

Product brief

EiceDRIVER™ 1EDN7550 and 1EDN8550

1-channel non-isolated gate-driver IC family with truly differential inputs
Prevents false triggering of power MOSFETs and enables highest power density

Overview:

1EDNx550 non-isolated gate-driver ICs are available in small 6-pin SOT-23 and TSNP packages. Their truly differential inputs enable cost-effective solutions with exceptional power density in:

- > Boost-PFC with Kelvin-source MOSFET
- > Synchronous rectification stages
- > Designs with long distance between control IC and gate-driver IC
- > Buck-boost converters
- > Low- and medium-voltage half-bridges
- > High density 48 V to 12 V intermediate bus converter

Key features

- > Configurable common-mode robustness
- > Separate low impedance outputs:
 - Source: 4 A/0.85 Ω
 - Sink: 8 A/0.325 Ω
- > +10 ns/-7 ns propagation delay
- > 4 V/8 V UVLO options
- > 6-pin package options:
 - SOT-23: 2.9 mm x 2.8 mm
 - TSNP: 1.5 mm x 1.1 mm

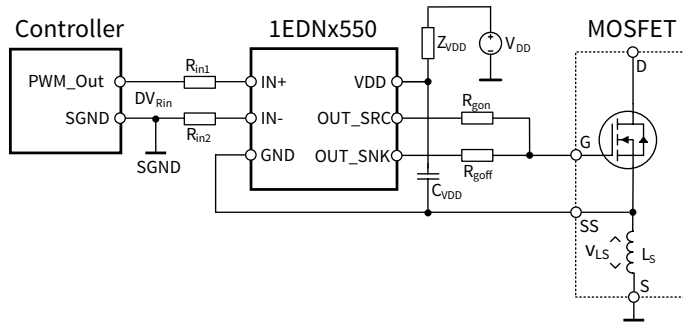
Challenge	Application example	1EDNx550 advantages
Parasitic ground inductance	<ul style="list-style-type: none"> > Long distance between controller IC and gate-driver IC <ul style="list-style-type: none"> – Control IC on daughter card, e.g., interleaved PFC – 1- and 2-layer PCBs 	<ul style="list-style-type: none"> > Design flexibility > Short R&D time
Parasitic source inductance	<ul style="list-style-type: none"> > Hard-switching applications <ul style="list-style-type: none"> – Boost-PFC with Kelvin-source MOSFETs – Synchronous rectification 	<ul style="list-style-type: none"> > Cost-effectiveness > Highest level of power density
Ultimate power density	<ul style="list-style-type: none"> > 48 V to 12 V intermediate bus converter <ul style="list-style-type: none"> – Cascaded switched capacitor topology at 1.2 MHz 	<ul style="list-style-type: none"> > Design flexibility > Increased power density

The common-mode robustness is configurable with resistors connected to the differential inputs:

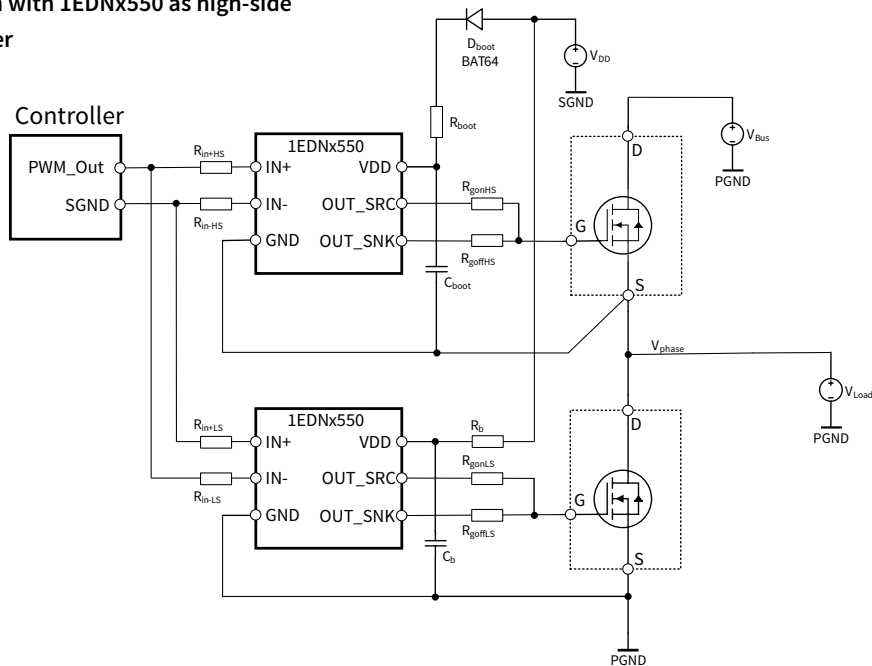
Input voltage	Common-mode resistor			DC common-mode robustness	AC common-mode robustness
	value	accuracy	form factor		
2.5 V	24 kΩ	0.1%	≥0402	-54 V / +63 V	±150 V
3.3 V	33 kΩ	0.1%	≥0603	-72 V / +84 V	±150 V
5 V	51 kΩ	1%	≥0603	-60 V / +60 V	±150 V
5 V	51 kΩ	0.1%	≥0805	-108 V / +126 V	±200 V
12 V	127 kΩ	0.1%	≥1206	-200 V / +200 V	±400 V

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Typical application for 4-pin Kelvin source CoolMOS™ with 1EDN8550B as a low-side gate driver



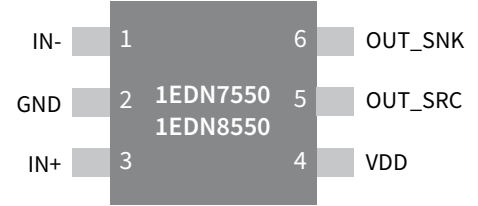
Half-bridge application with 1EDNx550 as high-side and low-side gate driver



Product portfolio

Part number	Package	UVLO	OPN
1EDN7550B	6-pin SOT-23	4 V	1EDN7550BXTSA1
1EDN8550B	6-pin SOT-23	8 V	1EDN8550BXTSA1
1EDN7550U	6-pin TSNP	4 V	1EDN7550UXTSA1

Pinout



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