

PRODUCT/PROCESS CHANGE NOTICE (PCN)

PCN Number: **06-02**
 Date Issued: **May 31, 2006**
 Product(s) Affected: **PI5C32390**
 Manufacturing Location Affected: **CSMC-Tech (Wuxi, China, PRC)**
 Date Effective: **August 31, 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): _____

Subject: PI5C32390 Characterization Comparison Report

Introduction:

PI5C32390 is a 16-to –8 Multiplexer/Demultiplexer bus switch. CSMC-Wuxi and CSM-S Fab 1 were compared side by side.

Reference:

Wafer Fab: **CSMC**, Array BS48-32390

Process: 0.6 μm , 5V 1P2M, CMOS

Lot #: EA54FF2.2A

Date Code: 0524ZW

Package: QSOP (Q28)

Wafer Fab: **CSM-S Fab 1**, Array BS48-32390

Process: 0.6 μm , 5V 1P2M, CMOS

Lot #: 257043.1

Date Code: 0420ZC

Package: QSOP (Q28)

Equipment:

HP power supply & DMM,

HP4145B DC Analyzer

HP4285A LCR Meter

TDS8000 Oscilloscope, TX P6209 Active Probe

HP8082A Signal Generator

HP8110A Pulse Generator

Temptronix X-Stream 4300

Tables:

Table 1: DC Characteristics

Table 2: Capacitance, 25C

Table 3: Dynamic ICC, $V_{cc} = 5.5V$, 25C

Table 4: Ron Measurements, all paths, 25C

Table 5: AC Characteristics - Enable and Disable timing.

Table 1A: DC Characteristics

Symb	Test Conditions	Vcc	CSMC-Wuxi			CSM-S Fab 1			Min Spec	Max Spec	unit
			-40°C	25°C	90°C	-40°C	25°C	90°C			
VIH	Input High Voltage	4.75 V	1.380	1.360	1.350	1.420	1.400	1.380	2.0	V	
VIH	Input High Voltage	5.00 V	1.420	1.410	1.400	1.460	1.440	1.430	2.0	V	
VIH	Input High Voltage	5.25 V	1.460	1.450	1.440	1.500	1.480	1.470	2.0	V	
VIL	Input Low Voltage	4.75 V	1.620	1.620	1.620	1.650	1.650	1.640		0.8 V	
VIL	Input Low Voltage	5.00 V	1.680	1.680	1.680	1.700	1.700	1.700		0.8 V	
VIL	Input Low Voltage	5.25 V	1.730	1.740	1.740	1.750	1.760	1.750		0.8 V	
VH	Input Hysteresis	4.75 V	0.240	0.260	0.270	0.230	0.250	0.260		N/A V	
VH	Input Hysteresis	5.00 V	0.260	0.270	0.280	0.240	0.260	0.270		N/A V	
VH	Input Hysteresis	5.25 V	0.270	0.290	0.300	0.250	0.280	0.280		N/A V	
Ron	Ion=48mA, Vin=0 V	4.75 V	26.80	30.30	34.80	22.70	25.80	29.30		40 Ω	
Ron	Ion=15mA, Vin=2.4 V	4.75 V	30.50	35.30	41.30	25.50	29.60	34.30		48 Ω	
IIL	Vin= 0 V	5.25 V	-548p	-2.5p	-8.0p	-560p	-6.0p	27.0p		-1μ A	
IIH	Vin= 5.5 V	5.25 V	3.21η	20.0p	2.07η	2.53η	96.0p	1.80η		1μ A	
IOZL	Voz= 0 V	5.25 V	-1.26η	-86.0p	-30p	-2.30η	-55.0p	-102p		-1μ A	
IOZH	Voz= 5.25V	5.25 V	2.48η	107p	3.4η	6.22η	316p	4.14η		1μ A	
VIK	I/O Pins, I=-18mA	4.75 V	0.872	0.805	0.709	0.861	0.792	0.695		-1.2 V	
VIK	S Pin, I=-18mA	4.75 V	0.872	0.793	0.695	0.860	0.783	0.682		-1.2 V	
ICCL	Vin=0 V	5.25 V	2.85η	868p	26.81η	3.72η	1.22η	22.1η		30 μA	
ICCH	Vin=5.5V	5.25 V	1.63η	266p	25.46η	1.86η	620p	21.3η		30 μA	
ΔICC	Vin=3.4V	5.25 V	856μ	785μ	742μ	929μ	864μ	818μ		3.5 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-Wuxi	CSM-S Fab 1	Typ	Units
Cin	\AEN, \BEN Enable Pin	5 V	5.19	4.90	6	ρF
Coff	A Cap, Switch Off	5 V	6.50	6.27	6	ρF
Coff	B Cap, Switch Off	5 V	6.45	6.22	6	ρF
Coff	C Cap, Switch Off	5 V	10.60	10.02	6	ρF
Con	A-C, Switch On	5 V	17.60	16.50	16	ρF
Con	B-C, Switch On	5 V	17.65	16.45	16	ρF

HP4285A LCR Meter

Table 3: Dynamic Icc, Vcc=5.25V

Frequency	CSMC-Wuxi	CSM-S Fab 1	Units
1MHZ	0.141	0.112	mA
5MHZ	0.699	0.557	mA
10MHZ	1.395	1.110	mA
20MHZ	2.787	2.215	mA
30MHZ	4.173	3.312	mA

Table 4: Ron Measurement, all paths, Vcc=4.75V, 25C

Channel	CSMC-Wuxi		CSM-S Fab 1		units
	Ion=+48mA Vin=0V	Ion=+15mA Vin=2.4V	Ion=+48mA Vin=0V	Ion=+15mA Vin=2.4V	
A0-C0	30.30	35.50	25.70	29.50	Ω
A1-C1	30.10	35.40	25.40	29.10	Ω
A2-C2	30.10	35.40	25.40	29.10	Ω
A3-C3	30.00	35.30	25.40	29.00	Ω
A4-C4	29.90	35.10	25.10	28.80	Ω
A5-C5	29.90	35.30	25.20	28.90	Ω
A6-C6	29.90	35.30	25.20	28.90	Ω
A7-C7	30.30	35.50	25.50	29.10	Ω
B0-C0	29.40	34.70	24.80	28.40	Ω
B1-C1	29.50	34.90	24.70	28.40	Ω
B2-C2	29.40	34.70	24.70	28.30	Ω
B3-C3	29.40	34.50	24.80	28.50	Ω
B4-C4	29.40	34.50	24.70	28.30	Ω
B5-C5	29.50	34.60	24.80	28.50	Ω
B6-C6	29.50	34.60	24.80	28.60	Ω
B7-C7	29.50	34.70	24.80	28.60	Ω
Min	29.40	34.50	24.70	28.30	Ω
Max	30.30	35.50	25.70	29.50	Ω
Spec Limit	Typ=40	Typ=48	Typ=40	Typ=48	Ω

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

Symbol	Vcc	Load	CSMC-Wuxi			CSM-S Fab 1			Max Spec	Units
			-40°C	25°C	90°C	-40°C	25°C	90°C		
tpZH	4.75 V	Load A	3.50	3.85	4.24	2.92	3.22	3.50	6.5	ηS
tpHZ	4.75 V	Load A	3.79	3.95	4.13	3.48	3.58	3.71	5.5	ηS
tpZL	4.75 V	Load B	3.94	4.38	4.82	3.32	3.68	4.07	6.5	ηS
tpLZ	4.75 V	Load B	4.20	4.58	4.88	3.47	3.77	4.09	5.5	ηS

*Bus Select Time

Load A: 50pF//500Ω

Load B: 50pF//500Ω, 500Ω to 7V