nexperia.com

**Product Change Notification** **CN-202609012F**

**Issue date:** 21 Sep 2026

**Effective date:** 03 Jan 2027

Dear pcn@ebv.com,

Here's your personalized quality information concerning products our customers and partners purchased from Nexperia B.V.

For more details please contact your respective Nexperia B.V. CSR/AM.




## Release of SOT363 Package on STS (Strip-to-Strip) Backend Assembly Platform for non-auto ssMOS

**Change Category**

| | | | | |
|---|---|---|---|---|
| [ ] Wafer Fab Process | [X] Assembly Process | [ ] Product Marking | [ ] Test Location | [ ] Design |
| [ ] Wafer Fab Materials | [X] Assembly Materials | [ ] Mechanical Specification | [ ] Test Process | [ ] Errata |
| | | [ ] Packing/Shipping/Labeling | [ ] Test Equipment | [ ] Electrical spec./Test coverage |

[ ] Wafer Fab Location

[ ] Assembly Location

## Details of this change

The SOT363 package is released on STS (strip-to-strip) backend assembly platform in combination with the following changes:
- Manufacturing based on strip-to-strip concept utilizing same basic technologies
- Release of mold compound EME-G700KC and leadframe base material C19400 (Cu)
- Lead width with relaxed dimension of lower specification limit (but with no change to solder footprint)
- Package version designated as SOT363-3 to reflect updated lead width specification in package outline

CN-202609012F_Self-Qualification-Report_nonauto.pdf:
https://qcm.nexperia.com/Document/DOC-616604/CN-202609012F_Self-Qualification-Report_nonauto.pdf

### Why do we implement this change?

To enhance manufacturing flexibility, increase throughput, and support future production growth as part of Nexperia's long-term capacity strategy to enable future supply scaling.

### Identification of affected products

Product Identification does not change

Changed products can be identified by date code after implementation.

## Management summary

Release of SOT363 Package on STS (Strip-to-Strip) Backend Assembly Platform for non-auto ssMOS
SEM-AN-01 - Any change with impact on agreed upon technical contractual agreements (adaptation of datasheet)
SEM-PA-11 - Mold Compound
SEM-PA-02 - Leadframe base material
SEM-PA-03 - Leadframe dimensions
SEM-EQ-02 - Production equipment

## Product availability

### Production

Planned first shipment: 03 Jan 2027

Existing inventory will be shipped until depleted

### Sample information

Please see remarks for sample availability

## Impact

No impact to the product's functionality anticipated

### Data sheet revision

A new datasheet will be issued

### Disposition of old products

Dual Sourcing

### Feedback

Your acknowledgement of this change, conform JEDEC J-STD-046, is expected till 21 Oct 2026. Lack of acknowledgement of the PCN constitutes acceptance of the change.

## Additional information

View Change Notification Online

## Contact and support

For all Quality Notification content inquiries, please contact your local Nexperia B.V. Sales Support Team.

For specific questions on this notice or the products affected please contact our specialist directly: pcn@nexperia.com

In case of distribution, please contact you distribution partner.

## About Nexperia B.V.

We at Nexperia B.V. are the efficiency semiconductor company. We deliver over 90 billion products a year and as such service thousands of global customers, both directly and through our extensive network of channel partners. We are at the heart of billions of electronic devices in the Automotive, Mobile, Industrial, Consumer, Computing, and Communication Infrastructure segments.

You have received this email because you are a designated contact or subscribed to Nexperia B.V. Quality Notifications. Nexperia B.V. shall not be held liable if this Notification is not correctly distributed within your organization.

This message has been automatically distributed. Please do not reply.

If you would like to adjust your mailing preferences, please click here.

This document is issued exclusively by Nexperia B.V. (The Netherlands) and reflects the standards, processes and quality management systems governed by Nexperia B.V. Documentation issued by other legal entities should not be attributed to Nexperia B.V. without explicit confirmation.



| SalesItem_name | SalesItem_orderablePartNumber | SalesOrder_customerPartNumber | ProductType_name | BasicType_description | PackageOutlineVersion_description | PackageType_description | SalesItem_state | SalesItem_discontinuationType | SalesItem_availability | SalesItem_source | SalesItem_lastTimeBuyDate | SalesItem_lastTimeShipDate | SalesItem_customerSpecificIndicator | Replacement_SalesItem_orderablePartNumber | Replacement_SalesItem_name | Replacement_ProductType_name | Replacement_BasicType_description | BusinessLine_description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 934070155135 | NX138AKSF | | NX138AKS | NX138AKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070155135 | NX138AKSF | | NX138AKS | NX138AKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070155115 | NX138AKSX | | NX138AKS | NX138AKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070155115 | NX138AKSX | | NX138AKS | NX138AKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070156135 | NX138BKSF | | NX138BKS | NX138AKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070156135 | NX138BKSF | | NX138BKS | NX138AKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070156115 | NX138BKSX | | NX138BKS | NX138AKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070156115 | NX138BKSX | | NX138BKS | NX138AKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934667534115 | NX3008NBKS-CX | | NX3008NBKS-C | NX3008NBKS-C | SOT363-3 | SC-88 | RFS | | | | | | Yes | | | | | MOS Discretes |
| 934667534115 | NX3008NBKS-CX | | NX3008NBKS-C | NX3008NBKS-C | SOT363 | SC-88 | RFS | | | | | | Yes | | | | | MOS Discretes |
| 934066973115 | NX3020NAKS,115 | | NX3020NAKS | NX3020NAKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934066973115 | NX3020NAKS,115 | | NX3020NAKS | NX3020NAKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934667775115 | NX5020UNBKSX | | NX5020UNBKS | NX5020UNBKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934667775115 | NX5020UNBKSX | | NX5020UNBKS | NX5020UNBKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934662515115 | NX6008NBKSX | | NX6008NBKS | small signal MOSFET | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934662515115 | NX6008NBKSX | | NX6008NBKS | small signal MOSFET | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934660274125 | NX6020CAKSAX | | NX6020CAKS | NX6020CAKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934660274125 | NX6020CAKSAX | | NX6020CAKS | NX6020CAKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934660274115 | NX6020CAKSX | NX6020CAKSX | NX6020CAKS | NX6020CAKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934660274115 | NX6020CAKSX | NX6020CAKSX | NX6020CAKS | NX6020CAKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934066295115 | NX7002AKS,115 | NX7002AKS,115 | NX7002AKS | NX7002AKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934066295115 | NX7002AKS,115 | NX7002AKS,115 | NX7002AKS | NX7002AKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934070742115 | NX7002BKS/QN1X | NX7002BKS/QN1X | NX7002BKS/QN1 | NX7002BKS | SOT363-3 | SC-88 | RFS | | | | | | Yes | | | | | MOS Discretes |
| 934070742115 | NX7002BKS/QN1X | NX7002BKS/QN1X | NX7002BKS/QN1 | NX7002BKS | SOT363 | SC-88 | RFS | | | | | | Yes | | | | | MOS Discretes |
| 934068619115 | NX7002BKSX | NX7002BKSX | NX7002BKS | NX7002BKS | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934068619115 | NX7002BKSX | NX7002BKSX | NX7002BKS | NX7002BKS | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057726115 | PMGD280UN,115 | PMGD280UN,115 | PMGD280UN | PMGD280UN | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057726115 | PMGD280UN,115 | PMGD280UN,115 | PMGD280UN | PMGD280UN | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057731115 | PMGD290XN,115 | PMGD290XN,115 | PMGD290XN | PMGD290XN | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057731115 | PMGD290XN,115 | PMGD290XN,115 | PMGD290XN | PMGD290XN | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057709115 | PMGD780SN,115 | PMGD780SN,115 | PMGD780SN | 60V N CHANNEL TRENCHFET | SOT363-3 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |
| 934057709115 | PMGD780SN,115 | PMGD780SN,115 | PMGD780SN | 60V N CHANNEL TRENCHFET | SOT363 | SC-88 | RFS | | | | | | No | | | | | MOS Discretes |

# CN-202609012F

## Release of SOT363 Package on STS (Strip-to-Strip) Backend Assembly Platform for non-auto ssMOS

**Revision: 21 September 2026** **Self Qualification Report**

### Document Information

| Information | Content |
|---|---|
| **Author** | Shaojun Wu |
| **Supplier** | Nexperia |
| **Document Number** | CN-202609012F |

### Revision History

| Revision Date | Description |
|---|---|
| 21 September 2026 | Initial document |

### Contact Information

For more information, please contact: pcn@nexperia.com

nexperia

# Table of Contents

1. Subject ..... 3
2. Introduction ..... 3
3. Material and process details ..... 3
   3.1 Material ..... 4
   3.2 Leadframe dimension ..... 4
   3.3 Process technology and flow ..... 5
4. Reliability test program ..... 6
   4.1 Qualification strategy ..... 6
5. Constructional details of test vehicles ..... 6
6. Affected product types ..... 7
7. Qualification report ..... 8
8. Electrical and thermal performance ..... 14
   8.1 Electrical performance ..... 14
   8.2 Thermal performance ..... 14
9. Comparison of visual appearance ..... 14
10. Traceability ..... 14
11. Conclusion ..... 14
12. Legal Disclaimer ..... 14


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

# 1. Subject

This Self Qualification Report gives background information about the qualification for the release of SOT363 package on STS (strip-to-strip) backend assembly platform. It refers to Nexperia CN-202609012F.

# 2. Introduction

As part of Nexperia's continuous improvement and long-term capacity strategy, we are releasing the SOT363 package on STS (strip-to-strip) backend assembly platform.

This initiative is not only intended to expand capacity but also to support a gradual transition of SOT363 package assembly from the existing BIM (reel-to-reel) platform to the STS platform. The introduction of STS technology will enhance manufacturing flexibility, increase throughput, and support future production growth using advanced backend technologies.

The assembly and test location does not change and remains Nexperia's backend site ATSN (Seremban, Malaysia). With the transition from BIM to STS the same process flow and process technologies remain unchanged in place. For the processing in STS assembly platform, some materials are replaced to be STS-compatible as described below.

# 3. Material and process details

Change items affected by this PCN are outlined in Table 1, along with their associated ZVEI identification numbers, and detailed in the subsections.

Before this release, the SOT363 package was assembled only on the BIM platform. After the release, it may be assembled on either the STS or BIM platform.

Table 1: Changes announced by this PCN for release of SOT363 package on STS assembly platform

| | Before | After | | ZVEI |
|---|---|---|---|---|
| **Change Item** | **BIM (reel-to-reel)** | **BIM (reel-to-reel)** | **STS (strip-to-strip)** | **DeQuMa** |
| Mold compound | Hysol GR646(CHN)<br>Sumitomo EME-E500HK | Hysol GR646(CHN)<br>Sumitomo EME-E500HK | Sumitomo EME-G700KC | SEM-PA-11 |
| Leadframe base material | FeNi42 with Cu plating | FeNi42 with Cu plating | C19400 (Cu) | SEM-PA-02 |
| Leadframe dimensions | Lead width *bp* = 0.3 – 0.2 | Lead width *bp* = 0.3 – 0.15 | | SEM-PA-03 |
| Tech. contractual agreements | Package version SOT363 | Package version SOT363-3 | | SEM-AN-01 |
| Production equipment | Reel-to-reel | Reel-to-reel | Strip-to-strip | SEM-EQ-02 |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

## 3.1 Material

As part of the release of SOT363 package on STS, the bill of materials (BOM) is adapted to ensure compatibility with the STS assembly platform. The only material changes are the mold compound and the leadframe base material (see Table 1). The changed materials are from well-established suppliers for Nexperia, already in use at Nexperia in other packages, and are standard in semiconductor packaging.

The leadframe finish materials remain unchanged. Only the thickness specification for the internal bonding plating (Ag spot) is slightly revised, from 4.0 (-1.5/+1.5) µm to 4.0 (-1.5/+4.0) µm. The external leads are unchanged in both finish material (Sn plating) and plating thickness.

## 3.2 Leadframe dimension

The introduction of the changed leadframe base material requires a slight relaxation of the lower specification limit for the lead width *bp* (SOT363 package with 6 leads; see Figure 1). This lead width *bp* remains compliant with the JEITA SC-88 standard and is a typical dimension for this package in the semiconductor industry.

The solder footprint remains unchanged, so the SOT363 package stays fully compatible with existing PCB footprints.

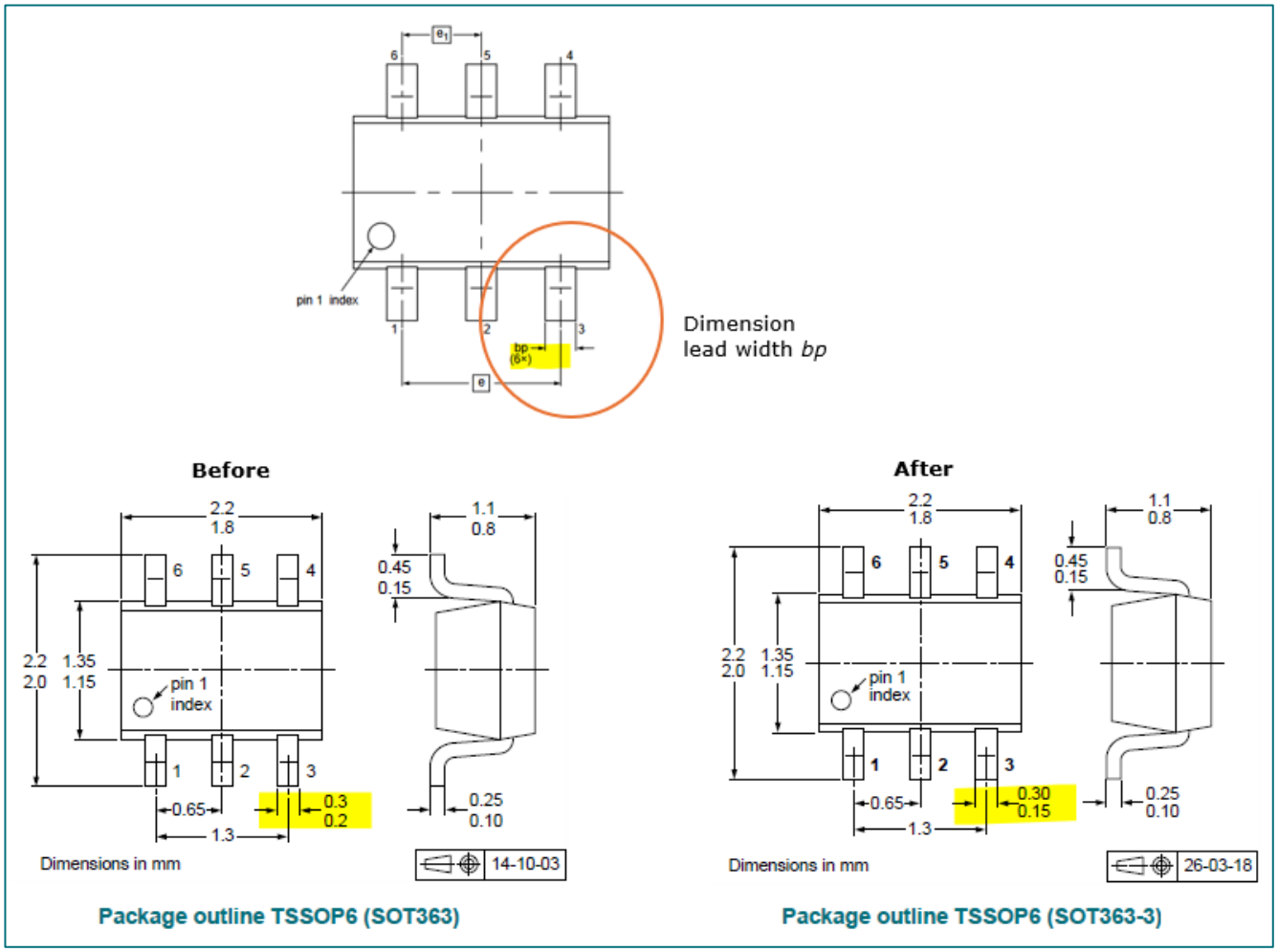



Figure 1: Lead width *bp* and package outline version for SOT363 (before) vs. SOT363-3 (after)


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

A revised data sheet will be released to include the updated lead width in its package outline. For clarity, the updated SOT363 package version will be designated as SOT363-3 after implementation of this change.

## 3.3 Process technology and flow

Processing in strip format on the STS assembly platform does not change the basic process technologies or the general process flow currently used on the BIM line. The existing quality standards and control plan remain unchanged.

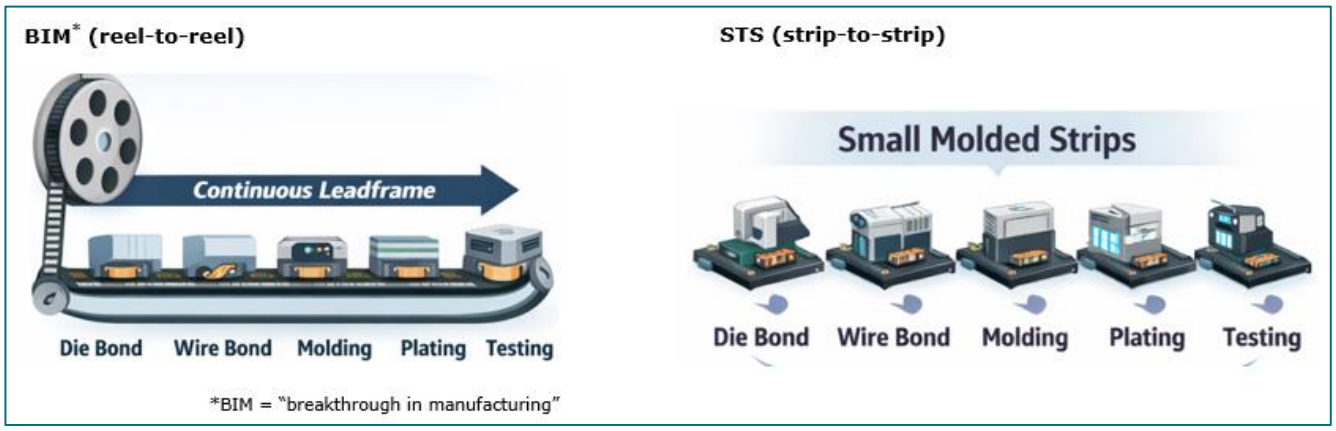



Figure 2: Simplified schematic of BIM (reel-to-reel) vs. STS (strip-to-strip) assembly concept

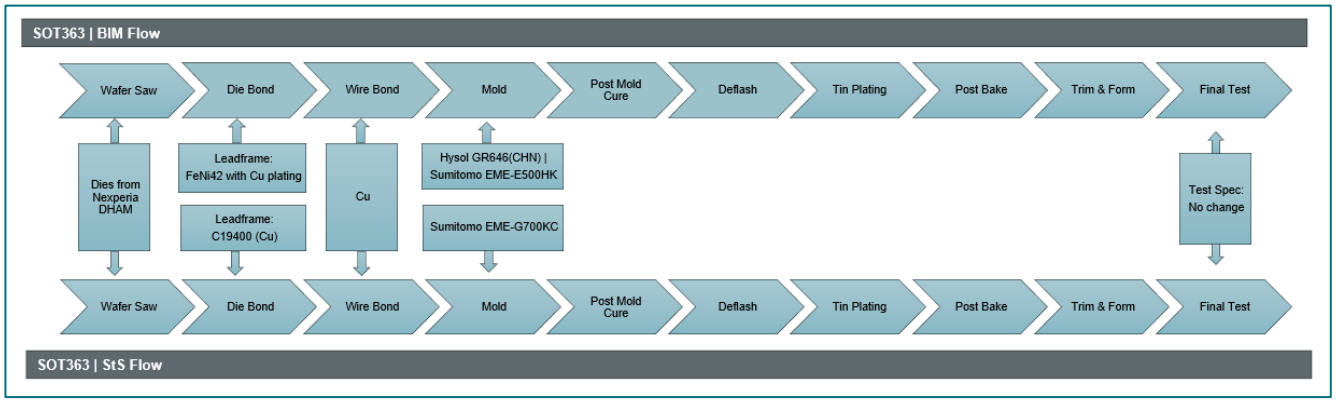



Figure 3: Process flow comparison for assembly platform of BIM (reel-to-reel) vs. STS (strip-to-strip)

No changes other than those described above are introduced. In particular, the frontend wafer processing and dies remain unchanged. Therefore, there is no impact on product specifications or performance.


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

# 4. Reliability test program

In line with Nexperia General Quality Specification, the product types to be changed have been combined to generic leader type families due to their structural similarity. To validate the assembly quality and reliability performance an extensive qualification program has been performed.

## 4.1 Qualification strategy

The qualification plan had been developed based on FMEA risk assessment. Potential failures have been identified and addressed in qualification. Five leader types have been selected based on structural similarity to represent the affected product types (see Table 2 for details).

# 5. Constructional details of test vehicles

The representative leader types for the qualification of the affected product types in this PCN are presented in Table 2.

Table 2: Leader types used for qualification

| | | **Material used for qualification** | |
|---|---|---|---|
| **Product** | **Package** | Mold compound | Leadframe |
| PMGD175XNE | SOT363-3 | EME-G700KC | C19400 |
| 2N7002HS | SOT363-3 | EME-G700KC | C19400 |
| PMGD290UCEA | SOT363-3 | EME-G700KC | C19400 |
| BSS84AKS | SOT363-3 | EME-G700KC | C19400 |
| PMGD290XN | SOT363-3 | EME-G700KC | C19400 |
| BAS16VY | SOT363-3 | EME-G700KC | C19400 |
| BAS40XY | SOT363-3 | EME-G700KC | C19400 |
| PMBT2227AYS-Q | SOT363-3 | EME-G700KC | C19400 |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

## 6. Affected product types

The affected product types to be released with this PCN are listed below:

| Product | 12NC | Package Name | Type of change: release of SOT363 package on STS (strip-to-strip) backend assembly platform |
|---|---|---|---|
| | | | STS |
| NX7002BKS | 934068619115 | SOT363-3 | • |
| NX7002AKS | 934066295115 | SOT363-3 | • |
| NX138AKS | 934070155115 | SOT363-3 | • |
| NX138AKS | 934070155135 | SOT363-3 | • |
| NX138BKS | 934070156115 | SOT363-3 | • |
| NX138BKS | 934070156135 | SOT363-3 | • |
| PMGD280UN | 934057726115 | SOT363-3 | • |
| PMGD290XN | 934057731115 | SOT363-3 | • |
| NX6008NBKS | 934662515115 | SOT363-3 | • |
| PMGD780SN | 934057709115 | SOT363-3 | • |
| NX5020UNBKS | 934667775115 | SOT363-3 | • |
| NX138AKS/S350 | 934663641115 | SOT363-3 | • |
| NX7002BKS/QN1 | 934070742115 | SOT363-3 | • |
| NX7002BKS/S350 | 934663617115 | SOT363-3 | • |
| NX3020NAKS | 934066973115 | SOT363-3 | • |
| NX6020CAKS | 934660274115 | SOT363-3 | • |
| NX6020CAKS | 934660274125 | SOT363-3 | • |
| NX3008NBKS-C | 934667534115 | SOT363-3 | • |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

# 7. Qualification report

The qualification as reported in the summary below (Table 3) has been carried out to release all affected product types mentioned in this PCN.

Table 3: Qualification results according to Nexperia General Quality Specification.

Test Group A – Accelerated Environment Stress Tests

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| A1 | **PC** Pre-conditioning | JEDEC/IPC J-STD-020, JESD22-A-113, TEST before and after PC | acc. to MSL 1 | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | - see notes - | | 0 |
| | Notes: | All qualification parts prior to tests #A2alt $H^3TRB$, #A3 UHAST, #A4 TC/TCHT/TCDT, #A5 IOL/PTC and #C8 RSH. | | | | | |
| A2 | **HAST** Highly Accelerated Stress Test | JEDEC JESD22-A-110<br>$T_A$ = 130 °C, RH = 85 %, $V_R$ = see notes | 96 hours | N/A | N/A | N/A | N/A |
| | Notes: | Omitted in lieu of alternative test, see test #A2 alt ($H^3TRB$). | | | | | |
| A2 alt | **$H^3TRB$** High Humidity High Temperature Reverse Bias | JEDEC JESD22-A-101<br>$T_A$ = 85 °C, RH = 85 %, $V_R$ = see notes (80% rated $V_R$) | 1000 hours | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 77<br>77<br>77<br>77<br>77 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | $V_R$: PMGD175XNE = 24V, 2N7002HS = 48V, PMGD290UCEA = 16V, BSS84AKS = -40V, PMGD290XN = 16V | | | | | |
| A3 | **UHAST** Unbiased HAST | JEDEC JESD22-A-118<br>$T_A$ = 130 °C, RH = 85 % | 96 hours | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 77<br>77<br>77<br>77<br>77 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | - | | | | | |
| A3 alt | **AC** Autoclave | JEDEC JESD22-A-102<br>$T_A$ = 121 °C, RH = 100 %, p = 15 psig | 192 hours | N/A | N/A | N/A | N/A |
| | Notes: | Omitted in lieu of alternative test, see test #A3 (UHAST). | | | | | |
| A4 | **TC** Temperature Cycling | JEDEC JESD22-A-104 Appendix 6<br>$T_A$ = -65 °C to 150°C | 1000 cycles | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 77<br>77<br>77<br>77<br>77 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | - | | | | | |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| A4a | **TCHT** Temperature Cycling Hot Test | JEDEC JESD22-A-104 Appendix 6 | 1000 cycles | N/A | N/A | N/A | N/A |
| | Notes: | TCHT is required for MOSFET parts with internal bond wire sizes 5 mil diameter and less. Reported parts are not MOSFET parts. | | | | | |
| A4a alt | **TCDT** Delamination Test | JEDEC JESD22-A-104 Appendix 6, J-STD-035 | 1000 cycles | N/A | N/A | N/A | N/A |
| | Notes: | TCDT is required for MOSFET parts with internal bond wire sizes 5 mil diameter and less. Reported parts are not MOSFET parts. | | | | | |
| A5 | **IOL** Intermittent Operational Life | MIL-STD-750-1 Method 1037<br>$T_A$ = 25 °C, $\Delta T_j \geq$ 100 °C,<br>$t_{on} = t_{off}$ = 2 min | 1000 hours | PMGD175XNE | 1 | 77 | 0 |
| | | | | 2N7002HS | 1 | 77 | 0 |
| | | | | PMGD290UCEA | 1 | 77 | 0 |
| | | | | BSS84AKS | 1 | 77 | 0 |
| | | | | PMGD290XN | 1 | 77 | 0 |
| | Notes: | - | | | | | |
| A5 alt | **PTC** Power and Temperature Cycle | JESD22-A-105 | 1000 hours | N/A | N/A | N/A | N/A |
| | Notes: | Omitted in lieu of alternative test, see test #A5 (IOL). | | | | | |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

## Test Group B – Accelerated Lifetime Simulation Tests

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| B1 | **HTRB** High Temperature Reverse Bias | MIL-STD-750-1 M1038 Condition A or M1039 Condition A<br>$T_j = T_{jmax} = 150°C$, $V_R$ = see notes (100% rated $V_R$) | 1000 hours | PMGD175XNE | 1 | 77 | 0 |
| | | | | 2N7002HS | 1 | 77 | 0 |
| | | | | PMGD290UCEA | 1 | 77 | 0 |
| | | | | BSS84AKS | 1 | 77 | 0 |
| | | | | PMGD290XN | 1 | 77 | 0 |
| | Notes: | $V_R$: PMGD175XNE = 24V, 2N7002HS = 60V, PMGD290UCEA = 16V, BSS84AKS = -40V, PMGD290XN = 20V | | | | | |
| B1a | **ACBV** AC blocking voltage | MIL-STD-750-1 M1040 Test condition A | 1000 hours | N/A | N/A | N/A | N/A |
| | Notes: | ACBV is required for Thyristors only. Reported parts are not Thyristors. | | | | | |
| B1b | **SSOP** Steady State Operational | MIL-STD-750-1 M1038 Condition B (Zeners) | 1000 hours | N/A | N/A | N/A | N/A |
| | Notes: | SSOP is required for Zener diodes only. Reported parts are not Zener diodes. | | | | | |
| B2 | **HTGB** High Temperature Gate Bias | JEDEC JESD22-A-108 | 1000 hours | N/A | N/A | N/A | N/A |
| | Notes: | HTGB, $V_R$: PMGD175XNE = 9.6V<br>HT(n)GB is required for MOS and IGBT parts only. Reported parts are not MOS or IGBT parts. | | | | | |

## Test Group C – Package Assembly Integrity Tests

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| C1 | **DPA** Destructive Physical Analysis | AEC-Q101-004 Section 4<br>2 devices each after $H^3TRB$ and TC | - | PMGD175XNE | 1 | 2+2 | 0 |
| | | | | 2N7002HS | 1 | 2+2 | 0 |
| | | | | PMGD290UCEA | 1 | 2+2 | 0 |
| | | | | BSS84AKS | 1 | 2+2 | 0 |
| | | | | PMGD290XN | 1 | 2+2 | 0 |
| | Notes: | - | | | | | |
| C2 | **PD** Physical Dimensions | JEDEC JESD22-B-100 | - | PMGD175XNE | 1 | 30 | 0 |
| | | | | PMGD290UCEA | 1 | 30 | 0 |
| | Notes: | - | | | | | |
| C3 | **WBP** Wire Bond Pull Strength | MIL-STD-750-2 Method 2037 / AEC-Q006 (Cu-wire) | - | PMGD175XNE | 1 | 5 | 0 |
| | | | | 2N7002HS | 1 | 5 | 0 |
| | | | | PMGD290UCEA | 1 | 5 | 0 |
| | | | | BSS84AKS | 1 | 5 | 0 |
| | | | | PMGD290XN | 1 | 5 | 0 |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| | Notes: | - | | | | | |
| C4 | **WBS** Wire Bond Shear Strength | AEC-Q101-003, JEDEC JESD22-B-116 | - | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 5<br>5<br>5<br>5<br>5 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | - | | | | | |
| C5 | **DS** Die Shear | MIL-STD-750-2 Method 2017 | - | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 5<br>5<br>5<br>5<br>5 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | - | | | | | |
| C6 | **TS** Terminal Strength | MIL-STD-750-2 Method 2036<br>evaluate lead integrity of through-hole leaded parts only | - | N/A | N/A | N/A | N/A |
| | Notes: | TS is required for leaded parts only. Reported parts are not leaded parts. | | | | | |
| C7 | **RTS** Resistance to Solvents | JEDEC JESD22-B-107<br>verify marking permanency | - | N/A | N/A | N/A | N/A |
| | Notes: | RTS is not required for laser etched parts or parts with no marking. Reported parts are laser etched parts. | | | | | |
| C8 | **RSH** Resistance to Solder Heat | JEDEC JESD22-A-111<br>260 °C ± 5 °C | 10 s | BAS16VY<br>BAS40XY<br>PMBT2227AYS-Q | 1<br>1<br>1 | 30<br>30<br>30 | 0<br>0<br>0 |
| | Notes: | - | | | | | |
| C9 | **TR** Thermal Resistance | JEDEC JESD24-3, 24-4, 24-6 as appropriate | - | PMGD175XNE | 1 | 3 | 0 |
| | Notes: | - | | | | | |
| C10 | **SD** Solderability | JEDEC J-STD-002 | - | PMGD175XNE<br>2N7002HS<br>PMGD290UCEA<br>BSS84AKS<br>PMGD290XN | 1<br>1<br>1<br>1<br>1 | 10<br>10<br>10<br>10<br>10 | 0<br>0<br>0<br>0<br>0 |
| | Notes: | - | | | | | |
| C11 | **WG** Whisker Growth Evaluation | AEC-Q005 | -------- according to AEC-Q005 -------- | | | | |
| | Notes: | Tests are performed based on structural similarity (generic family data) | | | | | |
| C12 | **CA** Constant Acceleration | MIL-STD-750-2 Method 2006 | - | N/A | N/A | N/A | N/A |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| | Notes: | CA is required for hermetic packaged parts only. Reported package is not a hermetic package. | | | | | |
| C13 | **VVF** Vibration Variable Frequency | JEDEC JESD22-B-103 | - | N/A | N/A | N/A | N/A |
| | Notes: | VVF is required for hermetic packaged parts only. Reported package is not a hermetic package. | | | | | |
| C14 | **MS** Mechanical Shock | JEDEC JESD22-B-104 | - | N/A | N/A | N/A | N/A |
| | Notes: | MS is required for hermetic packaged parts only. Reported package is not a hermetic package. | | | | | |
| C15 | **HER** Hermeticity | JEDEC JESD22-A-109 | - | N/A | N/A | N/A | N/A |
| | Notes: | HER is required for hermetic packaged parts only. Reported package is not a hermetic package. | | | | | |

## Test Group D – Die Fabrication Reliability Tests

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| D1 | **DI** Dielectric Integrity | AEC-Q101-004 Section 3 | - | N/A | N/A | N/A | N/A |
| | Notes: | DI is required for Power MOS and IGBT parts only. Reported parts are not Power MOS or IGBT parts. | | | | | |

## Test Group E – Electrical Verification Tests

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| E0 | **EV** External Visual | JEDEC JESD22-B-101 | - | All qualification parts submitting for testing. | | | 0 |
| | Notes: | Inspect part construction, marking and workmanship | | | | | |
| E1 | **TEST** Pre- and Post-Stress Electrical Test | According to supplier's standard specification | - | All qualification parts tested per the requirements of the appropriate part specification. | | | 0 |
| | Notes: | Test is performed as specified in the applicable stress reference at room temperature. | | | | | |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

| # | Stress | Test method | Duration | Tested part(s) | # of lots | Sample Size / lot | # of Fails |
|---|---|---|---|---|---|---|---|
| E2 | **PV**<br>Parametric Verification | Over part temperature range specified in data sheet. | - | PMGD175XNE | 1 | 25 | 0 |
| | | | | 2N7002HS | 1 | 25 | 0 |
| | | | | PMGD290UCEA | 1 | 25 | 0 |
| | | | | BSS84AKS | 1 | 25 | 0 |
| | | | | PMGD290XN | 1 | 25 | 0 |
| | Notes: | - | | | | | |
| E3 | **ESDH**<br>ESD – HBM Characterization | AEC-Q101-001 | - | PMGD175XNE | 1 | 30 | 0 |
| | | | | 2N7002HS | 1 | 30 | 0 |
| | | | | PMGD290UCEA | 1 | 30 | 0 |
| | | | | BSS84AKS | 1 | 30 | 0 |
| | | | | PMGD290XN | 1 | 30 | 0 |
| | Notes: | No change of wafer fab processes or materials, no change of die design | | | | | |
| E4 | **ESDC**<br>ESD – CDM Characterization | AEC-Q101-005 | - | N/A | N/A | N/A | N/A |
| | Notes: | Small packages are not able to hold enough charge and are therefore exempt from testing according to AEC-Q101-005. | | | | | |
| E5 | **UIS**<br>Unclamped Inductive Switching | AEC-Q101-004 Section 2 | - | N/A | N/A | N/A | N/A |
| | Notes: | UIS is required for MOS and IGBT parts only. Reported parts are not MOS or IGBT parts. | | | | | |
| E6 | **SC**<br>Short Circuit Characterization | AEC-Q101-006 | - | N/A | N/A | N/A | N/A |
| | Notes: | SC is required for smart power parts only. Reported parts are not smart power parts. | | | | | |


All information provided in this document is subject to legal disclaimers.
© 2026 Nexperia B.V. / V1.3.

# 8. Electrical and thermal performance

## 8.1 Electrical performance

Full electrical characterization over temperature range has been performed. Electrical parameters remain unchanged in specification and with the same distribution.

## 8.2 Thermal performance

Thermal parameters remain unchanged in specification and with the same distribution.

# 9. Comparison of visual appearance

There is no change of visual appearance (within specification).

# 10. Traceability

Changed products can be identified by date code after implementation.

# 11. Conclusion

The products do not change functionally. Nexperia does not anticipate any negative impact on fit, form, function, and reliability.

# 12. Legal Disclaimer

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent – or other industrial or intellectual property rights.

All information herein is per Nexperia's best knowledge. This document does not provide for any representation or warranty expressed or implied by Nexperia.

Nexperia may implement additional changes without separate customer notification where such changes are classified as notification-exempt under the criteria defined in the ZVEI Guideline for Customer Notifications of Product and/or Process Changes (PCN) of Electronic Components specified for Automotive Applications.