ON Semiconductor®

# Final Product/Process Change Notification

Document #:FPCN22879X
Issue Date:28 Nov 2019

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|---|---|
| **Title of Change:** | NCS2632DTBR2G design change to reduce power on reset (POReset) level. |
| **Proposed First Ship date:** | 06 Mar 2020 or earlier if approved by customer |
| **Contact Information:** | Contact your local ON Semiconductor Sales Office or <Jeremy.Becker@onsemi.com> |
| **PCN Samples Contact:** | Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com>.<br>Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.<br>Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements. |
| **Additional Reliability Data:** | Contact your local ON Semiconductor Sales Office or <Vladislav.Hrachovec@onsemi.com> |
| **Type of Notification:** | This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change.<br>ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact PCN.Support@onsemi.com |
| **Marking of Parts/ Traceability of Change:** | Date code traceability will be maintained. Parts manufactured after WW40, 2019 will be assembled with the new die. |
| **Change Category:** | Design Change |
| **Change Sub-Category(s):** | Product specific change, Datasheet/Product Doc change |

**Sites Affected:**

| **ON Semiconductor Sites** | **External Foundry/Subcon Sites** |
|---|---|
| None | None |

**Description and Purpose:**

A design change was made to support customer requested reduction of power on reset (POReset) feature of the NCS2632DTBR2G. POReset is not specified in the datasheet, however before and after performance results are noted in the electrical characteristics summary section of this document.

In addition, this design change creates an increase in IDD shutdown current; the maximum specification will increase from 0.5uA to 25uA in order to account for this change. The datasheet will be revised to account for this difference, as shown here.

**ELECTRICAL CHARACTERISTICS**, $T_A$ = 25°C (unless otherwise noted)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Output Offset Voltage | $\|V_{OS}\|$ | $V_{DD}$ = 2.5 V to 5 V, Voltage follower – gain = 1 | | 100 | 400 | μV |
| High–Level Input Current (EN) | $\|I_{IH}\|$ | $V_{DD}$ = 5 V, $V_I$ = $V_{DD}$ | | | 100 | nA |
| Low–Level Input Current (EN) | $\|I_{IL}\|$ | $V_{DD}$ = 5 V, $V_I$ = 0 V | | | 100 | nA |
| Supply Current | $I_{DD}$ | $V_{DD}$ = 2.2 V, No load, EN = $V_{DD}$ | | 7 | 11 | mA |
| | | $V_{DD}$ = 5.5 V, No load, EN = $V_{DD}$ | | 8 | 11 | mA |
| | | Shutdown mode, $V_{DD}$ = 2.2 V to 5.5 V | | ~~80~~ 15 | ~~500~~ 25 | ~~nA~~ μA |

Finally, these electrical differences are noted in the electrical characteristics summary section, below.

| | **Before Change Description** | **After Change Description** |
|---|---|---|
| **Other Changes** | NCS2632 Die Revision A | NCS2632 Die Revision B |

There are no product marking changes as a result of this change.

**Reliability Data Summary:**

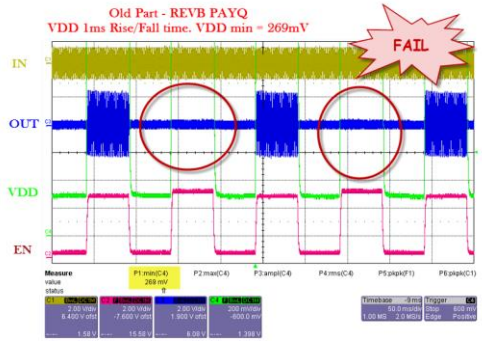
**QV DEVICE NAME : NCS2632DTBR2G**
**RMS : 18102**
**PACKAGE : TSSOP 14**

| Test | Specification | Condition | Interval | Results |
|---|---|---|---|---|
| HTOL | JESD22-A108 | Ta=125°C, 100% max rated V | 504 hrs<br>1008 hrs | 0/231<br>0/231 |
| HTSL | JESD22-A103 | Ta=150°C | 504 hrs<br>1008 hrs | 0/231<br>0/231 |
| PC | J-STD-020 JESD-A113 | MSL1 @ 260 °C | | 0/693 |
| TC | JESD22-A104 | Ta= -65°C to +150°C | 500 cyc | 0/231 |
| HAST | JESD22-A110 | 130°C, 18.8psig, 85% RH, bias | 96 hrs | 0/231 |
| UHAST | JESD22-A118 | 130°C, 18.8psig, 85% RH | 96 hrs | 0/231 |

**Electrical Characteristics Summary:**

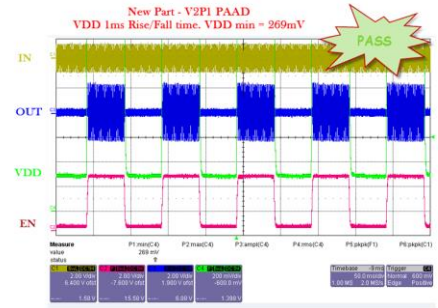
**POR Reset Before change:**

Old Part. Using Function Generator for Pulsing Unit On/OFF
VDD = 0.269 to 5V - 1ms R/F time – Unit Fails




**POR Reset After Change:**

New Part. Using Function Generator for Pulsing Unit On/OFF
VDD = 0.269 to 5V - 1ms R/F time – Unit Passes



**IDD Shutdown Before and After design change:**

| | IDD Shutdown Mode, Vdd=2.2V, No Load (uA) | | IDD Shutdown Mode, Vdd=5.5V, No Load (uA) | |
|---|---|---|---|---|
| **Ta** | **25C** | | **25C** | |
| | **Avg** | **Std Dev** | **Avg** | **Std Dev** |
| **Before** | -0.0332 | 0.0007 | 0.0498 | 0.0023 |
| **After** | 5.939 | 0.076 | 15.009 | 0.194 |

**List of Affected Parts:**

***Note:*** *Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the* ***PCN Customized Portal****.*

| Part Number | Qualification Vehicle |
|---|---|
| NCS2632DTBR2G | NCS2632DTBR2G |