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# BTS409L1 E3062A

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High side power switch with integrated vertical power FET, providing embedded protection and diagnostic functions.

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### Summary of Features

- Overload protection
- Current limitation
- Short circuit protection
- Thermal shutdown
- Overvoltage protection (including load dump)
- Fast demagnetization of inductive loads
- Reverse battery protection1)
- Undervoltage and overvoltage shutdown with auto-restart and hysteresis
- Open drain diagnostic output
- Open load detection in ON-state
- CMOS compatible input
- Loss of ground and loss of Vbb protection
- Electrostatic discharge (ESD) protection

### Benefits

- High voltage capability
- Benchmark energy robustness
- High Load Dump Protection

[BTS409L1 Data Sheet](#)  
[EN](#)  
 01\_00 | pdf | 391 KB



### Potential Applications

- Truck & Agricultural
- Vehicle Solutions (24V)

## Parametrics

Parametrics	BTS409L1 E3062A
Channels	1.0
Diagnostics	Digital
Family	Classic PROFET
IL (Short Circuit Current)	4.0 A
Nominal Load Current per channel (All channels active)	2.3 A
Operating Temperature <b>min max</b>	-40.0 °C 150.0 °C
R <sub>DS(on)</sub> (@ T <sub>j</sub> = 150°C) <b>max</b>	400.0 mΩ
R <sub>DS(on)</sub> (@ T <sub>j</sub> = 25°C)	160.0 mΩ
Recommended Operating Voltage <b>min max</b>	5.0 V 34.0 V
t <sub>off</sub> (Turn OFF time) <b>max</b>	400.0 μs
t <sub>on</sub> (Turn ON time) <b>max</b>	400.0 μs

## Documents

[+ Expand all](#)

[+ Data Sheets](#)

[+ Material Content Sheet](#) [Info](#)

[+ Application Brochure](#)

[+ Product Selection Guide](#)

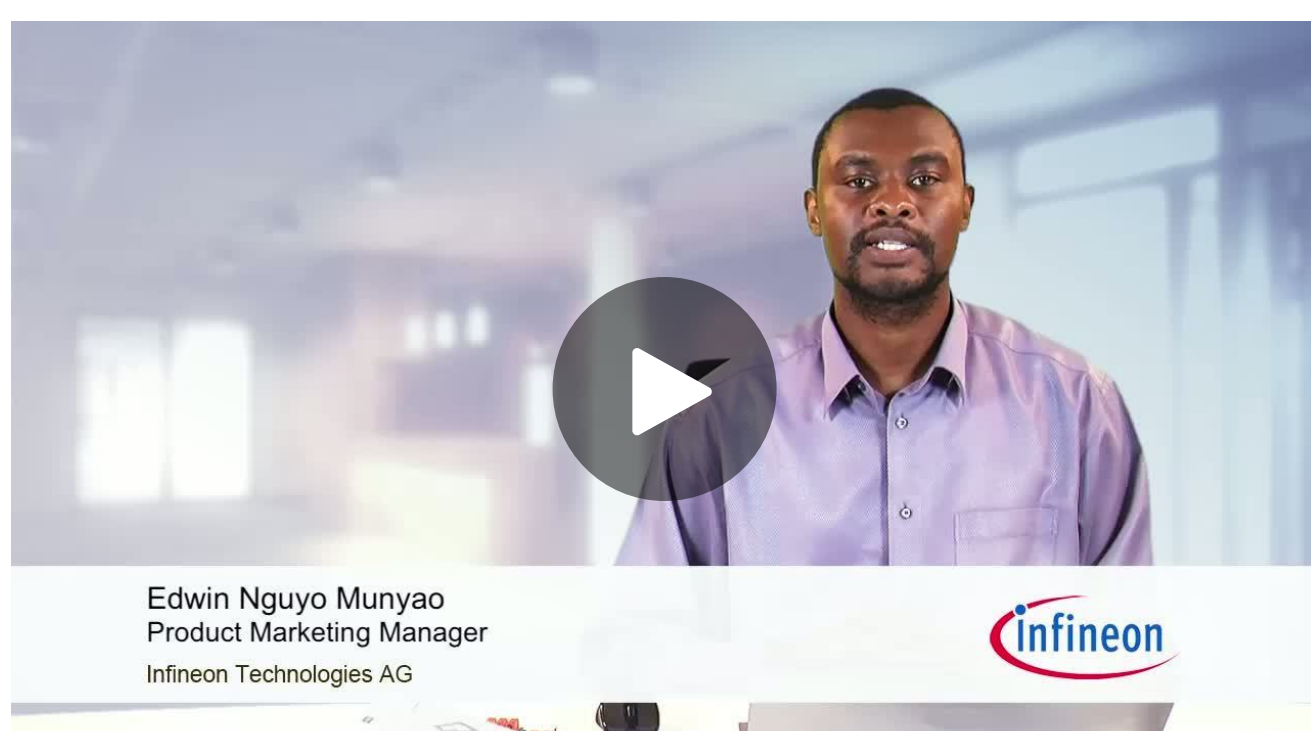
## Order

Sales Product Name	BTS409L1 E3062A
OPN	BTS409L1E3062ABUMA1
Product Status	active and preferred
Package name	<a href="#">PG-TO263-5</a>
Order online	<a href="#">Buy online</a>
Completely lead free	no
Halogen free	no
RoHS compliant	yes
Packing Size	1000
Packing Type	TAPE & REEL
Moisture Level	3
Moisture Packing	DRY

## Boards

[+ PCB Design Data](#)

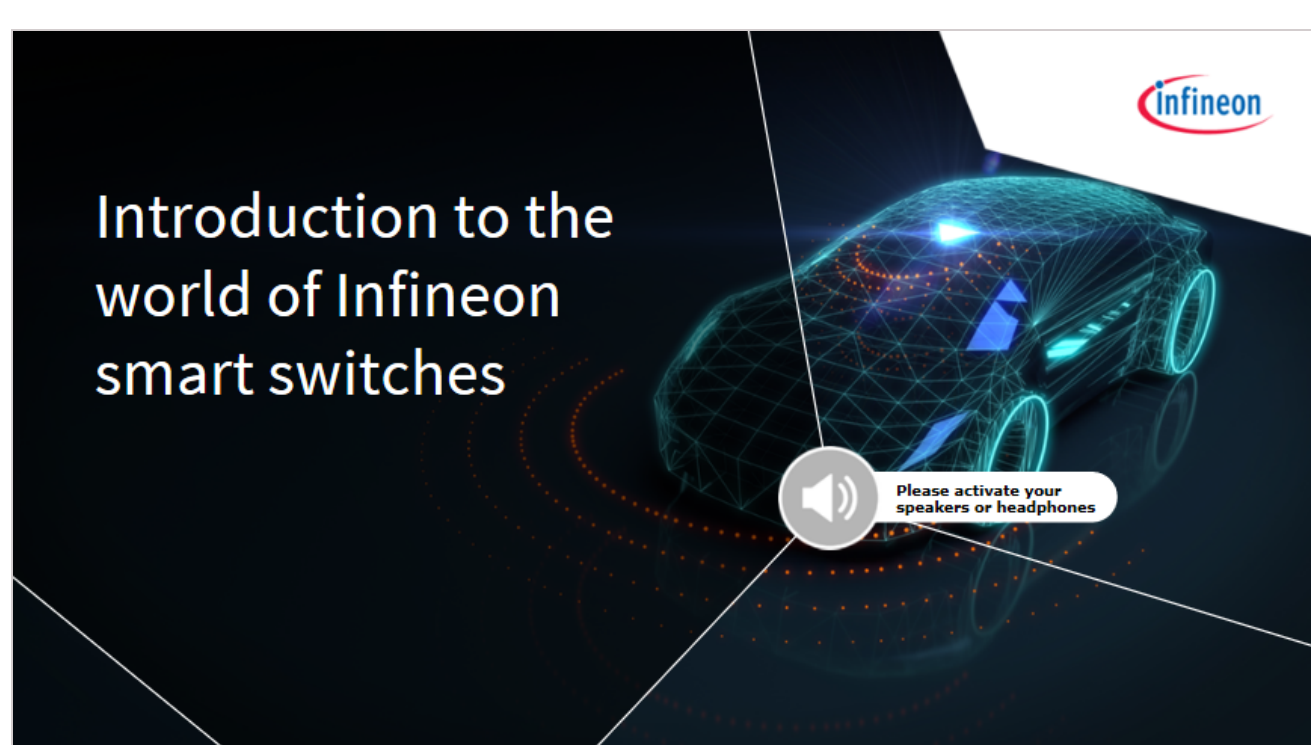
## Videos



### PROFET™+: Highest Design Flexibility in the Market

Infineon launches its next generation of discrete smart high-side switches – PROFET™+. The family is designed to drive light bulbs and LEDs in the harsh automotive environment but can also be used for industrial applications. The devices provide state-of-the-art diagnostics and protection features. Their high current sense accuracy (kILIS) is able to diagnose even the smallest loads, such as LEDs. The very high short-circuit robustness across the whole family sets the market benchmark. Infineon is the first company to specify the short-circuit robustness of a device in the datasheet. 100k cycles SC robustness (PROFET™+ 12V) is a factor 200 improvement towards today's smart high-side drivers in the market. Based on the identical footprint of its packages, maximum design flexibility is provided, allowing loads and devices to be changed without major modification of the board layout.

## Training



### Introduction to the world of Infineon smart switches

- Learn how smart switches are closely linked to the future of mobility
- Get acquainted with Infineon's solutions

[Watch eLearning](#)

## Packaging

[+ Package Data](#)

## Support

Search the FAQs! Enter your search terms...



Difference between BTS and ITS high side switches

BTS and ITS high side switches differ only in their temperature ranges. This is particularly critical in temperature-sensitive applications, such as automotive.

Can BTS5180 be used at 24V for an LED driver application?

BTS5180 has a nominal input voltage up to 28V. If the voltage will go higher, then move to BTT6100-2EKA or BTT6200-1EJA/BTT6200-4EKA.

What are the key features of ITS4075, ITS4040, ITS4090, ITS4130?

> Robust and reliable  
 > 2A industrial application current  
 > Precise current limit: +/-20%  
 > Low Rdson  
 > 2-4 channel/device at smallest footprint

What is the maximum switchable load inductance of BTS712N1? (Can EAS...)

The EAS formula mentioned in Page 10 of the datasheet cannot be easily solved for L. The value of EAS as 150mJ is valid only at 1.9A. Also, RL is set to 0Ω, therefore this would mean a division by 0 in th... **71000**

[+ Read more](#)

Example of requirements for high side switch design

Example of requirements for high side switch design: BTT6030 might have too high quiescent current. Because of the power dissipation, the...

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BTS5045-2EKA: What is the expected Maximum leakage current in the inp...

You will not have a real higher leakage current at 32V. The value for the BTT6030 as a 24V version of the same Profet designed in the same technology. The difference is that the parameters ar...

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