nexperia.com

Product Change Notification **CN-202601029F**

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 new assembly site as second source for non-automotive products in SOT223 package

Change Category

[X] Wafer Fab Process	[X] Assembly Process	[ ] Product Marking	[X] 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	[X] Assembly Location

Details of this change

The intention of this PCN is to release a second source assembly- and testing-site HANA Semiconductor (Ayutthaya) Co., Ltd. (HANA) for selected non-automotive products in the SOT223 package complementing existing site at Nexperia China Co., Ltd. (Nexperia ATGD). Moreover, additional materials for the package as well as the wafer back side are introduced and described in this PCN complementing the existing bill of materials.
The products to be released at HANA specifically cover only non-automotive quality criteria of Nexperia. For automotive quality according to AEC-Q101 the equivalent "-Q" products should be purchased.

Please refer to the Self-Qualification Report for a detailed description and evaluation of the changes covered by this PCN.

This notification applies only to customers currently ordering the non-automotive version. If you have already transitioned to the automotive-qualified version, please disregard this notification.
This notification may reach customers who have already completed this transition. We apologize for any inconvenience this may cause.

Chem_Content_CN-202601029F-20260917.zip:
https://qcm.nexperia.com/Document/DOC-616527/Chem_Content_CN-202601029F-20260917.zip

CN-202601029F_product_change_matrix.xlsx:
https://qcm.nexperia.com/Document/DOC-616519/CN-202601029F_product_change_matrix.xlsx

CN-202601029F_Self_Qualification_Report.pdf:
https://qcm.nexperia.com/Document/DOC-616508/CN-202601029F_Self_Qualification_Report.pdf

Why do we implement this change?

Second Source Assembly site. Expand production capacity.

Identification of affected products

Changed products can be identified by date code and assembly code “p” for HANA assembly after implementation.

Management summary

#1 Change of data sheet parameters/electrical specification (min./max./typ. values) and/or AC/DC specification
#2 Change of backside metallization
#3 Change of lead frame base material
#4 Change in lead frame dimensions
#5 Change in lead frame finishing area
#6 Change of die attach material
#7 Change of wire bonding
#8 change of mold compound
#9 Change of direct material supplier
#10 Production from a new equipment/tool which uses the different basic technology (die attach process change)
#11 Move all or parts of production to a different assembly site
#15 Move all or parts of final test to a different test site

Product availability

Production

Planned first shipment: 03 Jan 2027

Existing inventory will be shipped until depleted

Sample information

Samples are available upon request

Impact

No impact to the product's functionality anticipated

Data sheet revision

A new datasheet will be issued

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.

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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
933917270115	BCP51,115	BCP51,115	BCP51	45 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917290115	BCP51-16,115	BCP51-16,115	BCP51-16	45 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917290135	BCP51-16,135	BCP51-16,135	BCP51-16	45 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917330115	BCP53,115	BCP53,115	BCP53	80 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917350115	BCP53-16,115	BCP53-16,115	BCP53-16	80 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917350135	BCP53-16,135	BCP53-16,135	BCP53-16	80 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes
933917330135	BCP53F		BCP53	80 V, 1 A PNP medium power transistor	SOT223	SC-73	RFS						No					Bipolar Discretes

CN-202601029F

Release of additional assembly site for non-automotive products in SOT223 package

Revision: 03 September 2026 **Self Qualification Report**

Document Information

Information	Content	
Author	Alex Sabelfeld	
Supplier	Nexperia	
Document Number	CN-202601029F	[Keywords]

Revision History

Revision Date	Description
03 September 2026	New document

Contact Information

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1. Introduction

The intention of this PCN is to release a second source assembly- and testing-site HANA Semiconductor (Ayutthaya) Co., Ltd. (HANA) for selected non-automotive products in the SOT223 package complementing existing site at Nexperia China Co., Ltd. (Nexperia ATGD). Moreover, additional materials for the package as well as the wafer back side are introduced and described in this PCN complementing the existing bill of materials.

The products to be released at HANA specifically cover only non-automotive quality criteria of Nexperia. For automotive quality according to AEC-Q101 the equivalent "-Q" products should be purchased.

Table 1: Changes announces in CN-202601029F

Change items	**Before**	**After**	
Assembly and testing site	Nexperia China Ltd. (**ATGD**)	Nexperia China Ltd. (**ATGD**)	HANA Semiconductor Ayutthaya Co., Ltd. (**HANA**)
Assembly process & equipment	Reel to reel process w/ eutectic die bond	Reel to reel process w/ eutectic die bond	Strip to strip process w/glue die attach
Lead frame material and geometry	C19210 (Enomoto)	C19210 (by Enomoto)	C19400 (by NKE)
Die attach material	Eutectic die bond	Eutectic die bond	Glue die bond (by Henkel)
Wire bonding material	Pure Cu (Heraeus or Tanaka)	Pure Cu (by Heraeus or Tanaka)	AuPd coated Cu (by MKE)
Mold compound	GR646 (Hysol) E500HK (Sumitomo) CV4112-9 (Panasonic)	GR646 (by Hysol) E500HK (by Sumitomo) CV4112-9 (by Panasonic)	CV8214C (by Panasonic)
Wafer backside metallization	Au(As)/Ag/Ni/AuGe (1.75 µm)	Au(As)/Ag/Ni/AuGe (1.75 µm)	Au(As)/Ni/Ag (0.75 µm)
Rth_j-sp datasheet limit	Max. 16 K/W	Max. 34 K/W	

2. Affected product types

The product types which are affected by the changes described in the next section "Material and process details" are listed in the attached change matrix *"CN-202601029F_product_change_matrix.xlsx"*. Device construction pre and post change of each product type is shown.

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3. Material and process details

3.1 Assembly process

Table 2: Overview of changed assembly processing

Before	After	
ATGD	**ATGD**	**HANA**
Reel to reel processing (BIM) w/ eutectic die bond	Reel to reel processing (BIM) with eutectic die bonding	Strip to strip processing (STS) w/glue die attach

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.

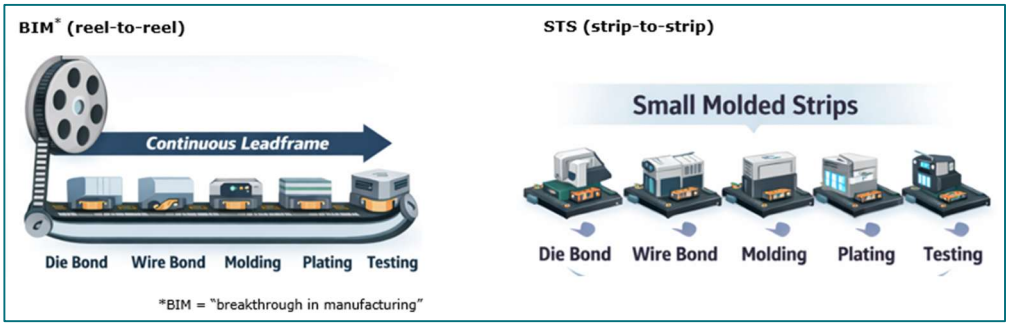
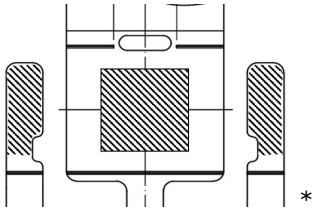
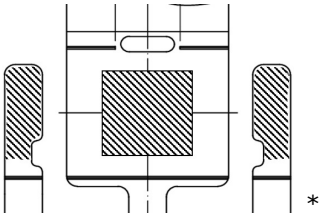
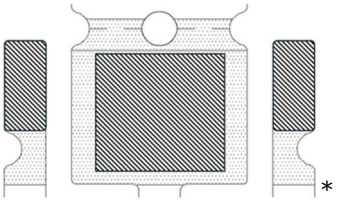


Figure 1: Simplified schematic of BIM (reel-to-reel) vs. STS (strip-to-strip) assembly concept

3.2 Lead frame

Another lead frame version will be introduced complementing the existing type. The outer dimensions, i.e. package outline drawing, are not affected by this change.

Table 3: Overview of changes to the lead frame

Before	After	
ATGD	**ATGD**	**HANA**
		
Ag plated Cu (C19210, Enomoto)	Ag plated Cu (C19210, Enomoto)	Ag plated Cu (C19400, NKE)

* *Hashed area: Ag plated spot*

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3.3 Die attach material

Table 4: Overview of changes to the die attach

Before	After	
ATGD	ATGD	HANA
Eutectic bonding	Eutectic bonding	Conductive glue attach: QMI519 (Henkel)

3.4 Wire bonding material

Table 5: Overview of changes to the wire bond

Before	After		
ATGD	ATGD		HANA
Pure Cu (Heraeus or Tanaka)	Pure Cu (Heraeus or Tanaka)	**or**	AuPd coated Cu (MKE)

3.5 Epoxy mold compound

Table 6: Overview of changes to the epoxy mold compound

Before	After	
ATGD	ATGD	HANA
GR646 (Hysol) E500HK (Sumitomo) CV4112-9 (Panasonic)	GR646 (Hysol) E500HK (Sumitomo) CV4112-9 (Panasonic)	CV8214C (Panasonic)

Table 7: Comparison of epoxy mold compound properties

Item Name	Supplier Response	
Mold Compound		
a. Mold compound supplier & ID	Hysol GR646	Sumitomo EME-E500HK
b. Mold compound type	epoxy (SiO_2 filled)	epoxy (SiO2 filled)
c. Flammability rating	UL 94 V0	UL 94 V0
d. Fire Retardant type/composition	None	None
e. T_g (glass transition temp.) (°C) [1]	min. 150	min. 125
f. CTE (below T_g) (ppm/°C) [1]	max. 25	max. 20
CTE (above T_g) (ppm/°C) [1]	max. 80	max. 70
Item Name	**Supplier Response**	
Mold Compound		
a. Mold compound supplier & ID	Panasonic CV4112-9	Panasonic CV8214C
b. Mold compound type	epoxy (SiO_2 filled)	epoxy (SiO_2 filled)
c. Flammability rating	UL 94 V0	UL 94 V0
d. Fire Retardant type/composition	None	None
e. T_g (glass transition temp.) (°C) [1]	min. 137	min. 122
f. CTE (below T_g) (ppm/°C) [1]	max. 21	max. 10
CTE (above T_g) (ppm/°C) [1]	max. 75	max. 39

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3.6 Wafer back side metallization

The wafer back side metallization Au(As)/Ni/Ag with a thickness of 0.75 µm will be introduced complementing the existing metallization Au(As)/Ag/Ni/AuGe.

Table 8: Comparison of back side metallization

	Before		After			
	ATGD		ATGD		HANA	
Schematic of back side metallization layer	Au(As) Ag Ni AuGe	Contact layer to Si Intermediate layer Intermediate layer Bond layer	Au(As) Ag Ni AuGe	Contact layer to Si Intermediate layer Intermediate layer Bond layer	Au(As) Ni Ag	Contact layer to Si Intermediate layer Bond layer
Total thickness	**1.75 µm**		**1.75 µm**		**0.75 µm**	

3.7 Thermal resistance datasheet limit

The datasheet limit of thermal resistance junction to solder point (Rth_j-sp) will be increased due to the change from eutectic to glue die attach. The thermal resistance junction to ambient (Rth_j-a) values remain within the current datasheet limits and will not be changed. The Zth curves remain unchanged since they are based on Rth_j-a measurements.

Table 9: Rth_j-sp datasheet limit change

	Before	Change
Thermal resistance Datasheet limits	Rth_j-a (std. fp. w/o cooling area) = 192 K/W Rth_j-a (std. fp w/ 1 cm² Cu cooling area) = 125 K/W Rth_j-a (std. fp w/ 6 cm² Cu cooling area) = 93 K/W **Rth_j-sp = 16 K/W**	Rth_j-a (std. fp. w/o cooling area) = 192 K/W Rth_j-a (std. fp w/ 1 cm² Cu cooling area) = 125 K/W Rth_j-a (std. fp w/ 6 cm² Cu cooling area) = 93 K/W **Rth_j-sp = 34 K/W**

4. Reliability test program

In line with AEC-Q101 and 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 will be performed.

4.1 Qualification strategy

The qualification plan had been developed based on FMEA risk assessment. Potential failures have been identified and will be addressed in qualification.

4.2 Test vehicles

Three leader types (see Table 10) have been selected based on structural similarity to represent the qualification family in terms of package related variations.

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5. Constructional details of test vehicles

Table 10: Representative leader types and materials used for qualification of the product family

Product	Technology	Material used for qualification						
		Back end site	Process	Wire [µm]	Leadframe Design	Die attach	Die size [µm]	Wafer backside metal
BCP56-16	NPN transistor	HANA	Strip to strip	AuPd coated Cu-wire 33 µm	New Design	QMI519 glue	620 x 620	Au(As)NiAg 0.75µm
BCP56-16T	NPN transistor	HANA	Strip to strip	AuPd coated Cu-wire 33 µm	New Design	QMI519 glue	530 x 530	Au(As)NiAg 0.75µm
BCP53	PNP transistor	HANA	Strip to strip	AuPd coated Cu-wire 33 µm	New Design	QMI519 glue	750 x 750	Au(As)NiAg 0.75µm
BCP51	PNP transistor	HANA	Strip to strip	AuPd coated Cu-wire 33 µm	New Design	QMI519 glue	750 x 750	Au(As)NiAg 0.75µm
BCP54T	NPN transistor	HANA	Strip to strip	AuPd coated Cu-wire 33 µm	New Design	QMI519 glue	530 x 530	Au(As)NiAg 0.75µm

6. Qualification plan

The qualification as reported in the summary below will be carried out to release all product types mentioned in this PCN.

Stress	Test method	Duration	Tested part(s)	# of lots	Sample size / lot	# of fails
PC Pre-conditioning	JEDEC/IPC J-STD-020, JESD22-A-113, TEST before and after PC	acc. to MSL 1	BCP56-16 BCP56-16T BCP53	- see notes -		0
Note:	All SMD qualification parts prior to tests #A2 HAST/H^{3}TRB, #A3 UHAST/AC, #A4 TC/TCHT/TCD, #A5 IOL/PTC and #C8 RSH.					
H3TRB High Humidity High Temperature Reverse Bias	JEDEC JESD22-A-101 T_A = 85 °C, RH = 85 % VCE = -64 V VCE = -64 V VCE = 64 V	 1000 h 1000 h 1000 h	 BCP56-16 BCP56-16T BCP53	 1 1 1	 80 80 80	 0 0 0
UHAST Unbiased HAST	JEDEC JESD22-A-118 T_A = 130 °C, RH = 85 %	96 h 96 h 96 h	BCP56-16 BCP56-16T BCP53	1 1 1	80 80 80	0 0 0
TC Temperature Cycling	JEDEC JESD22-A-104 Appendix 6 T_A = -65 °C to 150 °C	1000 cyc 1000 cyc 1000 cyc	BCP56-16 BCP56-16T BCP53	1 1 1	78 80 80	0 0 0
IOL Intermittent Operational Life	MIL-STD-750 Method 1037 T_A = 25 °C, $\Delta T_j \geq$ 100 °C, $t_{on} = t_{off}$ = 2 min	1000 h 1000 h 1000 h	BCP56-16 BCP56-16T BCP53	1 1 1	80 80 80	0 0 0

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Stress	Test method	Duration	Tested part(s)	# of lots	Sample size / lot	# of fails
HTRB High Temperature Reverse Bias	MIL-STD-750-1 M1038 Condition A or M1039 Condition A					
	T_j = 150 °C, VCE = 80	1000 h	BCP53	1	80	0
	T_j = 150 °C, VCE = 45 V	1000 h	BCP51	1	80	0
	T_j = 150 °C, VCE = -45 V	1000 h	BCP54T	1	80	0
WBP Wire Bond Pull Strength	MIL-STD-750-2 Method 2037	-	BCP56-16	1	15	0
			BCP56-16T	1	15	0
			BCP53	1	15	0
WBS Wire Bond Shear Strength	JEDEC JESD22-B116	-	BCP56-16	1	15	0
			BCP56-16T	1	15	0
			BCP53	1	15	0
DS Die Shear	MIL-STD-750-2 Method 2017	-	BCP56-16	1	30	0
			BCP56-16T	1	30	0
			BCP53	1	30	0
TR Thermal Resistance	JEDEC JESD24-3, 24-4, 24-6 as appropriate	-	BCP56-16T	1	9	0
			BCP53	1	9	0
EV External Visual	JEDEC JESD22-B101	-	All qualification parts submitting for testing.			
PV Parametric Verification	Over part temperature range specified in data sheet.	-	BCP56-16	1	25	0
			BCP56-16T	1	25	0
			BCP53	1	25	0
ESDH ESD – HBM Characterization	JESD22-A114	-	BCP56-16	1	30	0
			BCP56-16T	1	30	0
			BCP53	1	30	0

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7. Electrical and thermal performance

7.1 Electrical performance

Full electrical characterization over temperature range will be performed.

7.2 Thermal performance

Thermal resistance is increased as described in chapter 3.7.

8. Comparison of visual appearance

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

9. Traceability

Changed products can be identified by date code and assembly code “p” for HANA assembly after implementation.

10. Conclusion

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

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