PERICOM Semiconductor Corporation
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PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN Number: **06-03**

Date Issued: **June 1, 2006**

Product(s) Affected: **PI5C16244**

Manufacturing Location Affected: **CSMC-Tech (Wuxi, China, PRC)**

Date Effective: **September 1, 2006 – standard 90 day waiting period.**
Note: Current CSMS-Fab 1 product may no longer be available.

Means of Distinguishing Changed Devices:

☐ Product Mark:

☐ Back Mark

☒ Date Code: **Wafer Fab ID letter code ***

☐ Other

**** W - last letter of date code signifies CSMC***

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Attachment: ☒ Yes; ☐ No
Characterization data by Pericom's Product Engineering confirmed CSMC-Tech devices have no critical performance differences from CSMS Fab 1 products. See attached Characterization Comparison Data.

Samples: **Request from Pericom Sales.**

Description and Purpose of Change:

This product has been transferred from wafer fab subcontractor Chartered Semiconductor Manufacturing Singapore's (CSMS) Fab 1 (which closed operations in March 2004), to the previously approved CSMC-Tech, Wuxi, wafer fab in China. The devices are now being manufactured from the same die array, and will retain the same die size and CMOS 0.6-µm, 1P2M process type as used in CSMC Fab 1. The key CSMS wafer fab manufacturing equipment was sold to CSMC in 2005, and Pericom is using the same CSMS Fab 1 masks. See the CSMC-Technologies website for more information about their operations:
http://www.csmc.com.cn/csmc/english/index.asp

☐ Die Technology
☒ Wafer Fabrication
☐ Assembly Process
☐ Equipment
☐ Material
☐ Testing
☒ Manufacturing Site
☐ Data Sheet
☒ Other: Class 2 change

Reliability/Qualification Summary: **Generic Process Qualification report is at:** http://www.pericom.com/pdf/gen/CSMC_6um.pdf

Customer Acknowledgement of Receipt:

Customer: _____

Name: _____

Title: _____

Date: _____

E-Mail: _____

Phone: _____

Fax: _____

☐ Approval for shipments prior to PCN effective date
Customer Comments (Optional): _____

Confidential/For Customer Use Only

Subject: PI5C16244 Characterization Comparison Report

Introduction:

PI5C16244 is a 16-Bit, 4-port bus switches. CSMC-Tech (Wuxi, PRC) and CSM-S Fab 1 are compared side by side.

Reference:

Wafer Fab: **CSMC-Tech Wuxi PRC** (Array: BS48U01-16244A)
Fab Process: 0.6 µm, 5V CMOS, 1P2M.
Lot #: EA554FF2.3A
Date Code: 0523XW
P*ackage:* TSSOP (A48)

Wafer Fab: **CSM-S Fab 1** (Array: BS48-16244A)
Fab Process: 0.6 µm, 5V CMOS, 1P2M.
Lot #: 276266
Date Code: 0508OC
Package: TSSOP (A48)

Equipment:

HP power supply & DMM,
HP4145B DC Analyzer
HP4285A LCR Meter
TDS7404 Oscilloscope, TX P7240 Active Probe
HP8082A Signal Generator
HP8110A Pulse Generator
Temptronix X-Stream 4300

Tables:

Table 1. DC Characteristics

			CSMC			CSM-S Fab 1					
Symb	**Test Conditions**	**Vcc**	**-40°C**	**25°C**	**90°C**	**-40°C**	**25°C**	**90°C**	**Min Spec**	**Max Spec**	**unit**
VIH	Input High Voltage	4.5 V	1.370	1.350	1.330	1.380	1.360	1.350	2.0		V
VIH	Input High Voltage	5.0 V	1.450	1.440	1.430	1.460	1.440	1.430	2.0		V
VIH	Input High Voltage	5.5 V	1.540	1.530	1.530	1.540	1.530	1.520	2.0		V
VIL	Input Low Voltage	4.5 V	1.600	1.590	1.580	1.590	1.580	1.570		0.8	V
VIL	Input Low Voltage	5.0 V	1.710	1.700	1.690	1.700	1.700	1.690		0.8	V
VIL	Input Low Voltage	5.5 V	1.810	1.800	1.790	1.800	1.790	1.780		0.8	V
VH	Input Hysteresis	4.5 V	0.230	0.240	0.250	0.210	0.220	0.220	typ	0.15	V
VH	Input Hysteresis	5.0 V	0.260	0.260	0.260	0.240	0.260	0.260	typ	0.15	V
VH	Input Hysteresis	5.5 V	0.270	0.270	0.260	0.260	0.260	0.260	typ	0.15	V
Ron	Ion=48mA, Vin=0 V	4.5 V	4.33	5.12	6.62	3.87	4.55	5.67		7	Ω
Ron	Ion=15mA, Vin=2.4 V	4.5 V	9.00	11.30	14.80	6.87	8.33	10.60		15	Ω
IIL	Vin= 0 V	5.5 V	76p	-9.0p	5.0p	52p	-32.5p	-3.0p		-1	µA
IIH	Vin= 5.5 V	5.5 V	3.32n	136p	2.07n	3.58n	308p	2.50n		1	µA
IOZL	Voz= 0 V	5.5 V	1.52n	-66.3p	276p	690p	-639p	-587p		-1	µA
IOZH	Voz= 5.5V	5.5 V	1.64n	116p	2.87n	1.85n	612p	3.80n		1	µA
VIK	I/O Pins, I=-18mA	4.5 V	0.833	0.737	0.667	0.816	0.748	0.653		-1.2	V
VIK	S Pin, I=-18mA	4.5 V	0.871	0.784	0.704	0.851	0.778	0.685		-1.2	V
ICCL	Vin=0 V	5.5 V	2.16n	1.24n	22.5n	2.21n	1.33n	27.0n		3	µA
ICCH	Vin=5.5V	5.5 V	388p	294p	21.6n	1.76n	494p	25.8n		3	µA
ΔICC	Vin=3.4V	5.5 V	1.26	1.14	1.02	1.39	1.26	1.17		2.5	mA
IOS	C =0V, A, B =Vcc	5.25 V	126	113	104	128	115	104	100		mA

Table 2. Capacitance at 25C

Symbol	**Description**	**Vcc**	**CSMC**	**CSM-S Fab 1**	**Typ**	**Units**
Cin	Control Input	5 V	5.18	5.33	6	pF
Coff	A Cap, Switch Off	5 V	7.09	6.92	7	pF
Coff	B Cap, Switch Off	5 V	6.79	6.53	7	pF
Con	A-B, Switch On	5 V	14.67	13.89	14	pF

HP4285A LCR Meter

Table 3. Dynamic Icc, Vcc=5.0V

Frequency	**CSMC**	**CSM-S Fab 1**	**Units**
1MHZ	0.095	0.079	mA
5MHZ	0.472	0.393	mA
10MHZ	0.943	0.785	mA
20MHZ	1.881	1.568	mA
30MHZ	2.817	2.349	mA

Table 4. Ron Measurement, all paths, Vcc=4.5V, 25C

	CSMC		CSM-S Fab 1		
Channel	**Ion=+48mA Vin=0V**	**Ion=+15mA Vin=2.4V**	**Ion=+48mA Vin=0V**	**Ion=+15mA Vin=2.4V**	**units**
1A0 – 1B0	5.10	11.10	4.52	8.20	Ω
1A1 – 1B1	5.23	11.70	4.71	9.00	Ω
1A2 – 1B2	5.08	11.50	4.54	8.73	Ω
1A3 – 1B3	5.07	11.50	4.58	8.73	Ω
2A0 – 2B0	5.04	11.50	4.49	8.60	Ω
2A1 – 2B1	5.04	11.50	4.43	8.54	Ω
2A2 – 2B2	5.05	11.50	4.41	8.46	Ω
2A3 – 2B3	5.06	11.60	4.42	8.48	Ω
3A0 – 3B0	5.05	11.50	4.41	8.46	Ω
3A1 – 3B1	5.06	11.60	4.42	8.46	Ω
3A2 – 3B2	5.07	11.50	4.44	8.46	Ω
3A3 – 3B3	5.05	11.50	4.43	8.40	Ω
4A0 – 4B0	5.10	11.50	4.49	8.47	Ω
4A1 – 4B1	5.12	11.50	4.49	8.47	Ω
4A2 – 4B2	5.22	11.70	4.60	8.60	Ω
4A3 – 4B3	5.21	11.20	4.56	8.33	Ω
Min	**5.04**	**11.10**	**4.41**	**8.20**	**Ω**
Max	**5.23**	**11.70**	**4.71**	**9.00**	**Ω**
Specs Limits	**Max=7.00**	**Max=15.00**	**Max=7.00**	**Max=15.00**	**Ω**

Table 5. AC Characteristics (Bus Enable/Disable Time)

			CSMC			CSM-S Fab 1				
Symbol	**Vcc**	**Load**	**-40°C**	**25°C**	**90°C**	**-40°C**	**25°C**	**90°C**	**Max Spec**	**Units**
tpZH	4.5 V	Load A	3.06	3.29	3.56	2.59	2.81	3.03	5.6	nS
tpHZ	4.5 V	Load A	3.61	3.78	3.86	3.33	3.45	3.55	5.2	nS
tpZL	4.5 V	Load B	3.27	3.51	3.79	2.82	3.02	3.28	5.6	nS
tpLZ	4.5 V	Load B	2.91	3.10	3.27	2.51	2.73	2.85	5.2	nS

*Bus Select Time
Load A: 50pF//500Ω
Load B: 50pF//500Ω, 500Ω to 7V