

Product Change Notice (PCN)

Subject: Design optimization for 9QXL2000BNLGI

Publication Date: 5/26/2022

Effective Date: 8/26/2022

Revision Description:

Initial Release

Description of Change:

This notice is to advise our customers that Renesas is optimizing the design and also updating the fab technology from 0.18um CMOS logic technology (CL018G) to 0.18um CMOS mixed signal technology (CM018G) for 9QXL2000BNLGI. CM018G is a Renesas qualified fab technology. The changes are being made for the following reasons:

1. Upgrade to meet PCIe Gen6 compliance.
2. Enhance additive jitter performance from 20fs to 7fs in PCIe Gen5 spec.
3. Reduce propagation delay by ~50% from 2.7ns to 1.4ns.
4. Enhance maximum ambient operating temperature from 85°C to 105°C.

There is no change in fab location. There is no other expected change to the electrical characteristics.

A new part number and datasheet is created for this change. New part numbers are released and available now.

The current part numbers will be discontinued and replaced by the new ordering part numbers as of the effective date on this notice. The Last Time Buy (LTB) date for the current part numbers will be August 26, 2022.

Affected Product List:

Current Part Number	New Part Number
9QXL2000BNLGI	9QXL2000CNLGK
9QXL2000BNLGI8	9QXL2000CNLGK8

Reason for Change:

The changes are being made to improve device performance.

Impact on Fit, Form, Function, Quality & Reliability:

There is no impact on Fit, Form, Function, Quality & Reliability of the device except for the changes described in the description of change section.

Product Identification:

A new orderable part number with "C" in part# and an updated device top mark will distinguish this change.

Qualification Status: Completed. Refer to Appendix A

Sample Availability Date: 5/26/2022

Device Material Declaration: Available upon request

Note:

1. Acknowledgement must be received by Renesas within 30 days or Renesas will consider the change as approved.
2. If timely acknowledgement is provided by Customer, then Customer shall have 90 days from the date of receipt of this PCN to make any objections to this PCN. If Customer fails to make objections to this PCN within 90 days of the receipt of the PCN then Renesas will consider the PCN changes as approved.
3. If customer cannot accept the PCN then customer must provide Renesas with a last time buy demand and purchase order.

For additional information regarding this notice, please contact idt-pcn@lm.renesas.com

Appendix A - Qualification Results

Product: 9QXL2000CNLGK

Test Description	Conditions	Sample Size	Results (rej/SS)	Comments
High Temperature Operating Life	JESD22-A108, Ta 125°C, Vccmax, 2000 hrs	77	0/77	Pass
Early Life Failure Rate	JESD22-A108, Ta 125°C, Vccmax, 48 hrs	834	0/834	Pass
ESD: Human Body Model	JESD22-A114 (JS-001) Classification	5	0/5	Pass, Class 2 (2500V)
ESD: Charged Device Model	JESD22-C101 Classification	5	0/5	Pass, Class C3 (1000V)
Latch-Up	JESD78, +/-100mA	6	0/6	Pass, TA at 105°C
Electrical Characterization	Datasheet	10	Results reported in Datasheet	Complete
Temperature Cycling [§]	JESD22-A104, -55°C to +125°C, 700 cycles	25	0/25, 3 lots	Pass
Highly Accelerated Temperature and Humidity stress (Biased) [§]	JESD22-A110, +130°C, 85% R.H., Vccmax, 96 hrs	25	0/25, 3 lots	Pass
High Temperature Storage Life	JESD22-A103, +150°C, 1000 hrs	25	0/25, 3 lots	Pass
Physical Dimension	JESD22-B100 (Per applicable Renesas Package Outline Drawing)	30	0/30, 3 lots	Pass
Bond Pull Strength	M2011	5	0/5, 3 lot	Pass
Bond Shear	JESD22-B116	5	0/5, 3 lots	Pass
Solderability Test	J-STD-002	5	0/5, 3 lots	Pass
Moisture Classification	J-STD-020	25	0/25, 2 lots	MSL3, 260°C

[§] With MSL preconditioning per JESD22-A113, MSL 3 (260°C)