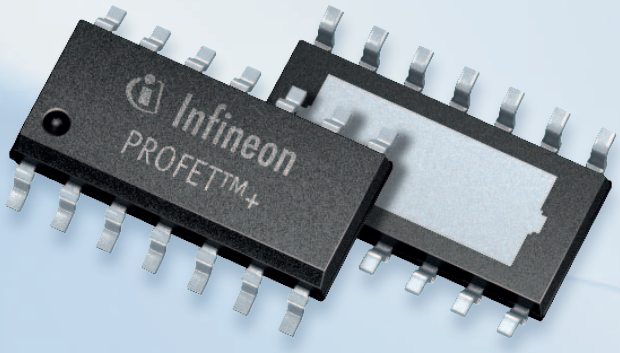
Product Brief



BTT6050-2EKA (Truck device) PROFET™+ 24V

Smart High-Side Power Switch for 2xP21W Lighting Load

The BTT6050-2EKA is the first device of the new PROFET™+ 24V family. It is a dual channel High-Side Power Switch (two times 50mΩ) in DSO-14 EP Package providing excellent diagnostics and protection features.

The device is specifically designed to drive light bulbs and LEDs in harsh automotive environments, for example, on trucks, farming machines or any other kind of 24V supply voltage applications.

Its benchmark short circuit robustness (min. 100k cycles) extends system lifetime and its high current sense accuracy enables it to diagnose the smallest loads such as LEDs.

Applications

- Target load: 2xP21W lighting load
- 24V grounded high-side loads
- µC compatible with diagnostic feedback
- Suitable for automotive and industrial applications
- All types of resistive, inductive and capacitive loads
- Suitable for loads with high inrush currents, such as bulbs
- Suitable for loads with low currents such as LEDs, valves and relays
- Replaces electromechanical relays, fuses and discrete circuits

Diagnostic Functions

- Proportional load current sense
- Open load detection in ON and OFF
- Over-Temperature sense
- Stable diagnostic signal during short circuit
- Enhanced kILIS accuracy with calibration

Basic Functions

- RoHS compliant & AEC qualified
- Op. Voltage range (5.0 ... 36.0V)
- Low stand-by current (< 0.5µA)
- ESD protection, optimized EMC
- PWM capability up to 200Hz
- 3.3V and 5V–compatible logic inputs
- Improved heat dissipation of DSO package

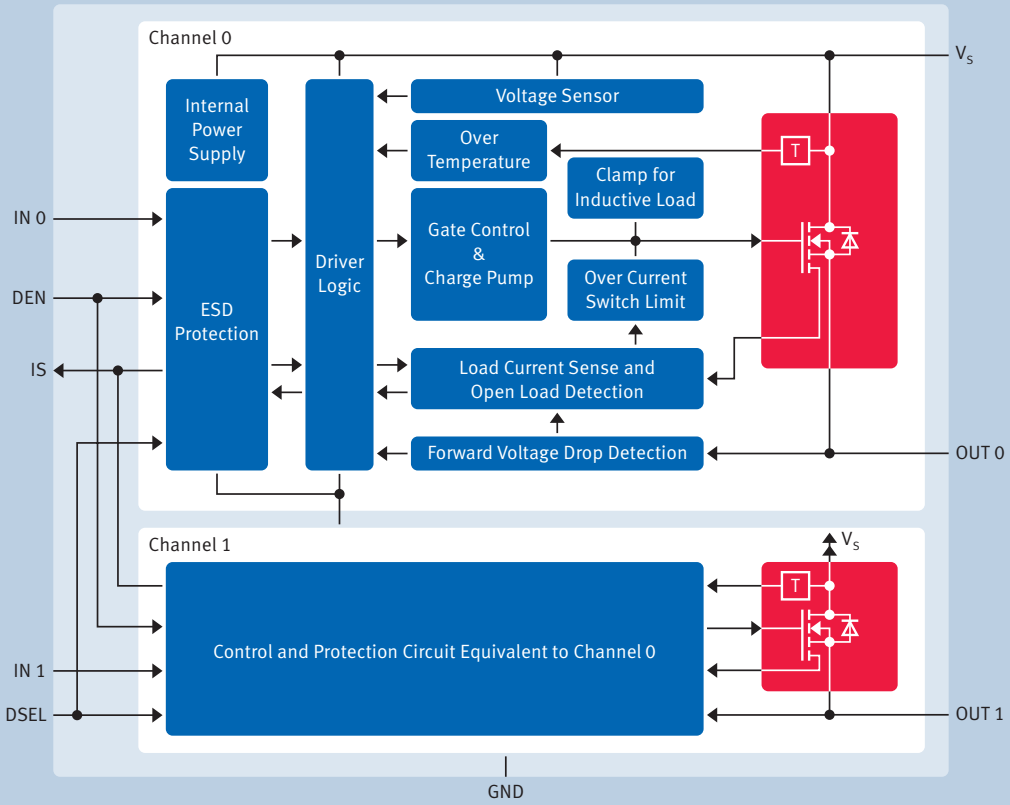
Protection Functions

- Load Dump: 65V
- Current limitation
- Thermal shutdown: Latch
- Enhanced short circuit operation: 100k cycles
- Loss of ground/battery protection
- Stable behavior at under voltage
- Overvoltage protection
- Voltage dependent current limitation

BTT6050-2EKA (Truck device) PROFET™+ 24V

Smart High-Side Power Switch for 2xP21W Lighting Load

Block Diagram



Product Summary

Type	Description	Package
BTT6050-2EKA for target load: 2xP21W lighting load	2x 50mΩ	PG-DSO-14-40 EP

Parameter	Symbol	Value
Operating voltage range	$V_{S(OP)}$	5.0 ... 36.0V
Maximum supply voltage	$V_{S(LD)}$	60V
Maximum ON state resistance at T_j=150°C per channel	$R_{DS(ON)}$	100mΩ
Nominal load current (on channel active)	$I_{L(NOM)1}$	4.5A
Nominal load current (both channels active)	$I_{L(NOM)2}$	3.0A
Typical current sense ratio	k_{ILIS}	1500
Minimum current limitation	$I_{LS(SC)}$	38A
Maximum standby current with load at T_j=25°C	$I_{S(OFF)}$	500nA
Load 2xP21W	12V 24V	BTS5030-2EKA (PROFET™+ 12V) BTT6050-2EKA (PROFET™+ 24V)

Published by
Infineon Technologies AG
85579 Neubiberg, Germany

Visit us:
www.infineon.com

Order Number: B127-H9730-X-X-7600
Date: 05 / 2012

ATTENTION PLEASE!
The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

INFORMATION
For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office (www.infineon.com).

WARNINGS
Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office. Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.