

## Product Change Notice (PCN)

**Subject:** Design revision for 5P49V60A

**Publication Date:** 8/8/2023

**Effective Date:** 11/8/2023

**Revision Description:**

Initial Release

**Description of Change:**

This notice is to advise our customers that Renesas is optimizing the design for 5P49V60A parts to improve device robustness, operating conditions and increase testability. The change is made on metal masks only and as follows:

1. 1.2V NMOS capacitors used on internal LDO blocks were changed to 3.3V NMOS capacitors. Additional test capability is added for LDO voltage.
2. Reduces risk for negative pulse when forcing a direct voltage at XIN pin
3. Re-arrange ESD diodes to improve protection.
4. Correct OE logic at power up that no longer require an OE toggle for always-on outputs to enable.

A new part number and datasheet is created for this change. New part numbers are 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 November 8, 2023.

**Affected Product List:** Refer to Appendix B

**Reason for Change:**

Device exhibited (i) Fractional output divider slipping due to low voltage on output of internal LDO. The LDO is dropping voltage due to excessive leakage on the 1.2V NMOS capacitors used in the circuit. (ii) higher negative pulse on Xin pin during power up which has the potential to cause XIN damage. (iii) When a set of outputs programmed to be controlled by OE, other outputs programmed to be always-on: at first power up always-on outputs will require an OE toggle to turn on.

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

The change will have no impact on Fit, Form, Function, Quality and Reliability of the device.

**Product Identification:**

A new orderable part number with revision "B" and an updated device top mark will distinguish this change.

**Qualification Status:** Completed. Refer Appendix A

**Sample Availability Date:** 8/8/2023

**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](mailto:idt-pcn@lm.renesas.com)**

**Appendix A - Qualification Results**

Test Description	Conditions	Sample Size	Results (rej/SS)	Comments
ESD: Human Body Model	JS-001 Classification	3	0/3	Pass. Class 2 (2000V)
ESD: Charged Device Model	JS-002 Classification	3	0/3	Pass. Class C3 (1000V)
Latch-Up	JESD78, +/-100mA	6	0/6	Pass. T <sub>A</sub> at 105°C.
Electrical Characterization	Datasheet	10	Reported in the datasheet	Completed
Electrical Distribution	AEC-Q100-009	33	0/33	Completed

**Appendix B – Affected Part Number**

Affected Part#	Replacement Part#
5P49V60A631NLG2	5P49V60B631NLG2
5P49V60A631NLG28	5P49V60B631NLG28
5P49V60A000NLG2	5P49V60B000NLG2
5P49V60A000NLG28	5P49V60B000NLG28
5P49V60A113NLG2	5P49V60B113NLG2
5P49V60A113NLG28	5P49V60B113NLG28
5P49V60A114NLG2	5P49V60B114NLG2
5P49V60A114NLG28	5P49V60B114NLG28
5P49V60A116NLG2	5P49V60B116NLG2
5P49V60A116NLG28	5P49V60B116NLG28
5P49V60A117NLG2	5P49V60B117NLG2
5P49V60A117NLG28	5P49V60B117NLG28
5P49V60A206NLG2	5P49V60B206NLG2
5P49V60A206NLG28	5P49V60B206NLG28
5P49V60A208NLG2	5P49V60B208NLG2
5P49V60A208NLG28	5P49V60B208NLG28
5P49V60A218NLG2	5P49V60B218NLG2
5P49V60A218NLG28	5P49V60B218NLG28
5P49V60A219NLG2	5P49V60B219NLG2
5P49V60A219NLG28	5P49V60B219NLG28
5P49V60A220NLG2	5P49V60B220NLG2
5P49V60A220NLG28	5P49V60B220NLG28
5P49V60A221NLG2	5P49V60B221NLG2
5P49V60A221NLG28	5P49V60B221NLG28
5P49V60A225NLG2	5P49V60B225NLG2
5P49V60A225NLG28	5P49V60B225NLG28
5P49V60A500NLG2	5P49V60B500NLG2
5P49V60A500NLG28	5P49V60B500NLG28
5P49V60A501NLG2	5P49V60B501NLG2
5P49V60A501NLG28	5P49V60B501NLG28
5P49V60A503NLG2	5P49V60B503NLG2
5P49V60A503NLG28	5P49V60B503NLG28
5P49V60A504NLG2	5P49V60B504NLG2
5P49V60A504NLG28	5P49V60B504NLG28
5P49V60A505NLG2	5P49V60B505NLG2
5P49V60A505NLG28	5P49V60B505NLG28
5P49V60A506NLG2	5P49V60B506NLG2
5P49V60A506NLG28	5P49V60B506NLG28
5P49V60A508NLG2	5P49V60B508NLG2
5P49V60A508NLG28	5P49V60B508NLG28
5P49V60A509NLG2	5P49V60B509NLG2
5P49V60A509NLG28	5P49V60B509NLG28

Affected Part#	Replacement Part#
5P49V60A510NLG2	5P49V60B510NLG2
5P49V60A510NLG28	5P49V60B510NLG28
5P49V60A511NLG2	5P49V60B511NLG2
5P49V60A511NLG28	5P49V60B511NLG28
5P49V60A512NLG2	5P49V60B512NLG2
5P49V60A512NLG28	5P49V60B512NLG28
5P49V60A513NLG2	5P49V60B513NLG2
5P49V60A513NLG28	5P49V60B513NLG28
5P49V60A514NLG2	5P49V60B514NLG2
5P49V60A514NLG28	5P49V60B514NLG28
5P49V60A515NLG2	5P49V60B515NLG2
5P49V60A515NLG28	5P49V60B515NLG28
5P49V60A516NLG2	5P49V60B516NLG2
5P49V60A516NLG28	5P49V60B516NLG28
5P49V60A520NLG2	5P49V60B520NLG2
5P49V60A520NLG28	5P49V60B520NLG28
5P49V60A521NLG2	5P49V60B521NLG2
5P49V60A521NLG28	5P49V60B521NLG28
5P49V60A522NLG2	5P49V60B522NLG2
5P49V60A522NLG28	5P49V60B522NLG28
5P49V60A523NLG2	5P49V60B523NLG2
5P49V60A523NLG28	5P49V60B523NLG28
5P49V60A524NLG2	5P49V60B524NLG2
5P49V60A524NLG28	5P49V60B524NLG28
5P49V60A525NLG2	5P49V60B525NLG2
5P49V60A525NLG28	5P49V60B525NLG28
5P49V60A526NLG2	5P49V60B526NLG2
5P49V60A526NLG28	5P49V60B526NLG28
5P49V60A527NLG2	5P49V60B527NLG2
5P49V60A527NLG28	5P49V60B527NLG28
5P49V60A528NLG2	5P49V60B528NLG2
5P49V60A528NLG28	5P49V60B528NLG28
5P49V60A529NLG2	5P49V60B529NLG2
5P49V60A529NLG28	5P49V60B529NLG28
5P49V60A530NLG2	5P49V60B530NLG2
5P49V60A530NLG28	5P49V60B530NLG28
5P49V60A531NLG2	5P49V60B531NLG2
5P49V60A531NLG28	5P49V60B531NLG28
5P49V60A532NLG2	5P49V60B532NLG2
5P49V60A532NLG28	5P49V60B532NLG28
5P49V60A534NLG2	5P49V60B534NLG2
5P49V60A534NLG28	5P49V60B534NLG28

Affected Part#	Replacement Part#
5P49V60A535NLG2	5P49V60B535NLG2
5P49V60A535NLG28	5P49V60B535NLG28
5P49V60A537NLG2	5P49V60B537NLG2
5P49V60A537NLG28	5P49V60B537NLG28
5P49V60A538NLG2	5P49V60B538NLG2
5P49V60A538NLG28	5P49V60B538NLG28
5P49V60A539NLG2	5P49V60B539NLG2
5P49V60A539NLG28	5P49V60B539NLG28
5P49V60A540NLG2	5P49V60B540NLG2
5P49V60A540NLG28	5P49V60B540NLG28
5P49V60A541NLG2	5P49V60B541NLG2
5P49V60A541NLG28	5P49V60B541NLG28
5P49V60A542NLG2	5P49V60B542NLG2
5P49V60A542NLG28	5P49V60B542NLG28
5P49V60A543NLG2	5P49V60B543NLG2
5P49V60A543NLG28	5P49V60B543NLG28
5P49V60A544NLG2	5P49V60B544NLG2
5P49V60A544NLG28	5P49V60B544NLG28
5P49V60A546NLG2	5P49V60B546NLG2
5P49V60A546NLG28	5P49V60B546NLG28
5P49V60A547NLG2	5P49V60B547NLG2
5P49V60A547NLG28	5P49V60B547NLG28
5P49V60A548NLG2	5P49V60B548NLG2
5P49V60A548NLG28	5P49V60B548NLG28
5P49V60A549NLG2	5P49V60B549NLG2
5P49V60A549NLG28	5P49V60B549NLG28
5P49V60A550NLG2	5P49V60B550NLG2
5P49V60A550NLG28	5P49V60B550NLG28
5P49V60A551NLG2	5P49V60B551NLG2
5P49V60A551NLG28	5P49V60B551NLG28
5P49V60A552NLG2	5P49V60B552NLG2
5P49V60A552NLG28	5P49V60B552NLG28
5P49V60A553NLG2	5P49V60B553NLG2
5P49V60A553NLG28	5P49V60B553NLG28
5P49V60A554NLG2	5P49V60B554NLG2
5P49V60A554NLG28	5P49V60B554NLG28
5P49V60A555NLG2	5P49V60B555NLG2
5P49V60A555NLG28	5P49V60B555NLG28
5P49V60A558NLG2	5P49V60B558NLG2
5P49V60A558NLG28	5P49V60B558NLG28
5P49V60A559NLG2	5P49V60B559NLG2
5P49V60A559NLG28	5P49V60B559NLG28

Affected Part#	Replacement Part#
5P49V60A560NLG2	5P49V60B560NLG2
5P49V60A560NLG28	5P49V60B560NLG28
5P49V60A561NLG2	5P49V60B561NLG2
5P49V60A561NLG28	5P49V60B561NLG28
5P49V60A563NLG2	5P49V60B563NLG2
5P49V60A563NLG28	5P49V60B563NLG28
5P49V60A565NLG2	5P49V60B565NLG2
5P49V60A565NLG28	5P49V60B565NLG28
5P49V60A566NLG2	5P49V60B566NLG2
5P49V60A566NLG28	5P49V60B566NLG28
5P49V60A567NLG2	5P49V60B567NLG2
5P49V60A567NLG28	5P49V60B567NLG28
5P49V60A568NLG2	5P49V60B568NLG2
5P49V60A568NLG28	5P49V60B568NLG28
5P49V60A569NLG2	5P49V60B569NLG2
5P49V60A569NLG28	5P49V60B569NLG28
5P49V60A570NLG2	5P49V60B570NLG2
5P49V60A570NLG28	5P49V60B570NLG28
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5P49V60A571NLG28	5P49V60B571NLG28
5P49V60A572NLG2	5P49V60B572NLG2
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5P49V60A576NLG28	5P49V60B576NLG28
5P49V60A577NLG2	5P49V60B577NLG2
5P49V60A577NLG28	5P49V60B577NLG28
5P49V60A582NLG2	5P49V60B582NLG2
5P49V60A582NLG28	5P49V60B582NLG28
5P49V60A583NLG2	5P49V60B583NLG2
5P49V60A583NLG28	5P49V60B583NLG28
5P49V60A584NLG2	5P49V60B584NLG2
5P49V60A584NLG28	5P49V60B584NLG28
5P49V60A585NLG2	5P49V60B585NLG2
5P49V60A585NLG28	5P49V60B585NLG28
5P49V60A586NLG2	5P49V60B586NLG2
5P49V60A586NLG28	5P49V60B586NLG28

Affected Part#	Replacement Part#
5P49V60A587NLG2	5P49V60B587NLG2
5P49V60A587NLG28	5P49V60B587NLG28
5P49V60A588NLG2	5P49V60B588NLG2
5P49V60A588NLG28	5P49V60B588NLG28
5P49V60A589NLG2	5P49V60B589NLG2
5P49V60A589NLG28	5P49V60B589NLG28
5P49V60A590NLG2	5P49V60B590NLG2
5P49V60A590NLG28	5P49V60B590NLG28
5P49V60A591NLG2	5P49V60B591NLG2
5P49V60A591NLG28	5P49V60B591NLG28
5P49V60A592NLG2	5P49V60B592NLG2
5P49V60A592NLG28	5P49V60B592NLG28
5P49V60A594NLG2	5P49V60B594NLG2
5P49V60A594NLG28	5P49V60B594NLG28
5P49V60A596NLG2	5P49V60B596NLG2
5P49V60A596NLG28	5P49V60B596NLG28
5P49V60A597NLG2	5P49V60B597NLG2
5P49V60A597NLG28	5P49V60B597NLG28
5P49V60A599NLG2	5P49V60B599NLG2
5P49V60A599NLG28	5P49V60B599NLG28
5P49V60A600NLG2	5P49V60B600NLG2
5P49V60A600NLG28	5P49V60B600NLG28
5P49V60A601NLG2	5P49V60B601NLG2
5P49V60A601NLG28	5P49V60B601NLG28
5P49V60A602NLG2	5P49V60B602NLG2
5P49V60A602NLG28	5P49V60B602NLG28
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5P49V60A606NLG28	5P49V60B606NLG28
5P49V60A607NLG2	5P49V60B607NLG2
5P49V60A607NLG28	5P49V60B607NLG28
5P49V60A608NLG2	5P49V60B608NLG2
5P49V60A608NLG28	5P49V60B608NLG28
5P49V60A609NLG2	5P49V60B609NLG2
5P49V60A610NLG2	5P49V60B610NLG2
5P49V60A611NLG2	5P49V60B611NLG2
5P49V60A612NLG2	5P49V60B612NLG2

Affected Part#	Replacement Part#
5P49V60A613NLG2	5P49V60B613NLG2
5P49V60A614NLG2	5P49V60B614NLG2
5P49V60A615NLG2	5P49V60B615NLG2
5P49V60A615NLG28	5P49V60B615NLG28
5P49V60A617NLG2	5P49V60B617NLG2
5P49V60A617NLG28	5P49V60B617NLG28
5P49V60A618NLG2	5P49V60B618NLG2
5P49V60A618NLG28	5P49V60B618NLG28
5P49V60A619NLG2	5P49V60B619NLG2
5P49V60A619NLG28	5P49V60B619NLG28
5P49V60A620NLG2	5P49V60B620NLG2
5P49V60A620NLG28	5P49V60B620NLG28
5P49V60A621NLG2	5P49V60B621NLG2
5P49V60A621NLG28	5P49V60B621NLG28
5P49V60A622NLG2	5P49V60B622NLG2
5P49V60A622NLG28	5P49V60B622NLG28
5P49V60A623NLG2	5P49V60B623NLG2
5P49V60A623NLG28	5P49V60B623NLG28
5P49V60A624NLG2	5P49V60B624NLG2
5P49V60A624NLG28	5P49V60B624NLG28
5P49V60A625NLG2	5P49V60B625NLG2
5P49V60A625NLG28	5P49V60B625NLG28
5P49V60A627NLG2	5P49V60B627NLG2
5P49V60A627NLG28	5P49V60B627NLG28
5P49V60A628NLG2	5P49V60B628NLG2
5P49V60A628NLG28	5P49V60B628NLG28
5P49V60A629NLG2	5P49V60B629NLG2
5P49V60A629NLG28	5P49V60B629NLG28
5P49V60A630NLG2	5P49V60B630NLG2
5P49V60A630NLG28	5P49V60B630NLG28
5P49V60A632NLG2	5P49V60B632NLG2
5P49V60A632NLG28	5P49V60B632NLG28
5P49V60A633NLG2	5P49V60B633NLG2
5P49V60A633NLG28	5P49V60B633NLG28
5P49V60A634NLG2	5P49V60B634NLG2
5P49V60A634NLG28	5P49V60B634NLG28
5P49V60A635NLG2	5P49V60B635NLG2
5P49V60A635NLG28	5P49V60B635NLG28
5P49V60A636NLG2	5P49V60B636NLG2
5P49V60A636NLG28	5P49V60B636NLG28
5P49V60A637NLG2	5P49V60B637NLG2
5P49V60A638NLG2	5P49V60B638NLG2

Affected Part#	Replacement Part#
5P49V60A638NLG28	5P49V60B638NLG28
5P49V60A639NLG2	5P49V60B639NLG2
5P49V60A639NLG28	5P49V60B639NLG28
5P49V60A640NLG2	5P49V60B640NLG2
5P49V60A640NLG28	5P49V60B640NLG28
5P49V60A641NLG2	5P49V60B641NLG2
5P49V60A641NLG28	5P49V60B641NLG28
5P49V60A644NLG2	5P49V60B644NLG2
5P49V60A644NLG28	5P49V60B644NLG28
5P49V60A645NLG2	5P49V60B645NLG2
5P49V60A645NLG28	5P49V60B645NLG28
5P49V60A646NLG2	5P49V60B646NLG2
5P49V60A646NLG28	5P49V60B646NLG28

Affected Part#	Replacement Part#
5P49V60A647NLG2	5P49V60B647NLG2
5P49V60A647NLG28	5P49V60B647NLG28
5P49V60A648NLG2	5P49V60B648NLG2
5P49V60A648NLG28	5P49V60B648NLG28
5P49V60A649NLG2	5P49V60B649NLG2
5P49V60A649NLG28	5P49V60B649NLG28
5P49V60A650NLG2	5P49V60B650NLG2
5P49V60A650NLG28	5P49V60B650NLG28
5P49V60A651NLG2	5P49V60B651NLG2
5P49V60A651NLG28	5P49V60B651NLG28
5P49V60A652NLG2	5P49V60B652NLG2
5P49V60A652NLG28	5P49V60B652NLG28