ON Semiconductor

PRODUCT BULLETIN # 16916

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Issue Date: 05-Oct-2012

TITLE: NCV7420 Datasheet Update

PROPOSED FIRST SHIP DATE: 05-Jan-2013 or sooner upon customer approval

AFFECTED CHANGE CATEGORY(S): Datasheet Only

FOR ANY QUESTIONS CONCERNING THIS NOTIFICATION:
Contact your local ON Semiconductor sales office or Roman Buzas <roman.buzas@onsemi.com>

NOTIFICATION TYPE:
ON Semiconductor considers this change approved unless specific conditions of acceptance are provided in writing. To do so, contact <quality@onsemi.com>.

DESCRIPTION AND PURPOSE:

Several corrections are made with the publication of the 7th revision of the NCV7420 datasheet:

- New Figures added:
  - Figure 6: Operating modes transitions example
  - Figure 7, 8, 15, 16: VCC Regulator Load Transient Response (Typical values)
  - Figure 9, 10, 17, 18: VCC Regulator Line Transient Response (Typical values)
  - Figure 11, 19: VCC Regulator Dropout Voltage vs. Temperature (Typical values)
  - Figure 12, 20: VCC Regulator Output Voltage vs. Output current (Typical values)
  - Figure 13, 21: VCC Regulator Ground Current vs. Output current (Typical values)
  - Figure 14, 22: VCC Regulator Output Voltage vs. Temperature (Typical values)
- Additional Info added:
  - Capacitance on pin LIN (CLIN) added
  - Over-current limitation (Iout_lim) typical value added
  - VCC regulator Line regulation specified - Typical values, not tested in production
  - VCC regulator Load regulation specified - Typical values, not tested in production
  - VCC regulator Dropout voltage specified - Typical values, not tested in production
  - LIN transmitter timing parameters specified (table and figure) – Guaranteed by design. Not tested.
- Table 1 and Table 2 – Note 1 added to VBB “Nominal battery operating voltage” to specify the LIN behavior below 5V on battery line is in accordance with SAE J2602 specification.
- Parameters PORH_Vcc and PORL_Vcc merged and renamed to VCC_UV_th – *VCC undervoltage threshold* in order to better represent the corresponding device function. Limits unchanged.
- Parameter PORL_Vbb (Vbb POR low level comparator) – Max. level added.
- Operation State transitions conditions specified. Figure 3. State diagram refined.
- Table 8 and 13: Parameter “LIN recessive output voltage” substituted by “LIN voltage drop at serial diode”
- RxD output driver details added. In Standby mode, RxD High state is achieved by internal pull-up resistor to VCC.
- VCC external decoupling capacitor requirements relaxed – Originally required: Capacitor of min. 80 nF (ESR < 10 mOhm) in parallel with a capacitor of min. 8 uF (ESR < 1 Ohm). New requirement: Only one ceramic capacitor of min. 8uF (ESR < 1 Ohm).

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- 3 parametric changes:
  - PORH_VBB renamed to Vbb_UV_th in order to better represent the corresponding device function. Min. limit (3 V) and typical value (4.2 V) added, Note 18 and 24 added. The Max. limit changed from 4.5V to 4.75V based on production data
  - The IBB_ON (Normal mode supply current) Max. limit changed from 1 mA to 1.6 mA, based on the device EMC/ESD improvements and fab transfer.
  - The IBB_STB (Stand-by mode supply current) Max. limit change from 60 µA to 70 µA, based on the device EMC/ESD improvements and fab transfer.

List of affected General Parts:

NCV7420D23G
NCV7420D23R2G
NCV7420D24G
NCV7420D24R2G
NCV7420D25G
NCV7420D25R2G
NCV7420D26G
NCV7420D26R2G