

System Regulator IC for Car Audio



The TCB010FNG is a system regulator IC for car audio. A power supply for a microcontroller backup, a power supply for a CAN microcontroller backup, one channel of the output voltage fixed power supply, two channels of the output variable power supply, and two high side switches are built-in. Mass production has started from the end of 2016.

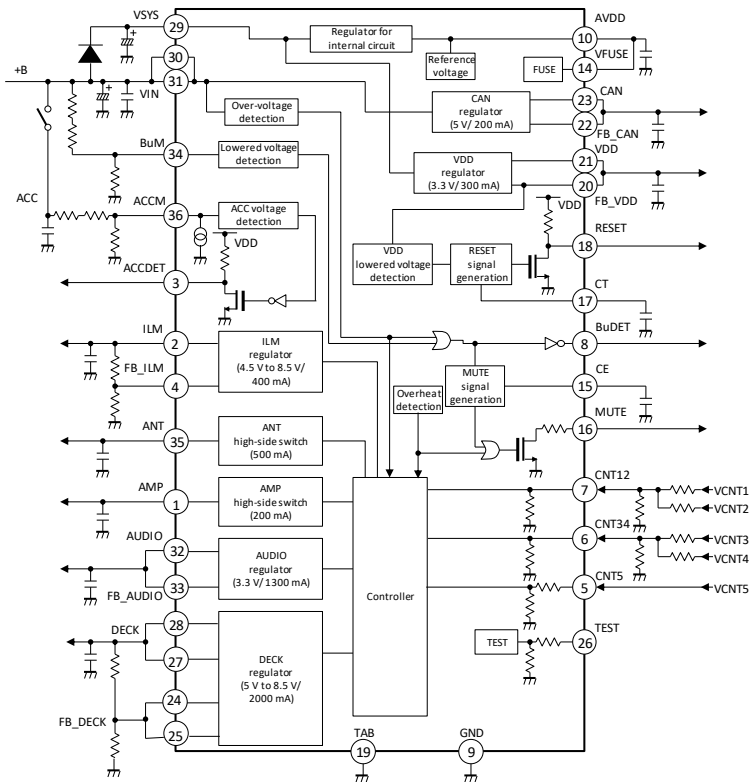
Features

- Built-in five power supply outputs and two high side switches: All power requirements of car audio systems can be covered.
- Unnecessary radiation: The IC is configured with series regulators, allowing users to design a system with no concerns for the impact of unnecessary radiation.
- Including various detection functions, such as voltage detections of the battery and accessory power supply, allows preventing malfunctions of power supply voltage.

Applications

- System regulator devices for car audio

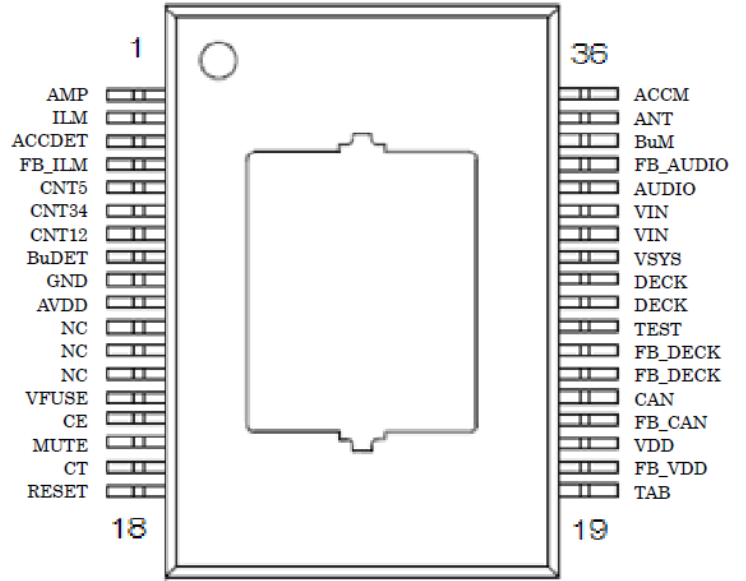
Block Diagram



Note: Some of the functional blocks, circuits, or constants in the block diagram may be omitted or simplified for explanatory purposes.

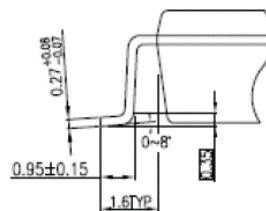
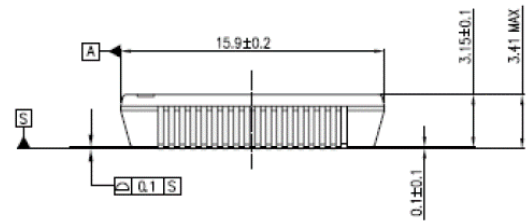
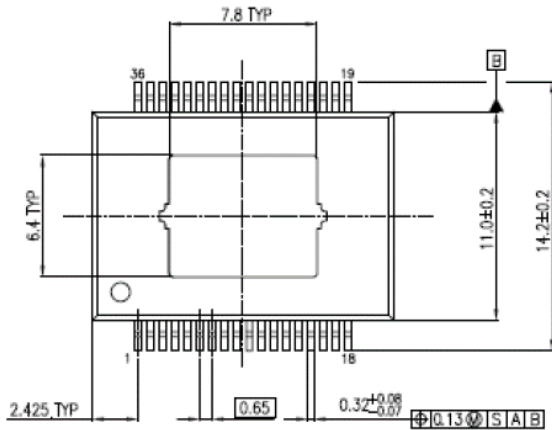
Product Specifications

Item	Specifications
Fixed power supply	3 ch (3.3V 300mA, 5V 200mA, 3.3V 1.3A)
variable power supply	2 ch (4.5V to 8.5V 400mA, 5V to 8.5V 2A)
Operating power supply voltage range	4.9V to 18V (by output)
Quiescent current	120μA (typ.)
Built-in power supply detection	ACC/Battery/VDD/Mute detection
Package	P-HSSOP36-1116-0.65-001
Temperature range	-40 to 85 °C



Pin assignment (Top View)

Package dimensions

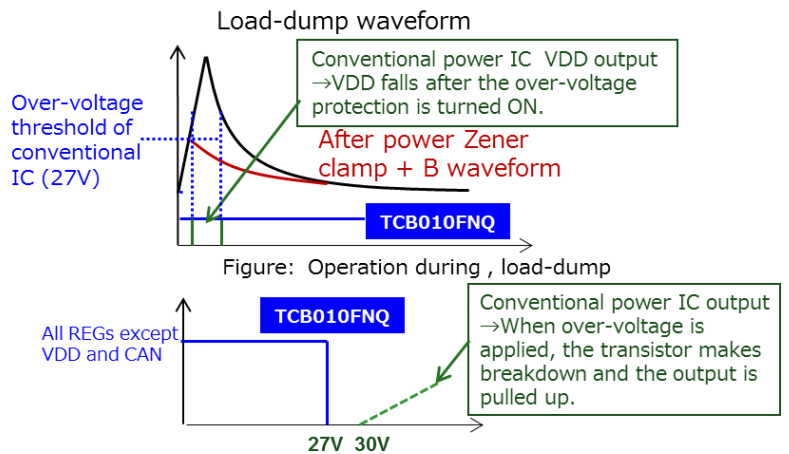


Technology and Characteristics

High voltage process

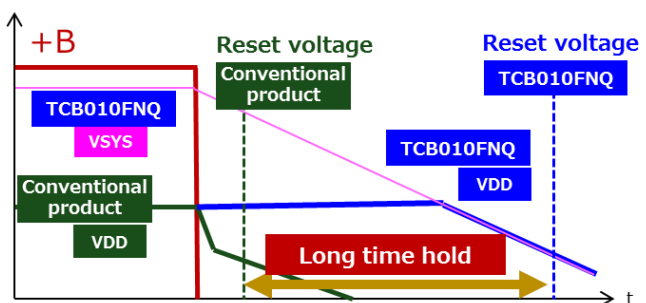
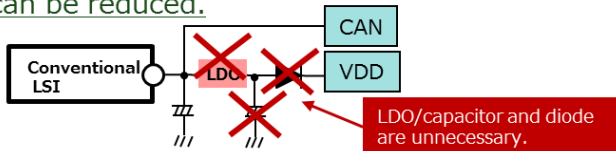
Compared with the conventional power IC, the high voltage process is adopted to this product. The shutdown operation of VDD which is generated when it could not clamp within 27 V with power Zener and others, is not performed.

→In conventional power IC, when the voltage more than 30V is applied, the output is pulled up, but it does not occur in the TCB010FNQ.



Long time hold of VDD voltage at momentary disconnection of power

By changing from the output-hold in conventional system power IC to the input-hold, the output-hold time becomes long at +B momentary disconnection. As the result, the external LDO is unnecessary and the capacity of hold capacitors can be reduced.



Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant information of this document and the instructions for the application that Product will be used with or for.