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AN5594

Application note

Main supply power up using L9966

Introduction

The L9966 is an automotive grade IC designed to be used as sensors interface. Up to 15 channels are available for analog sensing, resistance measurement and digital sensing (e.g. temperature, lambda, pressure, position sensors).

The L9966 allows replacing a number of discrete components and it gives the possibility to change the sensors across different applications without modifying the PCB hardware.

Target applications are Engine Control Units and Body/Chassis Modules.

1 Main supply

UBSW, the power supply of L9966, is connected to the main battery through an anti-reverse diode and a filter.

A TVS is also recommended in order to protect the IC against the ISO pulses.

UBSW is usually considered as a slow signal due to the capacitors filter that reduces the voltage transient speed (i.e. 10 µF + a few ceramic capacitors). Furthermore, the capacitors sustain the voltage during crank phase that could last a few ms. For these reasons big capacitors are requested; the evolution of UBSW is consequently slow, see Figure 1 and Figure 2.

Figure 1. Application circuit

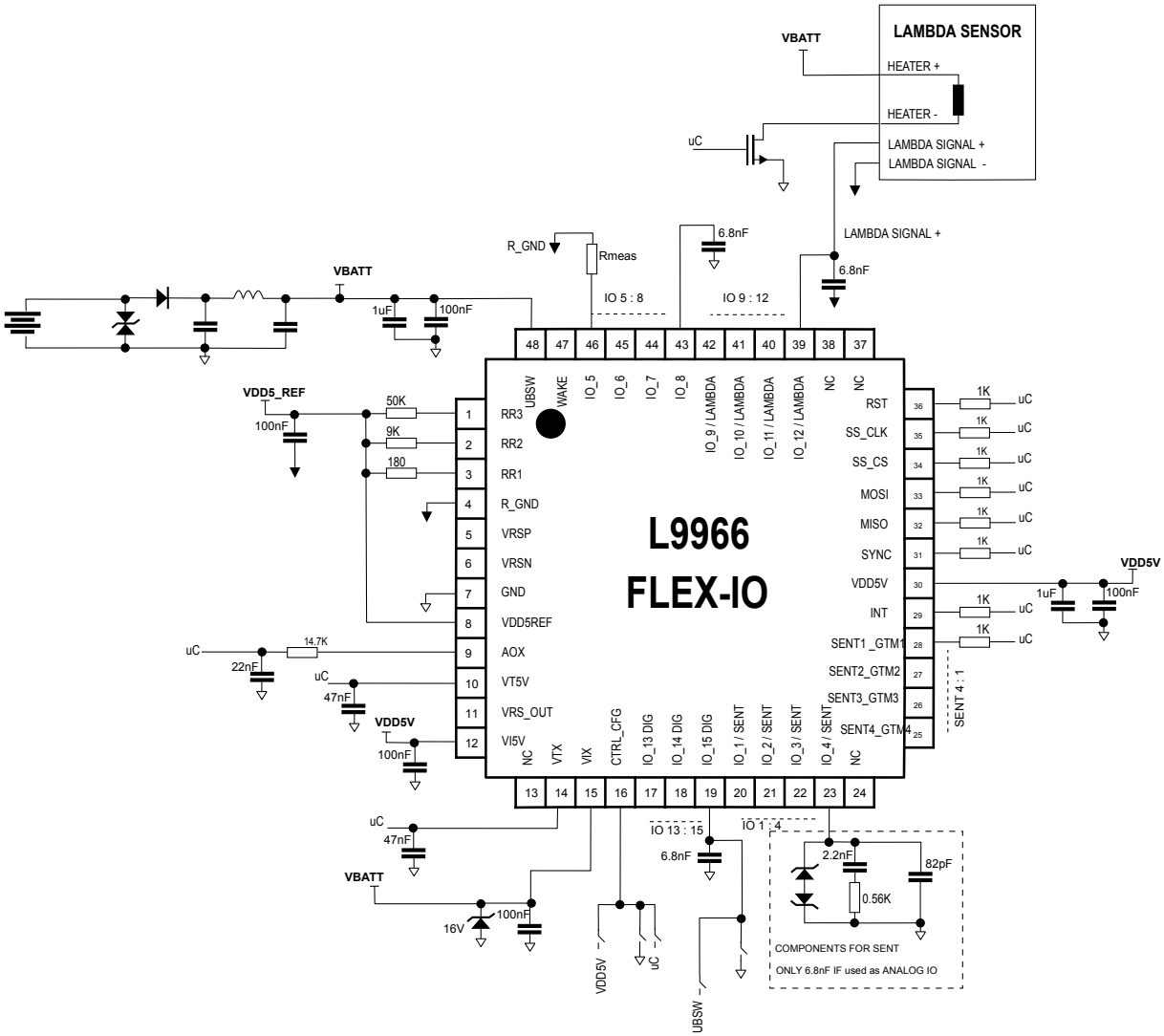
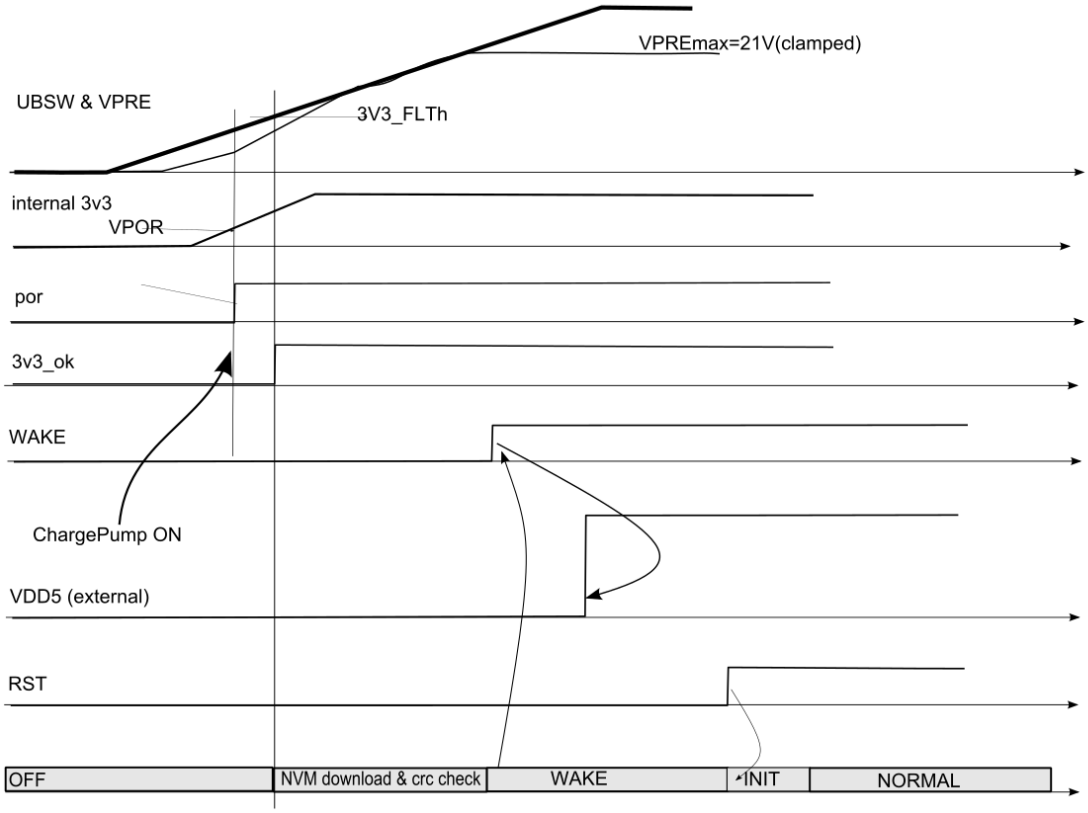


Figure 2. **L9966 signals at power up phase**



L9966 can sustain on the UBSW pin a maximum slew rate reported in the next table.

Table 1. **UBSW slew rate**

Parameter	Condition	Min	Typ	Max	Unit	Pin
UBSW slew rate	L99L996666 POWER UP	-	-	200	mV/µs	48

Revision history

Table 2. **Document revision history**

Date	Version	Changes
09-Dec-2020	1	Initial release.

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