

## Product brief

# AUIR324x

## Gate driver family for 12 V automotive power distribution

The Infineon **AUIR324x** gate driver family provides a solution for high-current ( $> 30\text{ A}$ ) load switching applications where conduction resistance of less than  $1\text{ m}\Omega$  is required. All AUIR324x gate drivers are designed in a way that they can drive multiple MOSFETs in parallel, and enable parallel MOSFETs which allow scaling up or down the capability of switching current.

**AUIR3241STR** and **AUIR3242STR** are perfect for applications that require very low on state operation current to support key-off loads. We call this feature **idle mode**. Idle mode results in gate driver operation current that is as less than  $50\text{ }\mu\text{A}$ . Idle mode is unique on the market for gate drivers in this power class and plays a big role in increasing efficiency in hybrid electric vehicles (key off mode). AUIR3241STR and AUIR3242STR differ in the active logic level of the input pin. AUIR3242STR has a high level active input which supports direct drive from the battery while the AUIR3241STR makes relay replacement very easy. The AUIR3241STR's low level active switch can be driven directly from the battery voltage. Both devices support LV124 E11 start impulses severe test case (cold cranking) with operations down to  $3\text{ V}$ .

The **AUIR3240S** is gate driver tailored for Q-diode start/stop applications. In addition it also offers a very low quiescent current in On and Off state plus an interface for analog temperature monitoring.

This family has an gate undervoltage protection included and allow an analog monitoring of the gate current.

### Key features

- > Idle mode ( $< 50\text{ }\mu\text{A}$  quiescent current)
- > Wide operating voltage of  $3\text{--}36\text{ V}$
- > Boost converter with integrated diode
- > Support of back to back and Q-diode configurations
- > Undervoltage lockout with diagnostics
- > Loss of ground protection
- > Gate current monitoring via frequency
- > Overtemperature protection via NTC (only AUIR3240)

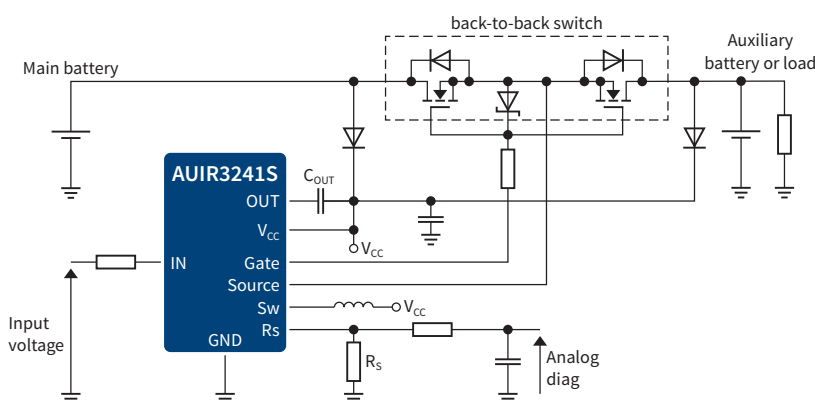
### Key benefits

- > Very low quiescent current during idle mode
- > Max. voltage rating up to  $65\text{ V}$
- > Small footprint (8-pin package)
- > Fast design in with a variety of demoboard

### Key applications

- > Battery switch (in Q-diode or back to back configuration)
- > Start stop board net stabilization
- >  $12\text{ V}$  safety switch
- > DC-DC safety output switch
- > High-power loads  $> 30\text{ A}$

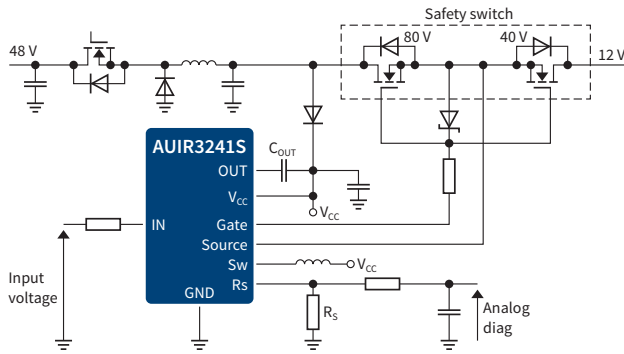
### AUIR3241S/AUIR3242S in back-to-back application



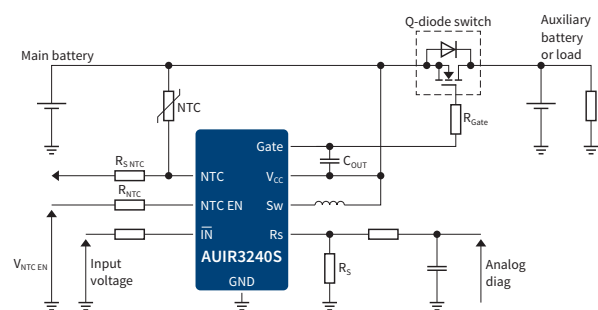
# AUIR324x

## Gate driver family for 12 V automotive power distribution

**AUIR3241STR/AUIR3242STR in safety switch application**



**AUIR3240S: Q-diode for start/stop**



### Product table

Feature	AUIR3240S	AUIR3241STR	AUIR3242STR
Package	DSO-8	DSO-8	DSO-8
Channels	1	1	1
High-side/Low-side	High-side	High-side	High-side
Input	Active low	Active high	Active low
Gate voltage supply and type	Boost converter w/diode	Boost converter w/diode	Boost converter w/diode
Gate current	±0.35 A	±0.35 A	±0.35 A
IC technology voltage	75 V	75 V	75 V
Operating voltage ( $V_{S-MAX}$ )	4–36 V	3–36 V	3–36 V
Qualification	AEC qualified	AEC qualified	AEC qualified
Low quiescent current (On State)	< ~50µA <sup>1)</sup>	< 50 µA	< 50 µA
Idle mode	Yes	Yes	Yes
Typical gate voltage supply	12.5 V	12.5 V	12.5 V
Protection	NTC interface for analog temperature measurement	No	No
	ESD protection	Yes	Yes
	Gate undervoltage protection	Yes	Yes
Diagnostics	Gate undervoltage lockout	Yes	Yes
	Analog gate current monitoring	Via frequency	Via frequency
Applications	Q-diode	Q-diode, B2B battery safety switch, DC/DC output safety switch, high-power loads	Q-diode, B2B battery safety switch, DC/DC output safety switch, high-power loads

1) Please refer to the datasheet

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