

Product brief

AUIR32xx

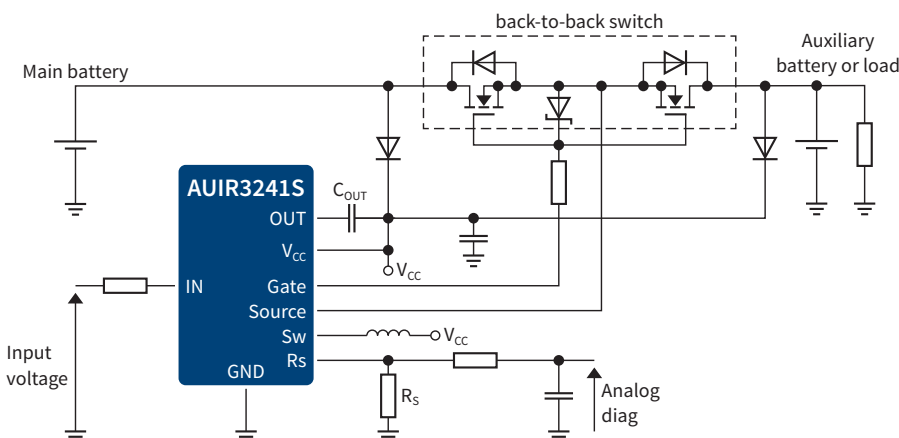
Gate driver family for 12 V automotive power distribution

The Infineon **AUIR32xx** gate driver family provides a solution for high-current ($> 40\text{ A}$) load switching applications where conduction resistance of less than $1\text{ m}\Omega$ is required. All AUIR32xx 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.

AUIR3241S and **AUIR3242S** 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. AUIR3241S and AUIR3242S differ in the active level of the input pin. AUIR3242S has a high level active input which supports direct drive from the battery while the AUIR3241S makes relay replacement very easy. The AUIR3241S's low level active switch can be driven directly from the battery voltage. Both devices support LV124 cold cranking worst case standards with operation down to 3 V .

The **AUIR3200S** is a general purpose gate driver for high-current applications including adjustable overtemperature detection and short-circuit protection to secure the load against damages. The device is optimized for loads that require reverse polarity protection. The device operates down to 6 V .

AUIR3241S/AUIR3242S in back-to-back application



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

Key benefits

- > Super low consumption during idle mode
- > Small footprint (8-pin package)
- > Fast design in with demo boards available
- > Low leakage current

Key applications

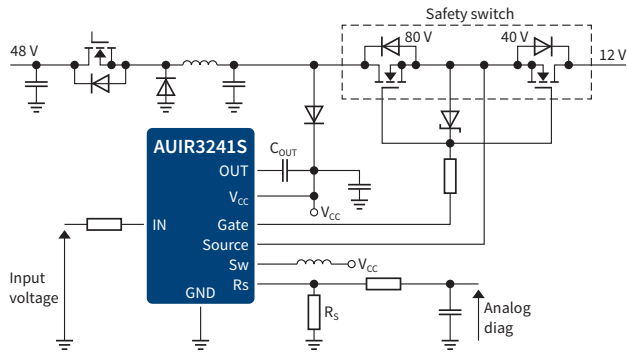
- > Battery switch (in Q-diode or back to back configuration)
- > Start stop board net stabilization
- > 12 V safety switch
- > DC-DC safety switch
- > High-power loads $> 40\text{ A}$



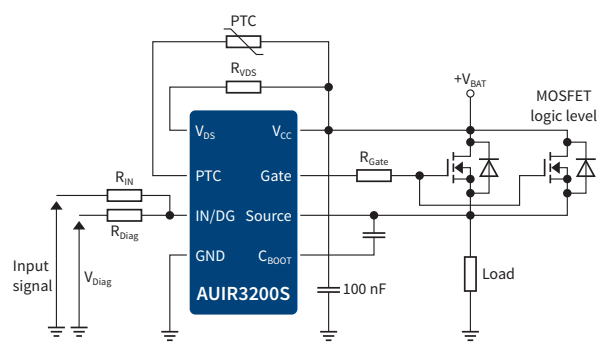
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AUIR3241S/AUIR3242S in safety switch application



AUIR3200S in relay replacement application



Product table

Feature	AUIR3200S	AUIR3241S	AUIR3242S ¹⁾	
Package	DSO-8	DSO-8	DSO-8	
Channels	1	1	1	
High-side/Low-side	High-side	High-side	High-side	
Input	Active high	Active high	Active low	
Gate voltage supply and type	bootstrap & charge pump	boost converter w/diode	boost converter w/diode	
PWM capability	Yes	No	No	
Gate current	±0.3 A	±0.35 A	±0.3 A	
IC technology voltage	75 V	75 V	75 V	
Operating voltage (V _{S-MAX})	6–36 V	3–36 V	3–36 V	
Qualification	AEC qualified	AEC qualified	AEC qualified	
On-state quiescent current	15 mA	< 50 µA	< 50 µA	
Idle mode	No	Yes	Yes	
Target MOSFET	Logic MOSFET	Standard MOSFET	Standard MOSFET	
Protection	Programmable short circuit (overcurrent) protection with V _{DS}	Yes	No	No
	Programmable overtemperature protection via NTC/PTC interface	Yes	No	No
	Reverse battery protection	Yes (turns on MOSFET)	No	No
	ESD protection	Yes	Yes	Yes
	Undervoltage lockout/protection	Yes	Yes	Yes
Diagnostics	Loss of ground protection	Yes	Yes	Yes
	Gate current monitoring	No	Via frequency	Via frequency
Applications	high-power loads (> 40 A), motor control	Q-diode, B2B li-battery switch, DC-DC, high-power loads	Q-diode, B2B li-battery switch, DC-DC, high-power loads	

1) Coming Q3/2018

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