

Date: April 13, 2005 (*Update of March 21, 2005 Report*)

Subject: **CSMC-HJ CMOS 0.6 μ m Wafer Fab Reliability Report**

CSMC-HJ's (<http://www.csmc-hj.com.cn/csmc/english/index.asp>) CMOS, 5-volt, 0.6-micron process was recently verified for acceptability to Pericom's standard die level process qualification requirements. This facility has previously been qualified on their 0.8-micron and 0.5 micron CMOS process, and that data is available on Pericom's website (<http://www.pericom.com/quality/index.php>). This 0.6-micron process is a direct transfer using the key processing equipment and existing Pericom masks from CSM-S Fab 1 in Singapore (closed in March 2004).

A total of 130 units have now successfully completed 3000 hours of Dynamic High Temperature Operating Life (DHTOL) test at 150°C and 5.5 volts applied bias with no failures. The PI5C3383 product was used as the qualification vehicle, and therefore all products using this same process technology and design rules will meet Pericom's Wafer Fab Process Qualification requirements. This will include: **PI5C3244, 3245, 3384, 3861, 32X2245, 32X383, 32X384, 34X245, and 34X2245**, as well as device types from other product families that use this process. It also passed High Temp Storage Life (HTSL), Unbiased HAST (UHAST), and Temperature Cycle (TMCL) testing as shown below.

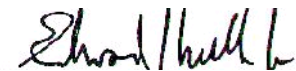
Based on 3000 hours of accelerated life test temperature and voltage operating conditions, the equivalent long-term life test FIT rate is currently 23.2, with a calculated MTBF of 390,000 hours. The FIT calculation was made using the Arrhenius equation, with an Activation energy of 0.5 eV, an assumed system operating temperature of 55 °C, and a Confidence factor of 60%.

Pericom's Qualification Test results:

Rel Lot #	Device Type	Pkg. Type	Date Code	Stress Test	Stress Condition	Stress Duration	Sample Units	Results Pass/Fail
Q04013-1A	PI5C3383	S24	X0444OW	DHTOL	150°C, 5.5 v	168 hrs	130	130/0
Q04013-1A	PI5C3383	S24	X0444OW			500 hrs		
Q04013-1A	PI5C3383	S24	X0444OW			1000 hrs		
Q04013-1A	PI5C3383	S24	X0444OW			2000 hrs		
Q04013-1A	PI5C3383	S24	X0444OW	↓	↓	3000 hrs	↓	↓
Q04013-1B	PI5C3383	S24	X0444OW	HTSL	150°C	168 hrs	100	100/0
Q04013-1B	PI5C3383	S24	X0444OW			500 hrs		
Q04013-1B	PI5C3383	S24	X0444OW	↓	↓	1000 hrs	↓	↓
Q04013-1C	PI5C3383	S24	X0444OW	UHAST	130°C	96 hrs	100	100/0
Q04013-1D	PI5C3383	S24	X0444OW	TMCL	-65, +150 °C	500 cycles	100	100/0

If there are any questions about this device qualification, please contact me as shown below.

Regards,



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