

## Product brief

# Double DPAK (DDPAK) package

Innovative top-side cooled SMD solution for high power applications and 1-channel low-side EiceDRIVER™ with truly differential inputs

Infineon's latest Double DPAK (DDPAK) package introduces the first top-side cooled SMD package with built-in four-pin Kelvin source configuration that addresses high power SMPS applications such as PC power, solar, server and telecom. The benefits of the already existing high voltage technologies 600 V CoolMOS™ G7 superjunction (SJ) MOSFET and CoolSiC™ Schottky diode 650 V G6 are combined with the innovative concept of top-side cooling. The top-side cooling concept of DDPAK enables the thermal decoupling of board and semiconductor, which allows the thermal limits of the PCB material to be overcome and provides up to 20 % higher power density or improved system lifetime thanks to around 12°C lower board temperature. DDPAK enables a SMD based system solution for high current PFCs as well as a high-end efficiency solution for LLC topologies.

The 1EDNx550 1-channel low-side gate driver IC family has truly differential control inputs. Unlike other gate driver ICs, the operation of the 1EDNx550-family is largely independent from the gate driver GND. Only the voltage difference between the two control inputs determines the status of the gate driver output. The 1EDNx550 family eliminates the risk of false triggering and is ideally suited for application designs prone to large GND shifts between the control IC and the gate driver IC, such as PFCs with Kelvin source MOSFETs.



### Key features of CoolMOS™ and CoolSiC™ in DDPAK package

- > CoolMOS™ G7 best-in-class FOM  $R_{DS(on)} \times E_{oss}$  and  $R_{DS(on)} \times Q_g$
- > CoolSiC™ G6 best-in-class  $V_F$  and FOM  $Q_c \times V_F$
- > CoolMOS™ G7 and CoolSiC™ G6 – the perfect match for system solutions in PFC
- > Innovative top-side cooling concept enabling thermal decoupling of board and semiconductor
- > Built-in 4<sup>th</sup> pin Kelvin source configuration and low parasitic source inductance leading to highest efficiency
- > MLS1 compliant and entirely Pb-free DDPAK TCOB capability of > 2.000 cycles, exceeding the industry's quality standards

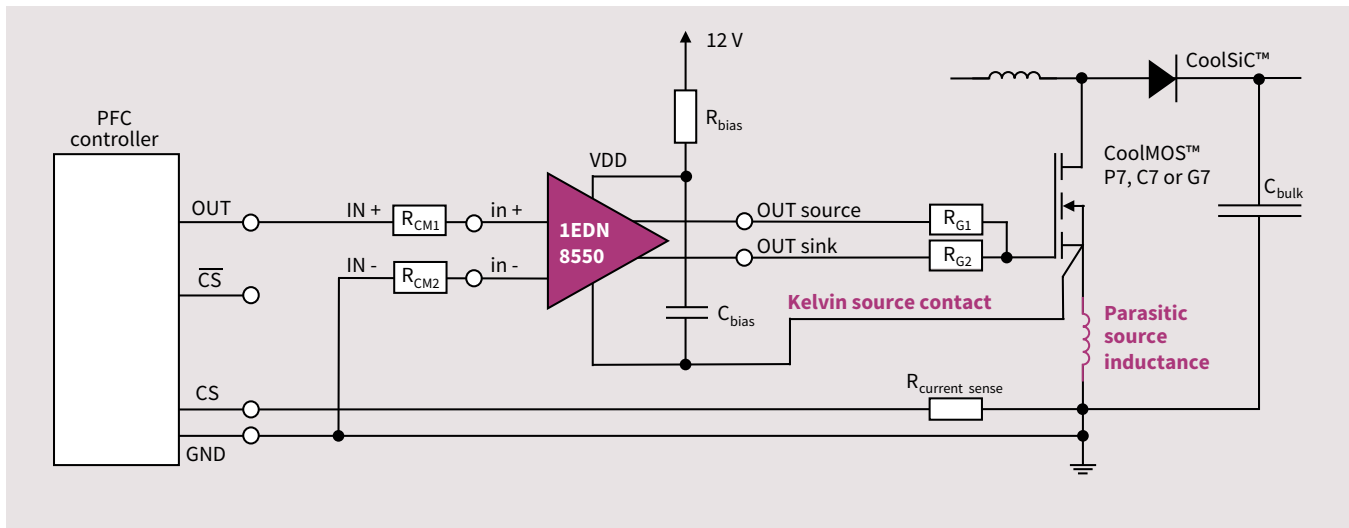
### Key features of 1EDN7550 and 1EDN8550

- > 1-channel low-side gate driver IC
- > Truly differential inputs for 150 V<sub>AC</sub> and 70 V<sub>DC</sub> GND-shift robustness
- > V<sub>DD</sub> supply = 20 V
- > V<sub>IN</sub> = ±6 V
- > Low ohmic outputs: 0.85 Ω source, 0.35 Ω sink
- > 5 A output reverse current robustness
- > 4 A source / 8 A sink current
- > Separate source / sink outputs
- > SOT-23 6pin

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## 1EDN8550 driving Kelvin source CoolMOS™ superjunction (SJ) MOSFET in boost PFC



## Product portfolio 1EDN7550 and 1EDN8550

Sales product name	Orderable part number (OPN)	Ground shift robustness		UVLO	Package
		dynamic	static		
1EDN7550B	1EDN7550BXTSA1	+/- 150 V	+/- 70 V	4 V	SOT-23 6pin
1EDN8550B	1EDN8550BXTSA1	+/- 150 V	+/- 70 V	8 V	SOT-23 6pin

## Product portfolio DDPAK

R <sub>DS(on)</sub> max. [mΩ]	CoolMOS™ G7 SJ MOSFET		I <sub>F</sub> [A]	CoolSiC™ Schottky diode G6	
	Sales product name	Orderable part number (OPN)		Sales product name	Orderable part number (OPN)
190	IPDD60R190G7	IPDD60R190G7XTMA1	4	IDDD04G65C6	IDDD04G65C6XTMA1
150	IPDD60R150G7	IPDD60R150G7XTMA1	6	IDDD06G65C6	IDDD06G65C6XTMA1
125	IPDD60R125G7	IPDD60R125G7XTMA1	8	IDDD08G65C6	IDDD08G65C6XTMA1
102	IPDD60R102G7	IPDD60R102G7XTMA1	10	IDDD10G65C6	IDDD10G65C6XTMA1
80	IPDD60R080G7	IPDD60R080G7XTMA1	12	IDDD12G65C6	IDDD12G65C6XTMA1
50	IPDD60R050G7	IPDD60R050G7XTMA1	16	IDDD16G65C6	IDDD16G65C6XTMA1
			20	IDDD20G65C6	IDDD20G65C6XTMA1

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