



## New Products Introduction

April 2018

High-side switch with embedded diagnosis and protection

BTS7004-1EPP

RF SP3T switch with enhanced ESD level

BGS13S4N9



## High-side switch with embedded diagnosis and protection

### BTS7004-1EPP

The new High Current PROFET™ family offers 12V high side switches in the range from 8mΩ down to 2mΩ with advanced protection and diagnosis features for heating and power distribution applications. The pin and function compatible scalable family concept enables benchmark design flexibility. The family gives very high power density on small footprint (TSDSO-14).

The BTS7004-1EPP is the lead type of the family and offers a typ. Rds(on) of 4mΩ.

#### Features

- > Typical Rds(on) of 4mΩ @ 25°C in small TSDSO-14 package
- > Nominal load current 15A (DC)
- > Capable for inrush currents up to 107A
- > Proportional load current sense with high accuracy (+/-5% calibrated)
- > Minimum operating voltage 3.1V (cranking)
- > Overcurrent protection (tripping) with Intelligent Latch
- > Absolute and dynamic temperature limitation with controlled reactivation
- > ReverSave™ for low power dissipation in Reverse Polarity
- > Overvoltage protection with external components
- > Open Load in ON and OFF state
- > Short circuit to ground and battery detection

#### Benefits

- > Pin and function compatibility over the whole family (2 – 8mΩ)
- > Switching of high current loads on small PCB area
- > Less effort for heatsinks due to low power losses
- > Very high short circuit robustness
- > Advanced load control for high system reliability
- > High design flexibility for cost optimized system
- > Highest efficiency and power density
- > Enables very compact and cost optimized system design
- > Reduces module and housing costs
- > Protection of load and wiring harness

#### NEW Value propositions

- > Low power losses reduce effort for cooling on module level
- > Smallest footprint reduce PCB for compact module design
- > High current sense accuracy enables high system protection for high reliability

#### Target applications

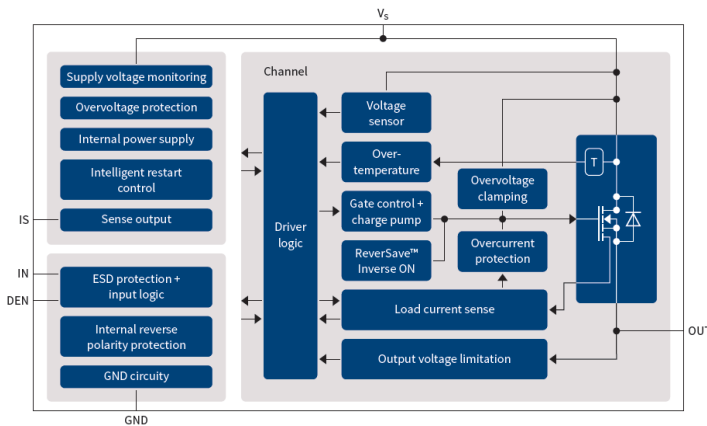
12V high side switch loads in automotive and industrial applications like

- > Seat heating
- > PTC heater
- > glow plug driver
- > urea heater
- > auxiliary power outlet,
- > switchable power feed
- > relay replacement

#### Qualification

Automotive according AECQ100

#### Block diagram



#### Competitive advantage

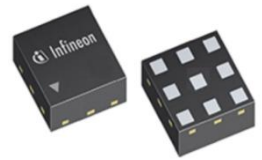
- > Highest power density on very small footprint enables compact and cost effective module design
- > State of the art load current sense accuracy for advanced load control and system protection

#### Products collaterals / online support

- > Product [page](#)
- > Application note [Sense Accuracy and Calibration](#)
- > Application note [Thermal behavior](#)

#### Product overview incl. data sheet link

| OPN                              | SP Number   | Package     |
|----------------------------------|-------------|-------------|
| <a href="#">BTS70041EPPXUMA1</a> | SP001403858 | PG-TSDSO 14 |



## RF SP3T switch with enhanced ESD level BGS13S4N9

The BGS13S4N9 RF MOS switch is specifically designed for cell phone and mobile applications. Any of the 3 ports can be used as termination of the diversity antenna handling up to 30 dBm. It offers outstanding ESD robustness of 1kV.

### Features

- > 3 high-linearity TRx paths with power handling capability of up to 30 dBm
- > Low insertion loss
- > Low harmonic generation
- > High port-to-port-isolation
- > 0.1 to 3.0 GHz coverage
- > No decoupling capacitors required if no DC applied on RF lines
- > On-chip control logic including ESD protection
- > General Purpose Input-Output (GPIO) Interface
- > Small form factor 1.1mm x 1.1mm x 0.375mm
- > No power supply blocking required
- > High EMI robustness
- > RoHS and WEEE compliant package

### Benefits

- > Very compact size
- > Low insertion loss levels
- > Designed to reduce antenna interfering signals
- > Ensure robustness at antenna termination port

### Target applications

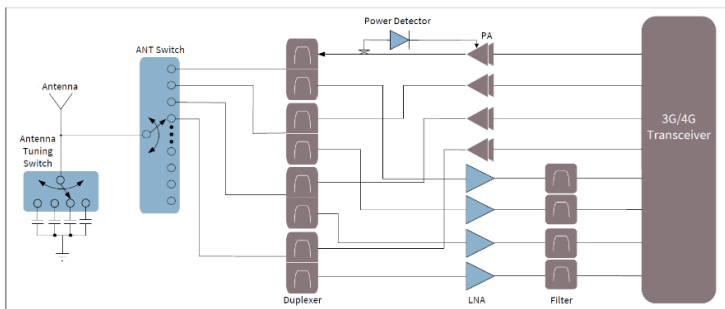
Wireless communication

- > Mobile devices (Edge / CDMA2000 / LTE / WCDMA)

### Complementary Products

- > Low Noise Amplifier [BGA7M1N6](#)
- > Low Noise Amplifier for LTE [BGA7L1N6](#)
- > low noise amplifier (LNA) MMIC for portable and mobile TV applications [BGA729N6](#)

### Block diagram



### Evaluation Board

[EVALBGS13S4N9TOBO1](#)

### Product collaterals / online support

- > Product [page](#)

### Product overview incl. data sheet link

| OPN                                 | SP Number   | Package   |
|-------------------------------------|-------------|-----------|
| <a href="#">BGS13S4N9E6327XTSA1</a> | SP001455358 | PG-TSNP-9 |
| <a href="#">EVALBGS13S4N9TOBO1</a>  | SP001465356 | N/A       |