183F

Three-Phase Bridge driver IC for MOSFET power stages with multiple protection functions

INFINEON'S TLE7183F Three-phase driver IC integrates 6 MOSFET gate drivers, a 2-stage charge pump, over-current protection, over-temperature protection, current sense OpAmp, superior EMC behavior and diagnostics to enable a wide range of automotive applications.

The TLE7183F includes 6 inputs for independent control of each MOSFET. The TLE7183F also includes adjustable dead time and the flexibility to control each phase with one input. It is designed to operate with the lowest  $R_{DS(on)}$  N-Channel MOSFET's such as Infineon's Automotive 30 V and 40 V power MOSFETs. The TLE7183F can support PWM frequencies from 0 to 30 kHz.

Parameter	Symbol	Value	Unit
Peak Turn-on Current	$I_{Gxx(on)}$	1500	mA
Peak Turn-off Current	$I_{Gxx(off)}$	1500	mA
Supply Voltage Range	$V$	5.5 ... 20	V
Gate Voltage	$V_{GS}$	10	V
Temperature Range	$T_j$	-40 ... +150	°C

### Applications

- Three-phase high-current motor driver for electronic power steering.
- Three-phase generator for integrated starter alternator.
- Three-phase motors for transmission/ECMT, water pumps, oil pumps, fuel pumps, HVAC.



### Features & Benefits

- Compatible with low  $R_{DS(on)}$  N-Channel MOSFETs to enable high current applications.
- Integrated 2-stage charge pump allows full operation at supply voltages down to 5.5 V at duty cycle range from 0% to 100%.
- Integrated high bandwidth, low-offset current sense amplifier.
- PWM frequency up to 30 kHz and operating voltage range up to 20 V. Can withstand voltages up to 40 V. Covers many different applications and motors.
- Low EMC sensitivity and emissions.
- Adjustable dead time with shoot through protection and short-circuit protection for each MOSFET.
- Protected against reverse polarity, under-voltage, over-current and over-temperature. Increases reliability and reduces the risk of damage to the electronic power circuits and the motor.
- Six independent TTL inputs or control TLE7183 with only three microcontroller pins.

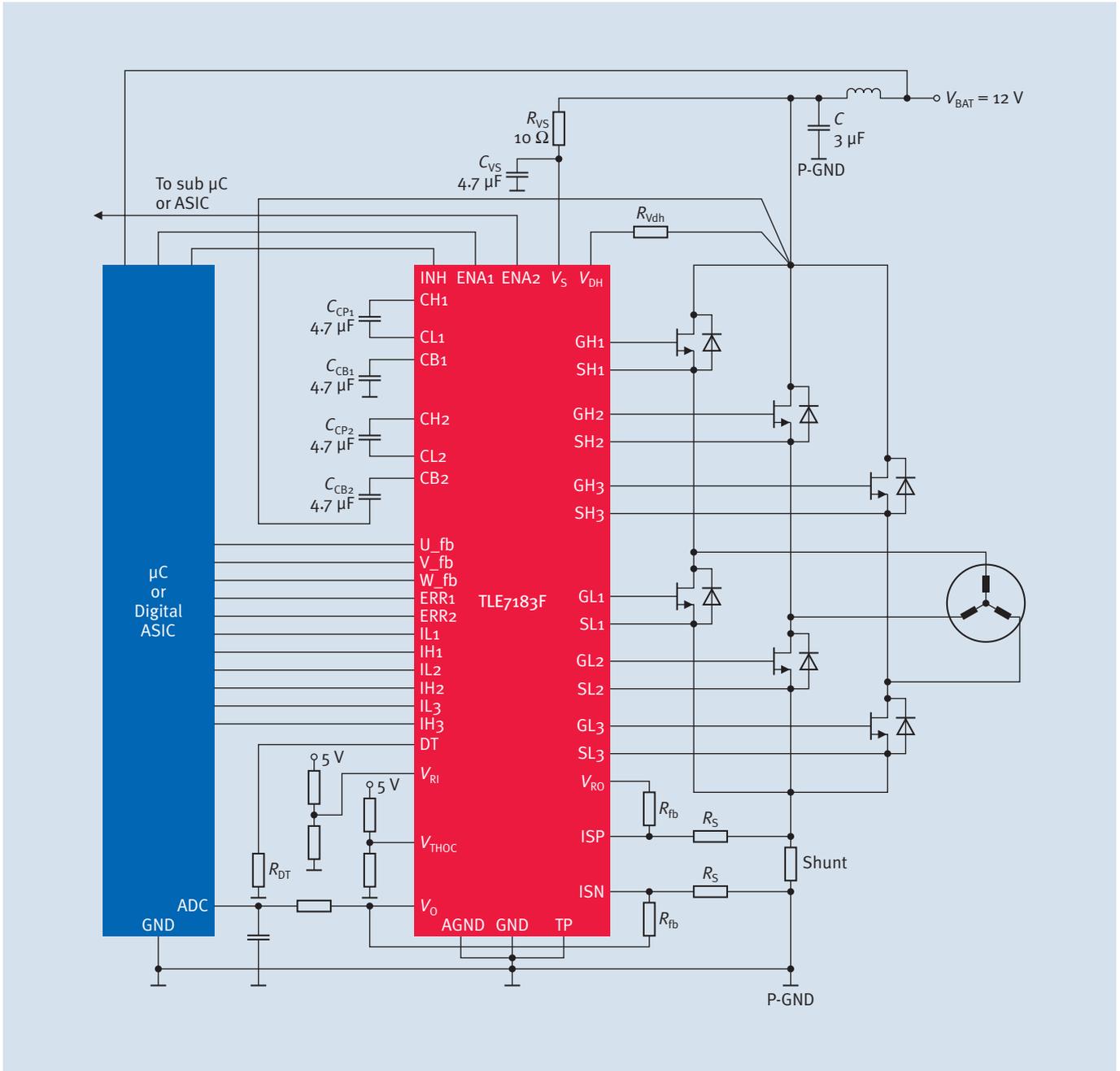
<http://www.infineon.com/Driver-IC>

## Automotive Power



Never stop thinking

## Application Example



## Product Summary

Type	Sales Code	Description	Package
TLE7183F	TLE7183F	3-phase Bridge Driver IC	VQFN-48

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