

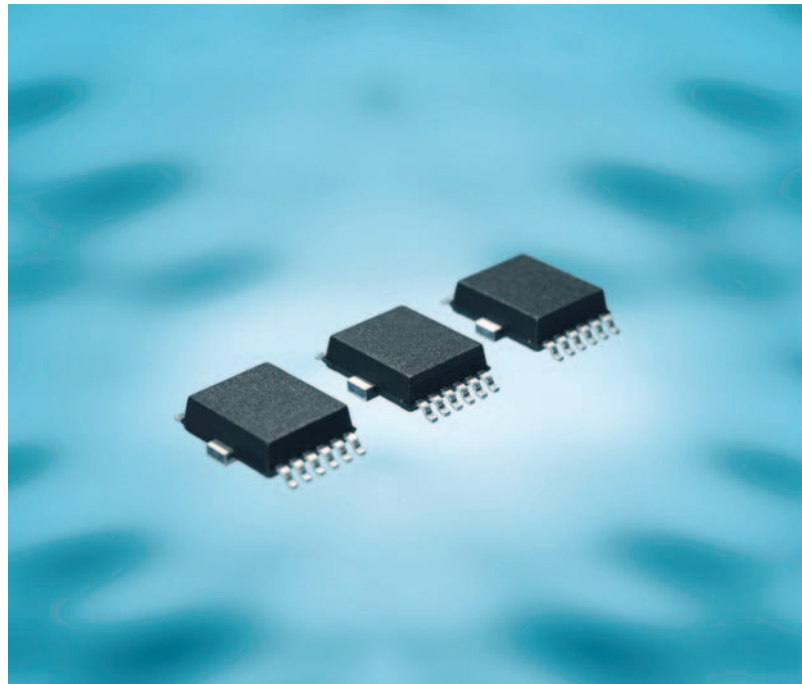
The BTS 5241L is a dual channel high-side power switch (two times 25 mΩ) in Power SO-12 package. It provides an Enhanced IntelliSense diagnosis signal and embedded protective functions including ReverSave.

ReverSave™ is a protection feature that causes the power transistor to switch on in case of reverse battery mode. As a result the power dissipation is reduced to almost forward condition.

Due to the integrated resistor in the ground path, reverse battery protection and over voltage protection is provided without external components.

There is one IntelliSense pin with enable function for each channel. It provides a sophisticated diagnostic feedback signal including current sense and open load diagnosis.

The power transistor is built by a N-channel vertical power MOSFET with charge pump. The inputs are ground referenced CMOS compatible. The device is monolithically integrated in Smart SIPMOS technology.



# BTS 5241L

## Basic Functions

- Very low standby current
- CMOS compatible input (3.3 V and 5 V)
- Improved electromagnetic compatibility (EMC)
- Stable behaviour at under voltage
- Logic ground independent from load ground
- Secure load turn-off while logic ground disconnected

## Protective Functions

- ReverSave™, channel opens in case of reverse polarity
- Reverse battery protection without external components
- Short circuit protection

- Over load protection
- Multi step current limitation
- Thermal shutdown with restart
- Thermal restart at reduced current limitation
- Over voltage protection without external resistor
- Loss of ground protection
- Electrostatic discharge protection (ESD)

## Diagnostic Functions

- Enhanced IntelliSense functionality for each channel
- Enable function for diagnosis pins (IS1, IS2)
- Proportional load current sense signal by current source

- High accuracy of current sense signal at wide load current range
- Open load detection in ON-state by load current sense
- Open load detection in OFF-state by voltage source
- Feedback on over temperature and current limitation in ON-state

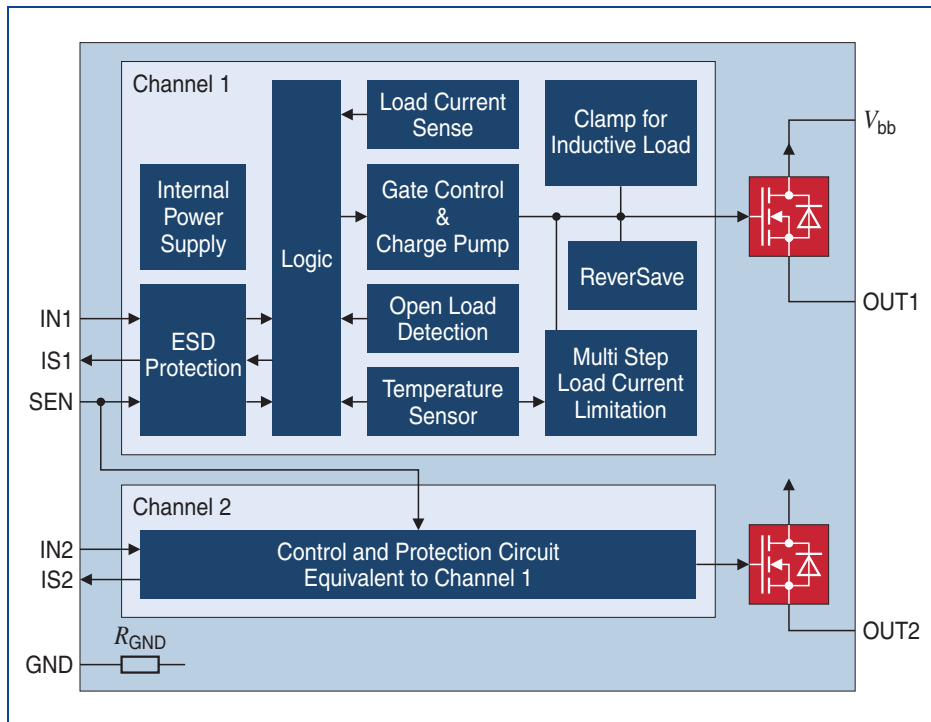
## Applications

- μC compatible high-side power switch with diagnostic feedback for 12 V grounded loads
- All types of resistive, inductive and capacitive loads
- Most suitable for loads with high inrush currents, so as lamps
- Replaces electromechanical relays, fuses and discrete circuits

Smart High-Side  
Power Switch  
Two Channels 25 mΩ



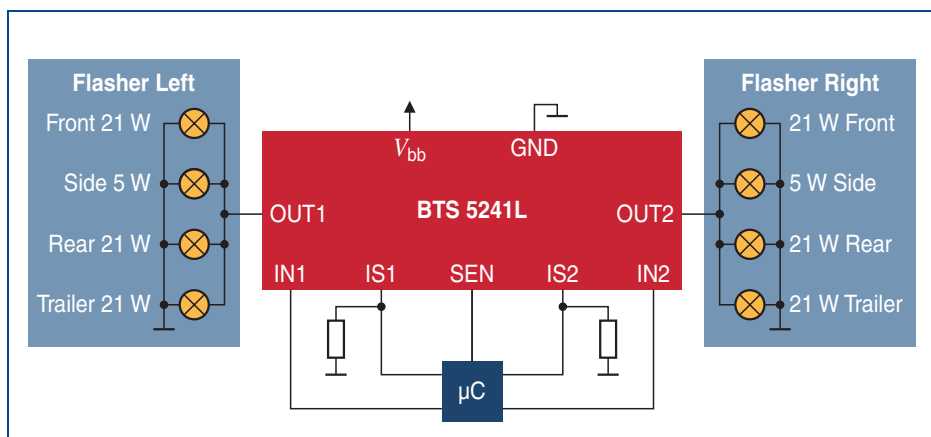
Block Diagram



Product Summary

Type	Sales Code	Package
BTS 5241L	Q67060-S6149	Power SO-12
Parameter	Symbol	Value
Operating Voltage	$V_{bb(on)}$	4.5 ... 28 V
Over Voltage Protection	$V_{bb(AZ,min)}$	41 V
ON-State Resistance	$R_{DS(ON,max)}@25^{\circ}C$	25 mΩ
Nominal Load Current	$I_{L(nom)}$	5.7 A
Current Limitation	$I_{L(lim)}$	40 A
	$I_{L(SCr)}$	9.5 A

Application Example



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