



# Reliability Report

## 2001

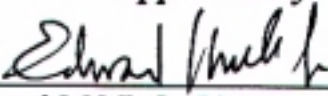
*Built In Reliability*

# Reliability By Design

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*Approved by:*  
  

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*Edward J. Mello Jr., Director, Quality Systems*

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## INDEX:

<b>Commitment To Quality:</b>	<b>Page 4</b>
<b>Product Families:</b>	<b>Page 5</b>
<b>Wafer Fab Process Technologies:</b>	<b>Page 6</b>
<b>Wafer Fab Codes:</b>	<b>Page 6</b>
<b>Fab Subcontractors:</b>	<b>Page 6</b>
<b>Package Type Codes And Dimensions:</b>	<b>Page 7</b>
<b>Package Assembly Codes:</b>	<b>Page 8</b>
<b>Assembly Subcontractors:</b>	<b>Page 8</b>
<b>Reliability Testing Methodology:</b>	<b>Page 9</b>
<b>Reliability Qualification Tests:</b>	<b>Page 10</b>
<b>When Tests Are Performed:</b>	<b>Page 11</b>
<b>Which Tests Are Not Performed:</b>	<b>Page 11</b>
<b>Guide To Reading This Report:</b>	<b>Page 12</b>
<b>Guide To Using This Report:</b>	<b>Page 13</b>
<b><u>Process/Design Test Data:</u></b>	
<b>Latch-Up Test Data:</b>	<b>Page 15</b>
<b>ESD Test Data:</b>	<b>Page 18</b>
<b>High Temperature Life Test Data:</b>	<b>Page 22</b>
<b>High Temperature Bake Test Data:</b>	<b>Page 28</b>
<b><u>Package Environmental Test Data:</u></b>	
<b>Temperature Humidity Biased Test:</b>	<b>Page 32</b>
<b>Temperature Humidity Storage Test:</b>	<b>Page 32</b>
<b>Accelerated Moisture Resistance Autoclave:</b>	<b>Page 33</b>
<b>Temperature Cycle:</b>	<b>Page 37</b>
<b><u>Moisture Sensitivity Level Data:</u></b>	
<b>Preconditioned Autoclave:</b>	<b>Page 43</b>
<b>Preconditioned Temperature Cycle:</b>	<b>Page 46</b>
<b>Moisture Sensitivity Level:</b>	<b>Page 50</b>
<b>Plastic Package Improvements:</b>	<b>Page 51</b>
<b>Package Solder Reflow Conditions:</b>	<b>Page 52</b>
<b>Package Solder Reflow Profiles:</b>	<b>Page 53</b>

## COMMITMENT TO QUALITY:

Pericom supports the Quality Systems and Management concepts of the ISO-9000 series of international standards for Quality. A corporate Quality Policy (detailed below) has been established as the basis of our commitment to maintain a world class quality supplier status. Adhering to this policy is required for *all* employees, as Quality is not the responsibility of any one person or group; each and every employee shares it.

In recognition of our commitment, Pericom completed an ISO-9001 Registration Assessment Audit with Underwriter's Laboratories (UL), and Certificate Registration File Number A3151 was issued on March 27, 1995. We have successfully passed all Reassessment Audits since that time, and our Certificate was revised and reissued for two additional years on May 25, 1999. For customers requiring Pericom's Commercial and Government Entity (CAGE) identification, our assigned code is 06MQ5

### *Quality Policy:*

***Pericom will deliver products and services that conform to customer requirements. We shall perform each job correctly the first time, emphasizing constant improvement in the quality of our work.***

*"Pericom will deliver..."* - delivery, not just intentions, is one of the key measures of Pericom's commitment to deliver a quality product to customers.

*"...products and services..."* - quality performance is not limited to physical products; sending a letter without spelling errors, or promptly and politely answering a telephone are services which demand our best quality.

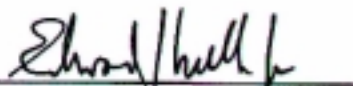
*"...that conform to customer requirements."* - a clear understanding of all requirements are needed *before* one can deliver quality products or services. This also signifies mutual agreement, with clear, two-way communications, which applies to customers within as well as outside the company. The entire Pericom team understands that each customer has a set of requirements and expectations that must be met.

*"We shall perform each job correctly the first time, ..."* - doing jobs correctly the first time means meeting agreements, that quality improvement measures are driven to determine the source of defects and preventing those defects from reoccurring. The continual *process* of preventing defects will drive down the costs we and our customer's experience, because costs associated with rework, redesign, etc., are dollars taken from being price competitive.

*"...emphasizing constant improvement in the quality of our work."* - each employee shall strive to find better, faster, more economical ways to perform their job, to ensure that quality continues to improve along with cost effectiveness.



Alex Hui  
President and CEO



Edward J. Mello, Jr.  
Director, Quality Systems

## PERICOM PRODUCT FAMILIES AND WAFER FAB PROCESSES

*The Pericom product data presented in this report represents the data from four marketing defined product group of families which are manufactured on various wafer fab processes:*

<u><i>DDR Products</i></u>	<u><i>Process Technology</i></u>	<u><i>More Recent Options</i></u>
<i>2.5 Volt Bus switch/SSTV</i>	<i>CS2L312/CS2L312A</i>	<i>TS2L312</i>
<i>2.5 Volt Bus SSTV Clock Driver</i>	<i>CS2L312/CS2L312A</i>	<i>TS2L312</i>
<u><i>SiliconInterface Logic</i></u>	<u><i>Process Technology</i></u>	<u><i>More Recent Options</i></u>
<i>3.3 Volt ALVC/ALVCH/ALVTC</i>	<i>CS0E5E</i>	<i>TS0E5E/HS0E5E</i>
<i>1.8/2.5 Volt ALVTC/AVC/VCX/SSTV</i>	<i>CS2L312</i>	<i>CS2L312A/TS2L312</i>
<i>3.3 Volt LPT/LCX</i>	<i>CS0B8B</i>	
<i>3.3 Volt FCT</i>	<i>CS0E5E</i>	
<i>5.0 Volt FCT</i>	<i>CS0080/CS0E6E/CS0F6F/CS0F5F</i> <i>HS0F6F/HS0F5F/PS0F5F</i>	
<i>5.0 Volt GTLP</i>	<i>CS0F5F</i>	<i>PS0F5F</i>
<u><i>SiliconConnect</i></u>	<u><i>Process Technology</i></u>	<u><i>More Recent Options</i></u>
<i>3.3 Volt LVDS</i>	<i>CS2L312/CS2L312A</i>	<i>TS2L312</i>
<u><i>SiliconClock</i></u>	<u><i>Process Technology</i></u>	<u><i>More Recent Options</i></u>
<i>5.0 Volt Non-PLL Clock Drivers</i>	<i>CS0080</i>	
<i>3.3 Volt Clock Drivers</i>	<i>CS0E5E</i>	<i>CS2L313</i>
<i>5.0 Volt Zero Delay Clock Drivers</i>	<i>CS0F6F</i>	
<i>3.3 Volt Clock Generators</i>	<i>CS0E5E</i>	
<i>5.0 Volt Clock Generators</i>	<i>CS0080</i>	
<i>3.3/5.0 Volt Programmable Skew</i>	<i>CS0F5F</i>	<i>PS0F5F</i>
<u><i>SiliconSwitch</i></u>	<u><i>Process Technology</i></u>	<u><i>More Recent Options</i></u>
<i>5.0 Volt Analog Switch</i>	<i>CS0E6E/CS0F5F</i>	<i>PS0F5F</i>
<i>16.0 Volt Analog Switch</i>	<i>NSLD15</i>	
<i>5.0 Volt Bus/Lan/VideoSwitch</i>	<i>CS0080/CS0E6E/CS0F6F/CS0F5F</i> <i>HS0F6F/HS0F5F/PS0F5F</i>	
<i>3.3 Volt BusSwitch</i>	<i>CS0E5E/CS2L312/CS2L312A</i>	<i>TS2L312</i>
<i>5.0 Volt Crossbar Switch</i>	<i>CS0353</i>	

## PERICOM WAFER FAB PROCESS TECHNOLOGIES

PROCESS	FAB	SUBCONTRACTOR CMOS PROCESS TECHNOLOGY DETAILS
NSLD15	NJRC	1.6µm gate, 16 V Single-Poly Double-Metal (SPDM) CMOS
CS0080	CSMC	0.8µm gate, 5.0V Single-Poly Double-Metal (SPDM) CMOS
CS0B8B	CSMC	0.8µm gate, 3.3V Single-Poly Double-Metal (SPDM) CMOS
CS0E6E	CSMC	0.6µm gate, 0.8µm M2 5.0V Single-Poly Double-Metal (SPDM) CMOS
CS0F6F	CSMC	0.6µm gate, 5.0V Single-Poly Double-Metal (SPDM) CMOS
TS0F6F	TSMC	0.6µm gate, 5.0V Single-Poly Double-Metal (SPDM) CMOS
HS0F6F	HMEC	0.6µm gate, 5.0V Single-Poly Double-Metal (SPDM) CMOS
CS0E5E	CSMC	0.5µm gate, 0.6µm M2 3.3V Single-Poly Double-Metal (SPDM) CMOS
TS0E5E	TSMC	0.5µm gate, 0.6µm M2 3.3V Single-Poly Double-Metal (SPDM) CMOS
CS0F5F	CSMC	0.5µm gate, 0.6µm M2 5.0V Single-Poly Double-Metal (SPDM) CMOS
HS0F5F	HMEC	0.5µm gate, 0.6µm M2 5.0V Single-Poly Double-Metal (SPDM) CMOS
PS0F5F	PSAC	0.5µm gate, 0.6µm M2 5.0V Single-Poly Double-Metal (SPDM) CMOS
CS0353	CSMC	0.5µm gate, 0.6µm M3 5.0V Single-Poly Triple-Metal (SPTM) CMOS
CS2L312	CSMC	0.35µ gate, 3.3V Single-Poly Double-Metal (SPDM) CMOS
TS2L312	TSMC	0.35µ gate, 3.3V Single-Poly Double-Metal (SPDM) CMOS
CS2L312A	CSMC	Enhanced 0.35µ gate, 3.3V Single-Poly Double-Metal (SPDM) CMOS
CS2L313	CSMC	0.35µ gate, 3.3V Single-Poly Triple-Metal (SPTM) CMOS

## PERICOM WAFER FAB CODES AND SUBCONTRACTORS

CODE	FAB	FAB SUBCONTRACTOR & GEOGRAPHIC LOCATION	INTERNET ADDRESS
C	CSMS	Chartered Semiconductor Manufacturing Corporation, Singapore	<a href="http://www.charteredsemi.com">http://www.charteredsemi.com</a>
D	NJRC	New Japan Radio Corporation, Japan	<a href="http://www.njr.co.jp">http://www.njr.co.jp</a>
G	HMEC	Hyundai Micro Electronics Corporation, Korea (formerly Lucky Gold Star Corporation -- LGSC)	<a href="http://www.hyundaimicro.co.kr">http://www.hyundaimicro.co.kr</a>
Q	PSAC	Peregrine Semiconductor Australia Corporation, Australia (formerly Quality Semiconductor Australia Corporation -- QSAC)	<a href="http://www.peregrine-semi.com">http://www.peregrine-semi.com</a>
T	TSMC	Taiwan Semiconductor Manufacturing Corporation, Taiwan	<a href="http://www.tsmc.com.tw">http://www.tsmc.com.tw</a>

## PERICOM STANDARD PACKAGE TYPE CODES AND DIMENSIONS

CODE	TYPE	LEAD STYLE, PITCH & STANDARD PACKAGE FAMILY DIMENSIONS
<b>A</b>	TSSOP	Gull wing leads, 0.5 mm lead pitch, 6.1 mm [240 mil] wide, 1.2 mm high
<b>B</b>	BQSOP	Gull wing leads, 0.4 mm lead pitch [48 pin], 0.5 mm lead pitch [40 & 80 pin] 3.8 mm [150 mil] wide, 2.0 mm high
<b>C</b>	SC70	Gull wing leads, 0.65 mm lead pitch, 2.0 mm length, 1.3 mm [50 mil] wide, 1.1 mm high
<b>FA</b>	TQFP	Gull wing leads, 0.80 mm lead pitch, 7.0 × 7.0 mm, 1.2 mm high
<b>FB</b>	LQFP	Gull wing leads, 0.80 mm lead pitch [32 pin], 0.65 mm lead pitch [52 pin] 7.0 × 7.0 mm, 1.6 mm high
<b>H</b>	SSOP	Gull wing leads, 0.65 mm lead pitch, 5.3 mm [209 mil] wide, 2.0 mm high
<b>J</b>	PLCC	J leads, 50 mil lead pitch, 14.0 × 11.4 mm [32 pin], 17.5 × 17.5 mm [44 pin], 4 mm high
<b>K</b>	TSSOP	Gull wing bend leads, 0.4 mm lead pitch, 4.4 mm [173 mil] wide, 1.2 mm high
<b>L</b>	TSSOP	Gull wing bend leads, 0.65 mm lead pitch, 4.4 mm [173 mil] wide, 1.2 mm high
<b>NA</b>	PBGA	Eutectic solder ball, 1.27 mm ball pitch, 27.0 × 27.0 mm, 3.5 mm high
<b>NB</b>	LFBGA	Eutectic solder ball, 0.8 mm ball pitch, 8 × 8 mm [64 pin], 13.5 × 5.5 mm [96 pin], 16.0 × 5.5 mm [114 pin], 3.5 mm high
<b>NC</b>	TFBG A	Eutectic solder balls, 0.5 mm ball pitch, 7.0 × 7.0 mm [64 pin], 1.2 mm high
<b>P</b>	PDIP	Through-hole leads, 100 mil lead pitch, 7.6 mm [300 mil] wide, 5.3 mm high
<b>Q</b>	QSOP	Gull wing leads, 25 mil lead pitch, 3.8 mm [150 mil] wide, 1.75 mm high
<b>R</b>	TSSOP	Gull wing bend leads, 0.64 mm lead pitch, 3.8 mm [150 mil] wide, 1.2 mm high
<b>S</b>	SOIC	Gull wing leads, 50 mil lead pitch, 7.5 mm [300 mil] wide, 2.6 mm high
<b>T</b>	SOT23	Gull wing leads, 0.95 mm lead pitch; 2.9 mm length; 1.6 mm [64 mil] wide, 1.45 mm high
<b>U</b>	MSOP	Gull wing leads, 37 mil lead pitch, 1.6 mm [64 mil] wide, 1.1 mm high
<b>V</b>	SSOP	Gull wing leads, 25 mil lead pitch, 7.6 mm [300 mil] wide, 2.8 mm high
<b>W</b>	SOIC	Gull wing leads, 50 mil lead pitch, 3.8 mm [150 mil] wide, 1.75 mm high
<b>Z</b>	MLF	Leadless lands, 0.5 mm land pitch, 6.0 mm [236 mil] wide, 1.75 mm high

## PERICOM PACKAGE ASSEMBLY CODES AND SUBCONTRACTORS

CODE	ASSY	ASSY SUBCONTRACTOR/GEOGRAPHIC LOCATION	INTERNET ADDRESS
<b>E</b>	AITI	Advanced Interconnect Technologies Incorporated, Indonesia (formerly Astra Microtronics Technology – AMT)	<a href="http://www.aitwebsite.com">http://www.aitwebsite.com</a>
<b>F</b>	CSTM	Carsem (M Facility) Semiconductor and Test, Malaysia	<a href="http://www.carsem.com">http://www.carsem.com</a>
<b>J</b>	WAEL	Walsin Advanced Electronics Limited, Taiwan	<a href="http://www.wae.com.tw">http://www.wae.com.tw</a>
<b>M</b>	LPIL	Lingsen Precision Industries Limited, Taiwan	<a href="http://www.lingsen.com.tw">http://www.lingsen.com.tw</a>
<b>N</b>	CSTS	Carsem (S Facility) Semiconductor and Test, Malaysia	<a href="http://www.carsem.com">http://www.carsem.com</a>
<b>O</b>	OSET	Orient Semiconductor and Test, Taiwan	<a href="http://www.ose.com.tw">http://www.ose.com.tw</a>
<b>P</b>	OSEP	Orient Semiconductor and Test, Philippines	<a href="http://www.ose.com.tw">http://www.ose.com.tw</a>
<b>S</b>	UNIB	Unisem (M) Berhad, Malaysia,	<a href="http://www.unisem.com.my">http://www.unisem.com.my</a>
<b>V</b>	CHIP	ChipPAC, China,	<a href="http://www.chippac.com">http://www.chippac.com</a>
<b>W</b>	KPTI	Kingpak Technology Incorporated, Taiwan,	<a href="http://www.kingpak.com">http://www.kingpak.com</a>
<b>X</b>	SPEL	SPEL Semiconductor Limited, India, (formerly SPIC Electronics and Systems Limited SPEL)	<a href="http://www.spel.com">http://www.spel.com</a>
<b>Z</b>	NSEB	NS Electronics - Bangkok	<a href="http://www.nseb.com">http://www.nseb.com</a>

## PERICOM RELIABILITY TESTING METHODOLOGY

*Pericom employs a commonly used industry method to generically qualify product. It is based on the premise that if one product of a specific wafer fab/package assembly process/materials is already qualified, then a second product that has similar design, manufacturing process, and materials can be qualified by extending the data used to qualify the first product to the second product without generating additional data. This methodology allows the ability to benchmark suppliers to ensure continuous process improvements and minimize cost and time required for new product availability.*

*The basis of this “qualification by similarity or extension” is the following rules:*

### *A. For Wafer Fabrication Process and Materials:*

- i) The wafer fabrication process technology and location are the same or similar*
- ii) The die array design rules and die size are the same or similar*
- iii) The standard and customized cell design and layout rules are the same or similar*
- iv) The density and complexity are the same or similar*
- v) The wafer fabrication materials are the same or similar*

### *B. For Package Assembly Process and Materials:*

- i) The package assembly process technology and location are the same or similar*
- ii) The die paddle to package aspect ratio is the same or smaller*
- iii) The package dimensions width and thickness dimensions are the same or similar*
- iv) The leadframe/substrate design and lead/ball pitch are the same or similar*
- v) The package assembly materials are the same or similar*

*Where a product of interest is not sampled during this period, it is valid to use the reliability data of the particular process technology or package type family to which the part belongs, since all parts within the same family are designed to the same rules and manufacturing is controlled by SPC. Within a product family, a device can only be fabricated on one process technology/option and only assembled on one package type process.*

## RELIABILITY QUALIFICATION OF PLASTIC PACKAGED MICROCIRCUITS

PERICOM RELIABILITY TEST DESCRIPTION (ALTERNATIVE NAME)	PERICOM TEST CODE	EIA JEDEC STANDARD (NOTES PAGE 9)	EIAJ 4701 STANDARD JAPAN
Latch-Up Sensitivity	LU1	JESD17 (1)	ED-4701-1-C113
Latch-Up Sensitivity	LU2	JESD78 (2)	ED-4701-1-C113
Electrostatic Discharge Sensitivity	ESD1	MIL-STD-883 (3)	ED-4701-1-C111A
Electrostatic Discharge Sensitivity	ESD2	JESD22-A114B (4)	ED-4701-1-C111A
(Dynamic) High Temperature & Voltage Operating Life	DHTVOL	JESD22-A108B (5)	ED-4701-D101
High Temperature Storage Life (Bake)	HTSL	JESD22-A103A	ED-4701-3-B111A
Temperature Humidity Bias (85/85/Biased)	THBT	JESD22-A101B	ED-4701-3-B122A
Temperature Humidity Storage (85/85/No Bias)	THST	JESD22-A101B	ED-4701-3-B122A
Accelerated Moisture Resistance (HAST/No Bias)	AMRT	JESD22-A118 (22)	-----
Autoclave (Pressure Cooker)	ACLV	JESD22-A102C	ED-4701-3-B123A
Temperature Cycling	TMCL	JESD22-A104B	ED-4701-3-B131A
Preconditioned Autoclave	PACLV	JESD22-A113B	A133B + B123A
Preconditioned Temperature Cycling	PTMCL	JESD22-A113B	A133B + B131A
External Package Integrity	EPI	Refer to QA-1803	-----
Internal Package Integrity	IPI	Refer to QA-1803	-----

PERICOM TEST CODE (SEE ABOVE)	TEMPERATURE HUMIDITY (PRESSURE)	MIN SAMPLE MAX/ACCEPT (MIN LOTS)	WHEN TESTS PERFORMED (NOTES PAGE 9)	AMPLITUDE MIN DURATION STRESS
LU1	25°C	1/0 (1 lot)	(1)	≥200mA/1.5×Vcc
LU2	25°C	1/0 (1 lot)	(2)	≥200mA/1.5×Vcc
ESD1	25°C	3/0 (1 lot)	(3)	≥1.3A/2000VHBM
ESD2	25°C	3/0 (1 lot)	(4)	≥1.3A/2000VHBM
DHTVOL	125/150°C (min. Bias: Vcc+10%)	129/1 (3 lots)	(6) (10) (13) (16)	1000 hrs (18)
HTSL	150°C (no bias)	32/0 (1 lot)	(6) (10) (13) (16)	168 hrs (18)
THBT	85°C/85%RH (biased)	76/1 (1 lot)	(7)	1000 hrs
THST	85°C/85%RH (no bias)	76/1 (3 lots)	(20)	1000 hrs
AMRT	120°C/85%RH	76/1 (3 lots)	(23)	168 hrs
ACLV	121°C/100%RH(2atm)	76/1 (3 lots)	(8) (11) (14)	96 hrs (18)
TMCL	-65°C TO 150°C (no bias)	76/0 (3 lots)	(8) (11) (14) (21)	100 cycles (18)
PACLV	Level 1 Moisture Soak	100/1 (1 lot)	(9) (12) (15) (21)	168 hrs/168 hrs (19)
PTMCL	Level 1 Moisture Soak	76/0 (1 lot)	(9) (12) (15)	168 hrs/100 cycle (19)
EPI	25°C	5/0 (1 lot)	(17)	-----
IPI	25°C	5/0 (1 lot)	(17)	-----

## **NOTES ON WHEN RELIABILITY TESTS ARE PERFORMED**

1. LU performed for characterization data for new die design by Process Technology to JESD17 pre 1/1/00
2. LU performed for characterization data for new die/process by Process Technology to JESD78 after 1/1/00
3. ESD performed for characterization data for new die design by Process Technology to MIL-STD-883, Method 3015.7 prior to 1/1/00
4. ESD performed for characterization data for new die/process by Process Technology to MIL-STD-883, Method 3015.7 prior to 1/1/00 and to JESD22-A114 after 1/1/00. ESD performed for classification data for new die/process by Reliability to JESD22-A114 after 1/1/00
5. “Dynamic” implies AC signals are applied to the device inputs to simulate the worst case operating conditions of both inputs and outputs within the limitations of the burn-in sockets, board, power supplies and chamber.
6. Performed for new wafer fab subcontractor (on at least one device from the process family)
7. Performed on at least one package per quarter as a monitor . This test is not performed as part of the qualification process due to the advances made in mold compound and assembly technologies. (Note D)
8. Performed for new package assembly subcontractor (on at least one package from at one package family)
9. Performed for new package assembly subcontractor (on the worst case package)
10. Performed for new array design family (on at least one device from the array design family)
11. Performed for new package design family (on at least one package lead count from the package family)
12. Performed for new package design family (on the worst case package)
13. Performed for new wafer fab process (on at least one device from at least one process family)
14. Performed for new package process/material (on at least one lot/package lead count from the package family)
15. Performed for new package process/material (on the worst case package)
16. Performed for new die revision (on at least one lot of a device that has more than a one layer mask change)
17. Performed for new package design family. Most tests can be done by the supplier
18. Conditional release given when first lot completes 168 hours/100 cycles with no rejects
19. Establishes moisture sensitivity level (MSL) only. Not a condition of release. Stress can be done by supplier
20. Substituted for ACLV where conditions or package type dictate
21. Performed for redesigned package (on at least one lot from the package family) – “mini-qual”
22. Substituted for ACLV where conditions or package type dictate
23. Under development to replace saturated ACLV test

## **NOTES ON WHICH RELIABILITY TESTS ARE NOT PERFORMED**

- A. Highly Accelerated Stress Test (HAST) is not performed since there is no known empirical correlation between HAST and THBT and it has been determined that HAST bias conditions cannot be maintained in a HAST environment.
- B. Thermal Shock Test (TMSK) is not performed since there is no known empirical correlation between TMSK and TMCL and it has been determined that the standard materials used to perform TMSK (fluorocarbons) present a potential health risk.
- C. Engineering evaluations have determined both the accelerated HAST and TMSK test environments have no real world equivalent and generate no value added data in lieu of advances made in mold compound and assembly technologies.
- D. Engineering evaluations have determined that the THBT test environment has a real world equivalent, however the time required to failure precludes this as a qualification test as it would generate no value added data in lieu of advances made in mold compound and assembly technologies.

# GUIDE TO READING THIS REPORT

**Pericom Process Technology:** See page 6

**Pericom Package Type Code:** See page 7

**EXAMPLE:**

*CSM 0.6 micron 5.0 volt SPDM CMOS (CS0E6E) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
00004	PI5C16215	A56	0005FOC	157	0	3000	150 °C	Vcc = 7.0 V

Reliability Test Number

Sample Size

Rejects

Duration

Ambient Temp

**Date Code:**

-0005FOC

0005FOC

0005FOC

0005FOC

0005FOC

0005FOC

**Definition (full traceability):**

Die revision letter code (*first issue no letter, then Z, X, Y, etc.*)

Year of manufacture

Work week of package assembly

Package assembly subplot letter code

Package assembly facility code (see page 8)

Wafer fabrication facility code (see page 6)

**Typical Remarks:**

HTOL Bias Voltage

Failure Analysis Report (FAR) Number

Failure Point / Mechanism

Number of Die in Package

Moisture Sensitivity Level (MSL)

(*per JESD-22-A113B and J-STD-020B*)

## GUIDE TO USING THIS REPORT

*To explain the concept of “qualification by extension” and how to use this report by example:*

Example: to determine all the available device reliability data for the device **PI49FCT3807**

### A. Die Process Data

- 1) Referring to the Pericom databook or web site at [www.pericom.com](http://www.pericom.com), this device is a product of the **3.3V Clock Driver** family of the **SiliconClock** product group. Hence referring to page 5 of this report yields:

<u>SiliconClock</u>	<u>Process Technology</u>	<u>More Recent Options</u>
<b>3.3 Volt Clock Drivers</b>	<b>CS0E5E</b>	<b>CS2L313</b>

- 2) Referring to pages 16 and 17 of this report, the Latch-Up data for the PI49FCT3807 process data is:

#### *CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Vcc<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>1</i>	<i>PI6C104-A1</i>	<i>A9814AOC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD17</i>
<i>2</i>	<i>PI6C673</i>	<i>Z9936AOC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD78</i>
<i>3</i>	<i>PI3C16212A</i>	<i>A9941AOC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD78</i>

#### *CSMC 0.35 micron 3.3 volt SPDM & SPTM CMOS (CS2L312, CS2L312A, & CS2L313) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Vcc<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>1</i>	<i>PI3B16234</i>	<i>9927ASC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD78</i>
<i>2</i>	<i>PI3B16234</i>	<i>9927BSC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD78</i>
<i>3</i>	<i>PI3B16234</i>	<i>9927CSC</i>	<i>1</i>	<i>0 3.6V</i>	<i>25 °C</i>	<i>JESD78</i>

## GUIDE TO USING THIS REPORT (CONTINUED)

3) Referring to pages 19 and 20 of this report, the ESD data for the PI49FCT3807 process data is:

### *CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. V<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>1</i>	<i>PI6C671</i>	<i>Z9728AOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>
<i>2</i>	<i>PI3C16211</i>	<i>A9942BOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>
<i>3</i>	<i>PI3C3384</i>	<i>Z9910CSC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>

### *CSMC 0.35 micron 3.3 volt SPDM & SPTM CMOS (CS2L312, CS2L312A, & CS2L313) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. V<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>1</i>	<i>PI3B16234</i>	<i>9927ASC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>
<i>2</i>	<i>PI3B16234</i>	<i>9927BSC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>
<i>3</i>	<i>PI3B16234</i>	<i>9927CSC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>
<i>00042B</i>	<i>PI3B3384</i>	<i>Z0022AOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>JEDEC CLASS 2</i>
<i>00044C</i>	<i>PI74ALVCT16245</i>	<i>Y0020COC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>JEDEC CLASS 2</i>
<i>00051C</i>	<i>PI74SSTV16857</i>	<i>A0016DOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>JEDEC CLASS 2</i>
<i>00063C</i>	<i>PI74SSTV16857</i>	<i>0030AOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>JEDEC CLASS 2</i>

4) Referring to page 23 of this report, the HTOL summary for the PI49FCT3807 process data is:

<u><i>Process</i></u>	<u><i>FIT</i></u>	<u><i>MTBF</i></u>
<i>CS0E5E</i>	<i>18</i>	<i>15 years</i>
<i>CS2L313</i>	<i>9</i>	<i>175 years</i>

Note: details of this data can be found on pages 25 & 26.



# Latch-Up Characterization Data By Process

# Latch-Up Test (LU)

## CSMC 0.8 micron 5.0 volt SPDM CMOS (CS0080) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI6C915	Z9718AOC	1	0 5.5V	25 °C	JESD17

## CSMC 0.8 micron 5.0 volt SPDM CMOS (CS0B8B) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	Various	Various	1	0 5.5V	25 °C	JESD17

## CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0E6E) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI5C32200Z	Z9844ASC	1	0 5.5V	25 °C	JESD17

## CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0F6F) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI5C3125	Y9917CNC	1	0 5.5V	25 °C	JESD17
2	PI5C32200Z	Z9844ASC	1	0 5.5V	25 °C	JESD17

## CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI6C104-A1	A9814AOC	1	0 3.6V	25 °C	JESD17
2	PI6C673	Z9936AOC	1	0 3.6V	25 °C	JESD78
3	PI3C16212A	A9941AOC	1	0 3.6V	25 °C	JESD78

## Latch-Up Test (LU)

### CSMC 0.5 micron 5.0 volt SPDM & SPTM CMOS (CS0F5F & CS0353) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI5C16215C	9850AOC	1	0 5.5V	25 °C	JESD17
2	PI5C6801CA	B9903BOC	1	0 5.5V	25 °C	JESD17

### CSMC 0.35 micron 3.3 volt SPDM & SPTM CMOS (CS2L312, CS2L312A, & CS2L313) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI3B16234	9927ASC	1	0 3.6V	25 °C	JESD78
2	PI3B16234	9927BSC	1	0 3.6V	25 °C	JESD78
3	PI3B16234	9927CSC	1	0 3.6V	25 °C	JESD78

### HMEC 0.6 micron 5.0 volt SPDM CMOS (HS0F6F) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PI5C3257	9806A0G	1	0 5.5V	25 °C	JESD17

### NJRC 1.6 micron 16 volt SPDM CMOS (NSLD15) Process

Lot #	Device	Date Code	SS	Rej. Vcc <sub>max</sub>	T <sub>a</sub>	Remarks
1	PS397	9946AOD	1	0 5.5V	25 °C	JESD78



ESD  
Characterization & Classification  
Data By Process

## ESD Test (ESD)

### CSMC 0.8 micron 5.0 volt SPDM CMOS (CS0080) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI6C915/918	9629AOC	3	0 2000V	25 °C	MIL

### CSMC 0.8 micron 5.0 volt SPDM CMOS (CS0B8B) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI74LPT162952	N/A	3	0 2000V	25 °C	MIL

### CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0E6E) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI5C16212Z	Z9711AOC	3	0 2000V	25 °C	MIL

### CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0F6F) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI5C3257Y	9537ASC	3	0 2000V	25 °C	MIL
2	PI6C5930	9727AOC	3	0 2000V	25 °C	MIL

### CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI6C671	Z9728AOC	3	0 2000V	25 °C	MIL
2	PI3C16211	A9942BOC	3	0 2000V	25 °C	MIL
3	PI3C3384	Z9910CSC	3	0 2000V	25 °C	MIL

## ESD Test (ESD)

### CSMC 0.5 micron 5.0 volt SPDM & SPTM CMOS (CS0F5F & CS0363) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI5C3302	N/A	3	0 2000V	25 °C	MIL
2	PI5C3384C	Y9840HOC	3	0 2000V	25 °C	MIL
99003-1B	PI5X1018C	ZC9946BOC	3	0 2000V	25 °C	JEDEC CLASS 2

### CSMC 0.35 micron 3.3 volt SPDM & SPTM CMOS (CS2L312, CS2L312A, & CS2L313) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI3B16234	9927ASC	3	0 2000V	25 °C	MIL
2	PI3B16234	9927BSC	3	0 2000V	25 °C	MIL
3	PI3B16234	9927CSC	3	0 2000V	25 °C	MIL
00042B	PI3B3384	Z0022AOC	3	0 2000V	25 °C	JEDEC CLASS 2
00044C	PI74ALVCT16245	Y0020COC	3	0 2000V	25 °C	JEDEC CLASS 2
00051C	PI74SSTV16857	A0016DOC	3	0 2000V	25 °C	JEDEC CLASS 2
00063C	PI74SSTV16857	0030AOC	3	0 2000V	25 °C	JEDEC CLASS 2

### HMEC 0.6 micron 5.0 volt SPDM CMOS (HS0F6F) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
1	PI5C3126	9806AOG	3	0 2000V	25 °C	MIL

### HMEC 0.5 micron 5.0 volt SPDM CMOS (HS0F5F) Process

Lot #	Device	Date Code	SS	Rej. $V_{max}$	$T_a$	Remarks
00019-E	PI5C16861	B0008BOG	3	0 2000V	25 °C	JEDEC CLASS 2
00019-2C	PI5C16861	0028AOG	3	0 2000V	25 °C	JEDEC CLASS 2
00019-3C	PI5C16861	A20029AOG	3	0 2000V	25 °C	JEDEC CLASS 2

# *ESD Test (ESD)*

## *NJRC 1.6 micron 16 volt SPDM CMOS (NSLD15) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. V<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>1</i>	<i>PS323</i>	<i>9818AOC</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>MIL</i>

## *TSMC 0.35 micron 3.3 volt SPDM CMOS (TS2L312) Process*

<i>Lot #</i>	<i>Device</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. V<sub>max</sub></i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
<i>00050-1C</i>	<i>PI90LV022</i>	<i>A10025AOT</i>	<i>3</i>	<i>0 2000V</i>	<i>25 °C</i>	<i>JEDEC CLASS 2</i>



# High Temperature Biased Die Life Test Data By Process

# *Dynamic High Temperature Operating Life Test (DHTOL)*

## *Summary of Process Data*

<u><i>Process</i></u>	<u><i>FIT</i></u>	<u><i>MTBF</i></u>
<i>CS0080</i>	<i>12</i>	<i>29 years</i>
<i>CS0B8B</i>	<i>30</i>	<i>43 years</i>
<i>CS0E6E</i>	<i>4</i>	<i>105 years</i>
<i>CS0F6F</i>	<i>49</i>	<i>15 years</i>
<i>CS0E5E</i>	<i>18</i>	<i>82 years</i>
<i>CS0F5F</i>	<i>25</i>	<i>29 years</i>
<i>CS0353</i>	<i>25</i>	<i>29 years</i>
<i>CS2L312</i>	<i>9</i>	<i>175 years</i>
<i>CS2L312A</i>	<i>9</i>	<i>175 years</i>
<i>CS2L313</i>	<i>9</i>	<i>175 years</i>
<i>HS0F6F</i>	<i>17</i>	<i>59 years</i>
<i>NSLD15</i>	<i>1</i>	<i>43 years</i>
<i>HS0F5F</i>	<i>14</i>	<i>72 years</i>
<i>TS0E5E</i>	<i>17</i>	<i>29 years</i>
<i>TS2L312</i>	<i>29</i>	<i>55 years</i>

### **NOTES:**

**FIT** = Failures In Time = number of device failures per billion device hours and is calculated using the Arrhenius equation with an Activation Energy  $E_A = 0.5 \text{ eV}$  and System Temperature  $T_S = 55^\circ\text{C}$

**MTBF** = Mean Time Between Failure = the average time for device failure to occur and is calculated using:

Total Device Hours/Total Device Failures (a minimum of 1 even if there are no failures)

# Dynamic High Temperature Operating Life Test (DHTOL)

## CSMC 0.8 micron 5.0 volt SPDM CMOS (CS0080) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
95001	PI5C3257	S16	9437BSC	129	0	1000	125 °C Vcc = 6.50V
95023	PI5C3257	S16	9544ASC	128	0	1000	125 °C Vcc = 6.50V
<i>Maximum Failure Rate:</i>		12	<i>FIT</i>	<i>0.5eV at 60% confidence level</i>			
<i>MTBF:</i>		<i>257,000 hours (~29 years)</i>					

## CSMC 0.8 micron 3.3 volt SPDM, CMOS (CS0B8B) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98025	PI74LPT16501	V56	9739AOC	127	0	3000	150 °C Vcc = 3.6 Volts
<i>Maximum Failure Rate:</i>		30	<i>FIT</i>	<i>0.5eV at 60% confidence level</i>			
<i>MTBF:</i>		<i>381,000 hours (~43 years)</i>					

## CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0E6E) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98093	PI5C16215	A56	9912ASC	149	0	3000	150 °C Vcc = 7.0 Volts
00004	PI5C16215	A56	0005FOC	157	0	3000	150 °C Vcc = 7.0 Volts
<i>Maximum Failure Rate:</i>		4	<i>FIT</i>	<i>0.5eV at 60% confidence level</i>			
<i>MTBF:</i>		<i>918,000 hours (~105 years)</i>					

# Dynamic High Temperature Operating Life Test (DHTOL)

## CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0F6F) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
96006	PI5C3257	S16	Y9603BSC	130	0	1000	150 °C Vcc = 6.50V
<i>Maximum Failure Rate:</i>		49	<i>FIT</i>	0.5eV at 60% confidence level			
<i>MTBF:</i>		130,000 hours (~15 years)					

## CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98095	PI6C2509	L24	Z9844ANC	120	0	3000	150 °C Vcc = 3.6 Volts
00062	PI6C2510	L24	Y0025AOC	118	0	3000	150 °C Vcc = 3.6 Volts
<i>Maximum Failure Rate:</i>		18	<i>FIT</i>	0.5eV at 60% confidence level			
<i>MTBF:</i>		714,000 hours (~82 years)					

## CSMC 0.5 micron 5.0 volt SPDM & SPTM CMOS (CS0F5F & CS0353) Process

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98005	PI5A100	S16	Z9742AOC	128	0	1500	150 °C Vcc = 5.5 Volts
01007	PI5C3861	S20	Z0105ASC	128	1	500	150 °C Vcc = 5.5 Volts
<i>Maximum Failure Rate:</i>		25	<i>FIT</i>	0.5eV at 60% confidence level			
<i>MTBF:</i>		256,000 hours (~29 years)					

# Dynamic High Temperature Operating Life Test (DHTOL)

## HMEC 0.5 micron 5.0 volt SPDM CMOS (HS0F5F) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
00019-1A	PI5C16861	V48	0013AOG	119	0	1000	150 °C V <sub>cc</sub> = 5.5 Volts
00019-2A	PI5C16861	V48	0028AOG	130	0	1000	150 °C V <sub>cc</sub> = 5.5 Volts
00019-3A	PI5C3245	S20	0029AOG	129	0	3000	150 °C V <sub>cc</sub> = 5.5 Volts

Maximum Failure Rate: 14 FIT 0.5eV at 60% confidence level

MTBF: 636,000 hours (~72 years)

## CSMC 0.35 micron 3.3 volt SPDM/SPTM CMOS (CS2L312, CS2L312A & CS2L313) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
98068A	PI3B3384	S24	9824AOC	130	0	3000	150 °C V <sub>cc</sub> = 3.6V
98082A	PI74ALPT16245	V48	Z9829ASC	130	0	1000	150 °C V <sub>cc</sub> = 3.6V
98096A	PI74ALPT16245	V48	Z9845AOC	116	0	3000	150 °C V <sub>cc</sub> = 3.6V
00042A	PI3B3384	S24	Z0022AOC	240	0	1000	150 °C V <sub>cc</sub> = 3.6V
00044A	PI74ALVCT16245	V48	Y0020AOC	130	0	1000	150 °C V <sub>cc</sub> = 3.6V
00063A	PI74SSTV16857	V48	0030AOC	120	0	500	150 °C V <sub>cc</sub> = 3.6V
00063AR	PI74SSTV16857	V48	0030AOC	117	0	2000	150 °C V <sub>cc</sub> = 3.6V

Maximum Failure Rate: 9 FIT 0.5eV at 60% confidence level

MTBF: 1,532,000 hours (~175 years)

## TSMC 0.35 micron 3.3 volt SPDM CMOS (TS2L312) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
00050A	PI90LV022W	W16	0025AOT	160	0	3000	150 °C V <sub>cc</sub> = 3.6V

Maximum Failure Rate: 29 FIT 0.5eV at 60% confidence level

MTBF: 480,000 hours (~55 years)

# Dynamic High Temperature Operating Life Test (DHTOL)

## HMEC 0.6 micron 5 volt SPDM CMOS (HS0F6F) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
98028	PI5C3257	S16	9806AOG	130	0 1000	150 °C	V <sub>cc</sub> = 5.5 Volts
98077	PI74FCT245	S20	9827ASG	129	0 3000	150 °C	V <sub>cc</sub> = 5.5 Volts

**Maximum Failure Rate:** 17 FIT 0.5eV at 60% confidence level  
(Process Average)

**MTBF:** 517,000 hours (~59 years)

## NJRC 1.6 micron 16 volt SPDM CMOS (NSLD15) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
98052	PS391Z	S16	Z9819AOD	127	1 1000	150 °C	V <sub>cc</sub> = ± 8.0 Volts
98067A	PS325ESA	S16	9824AOD	129	0 1000	150 °C	V <sub>cc</sub> = ± 8.0 Volts
98081	PS322ESA	S16	9831AND	122	0 1000	150 °C	V <sub>cc</sub> = ± 8.0 Volts

**Maximum Failure Rate:** < 1 FIT 0.5eV at 60% confidence level

**MTBF:** 378,000 hours (~43 years)

## TSMC 0.5 micron 3.3 volt SPDM CMOS (TS0E5E) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
97067	PI74ALVCH162601	V56	9719AOT	129	1 3000	150 °C	V <sub>cc</sub> = 3.6 Volts
97129	PI74ALVCH16374	V48	9733AOC	129	0 3000	150 °C	V <sub>cc</sub> = 3.6 Volts

**Maximum Failure Rate:** 17 FIT 0.5eV at 60% confidence level

**MTBF:** 258,000 hours (~29 years)



# High Temperature Storage Die Life Test Data By Process

# High Temperature Storage Life Test (HTSL)

## CSMC 0.8 micron 3.3 volt SPDM CMOS (CS0B8B) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
98026	PI74LPT16501	A56	9803BOC	130	0 1000	150 °C	

## CSMC 0.6 micron 5.0 volt SPDM CMOS (CS0E6E) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
98093B	PI5C16215	A48	9912ASC	100	0 1000	150 °C	
00004B	PI5C16215	A48	0005FOC	100	0 1000	150 °C	

## CSMC 0.5 micron 3.3 volt SPDM CMOS (CS0E5E) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
99033-2C	PI74ALVCH32501	NB114	0035AOT	99	0 1000	150 °C	MCM - 2 die
99033-3C	PI74ALVCH32501	NB114	0036AOT	99	0 1000	150 °C	MCM - 2 die
00061-1B	PI3C34X484	NB96	0029AWC	97	0 1000	150 °C	MCM - 4 die
00061-3B	PI3C34X484	NB96	0036AWC	99	0 1000	150 °C	MCM - 4 die

## CSMC 0.5 micron 5.0 volt SPDM & SPTM CMOS (CS0F5F & CS0363) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
99903-1A	PI5X1018C	NA256	ZC9946BOC	80	0 168	150 °C	MCM - 2 die
00022B	PI5A124T	SOT23-6	0012A	150	0 72	150 °C	
00061-2B	PI5C34X484	NB96	0030AWC	98	0 1000	150 °C	MCM - 4 die

## HMEC 0.5 micron 5.0 volt SPDM CMOS (HS0F5F) Process

Lot #	Device	Package	Date Code	SS	Rej. Hours	T <sub>a</sub>	Remarks
00019-1B	PI5C16861	V48	0013AOG	100	0 1000	150 °C	
00019-2B	PI5C16861	V48	0028AOG	80	0 1000	150 °C	
00019-3B	PI5C3245	S20	0029AOG	100	0 1000	150 °C	

## *High Temperature Storage Life Test (HTSL)*

### *CSMC 0.35 micron 3.3 volt SPDM/SPTM CMOS (CS2L312, CS2L312A & CS2L313) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98048B	PI3B3384	S24	9816AOC	100	0	1000	150 °C
00043A	PI3B3384S	S24	Y0020BOC	160	0	1000	150 °C
00044B	PI74ALVCT16245	A48	Y0020COC	80	0	1000	150 °C
00051B	P74SSTV16857	A48	Y0016DOC	79	0	1000	150 °C
00063B	P74SSTV16857	V48	0030AOC	80	0	1000	150 °C

### *HMEC 0.6 micron 5 volt SPDM CMOS (HS0F6F) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
97167B	PI74FCT245	S24	U9743AOG	100	0	1000	150 °C
99047-1G	PI5C3257	Q16	0007ASY	100	0	1000	150 °C

### *NJRC 1.6 micron 16 volt SPDM CMOS (NSLD15) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
98067B	PI325ESA	S16	9824AOD	100	0	1000	150 °C

### *TSMC 0.5 micron 3.3 volt SPDM CMOS (TS0E5E) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
97003A	PI74ALVCH162601	V56	9652AOT	100	0	1000	150 °C
97036B	PI74ALVCH162601	V56	9715AOT	100	0	1000	150 °C

### *TSMC 0.5 micron 3.3 volt SPDM CMOS (TS2L312) Process*

<i>Lot #</i>	<i>Device</i>	<i>Package</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej. Hours</i>	<i>T<sub>a</sub></i>	<i>Remarks</i>
00050B	PI90LV022	W16	A10025AOT	80	0	1000	150 °C



# Environmental Test Data By Package Type

## *Temperature Humidity Biased Test (THBT)*

### *TSSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
<i>98093D</i>	<i>PI5C16215</i>	<i>TSSOP / A48</i>	<i>9912ASC</i>	<i>78</i>	<i>0</i>	<i>1000</i>	
<i>99053</i>	<i>PI5C16215</i>	<i>TSSOP / A48</i>	<i>9923ASC</i>	<i>78</i>	<i>0</i>	<i>1000</i>	
<i>00004C</i>	<i>PI5C16215</i>	<i>TSSOP / A48</i>	<i>9923ASC</i>	<i>80</i>	<i>0</i>	<i>1000</i>	

## *Temperature Humidity Storage Test (THST)*

### *BGA*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
<i>99003-1E</i>	<i>PI5X1018C</i>	<i>PBGA /NA256</i>	<i>9912ASC</i>	<i>80</i>	<i>0</i>	<i>500</i>	<i>MCM - 2 die/4 layer</i>
<i>99003-2E</i>	<i>PI5X1018C</i>	<i>PBGA /NA256</i>	<i>9912ASC</i>	<i>100</i>	<i>0</i>	<i>1000</i>	<i>MCM - 2 die/4 layer</i>
<i>99033-2A</i>	<i>PI74ALVCH32501</i>	<i>LFBGA /NB114</i>	<i>0035AOT</i>	<i>99</i>	<i>0</i>	<i>1000</i>	<i>MCM - 2 die/4 layer</i>
<i>99033-3A</i>	<i>PI74ALVCH32501</i>	<i>LFBGA /NB114</i>	<i>0036AOT</i>	<i>100</i>	<i>0</i>	<i>1000</i>	<i>MCM - 2 die/4 layer</i>
<i>00061-1B</i>	<i>PI3C34X484</i>	<i>LFBGA /NB96</i>	<i>0029AWC</i>	<i>91</i>	<i>0</i>	<i>1000</i>	<i>MCM - 4 die/2 layer</i>
<i>00061-2B</i>	<i>PI5C34X484</i>	<i>LFBGA /NB96</i>	<i>0030AWC</i>	<i>100</i>	<i>0</i>	<i>500</i>	<i>MCM - 4 die/2 layer</i>
<i>00061-3B</i>	<i>PI3C34X484</i>	<i>LFBGA /NB96</i>	<i>0036AWC</i>	<i>99</i>	<i>0</i>	<i>1000</i>	<i>MCM - 4 die/2 layer</i>

## *Moisture Autoclave (ACLV)*

### *QFP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
<i>00087-1B</i>	<i>PI6C2952</i>	<i>TQFP / FA32</i>	<i>Z0048ANC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>00087-2B</i>	<i>PI6C2952</i>	<i>TQFP / FA32</i>	<i>Z0048BNC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>00087-3B</i>	<i>PI6C2952</i>	<i>TQFP / FA32</i>	<i>Z0049ANC</i>	<i>100</i>	<i>0</i>	<i>168</i>	

### *SOIC*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
<i>98038-1A</i>	<i>PI5C3257</i>	<i>SOIC / W16</i>	<i>Y9826AJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>98038-2A</i>	<i>PI5C3257</i>	<i>SOIC / W16</i>	<i>Y9826BJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>98038-3A</i>	<i>PI5C3257</i>	<i>SOIC / W16</i>	<i>Y9826CJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>98039-1A</i>	<i>P74FCT245</i>	<i>SOIC / S20</i>	<i>W9826AJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>98039-2A</i>	<i>P74FCT245</i>	<i>SOIC / S20</i>	<i>W9826BJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	
<i>98039-3A</i>	<i>P74FCT245</i>	<i>SOIC / S20</i>	<i>W9826CJC</i>	<i>100</i>	<i>0</i>	<i>168</i>	

# Moisture Autoclave (ACLV)

## SSOP

Lot #	Device	Package/Code	Date Code	SS	Rej.	Hours	Remarks
98034-1A	PI6C464	SSOP / H28	9808ANC	100	0	168	
98034-2A	PI6C464	SSOP / H28	9809ANC	100	0	168	
98034-3A	PI6C464	SSOP / H28	9810ANC	99	0	168	
98040-1A	PI5C3384C	QSOP / Q24	Y9832AJC	100	0	168	
98040-2A	PI5C3384C	QSOP / Q24	Y9833AJC	100	0	168	
98040-3A	PI5C3384C	QSOP / Q24	Y9834AJC	99	0	168	
98055-1A	PI5C3306	QSOP / Q24	Y9831AZC	100	0	168	
98055-2A	PI5C3306	QSOP / Q24	Y9832AZC	100	0	168	
98055-3A	PI5C3306	QSOP / Q24	Y9834AZC	100	0	168	
98063-1A	PI5C32X383	BQSOP / B48	X9831ASC	100	0	168	2 die
98063-2A	PI5C32X383	BQSOP / B48	X9832ASC	99	0	168	2 die
98063-3A	PI5C32X383	BQSOP / B48	X9833ASC	100	0	168	2 die
98088-1A	PI5C32X384C	BQSOP / B48	Y9838AJC	99	0	168	2 die
98088-2A	PI5C32X384C	BQSOP / B48	Y9839AJC	100	0	168	2 die
98088-3A	PI5C32X384C	BQSOP / B48	Y9840AJC	99	0	168	2 die
98094-1A	PI5C32X245	BQSOP / B48	X9839ASC	98	0	168	2 die
98094-2A	PI5C32X245	BQSOP / B48	X9841ASC	100	0	168	2 die
99001-1A	PI74FCT162374	SSOP / V48	Z9849AEC	92	0	168	
99001-2A	PI74FCT162374	SSOP / V48	Z9850AEC	100	0	168	
99001-3A	PI74FCT162374	SSOP / V48	Z9851AEC	98	0	168	
99002-1A	PI74FCT162543	SSOP / V56	9849AEC	99	0	168	
99002-2A	PI74FCT162543	SSOP / V56	9850AEC	98	0	168	
99002-3A	PI74FCT162543	SSOP / V56	9851AEC	99	0	168	
99015-1A	PI5C34X245	BQSOP / B80	Y9920ASC	99	0	168	4 die
99015-2A	PI5C34X245	BQSOP / B80	Y9925ASC	99	0	168	4 die
99015-3A	PI5C34X245	BQSOP / B80	Y9926ASC	100	0	168	4 die
99019-1A	PI5C34X245	BQSOP / B80	Y9930AXC	99	0	168	4 die
99019-2A	PI5C34X245	BQSOP / B80	Y9931AXC	100	0	168	4 die
99019-3A	PI5C34X245	BQSOP / B80	Y9932AXC	100	0	168	4 die
99032A	PI5C3383	QSOP / Q24	X9903AJC	100	0	168	
99037-1A	PI5C32X384C	BQSOP / B48	Y9941AXC	77	0	168	2 die
99037-2A	PI5C32X384C	BQSOP / B48	Y9942AXC	62	0	168	2 die
99037-3A	PI5C32X384C	BQSOP / B48	Y9943AXC	35	0	168	2 die
99051-1A	PI5C3257	QSOP / Q16	0007APY	100	0	168	
00027-1A	PI5C32X245	BQSOP / B40	0024AMC	99	0	168	2 die
00027-2A	PI5C32X245	BQSOP / B40	0025AMC	98	0	168	2 die
00059-1A	PI5C32X384C	BQSOP / B48	0027AXY	100	0	168	2 die
00059-2A	PI5C32X384C	BQSOP / B48	0027BXY	100	0	168	2 die

# Moisture Autoclave (ACLV)

## TSSOP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
98051-1A	PI74FCT162543T	TSSOP / A56	9821ANC	100	0	168	
98051-2A	PI74FCT162543T	TSSOP / A56	9822ANC	99	0	168	
98051-3A	PI74FCT162543T	TSSOP / A56	9823ANC	99	0	168	
98056-1A	PI5C3306	TSSOP / L8	Y9831AZC	100	0	168	
98056-2A	PI5C3306	TSSOP / L8	Y9832AZC	100	0	168	
98056-3A	PI5C3306	TSSOP / L8	Y9834AZC	99	0	168	
98064-1A	PI5C6800	TSSOP / L24	9826ANT	99	0	168	
98064-2A	PI5C6800	TSSOP / L24	9827BNT	99	0	168	
98064-3A	PI5C6800	TSSOP / L24	9828CNT	100	0	168	
98069-1A	PI5C3306	TSSOP / L8	9834ANC	100	0	168	
98069-2A	PI5C3306	TSSOP / L8	9835ANC	100	0	168	
98069-3A	PI5C3306	TSSOP / L8	9837ANC	100	0	168	
98072-1A	PI74ALVCH16260	TSSOP / K56	9828AOT	95	0	168	
98072-2A	PI74ALVCH16260	TSSOP / K56	9829AOT	95	0	168	
98072-3A	PI74ALVCH16260	TSSOP / K56	9830AOT	100	0	168	
98080-1A	PI5C3306	TSSOP / L8	9841AYT	99	0	168	
98080-2A	PI5C3306	TSSOP / L8	9842AYT	100	0	168	
98080-3A	PI5C3306	TSSOP / L8	9843AYT	100	0	168	
98083-1A	PS325	MSOP / U8	9832AFD	100	0	168	
98083-2A	PS325	MSOP / U8	9834AFD	100	0	168	
98083-3A	PS325	MSOP / U8	9836AFD	100	0	168	
99016-1A	PI5C16211	TSSOP / A56	Z9924AJC	77	0	168	
99016-2A	PI5C16211	TSSOP / A56	Z9925AJC	99	0	168	
99016-3A	PI5C16211	TSSOP / A56	Z9926AJC	94	0	168	
99021-1A	PI5C3257	TSSOP / L16	9930ANG	98	0	168	
99021-2A	PI5C3257	TSSOP / L16	9931ANG	99	0	168	
99021-4A	PI5C3257	TSSOP / L16	0010ANY	100	0	168	
99022-1A	PI5C3257	TSSOP / L16	9931AOG	100	0	168	
99022-2A	PI5C3257	TSSOP / L16	9931AOG	99	0	168	
99022-3A	PI5C3257	TSSOP / L16	9934AOG	100	0	168	
99048-1A	PI5C16211	TSSOP / A56	Z006AEC	100	0	168	
99050-1A	PI5C16211	TSSOP / A56	Z0007APY	98	0	168	
00038-1A	PI5C32200	TSSOP / A56	Y0022AOC	100	0	168	4 die/pads
00038-2A	PI5C32200	TSSOP / A56	Y0024AOC	100	0	168	4 die/pads
00038-3A	PI5C32200	TSSOP / A56	Y0026AOC	92	0	168	4 die/pads
00085-1A	PI74SSTV16859	TSSOP / A64	0039AJC	98	0	168	2 die/pads
00085-2A	PI74SSTV16859	TSSOP / A64	0041AJC	100	0	168	2 die/pads
00085-3A	PI74SSTV16859	TSSOP / A64	0042AJC	100	0	168	2 die/pads
00086-1A	PI5C3257	TSSOP / L16	Y0037AZC	100	0	168	
00086-2A	PI5C3257	TSSOP / L16	Y0038BZC	100	0	168	
00086-3A	PI5C3257	TSSOP / L16	Y0039CZC	100	0	168	

# Moisture Autoclave (ACLV)

## SOT

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
98070-1A	PI5A125	SOT23 / T5	9825	100	0	168	
98071-1A	PI5A125	SOT23 / T5	9827	100	0	168	
98071-2A	PI5A125	SOT23 / T5	9832	99	0	168	
98071-4A	PI5A125	SOT23 / T5	0007	99	0	168	
98071-5A	PI5A125	SOT23 / T5	0008	100	0	168	
99007-1A	PI5A121	SC70-5 / C5	9910	100	0	168	
99007-3A	PI5A121	SC70-5 / C5	9931	100	0	168	
99007-4A	PI5A121	SC70-5 / C5	0008	100	0	168	
99007-5A	PI5A121	SC70-5 / C5	0009	90	0	168	
00028-2A	PI5A125	SOT23 / T5	0027	100	0	168	
00028-3A	PI5A125	SOT23 / T5	0028	100	0	168	
01003-1A	PI74ST1G125	SOT23 / T5	0103	100	0	168	
01003-2A	PI74ST1G125	SOT23 / T5	0104	96	0	168	
01003-3A	PI74ST1G125	SOT23 / T5	0105	96	0	168	

## BGA

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
99033-1A	PI74ALVCH32501	LFBGA / NB114	9921AOT	96	0	168	MCM - 2 die

## PDIP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
00001-1A	PI5C3384A	PDIP / P16	Z0010AVC	100	0	168	
00001-2A	PI5C3384A	PDIP / P16	Z0013AVC	100	0	168	
00001-3A	PI5C3384A	PDIP / P16	Z0014AVC	100	0	168	

# Temperature Cycle (TMCL)

## PDIP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00001-1B	PI5C3384A	PDIP / P24	Z0010AVC	100	0	100	
00001-2B	PI5C3384A	PDIP / P24	Z0013AVC	100	0	100	
00001-3B	PI5C3384A	PDIP / P24	Z0014AVC	100	0	100	

## PLCC

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00010B	PI6C9911J	PLCC / J32	YB40004AOC	100	0	100	

## QFP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00087-1B	PI6C2952	TQFP / FA32	Z0048ANC	99	0	100	
00087-2B	PI6C2952	TQFP / FA32	Z0048BNC	100	0	100	
00087-3B	PI6C2952	TQFP / FA32	Z0049ANC	100	0	100	

## SOIC

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98038-1B	PI5C3257	SOIC / W16	Y9826AJC	100	0	100	
98038-2B	PI5C3257	SOIC / W16	Y9826BJC	100	0	100	
98038-3B	PI5C3257	SOIC / W16	Y9826CJC	100	0	100	
98039-1B	P74FCT245	SOIC / S20	W9826AJC	100	0	100	
98039-2B	P74FCT245	SOIC / S20	W9826BJC	100	0	100	
98039-3B	P74FCT245	SOIC / S20	W9826CJC	100	0	100	
01007-B	PI3C3861	SOIC / S24	Z0105ASC	100	0	100	

# Temperature Cycle (TMCL)

## SSOP

Lot #	Device	Package/Code	Date Code	SS	Rej.	Cycles	Remarks
98034-1B	PI6C464	SSOP / H28	9808ANC	100	0	100	
98034-2B	PI6C464	SSOP / H28	9809ANC	100	0	100	
98034-3B	PI6C464	SSOP / H28	9810ANC	100	0	100	
98040-1B	PI5C3384C	QSOP / Q24	Y9832AJC	100	0	100	
98040-2B	PI5C3384C	QSOP / Q24	Y9833AJC	100	0	100	
98040-3B	PI5C3384C	QSOP / Q24	Y9834AJC	100	0	100	
98055-1B	PI5C3306	QSOP / Q24	Y9831AZC	100	0	100	
98055-2B	PI5C3306	QSOP / Q24	Y9832AZC	100	0	100	
98055-3B	PI5C3306	QSOP / Q24	Y9834AZC	100	0	100	
98063-1B	PI5C32X383	BQSOP / B48	X9831ASC	100	0	100	2 die
98063-2B	PI5C32X383	BQSOP / B48	X9832ASC	99	0	100	2 die
98063-3B	PI5C32X383	BQSOP / B48	X9833ASC	100	0	100	2 die
98075	PI74LPT16224	SSOP / V48	9826AOC	100	0	100	
98076	PI5C3257	QSOP / 16	Y9822AOC	100	0	100	
98088-1B	PI5C32X384C	BQSOP / B48	Y9838AJC	100	0	100	2 die
98088-2B	PI5C32X384C	BQSOP / B48	Y9839AJC	100	0	100	2 die
98088-3B	PI5C32X384C	BQSOP / B48	Y9840AJC	100	0	100	2 die
98094-1B	PI5C32X245	BQSOP / B48	X9839ASC	81	0	100	2 die
98094-2B	PI5C32X245	BQSOP / B48	X9841ASC	99	0	100	2 die
99001-1B	PI74FCT162374	SSOP / V48	Z9849AEC	100	0	100	
99001-2B	PI74FCT162374	SSOP / V48	Z9850AEC	100	0	100	
99001-3B	PI74FCT162374	SSOP / V48	Z9851AEC	100	0	100	
99002-1A	PI74FCT162543	SSOP / V56	9849AEC	100	0	100	
99002-2A	PI74FCT162543	SSOP / V56	9850AEC	100	0	100	
99002-3A	PI74FCT162543	SSOP / V56	9851AEC	100	0	100	
99015-1B	PI5C34X245	BQSOP / B80	Y9920ASC	100	0	100	4 die
99015-2B	PI5C34X245	BQSOP / B80	Y9925ASC	99	0	100	4 die
99015-3B	PI5C34X245	BQSOP / B80	Y9926ASC	100	0	100	4 die
99019-1B	PI5C34X245	BQSOP / B80	Y9930AXC	99	0	100	4 die
99019-2B	PI5C34X245	BQSOP / B80	Y9931AXC	100	0	100	4 die
99019-3B	PI5C34X245	BQSOP / B80	Y9932AXC	100	0	100	4 die
99037-1B	PI5C32X384C	BQSOP / B48	Y9941AXC	97	0	100	2 die
99037-2B	PI5C32X384C	BQSOP / B48	Y9942AXC	97	0	100	2 die
99037-3B	PI5C32X384C	BQSOP / B48	Y9943AXC	97	0	100	2 die
99051-1B	PI5C3257	QSOP / Q16	0007APY	100	0	100	
99051-2B	PI5C3257	QSOP / Q16	0009BPG	100	0	100	
99051-3B	PI5C3257	QSOP / Q16	0010CPG	100	0	100	

# Temperature Cycle (TMCL)

## SSOP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
99059-1B	PI5C32X384C	BQSOP / B48	0027AXY	100	0	100	2 die
99059-2B	PI5C32X384C	BQSOP / B48	0027BXY	100	0	100	2 die
00027-1B	PI5C32X245	BQSOP / B40	0024AMC	100	0	100	2 die
00027-2B	PI5C32X245	BQSOP / B40	0025AMC	100	0	100	2 die
01008-B	PI74FCT16244	SSOP / V48	A10105AOC	25	0	100	

## MLF

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00101-1B	PI5C34X245	MLF / Z80	0042AOY	94	0	100	2 die
00101-2B	PI5C34X245	MLF / Z80	0043AOY	100	0	100	2 die
00101-3B	PI5C34X245	MLF / Z80	0044AOY	100	0	100	2 die

# Temperature Cycle (TMCL)

## TSSOP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98051-1B	PI74FCT162543	TSSOP / A56	9821ANC	100	0	100	
98051-2B	PI74FCT162543	TSSOP / A56	9822ANC	100	0	100	
98051-3B	PI74FCT162543	TSSOP / A56	9823ANC	94	0	100	
98056-1B	PI5C3306	TSSOP / L8	Y9831AZC	100	0	100	
98056-2B	PI5C3306	TSSOP / L8	Y9832AZC	97	0	100	
98056-3B	PI5C3306	TSSOP / L8	Y9834AZC	100	0	100	
98059B	PI5C16211	TSSOP / A56	Z9821AOC	100	0	100	
98064-1B	PI5C6800	TSSOP / L24	9826ANT	92	0	100	
98064-2B	PI5C6800	TSSOP / L24	9827BNT	99	0	100	
98064-3B	PI5C6800	TSSOP / L24	9828CNT	100	0	100	
98069-1B	PI5C3306	TSSOP / L8	9834ANC	100	0	100	
98069-2B	PI5C3306	TSSOP / L8	9835ANC	100	0	100	
98069-3B	PI5C3306	TSSOP / L8	9837ANC	100	0	100	
98072-1A	PI74ALVCHI16260	TSSOP / K56	9828AOT	75	0	100	
98072-2A	PI74ALVCHI16260	TSSOP / K56	9829AOT	100	0	100	
98072-3A	PI74ALVCHI16260	TSSOP / K56	9830AOT	100	0	100	
98078	PI74LPT373	TSSOP / L20	9828ANC	100	0	100	
98080-1B	PI5C3306	TSSOP / L8	9841AYT	100	0	100	
98080-2B	PI5C3306	TSSOP / L8	9842AYT	100	0	100	
98080-3B	PI5C3306	TSSOP / L8	9843AYT	100	0	100	
98083-1A	PS325	MSOP / U8	9832AFD	99	0	100	
98083-3A	PS325	MSOP / U8	9836AFD	100	0	100	
99016-1B	PI5C16211	TSSOP / A56	Z9924AJC	60	0	100	
99016-2B	PI5C16211	TSSOP / A56	Z9925AJC	100	0	100	
99016-3B	PI5C16211	TSSOP / A56	Z9926AJC	100	0	100	
99021-1B	PI5C3257	TSSOP / L16	9930ANG	98	0	100	
99021-2B	PI5C3257	TSSOP / L16	9931ANG	91	0	100	
99021-4B	PI5C3257	TSSOP / L16	0010ANY	91	0	100	
99022-1B	PI5C3257	TSSOP / L16	9931AOG	100	0	100	
99022-2B	PI5C3257	TSSOP / L16	9931AOG	100	0	100	
99022-3B	PI5C3257	TSSOP / L16	9934AOG	99	0	100	
99048-1B	PI5C16211	TSSOP / A56	Z0006AEC	100	0	100	
99048-2B	PI5C16211	TSSOP / A56	Z0007AEC	100	0	100	
99048-3B	PI5C16211	TSSOP / A56	Z0008AEC	100	0	100	
99050-1B	PI5C16211	TSSOP / A56	Z0007APC	100	0	100	
99050-2B	PI5C16211	TSSOP / A56	Z0009BPC	100	0	100	
00038-1B	PI5C32200	TSSOP / A56	Y0022AOC	100	0	100	
00038-2B	PI5C32200	TSSOP / A56	Y0024AOC	100	0	100	
00038-3B	PI5C32200	TSSOP / A56	Y0026AOC	100	0	100	

# *Temperature Cycle (TMCL)*

## *TSSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
<i>00085-2B</i>	<i>PI74SSTV16859</i>	<i>TSSOP / A64</i>	<i>0041AJC</i>	<i>79</i>	<i>0</i>	<i>100</i>	<i>2 die/pads</i>
<i>00085-3B</i>	<i>PI74SSTV16859</i>	<i>TSSOP / A64</i>	<i>0042AJC</i>	<i>68</i>	<i>0</i>	<i>100</i>	<i>2 die/pads</i>
<i>00086-1B</i>	<i>PI5C3257</i>	<i>TSSOP / L16</i>	<i>Y0037AZC</i>	<i>80</i>	<i>0</i>	<i>100</i>	
<i>00086-2B</i>	<i>PI5C3257</i>	<i>TSSOP / L16</i>	<i>Y0038BZC</i>	<i>100</i>	<i>0</i>	<i>100</i>	
<i>00086-3B</i>	<i>PI5C3257</i>	<i>TSSOP / L16</i>	<i>Y0039CZC</i>	<i>80</i>	<i>0</i>	<i>100</i>	

## *Temperature Cycle (TMCL)*

### *SOT*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98070-1B	PI5A125	SOT23 / T5	9825	100	1	100	<i>98-0705 marginal lkg</i>
98071-1B	PI5A125	SOT23 / T5	9827	100	0	100	
98071-2B	PI5A125	SOT23 / T5	9832	99	0	100	
98071-4B	PI5A125	SOT23 / T5	0007	100	0	100	
98071-5B	PI5A125	SOT23 / T5	0008	100	0	100	
99007-1B	PI5A121C	SC705 / C5	9910	100	0	100	
99007-2B	PI5A121C	SC705 / C5	9930	100	0	100	
99007-4B	PI5A121C	SC705 / C5	0008	99	0	100	
99007-5B	PI5A121C	SC705 / C5	0009	99	0	100	
00020A	PI5C3303	SOT23 / T6	0011	200	0	100	
00021A	PI5C3303	SOT23 / T6	9915	200	0	100	
00022A	PI5A124	SOT23 / T6	0012	150	0	100	
00028-1B	PI5A121	SOT23 / T5	0026	100	0	100	
00028-2B	PI5A121	SOT23 / T5	0027	100	0	100	
01003-1A	PI74ST1G125	SOT23 / T5	0103	76	0	100	
01003-2A	PI74ST1G125	SOT23 / T5	0104	73	0	100	
01003-3A	PI74ST1G125	SOT23 / T5	0105	76	0	100	

### *BGA*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
99033-1B	PI74ALVCH32501	LFBGA/NB114	9921AOT	100	0	100	<i>MCM - 2 die</i>
99003-1B	PI5X1018C	PBGA / NA256	ZC9946BOC	100	0	100	<i>MCM - 2 die</i>
00061-1B	PI3C34X484	LFBGA / NB96	Z0029AWC	100	0	99	<i>MCM - 4 die</i>
00061-2B	PI5C34X484	LFBGA / NB96	Z0030AWC	100	0	100	<i>MCM - 4 die</i>
00061-3B	PI3C34X484	LFBGA / NB96	Z0036AWC	100	0	100	<i>MCM - 4 die</i>

## Preconditioned Moisture Autoclave (PACLV)

### QFP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
00087-1G	PI6C2952	TQFP / FA32	Z0048ANC	100	0	168	Level 1
00087-2G	PI6C2952	TQFP / FA32	Z0048BNC	100	0	168	Level 1
00087-3G	PI6C2952	TQFP / FA32	Z0049ANC	100	0	168	Level 1

### SOIC

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
98103A	PI5C3125	SOIC / W14	Y9837ENC	100	0	168	Level 1
98104A	PI5C3253	SOIC / W16	Y9840ANC	99	0	168	Level 1
98107A	PI5C3401	SOIC / S24	Z9836INC	100	0	168	Level 1
99029A	PI74FCT16373	SOIC / S24	X9918AOC	98	0	168	Level 1
99054A	PI5C3244	SOIC / S20	9940BOC	100	0	168	Level 1
99029A	PI74FCT16373	SOIC / S24	X9918AOC	98	0	168	Level 1
00031A	PI5C3245	SOIC / S20	Y0009BOC	99	0	168	Level 1
00033A	PI74FCT151	SOIC / W16	Y0009BOC	100	0	168	Level 1
00034A	PI5V330W	SOIC / W16	0005COG	100	0	168	Level 1
00040A	PI74FCT16245	SOIC / S24	X9918AOC	98	0	168	Level 1
00041A	PI74FCT151	SOIC / W16	Y0015AOC	100	0	168	Level 1
00049A	PI5C3125	SOIC / W14	Y0018BOG	100	0	168	Level 1
00053A	PI5C3401	SOIC / S24	Z0022BOC	98	0	168	Level 1
00093A	PI5V331	SOIC / W16	Y0033AOC	100	0	168	Level 1
00109A	PI5L100	SOIC / W16	0038AOG	100	0	168	Level 1

### SSOP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
99001A	PI74FCT162374	SSOP / V48	Z9906AEC	100	0	168	Level 1
99002A	PI74FCT162543	SSOP / V56	9906AEC	98	0	168	Level 1
99005A	PI5C3129	QSOP / Q16	9902AFC	99	0	168	Level 1
99009A	PI5C3125	QSOP / Q16	Y9906DFC	99	0	168	Level 1
99011A	PI5C3239	QSOP / Q28	9906BFC	100	0	168	Level 1
99015-2PA	PI5C34X245	BQSOP / B80	Y9926ASC	35	0	168	Level 1 – 4 die
99015-3PA	PI5C34X245	BQSOP / B80	Y9926ASC	29	0	168	Level 1 – 4 die
99017A	PI74LPT573	QSOP / Q20	9915AFC	99	0	168	Level 1
99019PA	PI5C34X245	BQSOP / B80	Y9930AXC	100	0	168	Level 1 – 4 die
99024A	PI74FCT244	QSOP / Q20	V9919AFC	100	0	168	Level 1

# *Preconditioned Moisture Autoclave (PACLV)*

## *SSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
99026A	PI74FCT163244	SSOP / V48	Z9906COC	100	0	168	Level 1
99032A	PI5C3383	QSOP / Q24	X9903AJC	100	0	168	Level 1
99035A	PI5C16212	SSOP / V56	Z9923LOC	100	0	168	Level 1
99039A	PI74LPT244	QSOP / Q20	9923AFC	96	0	168	Level 1
99042A	PI5C3257	QSOP / Q16	Y9928AFC	100	0	168	Level 1
99047-1A	PI5C3257	QSOP / Q16	0007ASY	100	0	168	Level 1
99047-2A	PI5C3257	QSOP / Q16	0013ASG	99	0	168	Level 1
99047-3A	PI5C3257	QSOP / Q16	0013BSG	100	0	168	Level 1
99055A	PI74FCT2244	QSOP / Q20	Y9937DOC	100	0	168	Level 1
99056A	PI74FCT244	QSOP / Q20	9933CFG	100	0	168	Level 1
99059A	PI74FCT244	QSOP / Q20	Y9938EFC	97	0	168	Level 1
99062A	PI5C3254	QSOP / Q20	Z9947HOC	100	0	168	Level 1
00006A	PI74FCT245	QSOP / Q20	W9948POC	90	0	168	Level 1
00009A	PI5C3384	QSOP / Q24	Y9950ROC	100	0	168	Level 1
00015A	PI74FCT2828	QSOP / Q24	Y9940CFC	100	0	168	Level 1
00016A	PI5C3126	QSOP / Q16	9946FFG	99	0	168	Level 1
00025A	PI74FCT2541	QSOP / Q20	X0003AFC	100	0	168	Level 1
00035A	PI5C3245	QSOP / Q20	Y0008GOC	100	0	168	Level 1
00039A	PI5C3384	QSOP / Q24	Y0019IOC	99	0	168	Level 1
00040A	PI74FCT16245	SSOP / V48	Y0013MOT	100	0	168	Level 1
00046A	PI74FCT374	QSOP / Q20	0012AOG	100	0	168	Level 1
00052A	PI74FCT245	QSOP / Q20	0016EOG	100	0	168	Level 1
00058A	PI74FCT2245	QSOP / Q20	0021COG	100	0	168	Level 1
00065A	PI74FCT244	QSOP / Q20	0027DOG	100	0	168	Level 1
00066A	PI74FCT16374	SSOP / V48	X0026FOC	100	0	168	Level 1
00072A	PI74FCT245	QSOP / Q20	0030HOG	99	0	168	Level 1
00077A	PI74FCT2244	QSOP / Q20	0023AFG	100	0	168	Level 1
00094A	PI5C3257	QSOP / Q16	0036AOG	100	0	168	Level 1
00097A	PI74FCT2828	QSOP / Q24	Y0029BFC	100	0	168	Level 1
00107A	PI5C3384	QSOP / Q24	Y0040COC	100	0	168	Level 1
00111A	PI74FCT244	QSOP / Q20	0036AFG	100	0	168	Level 1
00114A	PI74FCT540	QSOP / Q20	X0045AOC	100	0	168	Level 1
00118A	PI74FCT16374	SSOP / V48	X0050OOC	100	0	168	Level 1

## *Preconditioned Moisture Autoclave (PACLV)*

### *TSSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
98100A	PI74FCT3244	TSSOP / L20	9833ANC	100	0	168	Level 1
98102A	PI5C16212	TSSOP / A56	Z9835CNC	100	0	168	Level 1
98106A	PI5C16211	TSSOP / A56	Z9845ANC	99	0	168	Level 1
98113A	PI74LPT16501	TSSOP / A56	9849BNC	99	0	168	Level 1
99016PA	PI5C16211	TSSOP / A56	Z9924AJC	100	0	168	Level 1
99018A	PI74ALVCH162827	TSSOP / A56	Z9915CNT	99	0	168	Level 1
99036A	PI74FCT16374	TSSOP / A48	X9923BOC	100	0	168	Level 1
99038A	PI5C16292	TSSOP / A56	Z9923BNC	95	0	168	Level 1
99043A	PI74LPT16244	TSSOP / A48	Z9931COC	100	0	168	Level 1
99058A	PI5C16211	TSSOP / A56	Z9937ANC	100	0	168	Level 1
99061A	PI5C16211	TSSOP / A56	Z9948MOC	100	0	168	Level 1
00002A	PI5C16211A	TSSOP / A56	Z9948AOC	100	0	168	Level 1
00012A	PI74ALVC16835	TSSOP / A56	9942INT	100	0	168	Level 1
00014A	PI74ALVCT16260	TSSOP / A56	9950RNT	100	0	168	Level 1
00026A	PI74ALVCT1622601	TSSOP / A56	0006ANT	100	0	168	Level 1
00032A	PI74ALVCH16244	TSSOP / A48	0006BOC	100	0	168	Level 1
00036A	PI5C16211A	TSSOP / A56	Z0010DNC	100	0	168	Level 1
00048A	PI5C16211A	TSSOP / A56	Z0015DNC	100	0	168	Level 1
00057A	PI5C16861A	TSSOP / A48	0022BOG	99	0	168	Level 1
00070A	PI5C16211A	TSSOP / A56	Z0027COC	100	0	168	Level 1
00071A	PI5C16861A	TSSOP / A48	0029LOG	100	0	168	Level 1
00075A	PI5C16211A	TSSOP / A56	Z0025ANC	100	0	168	Level 1

### *SOT*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Hours</i>	<i>Remarks</i>
98071-4A	PI5A121	SOT23 / T5	0007	100	0	168	Level 1
98071-5A	PI5A121	SOT23 / T5	0008	100	0	168	Level 1
99007-4A	PI5A121	SC70 / C5	0008	100	0	168	Level 1
99007-5A	PI5A121	SC70 / C5	0009	99	0	168	Level 1
00078A	PI5C3301	SC70 / C5	0012	95	0	168	Level 1
00079A	PI5A121	SC70 / C5	0025	91	0	168	Level 1
00080A	PI5A124	SOT23 / T6	0024	100	0	168	Level 1
00103A	PI5C3301	SOT23 / T5	0029	98	0	168	Level 1
00104A	PI5A124	SOT23 / T6	0033	100	0	168	Level 1
00112A	PI5A124	SOT23 / T6	0036	100	0	168	Level 1
00126A	PI5A124	SOT23 / T6	0040	99	0	168	Level 1
00127A	PI5A121	SC70 / C5	0043	100	0	168	Level 1

## *Preconditioned Temperature Cycle (PTMCL)*

### *QFP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00087-1H	PI6C2952	TQFP / FA32	Z0048ANC	99	0	100	Level 1
00087-2H	PI6C2952	TQFP / FA32	Z0048BNC	100	0	100	Level 1
00087-3H	PI6C2952	TQFP / FA32	Z0049ANC	99	0	100	Level 1

### *SOIC*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98103B	PI5C3125	SOIC / W14	Y9837ENC	77	0	200	Level 1
98104B	PI5C3253	SOIC / W16	Y9840ANC	77	0	200	Level 1
98107B	PI5C3401	SOIC / S24	Z9836INC	77	0	200	Level 1
99025B	PI49FCT805	SOIC / S20	Z9951COC	76	0	100	Level 1
99027B	PI5C3401	SOIC / S24	Z9911COC	76	0	100	Level 1
99028B	PI74FCT825	SOIC / S24	9918AOC	76	0	100	Level 1
99029B	PI49FCT805	SOIC / S20	X9918AOC	75	0	100	Level 1
99044B	PS392ESE	SOIC / W16	Z9930BOD	76	0	100	Level 1
99054B	PI5C3244	SOIC / S20	9940BOC	77	0	100	Level 1
00008B	PI5C3125	SOIC / W14	Y9949AOC	76	0	100	Level 1
00031B	PI5C3245	SOIC / S20	Y0009BOC	76	0	100	Level 1
00033B	PI74FCT151	SOIC / W16	Y0009BOC	76	0	100	Level 1
00034B	PI5V330	SOIC / W16	0005COG	76	0	100	Level 1
00041B	PI74FCT151	SOIC / W16	Y0015AOC	76	0	100	Level 1
00049B	PI5C3125	SOIC / W14	0018BOG	75	0	100	Level 1
00053B	PI5C3401	SOIC / S24	Z0022BOC	76	0	100	Level 1
00056B	PI5C3401	SOIC / S24	Z0022BOC	76	0	100	Level 1
00090B	PI5C3245	SOIC / S20	A30032EOG	76	0	100	Level 1
00093B	PI5V330	SOIC / W16	Y0033AOC	75	0	100	Level 1
00034B	PI5V330	SOIC / W16	0005COG	76	0	100	Level 1
00121B	PI74FCT2244	SOIC / S20	0049AOG	76	0	100	Level 1

## *Preconditioned Temperature Cycle (PTMCL)*

### *SSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
99001PB	PI74FCT162374	SSOP / V48	Z9906AEC	100	0	100	Level 1
99002B	PI74FCT162543	SSOP / V56	9906AEC	100	0	100	Level 1
99011B	PI5C3239	QSOP / Q28	9906BFC	73	0	200	Level 1
99014B	PI74FCT245	QSOP / Q20	W9912BFC	74	0	200	Level 1
99015-2PB	PI5C34X245	BQSOP / B80	Y9926ASC	30	0	100	Level 1 – 4 die
99015-3PB	PI5C34X245	BQSOP / B80	Y9926ASC	44	0	100	Level 1 – 4 die
99017B	PI74LPT573	QSOP / Q20	9915AFC	99	0	200	Level 1
99019PB	PI5C34X245	BQSOP / B80	Y9930AXC	98	0	100	Level 1 – 4 die
99024B	PI74FCT244	QSOP / Q20	V9919AFC	75	0	200	Level 1
99026B	PI74FCT163244	QSOP / Q20	Z9906COC	75	0	100	Level 1
99035B	PI5C16212	SSOP / V56	Z9923LOC	76	0	100	Level 1
99039B	PI74LPT244	QSOP / Q20	9923AFC	75	0	200	Level 1
99042B	PI5C3257	QSOP / Q16	Y9928AFC	76	0	200	Level 1
99055B	PI74FCT2244	QSOP / Q20	Y9937DOC	76	0	100	Level 1
99056B	PI74FCT244	QSOP / Q20	9933CFG	76	0	200	Level 1
99059B	PI74FCT244	QSOP / Q20	Y9938EFC	76	0	200	Level 1
99062B	PI5C3245	QSOP / Q20	Z9947HOC	76	0	100	Level 1

# Preconditioned Temperature Cycle (PTMCL)

## SSOP

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
00006B	PI74FCT245	QSOP / Q20	W9948POC	76	0	100	Level 1
00015B	PI74FCT2828	QSOP / Q24	Y9940CFC	75	0	200	Level 1
00016B	PI5C3126Q	QSOP / Q16	9946FFG	80	0	200	Level 1
00025B	PI74FCT2541	QSOP / Q20	X0003AFC	76	0	200	Level 1
00030B	PI6C180	SSOP / V48	Z0009QOC	75	0	100	Level 1
00035B	PI5C3245	QSOP / Q20	Y0008GOC	76	0	100	Level 1
00037B	PI74FCT245	QSOP / Q20	0009DFG	76	0	200	Level 1
00039B	PI5C3384	QSOP / Q24	Y0019IOC	73	0	100	Level 1
00040B	PI74FCT16245	SSOP / V48	Y0013MOT	76	0	100	Level 1
00046B	PI74FCT374	QSOP / Q20	0012AOG	76	0	100	Level 1
00047B	PI74FCT2245	QSOP / Q20	0015BFG	76	0	200	Level 1
00052B	PI74FCT245	QSOP / Q20	0016EOG	76	0	100	Level 1
00058B	PI74FCT2245	QSOP / Q20	0021COG	75	0	100	Level 1
00065B	PI74FCT244	QSOP / Q20	0027DOG	76	0	100	Level 1
00066B	PI74FCT16374	SSOP / V48	X0026FOC	76	0	100	Level 1
00072B	PI74FCT245	QSOP / Q20	0030HOG	76	0	100	Level 1
00076B	PI74FCT3244	QSOP / Q20	0019CFC	76	0	200	Level 1
00077B	PI74FCT2244	QSOP / Q20	0023AFG	76	0	200	Level 1
00091B	PI74FCT16374	SSOP / V48	X0035BOC	76	0	100	Level 1
00094B	PI5C3257	QSOP / Q16	0036AOG	76	0	100	Level 1
00107B	PI5C3384	QSOP / Q24	Y0040COC	75	0	100	Level 1
00111B	PI74FCT244	QSOP / Q20	0036AFG	75	0	200	Level 1
00114B	PI74FCT540	QSOP / Q20	X0045AOC	76	0	100	Level 1
00116B	PI74FCT16244	SSOP / V48	X0047BOC	76	0	100	Level 1
00121B	PI74FCT2244	QSOP / Q20	0049AOG	76	0	100	Level 1
00132B	PI74FCT244	QSOP / Q20	0053GOG	76	0	100	Level 1

## *Preconditioned Temperature Cycle (PTMCL)*

### *TSSOP*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98100B	PI74FCT3244	TSSOP / L20	9833ANC	76	0	200	Level 1
98106B	PI5C16211	TSSOP / A56	Z9845ANC	75	0	200	Level 1
98113B	PI74LPT16501	TSSOP / A56	9849BNC	77	0	200	Level 1
99016-PB	PI5C16211	TSSOP / A56	Z9924AJC	97	0	100	Level 1
99018B	PI74ALVCHI162827	TSSOP / A56	Z9915CNT	76	0	200	Level 1
99023A	PI5C16211A	TSSOP / A56	Z9918XNC	76	0	200	Level 1
99036B	PI74FCT16374	TSSOP / A48	X9923BOC	76	0	100	Level 1
99041B	PI74FCT16835	TSSOP / A56	9928ANT	76	0	200	Level 1
99043B	PI74LPT16244	TSSOP / A48	Z9931COC	76	0	100	Level 1
99058B	PI5C16211A	TSSOP / A56	Z9937ANC	76	0	200	Level 1
00002B	PI5C16211A	TSSOP / A56	Z9948AOC	76	0	100	Level 1
00012B	PI74ALVC16835	TSSOP / A56	9942INT	77	0	200	Level 1
00014B	PI74ALVCT16260	TSSOP / A56	9950RNT	75	0	200	Level 1
00026B	PI74ALVCT1622601	TSSOP / A56	0006ANT	76	0	200	Level 1
00036B	PI5C16211A	TSSOP / A56	Z0010DNC	76	0	200	Level 1
00048B	PI5C16211A	TSSOP / A56	Z0015DNC	74	0	200	Level 1
00057B	PI5C16861A	TSSOP / A48	0022BOG	76	0	100	Level 1
00070B	PI5C16211A	TSSOP / A56	Z0027COC	76	0	100	Level 1
00071B	PI5C16861A	TSSOP / A48	0029LOG	76	0	100	Level 1
00075B	PI5C16211A	TSSOP / A56	Z0025ANC	76	0	200	Level 1
00092B	PI5C16211A	TSSOP / A56	Z0034GOC	76	0	100	Level 1

### *SOT*

<i>Lot #</i>	<i>Device</i>	<i>Package/Code</i>	<i>Date Code</i>	<i>SS</i>	<i>Rej.</i>	<i>Cycles</i>	<i>Remarks</i>
98071-4C	PI5A121	SOT23 / T5	0007	99	0	200	Level 1
98071-5C	PI5A121	SOT23 / T5	0008	100	0	200	Level 1
99007-4C	PI5A121	SC70 / C5	0008	99	0	200	Level 1
99007-5C	PI5A121	SC70 / C5	0009	99	0	200	Level 1
00078B	PI5C3301	SC70 / C5	0012	76	0	200	Level 1
00079B	PI5A121	SC70 / C5	0025	76	0	200	Level 1
00080B	PI5A124	SOT23 / T6	0024	76	0	200	Level 1
00081B	PI5A121	SOT23 / T5	0013	76	0	200	Level 1
00103B	PI5C3301	SOT23 / T5	0029	76	0	200	Level 1
00104B	PI5A124	SOT23 / T6	0033	76	0	200	Level 1
00112A	PI5A124	SOT23 / T6	0036	76	0	200	Level 1
00126B	PI5A124	SOT23 / T6	0040	76	0	200	Level 1
00127B	PI5A121	SC70 / C5	0043	76	0	200	Level 1

## MOISTURE SENSITIVITY LEVEL (MSL) OF PERICOM'S PACKAGES

*Pericom's Integrated Circuit (IC) products are enclosed in plastic encapsulated or plastic covered substrate, Surface Mount Technology (SMT) packages. These have been evaluated by Moisture Sensitivity Testing (MST) and Moisture Resistance Testing (MRT) by Pericom and/or its assembly subcontractors and found to be in compliance with MSL requirements of the latest revisions to joint industry standards IPC/JEDEC J-STD-020A and JESD22-A113.*

*Pericom's SO (QSOP, SOIC (SOP), SSOP, TSSOP, SOT-23, and SC-70), PLCC, and QFP (LQFP and TQFP) type packages have been determined to meet MSL 1 and therefore do not require any bake or dry pack prior to shipment. They are capable of withstanding 3 cycles of IR / Convection / Forced Air (N<sub>2</sub>) reflow profiled to a recommended maximum peak temperature of 240°C. Customers do not need to store them in a specially controlled temperature and humidity environment prior to use. The floor life is unlimited at up to 30°C and 85% RH. No board mounting/reflow package damage should occur with product in these package types when utilizing industry standard SMT Reflow Solder profile methods and temperatures (including ramp rates and dwells).*

*Pericom's BGA (PBGA and LFBGA) type packages have been determined to meet MSL 3 and therefore do require bake and dry pack prior to shipment. They are capable of withstanding 3 cycles of IR / Convection / Forced Air (N<sub>2</sub>) reflow profiled to a recommended peak temperature of 225°C and a maximum peak temperature of 235°C. Customers do not need to store them in a specially controlled temperature and humidity environment prior to use provided they remain in tape and reel in a dry environment. The floor life is limited to 168 hours at up to 30°C and 85% RH. No board mounting/reflow package damage should occur with product in these package types when utilizing industry standard SMT Reflow Solder profile methods and temperatures (including ramp rates and dwells) if used within the shelf life period.*

*Pericom ensures maximum protection against moisture penetration because our plastic encapsulated/covered substrate packages are designed using the most appropriate epoxy and leadframe/substrate materials applicable to the type of package being assembled. Pericom's IC chips also use a silicon nitride (SN<sub>2</sub>) topside passivation to help reduce the possibility of moisture corrosion to the device metallization.*

## PERICOM PLASTIC PACKAGE IMPROVEMENTS

*Pericom pioneered the use of 240°C Moisture/Reflow Sensitivity testing back in 1998. Pericom is currently preparing to evaluate higher reflow temperatures up to 260°C to accommodate customer requirements for lead-free soldering. Pericom works very closely with all its package assembly subcontractors to constantly improve the mechanical design of all plastic packages they supply. The following areas are addressed:*

### *A. For Plastic Encapsulated SO/PLCC Packages:*

- i) Mold Compound material changes to improve mechanical and moisture sensitivity*
- ii) Leadframe material/design changes to improve mechanical and thermal sensitivity*
- iii) Die Attach Epoxy material/process changes to improve mechanical sensitivity*

### *B. For Plastic Overmolded PBGA/LFBGA:*

- i) Mold Compound material changes to improve mechanical and moisture sensitivity*
- ii) Substrate material changes to improve mechanical and moisture sensitivity*
- iii) Die Attach Epoxy material/process changes to improve mechanical sensitivity*

## PACKAGE SOLDER REFLOW CONDITIONS

### SO/PLCC Convection/Infrared/N<sub>2</sub> Reflow Soldering

<b>Stage</b>	<b>Maximum</b>	<b>Recommended</b>	<b>Minimum</b>
Ramp up (°C /sec)	3°C /sec.	<2°C /sec. *	**
Dwell Time @ 183°C	150 sec.	<120 sec. *	60 sec. **
Solder Temperature	240°C **	<240°C *	**
Dwell Time @ Max.	40 sec.	<20 sec.	**
Ramp Down (°C /sec.)	5°C /sec.	<4°C /sec.	**

### PBGA/LFBGA Convection/Infrared/N<sub>2</sub> Reflow Soldering

<b>Stage</b>	<b>Maximum</b>	<b>Recommended</b>	<b>Minimum</b>
Ramp up (°C /sec)	3°C /sec	<2°C /sec *	**
Dwell Time @ 183°C	150 sec.	<60 sec. *	60 sec. **
Solder Temperature	235°C **	<225°C *	**
Dwell Time @ Max.	20 sec.	<10 sec.	**
Ramp Down (°C /sec.)	5°C /sec.	<4°C /sec.	**

Notes:

Temperature measured at the component lead area in degrees Celsius.

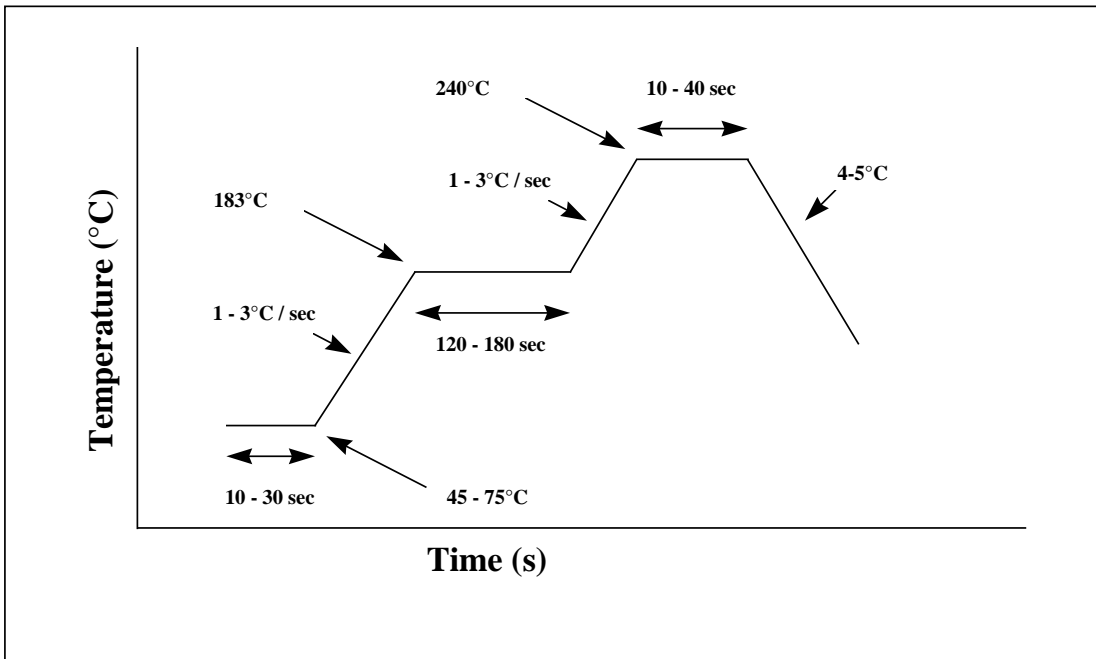
\* Will vary depending on board density, geometry and package type; good for up to three cycles (2 reflow+1 rework)

\*\* Will vary depending on package types and board density.

# TYPICAL PACKAGE SOLDER REFLOW PROFILES



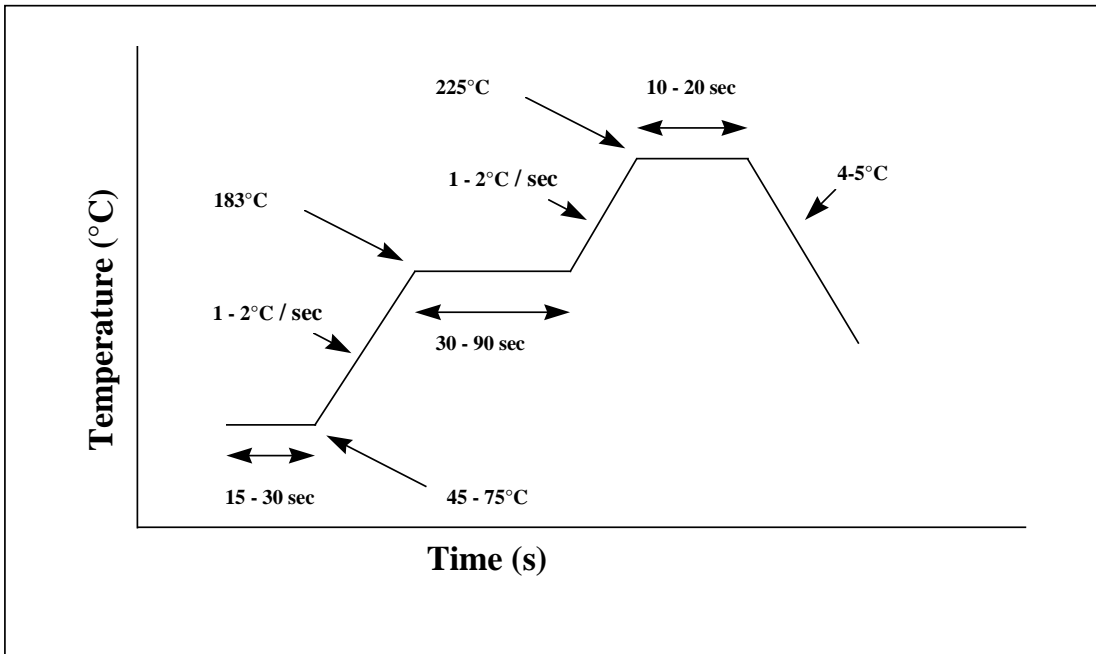
## SO/PLCC Convection/IR +N<sub>2</sub> Solder Reflow Profile



01/01/01 issued by Pericom Semiconductor Corp.



## PBGA/LFBGA Convection/IR Solder Reflow Profile



01/01/01 issued by Pericom Semiconductor Corp.