Feb 01, 2017

Panasonic and United Microelectronics Corporation Agreed to Develop Mass Production Process for Next Generation ReRAM

The process for 40nm next-generation ReRAM will be developed using their own technologies. The sample will be shipped in 2018.

Osaka, Japan - Panasonic Semiconductor Solutions Co., Ltd. ("PSCS", Head Office: Nagaokakyo City, Kyoto Prefecture; President: Kazuhiro Koyama) has reached an agreement with United Microelectronics Corporation ("UMC", Head Office: Hsinchu City, Taiwan, CEO: Po Wen Yen) on the joint development of mass production process for next-generation 40nm ReRAM[1].

ReRAM, alike flash memory[2] currently in widespread use, is a type of non-volatile memory[3]. The device features a simple structure, high-speed processing, and low power consumption. PSCS started ReRAM mass production using a 180nm process in 2013, and is currently supplying its 8-bit microcomputer MN101LR series for low power consumption applications such as in portable healthcare devices. The company was the first to test and verify the high reliability of memory arrays by 40nm process.

The agreed cooperative project will enable the integration of 40nm ReRAM process technologies developed by PSCS with UMC's high-reliability CMOS process technologies. This will achieve a process platform for ReRAM that are applicable, as embedded memories in place of flash memories, to diverse system devices such as those widely used in IC cards, wearable terminals, and IoT devices.

PSCS will ship product samples in 2018 that use the new 40nm process, and will be the first to start mass production in the industry. The two companies, PSCS and UMC, will offer the co-developed ReRAM process platform to other semiconductor manufacturers and suppliers from around the world.

Regarding this cooperative program, PSCS President Kazuhiro Koyama says, "The company will provide a wide range of optimal products that meet customer needs by developing a scaling process platform that will accelerate the market uptake of ReRAM, whose mass production in the industry was started by PSCS."

"We are excited to enter into this foundry agreement with Panasonic," said Senior Vice President S.C. Chien from UMC. "The proven reliability, fast cycle times and high yields of our 40nm process will bring a new element of competitiveness to Panasonic's ReRAM, which will result in mutual benefits for both companies as the product gains widespread market adoption. We look forward to working with Panasonic to bring their 40nm ReRAM to high volume production."

Terminology

[1] ReRAM (Resistive Random Access Memory)
Non-volatile memory that generates wide resistance differences by applying pulse voltages to metal oxide thin films to store "0"s and "1"s. It has a simple structure that comprises metal oxides sandwiched by electrodes that enables simple manufacturing process, and features exceptional characteristics that include low power consumption and high-speed rewriting.
[2] Flash memory
Non-volatile memory that can be electrically erased and rewritten.
[3] Non-volatile memory
Semiconductor memory that retains data even when there is no power supply.

About Panasonic

Panasonic Corporation is a worldwide leader in the development of diverse electronics technologies and solutions for customers in the consumer electronics, housing, automotive, enterprise solutions and device industries. Since its founding in 1918, the company has expanded globally and now operates 474 subsidiaries and 94 associated companies worldwide, recording consolidated net sales of 7.553 trillion yen for the year ended March 31, 2016. Committed to pursuing new value through innovation across divisional lines, the company uses its technologies to create a better life and a better world for its customers. To learn more about Panasonic: http://www.panasonic.com/global.

About UMC(United Microelectronics Corporation)

UMC is a leading global semiconductor foundry that provides advanced IC production for applications spanning every major sector of the electronics industry. UMC's 10 wafer fabs are strategically located throughout Asia and are able to produce over 500,000 wafers per month. The company employs more than 17,000 people worldwide, with offices in Taiwan, mainland China, Europe, Japan, Korea, Singapore, and the United States. UMC : http://www.umc.com

Media Contact:

Public Relations Department

Panasonic Corporation
Tel: +81-(0)3-3574-5664 Fax: +81-(0)3-3574-5699