Date: Oct. 8, 2010

RENESAS TECHNICAL UPDATE

1753, Shimonumabe, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8668 Japan
Renesas Electronics Corporation

Product Category	SRAM		Document No.	TN-M62-A135A/E	Rev. 1.00
Title	Notice about the generation change of 256Kbit LP SRAM series		Information Category	Product Generation Change	
Applicable Product	256Kbit Low Power SRAM ; M5M5256D series	Lot No. All shipped lots after ‘11/4	Reference Document	Nothing	

Please be informed that we, Renesas will be proceeding with the product generation change of 256Kbit LP SRAM from “M5M5256D series” to “R1LV5256E series” or “R1LP5256E series”. This generation change is scheduled as follows.

So your acceptance of paper qualification and your kind understanding are greatly appreciated.

<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.

<Objective parts>

256Kb (x8) 5V, SOP : from M5M5256DFP series to R1LP5256ESP series

256Kb (x8) 5V, TSOP(normal bend) : from M5M5256DVP series to R1LP5256ESA series

256Kb (x8) 3V, SOP : from M5M5256DFP-xxG series to R1LV5256ESP series

256Kb (x8) 3V, TSOP(normal bend) : from M5M5256DVP-xxG series to R1LV5256ESA series

<Document and Sample availability>

Data sheet : Feb., 2011 (preliminary)   Apr., 2011(fixed version)

ES sample : Feb.., 2011

CS sample : Apr., 2011

Reliability report : Apr., 2011

<Launch date of this “generation change”>

We will be starting to ship out new generation parts accordingly from Apr. in 2011. There is a possibility to ship out both current parts series (M5M5256D) and new parts series (R1LP5256E or R1LV5256E) in parallel, because of our inventory of current parts series.

<replaced part name list on this generation change>

1) replaced part name on this generation change

<256Kb Low Power SRAM(3V version)>

Package	Current part name		Replaced part name
SOP	Not available		R1LV5256ESP-5SR
	Not available		R1LV5256ESP-5SI
	M5M5256DFP-70G	→	R1LV5256ESP-7SR
	M5M5256DFP-70XG	→	R1LV5256ESP-7SR
	M5M5256DFP-70GI	→	R1LV5256ESP-7SI

Package	Current part name		Replaced part name
TSOP (normal bend)	Not available		R1LV5256ESA-5SR
	Not available		R1LV5256ESA-5SI
	M5M5256DVP-70G	→	R1LV5256ESA-7SR
	M5M5256DVP-70XG	→	R1LV5256ESA-7SR
	M5M5256DVP-70GI	→	R1LV5256ESA-7SI

<256Kb Low Power SRAM(5V version)>

Package	Current part name		Replaced part name
SOP	M5M5256DFP-55LL	→	R1LP5256ESP-5SR
	M5M5256DFP-55XL	→	R1LP5256ESP-5SR
	Not available		R1LP5256ESP-5SI
	M5M5256DFP-70LL	→	R1LP5256ESP-7SR
	M5M5256DFP-70XL	→	R1LP5256ESP-7SR
	M5M5256DFP-70LLI	→	R1LP5256ESP-7SI

Package	Current part name		Replaced part name
TSOP (normal bend)	M5M5256DVP-55LL	→	R1LP5256ESA-5SR
	M5M5256DVP-55XL	→	R1LP5256ESA-5SR
	Not available		R1LP5256ESA-5SI
	M5M5256DVP-70LL	→	R1LP5256ESA-7SR
	M5M5256DVP-70XL	→	R1LP5256ESA-7SR
	M5M5256DVP-70LLI	→	R1LP5256ESA-7SI

2) Explanation about part name

R1L V 5256E xx - xx x

R(0 to 70deg.C), I(-40 to 85deg.C)

5S (55ns), 7S (70ns)

SP (SOP) , SA (sTSOP)

5256(256Kbit density), E (sixth generation)

P (5V version), V (3V version)

RENESAS Low Power SRAM

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.

<Comparison table between current parts series and new parts series>

Circuit	M5M5256D series	R1LV5256E / R1LP5256E series
Memory cell structure	High-resistance load	TFT load capacitor cell
Peripheral circuit	CMOS	CMOS

Process	M5M5256D series	R1LV5256E / R1LP5256E series
Wafer process layer	3poly, 1metal	8poly, 2metal, 1tungsten
Design rule	0.6um	0.15um
Gate oxide thickness	14nm	<For R1LP5256E series> Memory cell : 6.5nm peripheral circuit : 12nm <For R1LV5256E series> Memory cell / peripheral circuit : 6.5nm
Gate oxide material	SiO2	SiO2
Passivation thickness	0.75um	0.75um
Passivation material	p-SiN	p-SiN

Assembly	M5M5256D series	R1LV5256E / R1LP5256E series
Resin material	Epoxy Resin	Epoxy Resin
Frame material	Fe-Ni 42 alloy	Fe-Ni 42 alloy
Lead frame plating	Sn/Cu	Sn/Cu
Inner wire material	Au	Au
Die bond material	Resin	Resin

Sincerely yours.