



Integrated Precision Battery Sensor for Automotive System

Silicon Anomaly

ADuC7032-8L

This anomaly list describes the known bugs, anomalies, and workarounds for the ADuC7032-8L integrated precision battery sensor. The anomalies listed apply to all ADuC7032-8L packaged material branded as follows:

First Line ADuC7032
Second Line BSTZ96 8L

Analog Devices, Inc. is committed, through future silicon revisions, to continuously improving silicon functionality. Analog Devices tries to ensure that these future silicon revisions remain compatible with your present software/systems by implementing the recommended workarounds outlined here.

ADuC7032-8L FUNCTIONALITY ISSUES

Silicon Revision Identifier	Kernel Revision Identifier	Chip Marking	Silicon Status	Anomaly Sheet	No. of Reported Anomalies
8L	A60	ADuC7032 BSTZ96 8L	Release	Rev. A	3

ADuC7032-8L PERFORMANCE ISSUES

Silicon Revision Identifier	Kernel Revision Identifier	Chip Marking	Silicon Status	Anomaly Sheet	No. of Reported Anomalies
8L	A60	ADuC7032 BSTZ96 8L	Release	Rev. A	2

Rev. A

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ANOMALIES**ADuC7032-8L Functionality Issues****1. LIN Communication with VDD > 31 V [er001]:**

Background:	The ADuC7032-8L is specified for operation up to 40 V.
Issue:	If the LIN communication occurs with VDD > 31 V, the ADuC7032-8L resets.
Workaround:	Pending.
Related Issues:	None.

2. LIN Short-Circuit Recognition [er002]:

Background:	The ADuC7032-8L features LIN short-circuit protection. In the event of a short circuit on the LIN bus, an interrupt is generated. HVCFG1[2] allows users to enable/disable this interrupt. It is enabled by default.
Issue:	If the LIN is shorted to VDD with a resistance lower than 120 Ω , LIN can oscillate over temperature and supply and a short may not be detected.
Workaround:	Pending.
Related Issues:	None.

3. Power-On Reset [er003]:

Background:	The ADuC7032-8L integrates a power-on reset (POR) circuit holding the ASIC in reset for 20 ms typically after VDD reaches 3 V typically.
Issue:	Under particular conditions, the POR does not release the reset signal, that is, the ASIC remains in reset until a power cycle occurs. This POR issue only occurs under three specific and coincident power-on conditions: Fast ramp on VDD, nominally faster than 100 μ s from V_{init} to 12 V Initial value of VDD (V_{init}) \sim 1.2 V Voltage on REG_DVDD at time the VDD ramp is reapplied \sim 175 mV
Workaround:	A fast VDD ramp (that is, ramping from \sim 1.2 V to 12 V in $<$ 100 μ s) is required as one of the conditions to initiate the reported POR issue. Analog Devices recommends careful selection of external power supply decoupling components to ensure that the VDD supply ramp rate can always be guaranteed to be $>$ 100 μ s under all VBAT power-on conditions. Specifically, in modules that already incorporate a series resistor and decoupling capacitor to ground on the VDD line between the reverse protection diode and the VDD pin (see Figure 1), choose the series resistor/decoupling capacitor combination to give an RC time constant of at least 100 μ s, such as 10 Ω and 10 μ F.

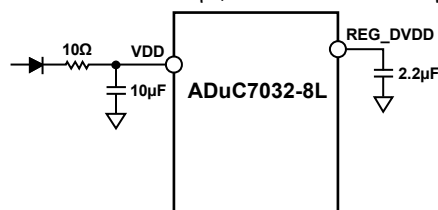


Figure 1.

07055-002

Related Issues: None.

ANOMALIES**ADuC7032-8L Performance Issues****1. ESD [pr001]:**

Background:	The ADuC7032-8L is intended to be classified for HBM ESD rating of 2 kV and FICDM ESD rating of 500 V.
Issue:	For silicon branded 8L, HBM ESD is specified to 800 V and FICDM ESD is specified to 400 V and 750 V for the corner pins.
Workaround:	Pending.
Related Issues:	None.

2. WU Pin Latch-Up [pr002]:

Background:	The latch-up condition on the WU pin should follow the AECQ100 specification and should be able to sink up to -100 mA at 125°C.
Issue:	The WU pin fails the AECQ100 specification.
Workaround:	It is recommended to use a protection diode such as BAS52, as shown in Figure 2, to avoid destructive damage to the part.

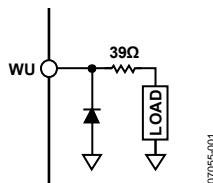


Figure 2. Protection Diode on WU Pin

Related Issues:	None.
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SECTION 1. ADuC7032-8L FUNCTIONALITY ISSUES

Reference Number	Description	Status
er001	LIN communication with VDD > 31 V	Open
er002	LIN short-circuit recognition	Open
er003	Power-on reset	Open

SECTION 2. ADuC7032-8L PERFORMANCE ISSUES

Reference Number	Description	Status
pr001	ESD	Open
pr002	WU pin latch-up	Open