

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

Send any inquiries to <http://www.renesas.com/inquiry>.

RENESAS TECHNICAL UPDATE

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Renesas Technology Corp.

Product Category	SRAM		Document No.	TN-M62-A131B/E	Rev.	2.00
Title	Notice about the generation change of 4Mbit LP SRAM 3V version		Information Category	Product Generation Change (Including Packing Change)		
Applicable Product	4Mbit Low Power SRAM 3V version ; R1LV04xxC series to R1LV04xxD series	Lot No.	Reference Document	See attached material (page 5-6)		
		All shipped lots after '07/7				

Please be informed that we, Renesas will be proceeding with the product generation change of 4Mbit LP SRAM 3V version from "R1LV04xxC series" to "R1LV04xxD series". This generation change is scheduled as follows.

"R1LV04xxD series" is fully compatible to "R1LV04xxC series", from the electrical characteristics specifications and package dimension.

We'd greatly appreciate your kind understanding.

<Generation Change>

This generation change is to shrink die with 0.15um technology, in order to improve the production efficiency.

All packages' outline is completely same.

We make a use of Renesas original technology with adoption of memory cell with TFT load and capacitor structure for this part. By adopting the original technology, we could offer an excellent high reliability against Soft error and latch-up phenomenon.

<Packing Change>

We will be changing tray for 32pin TSOP(II) : R1LV0408DSB, 44pin TSOP(II) : R1LV0416DSB/ R1LV0414DSB.

Current trays are Renesas's unique ones, but we are changing to JEDEC standard trays.

(For your information, however, there is no change for 32pin sTSOP(I) : R1LV0408CSA, 48ball FBGA : R1LV0416DBG, because we have already been using JEDEC standard trays for those two.)

<Objective products >

4Mbit LP SRAMs 3V version : R1LV0408C series, R1LV0416C series, R1LV0414C series

<Document and Sample availability>

Data sheet : already available

ES sample : 4/E, 2007

CS sample : 5/E, 2007

Reliability report : 5/E, 2007

<Launch date of this "generation change">

We will be starting to ship out new generation parts accordingly from July in 2007. There is a possibility to ship out both R1LV04xxC and R1LV04xxD series in parallel, because of our inventory of R1LV04xxC series.

<Launch date of this "packing change">

We will begin using the new trays from the launch of Mass Production of the new generation parts, while use both current and new trays for CS sample submission.

(We are planning to change to new trays for current Cver. Products from Oct./'07 accordingly.)

<Reference document>

- (1) Replaced part name list on this generation change
- (2) Comparison table between R1LV04xxC and R1LV04xxD series

Sincerely yours.

<replaced part name list on this generation change>

1) replaced part name on this generation change

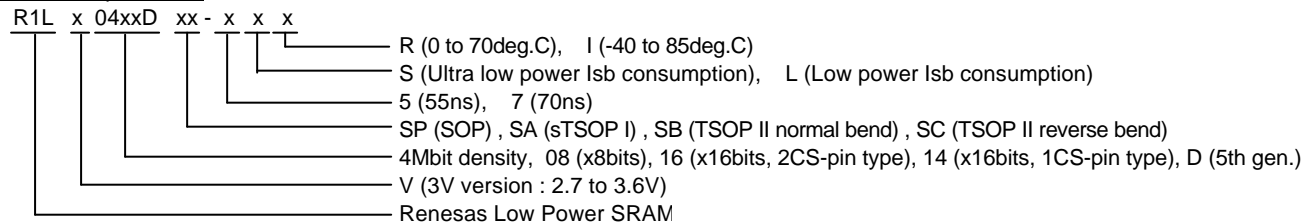
** 4Mb (x8) 3V parts** (Please refer to the following 1st term of Remarks, too.)

Package	Current part name	replaced part name
SOP	R1LV0408CSP -5SI	R1LV0408DSP -5SI
	R1LV0408CSP -5SC	R1LV0408DSP -5SR
	R1LV0408CSP -7LI	R1LV0408DSP -7LI
	R1LV0408CSP -7LC	R1LV0408DSP -7LR
sTSOP(I) normal bend	R1LV0408CSA -5SI	R1LV0408DSA -5SI
	R1LV0408CSA -5SC	R1LV0408DSA -5SR
	R1LV0408CSA -7LI	R1LV0408DSA -7LI
	R1LV0408CSA -7LC	R1LV0408DSA -7LR
TSOP(II) normal bend	R1LV0408CSB -5SI	R1LV0408DSB -5SI
	R1LV0408CSB -5SC	R1LV0408DSB -5SR
	R1LV0408CSB -7LI	R1LV0408DSB -7LI
	R1LV0408CSB -7LC	R1LV0408DSB -7LR

** 4Mb (x16) 3V parts** (Please refer to the following 2nd term of Remarks, too.)

Package	Current part name	replaced part name
TSOP(II) normal bend	R1LV0416CSB -5SI	R1LV0416DSB -5SI
	R1LV0416CSB -7LI	R1LV0416DSB -7LI
TSOP(II) normal bend	R1LV0414CSB -5SI	R1LV0414DSB -5SI
	R1LV0414CSB -7LI	R1LV0414DSB -7LI
FBGA	R1LV0416CBG -5SI	R1LV0416DBG -5SI
	R1LV0416CBG -7LI	R1LV0416DBG -7LI

2) Explanation about part name



Basically each correspondence follows above the list, however we'd like to ask you all to check data sheet of new part and to confirm whether all characteristics satisfy you or not.

3) Remarks

- part item change regarding temperature range ;

We will be changing part items about temperature range between R1LV0408C and R1LV0408D series.

When the item of "-5SC/-7LC" on R1LV0408C series has been using, please select the item on R1LV0408D as follows.

a) Your system requires the range of "0 to 70deg.C", please select the item of "-5SR/-7LR"on R1LV0408D series.

b) Your system requires exceeding range of "0 to 70deg.C", please select the item of "-5SI/-7LI"on R1LV0408D series.

- specification change on x16bits configuration parts regarding operating voltage range ;

Operating voltage range of R1LV0416C/R1LV0414C series is "2.2 to 3.6V".

On the other hand, that of R1LV0416D/R1LV0414D series is "2.7 to 3.6V".

<Comparison table between R1LV04xxC and R1LV04xxD series>

Circuit	R1LV04**C series	R1LV04**D series
Memory cell structure	Full CMOS cell	TFT load capacitor cell
Peripheral circuit	CMOS	CMOS

Process	R1LV04**C series	R1LV04**D series
Wafer process layer	1poly, 3metal, 1tungsten	8poly, 2metal, 1tungsten
Design rule	0.18um	0.15um
Gate oxide thickness	8.8nm/3.9nm	6.5nm
Gate oxide material	SiO ₂	SiO ₂
Passivation thickness	0.60um	0.75um
Passivation material	p-SiN	p-SiN

Assembly	R1LV04**C series	R1LV04**D series
Resin material	Epoxy	Epoxy
Lead frame material	Fe-Ni 42 alloy	Fe-Ni 42 alloy
Lead frame plating	Sn/Cu	Sn/Cu
Solder ball material for BGA	Sn/Ag/Cu	Sn/Ag/Cu
Inner wire material	Au	Au
Die bond material	resin	resin

Package (part1)	R1LV0408C*	R1LV0408D*
SOP	Available	Available
sTSOP I (normal bend)	Available	Available
TSOP II (normal bend)	Available	Available

Package (part2)	R1LV0416C*	R1LV0416D*
TSOP II (normal bend)	Available	Available
FBGA	Available	Available

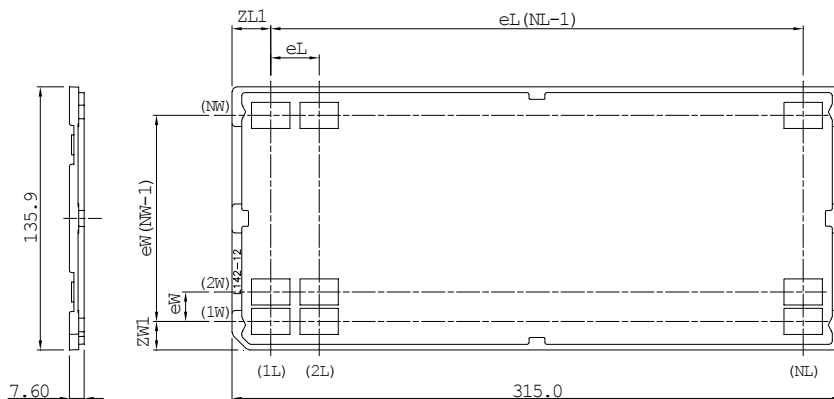
Package (part3)	R1LV0414C*	R1LV0414D*
TSOP II (normal bend)	Available	Available

Shipping tray/tube	R1LV0408C*	R1LV0408D*
SOP	tube (MP525PC)	tube (MP525PC)
sTSOP I (normal bend)	JEDEC tray (L196-10)	JEDEC tray (L196-10)
TSOP II (normal bend)	Renesas original tray (L142-14)	Renesas original tray (L196-93)

Shipping tray	R1LV0416C*	R1LV0416D*
TSOP II (normal bend)	Renesas original tray (L142-12)	JEDEC tray (L196-92)
FBGA	JEDEC tray (L196-45)	JEDEC tray (L196-45)

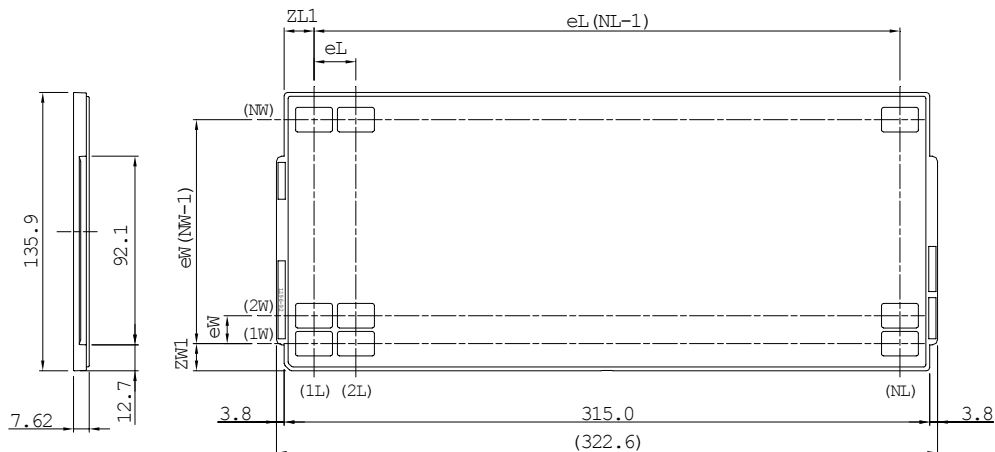
The change of the tray L142-12 -> L196-92

Current

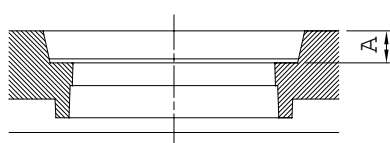


L142-12

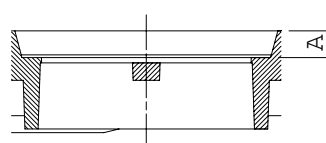
New



L196-92 (JEDEC TRAY)



L142-12



L196-92

(The dimensions of the tray)

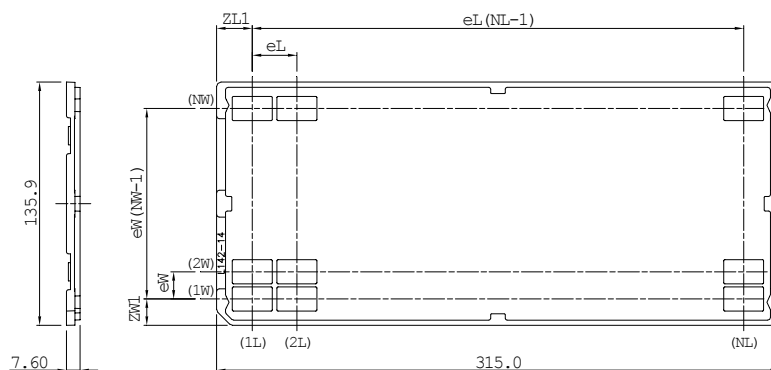
	ZW1	ZL1	eW	eL	eW(NW-1)	eL(NL-1)	A
L142-12	14.75	20.00	15.20	25.00	15.20×7=106.40	25.00×11=275.00	2.40
L196-92	13.27	14.56	13.67	20.42	13.67×8=109.36	20.42×14=285.88	2.00

(The number of pockets per tray)

	NW	NL	NW×NL
L142-12	8	12	96
L196-92	9	15	135

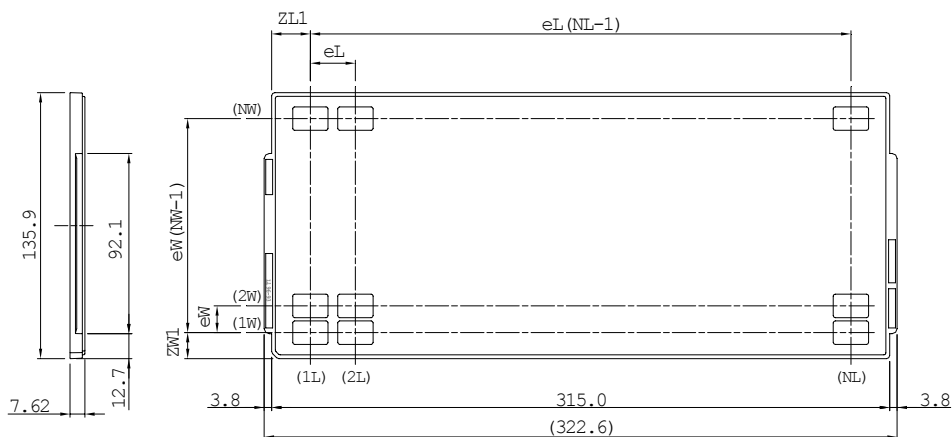
The change of the tray L142-14 -> L196-93

Current

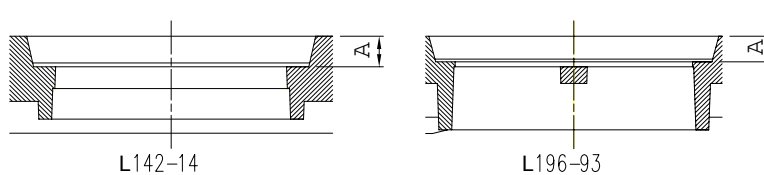


L142-14

New



L196-93 (JEDEC TRAY)



(The dimensions of the tray)

	ZW1	ZL1	eW	eL	eW(NW-1)	eL(NL-1)	A
L142-14	14.75	20.00	15.20	25.00	15.20×7=106.40	25.00×11=275.00	2.40
L196-93	13.27	19.74	13.67	22.96	13.67×8=109.36	22.96×12=275.52	2.00

(The number of pockets per tray)

	NW	NL	NW×NL
L142-14	8	12	96
L196-93	9	13	117