



# Exar Quarterly Quality and Reliability Report

---

May 2010

## Report Contents:

---

<b>Outgoing Quality (PPM) Data .....</b>	<b>4</b>
<i>Quarterly QC Visual PPM Report .....</i>	<i>5</i>
<i>Quarterly QC Electrical PPM Report .....</i>	<i>6</i>
<b>SPC – Cpk Trends .....</b>	<b>7</b>
<i>SPC – Cpk Trends - Assembly .....</i>	<i>8</i>
Unisem, Indonesia - LQFP .....	8
Unisem, Indonesia - PDIP .....	9
Unisem, Indonesia - PLCC .....	10
Unisem, Indonesia - SOIC .....	11
Unisem, Ipoh – 8L NSOIC .....	12
Unisem, Ipoh – 8L PDIP .....	13
Unisem, Ipoh – SOT223 .....	14
Unisem, Ipoh – SOT23 .....	15
Unisem, Ipoh - MSOP .....	16
Unisem, Ipoh - TSSOP .....	17
Carsem M - MSOP .....	18
Carsem M – TO220 .....	19
Carsem M – TO263 .....	20
Carsem M – SOT223 .....	21
Carsem M – SC70 .....	22
Carsem M – SOT23 .....	23
Carsem S - TSSOP .....	24
Carsem S - QFP .....	25
Carsem S - SSOP .....	26
Carsem S - WSOIC .....	27
Carsem S – PDIP .....	28
<i>SPC – Cpk Trends - Assembly .....</i>	<i>29</i>
UTAC, China - BGA .....	29
<i>SPC – Cpk Trends - Assembly .....</i>	<i>30</i>
UTAC, China - QFP .....	30
<i>SPC – Cpk Trends - Assembly .....</i>	<i>31</i>
UTAC, China - LPCC .....	31
<b>Reliability .....</b>	<b>32</b>
GLOBALFOUNDRIES, Singapore - 0.35 $\mu$ CMOS .....	33

GLOBALFOUNDRIES, Singapore - 0.6 $\mu$ CMOS.....	34
Tower/Jazz, CA USA - 0.5 $\mu$ CMOS.....	35
Polar, MN USA - 0.5 $\mu$ BiCMOS.....	36
Episil, Taiwan – 1.2 $\mu$ CMOS.....	37
Silan, Hangzhou PRC – 2 $\mu$ CMOS.....	38
Silan, Hangzhou PRC – 5 $\mu$ CMOS.....	39
Silan, Hangzhou PRC – Bipolar .....	40
<i>Die Stress Data</i> .....	41
GLOBALFOUNDRIES, Singapore - 0.35 $\mu$ CMOS.....	41
GLOBALFOUNDRIES, Singapore - 0.18 $\mu$ CMOS.....	42
GLOBALFOUNDRIES, Singapore - 0.6 $\mu$ CMOS.....	43
<i>Die Stress Data</i> .....	44
Tower/Jazz, CA USA – 0.5 $\mu$ CMOS.....	44
<i>Die Stress Data</i> .....	45
Episil, Taiwan -1.2 $\mu$ CMOS .....	45
<i>Die Stress Data</i> .....	46
Episil, Taiwan -2 $\mu$ CMOS .....	46
<i>Die Stress Data</i> .....	47
Silan, Hangzhou PRC - 2 $\mu$ CMOS .....	47
<i>Die Stress Data</i> .....	48
Silan, Hangzhou PRC - 5 $\mu$ CMOS .....	48
<i>Die Stress Data</i> .....	49
Silan, Hangzhou PRC -Bipolar.....	49
<i>Package Stress Data</i> .....	50
BGA Families .....	50
PDIP .....	51
PLCC .....	52
T/S/LQFP.....	53
TO.....	54
SOT, TSOT, SC-70.....	55
MSOP, TSSOP, SSOP, SOIC.....	56
QFN, DFN .....	57

## Outgoing Quality (PPM) Data

---

The outgoing quality data are the results of electrical and visual/mechanical inspection on samples of all Exar's products. The results are measured in parts per million (PPM).

## Quarterly QC Visual PPM Report

---

**Quarter:** January 1, 2010 to March 31, 2010

**Devices:** Exar Products

**Summary:** All data is first submission data

<b>Total number of lots inspected:</b>	2627
<b>Total number of lots accepted:</b>	2626
<b>Total number of QC samples inspected:</b>	301,690
<b>Total number fail in QC samples:</b>	1

<b>Process average PPM:</b> $= \Sigma r / \Sigma n \times 10^6$ $= 1 / 301,690 \times 10^6$ r = Total number fail in QC samples n = Total number of QC samples inspected	3.31 PPM
--	----------

## Quarterly QC Electrical PPM Report

---

**Quarter:** January 1, 2010 to March 1, 2010

**Devices:** Exar Products

**Summary:** All data is first submission data

<b>Total number of lots inspected:</b>	3,691
<b>Total number of lots accepted:</b>	3,691
<b>Total number of QC samples inspected:</b>	1,105,177
<b>Total number fail in QC samples:</b>	0

<b>Process average PPM:</b> $= \Sigma r / \Sigma n \times 10^6$ $= 0 / 1,105,177 \times 10^6$ r = Total number fail in QC samples n = Total number of QC samples inspected	0 PPM
--	-------

## SPC – Cpk Trends

---

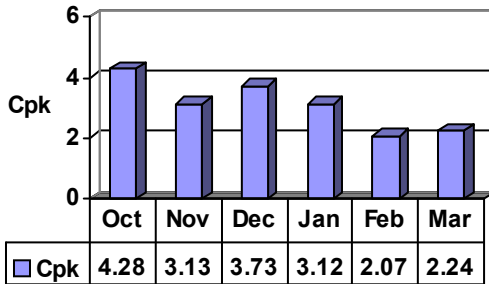
Data on Cpk and Cpk trends for critical processes of Exar's assembly subcontractors and foundry fabs are reported in order to assure our customers that our suppliers have an on-going SPC plan to control and continually improve their critical processes. This also serves as an early warning system which keeps processes from becoming marginal.

# SPC – Cpk Trends - Assembly

Unisem, Indonesia SPC Program: 2009 / 2010

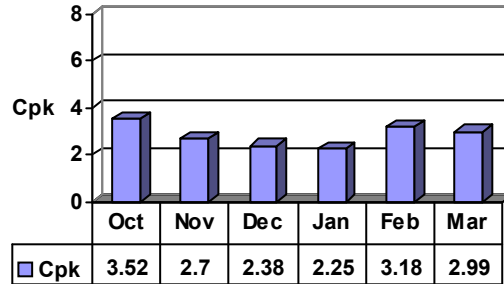
Package Technology: LQFP

**Wire Pull**



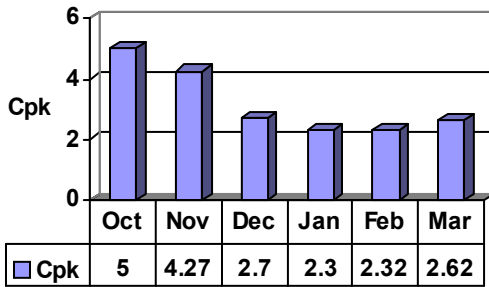
LSL = 6 gms

**Ball Shear**



LSL = 20 gms

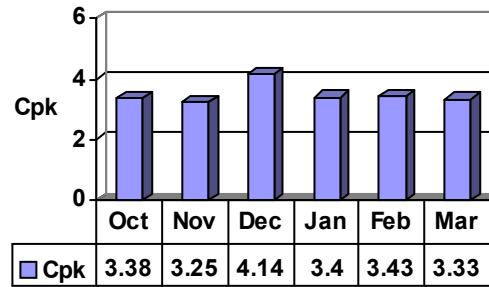
**Plating Thickness Pb-Free**



LSL = 300µin

USL = 800µin

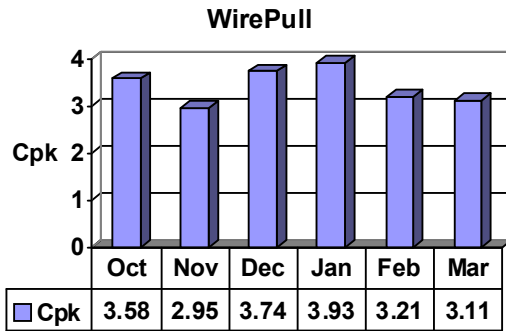
**Coplanarity**



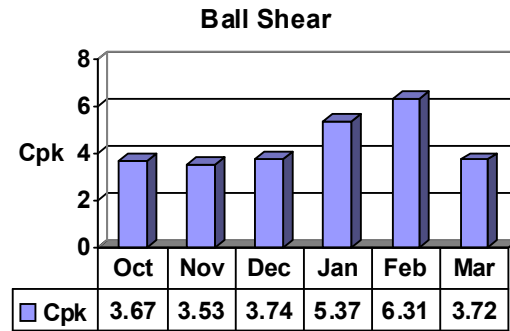
USL = 2.0 mils

Unisem, Indonesia SPC Program: 2009 / 2010

Package Technology: PDIP



LSL = 6 gms

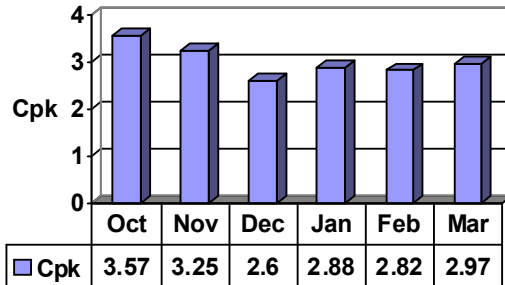


LSL = 20 gms

Unisem, Indonesia SPC Program: 2009 / 2010

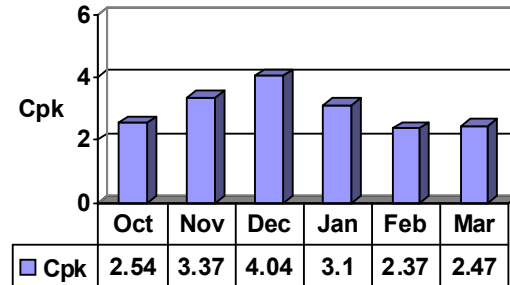
Package Technology: PLCC

Wire Pull



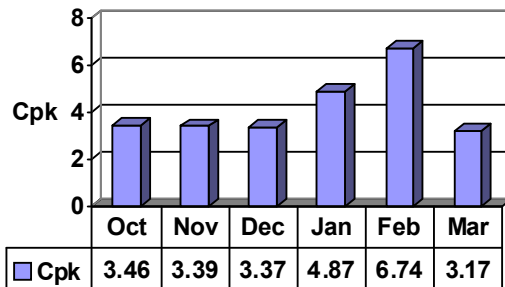
LSL = 6 gms

Ball Shear



LSL = 20 gms

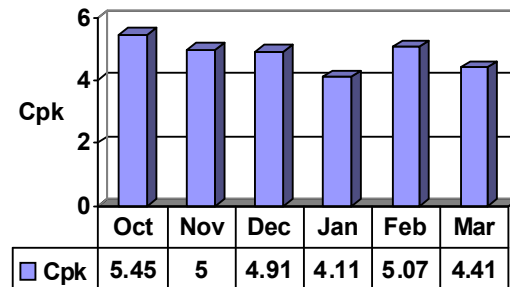
Plating Thickness Pb-Free



LSL = 300µin

USL = 800µin

Coplanarity

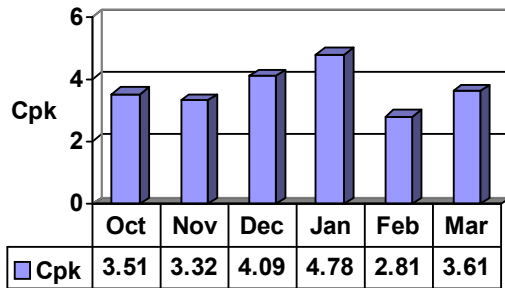


USL = 3.0 mils

Unisem, Indonesia SPC Program: 2009 / 2010

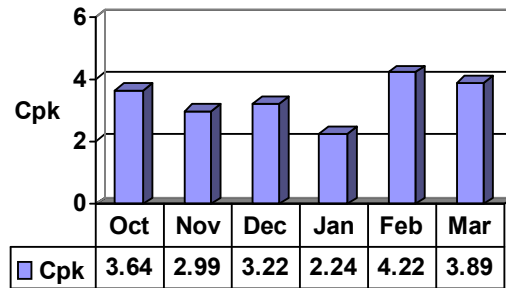
Package Technology: SOIC

Wire Pull



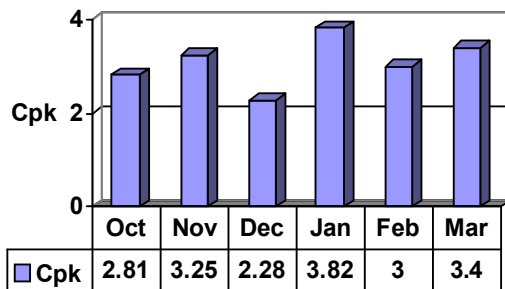
LSL = 6 gms

Ball Shear



LSL = 20 gms

Plating Thickness Pb-Free

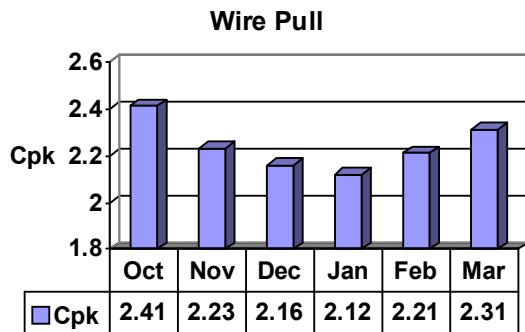


LSL = 300µin

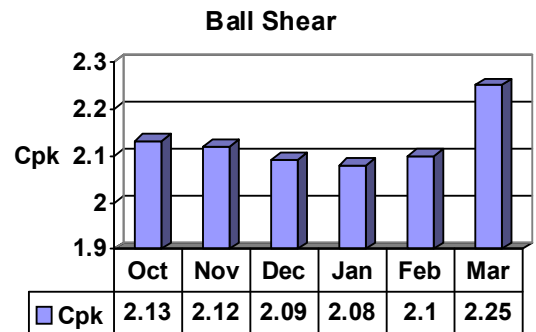
USL = 800µin

Unisem, Ipoh SPC Program: 2009 / 2010

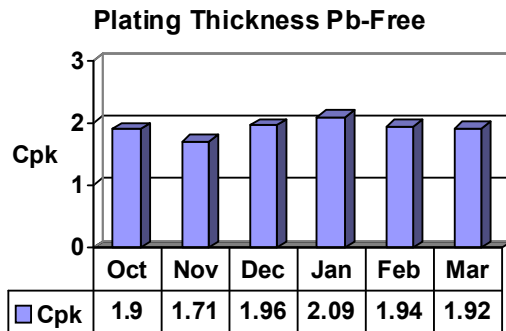
Package Technology: NSOIC



LSL = 6 gms



LSL = 20 gms

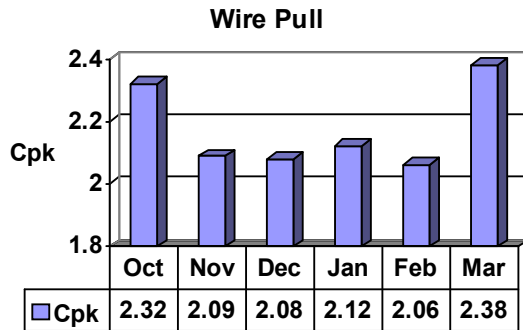


LSL = 300µin

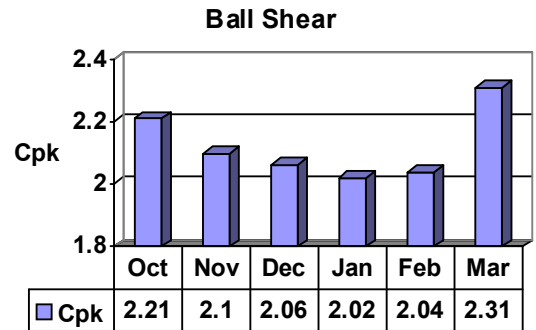
USL = 800µin

Unisem, Ipoh SPC Program: 2009 / 2010

Package Technology: PDIP



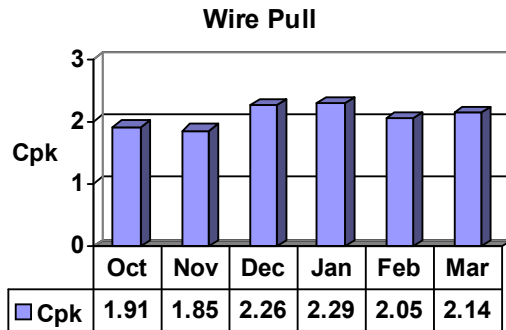
LSL = 6 gms



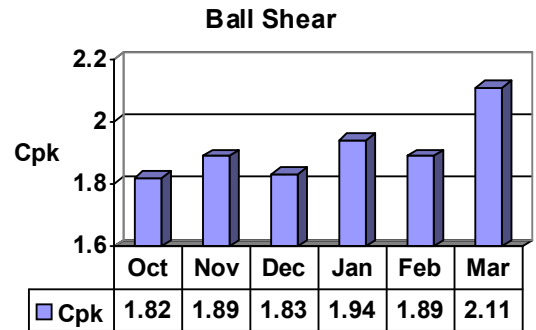
LSL = 20 gms

Unisem, Ipoh SPC Program: 2009 / 2010

Package Technology: SOT223



LSL = 6 gms

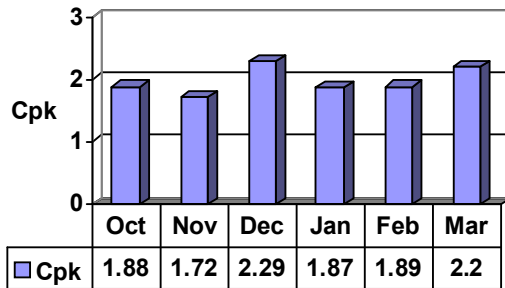


LSL = 20 gms

Unisem, Ipoh SPC Program: 2009 / 2010

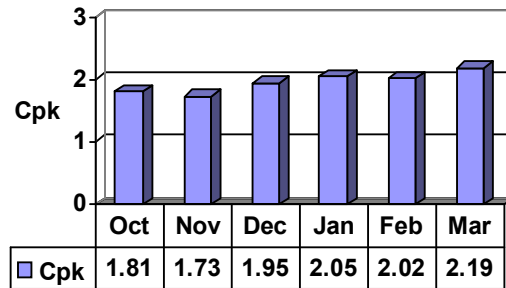
Package Technology: SOT23

Wire Pull



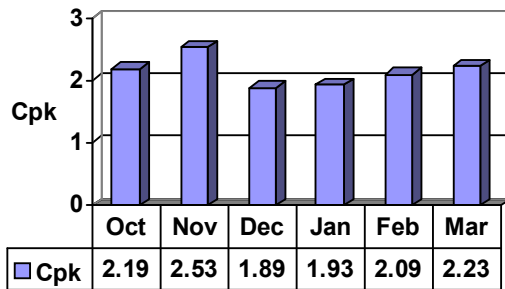
LSL = 6 gms

Ball Shear



LSL = 20 gms

Plating Thickness Pb-Free

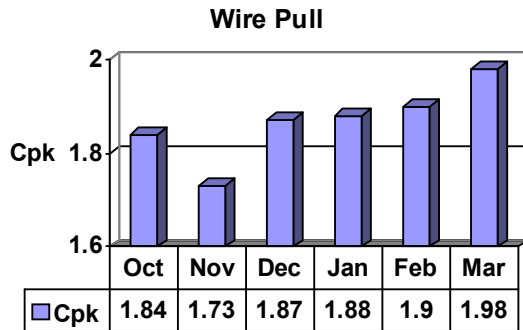


LSL = 300µin

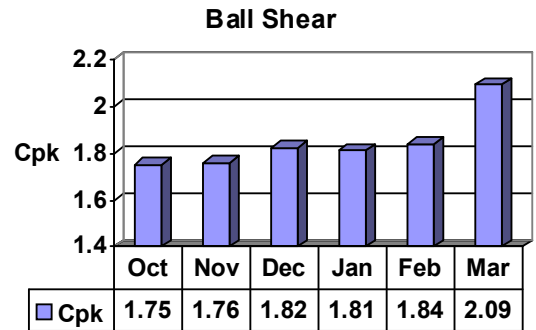
USL = 800µin

Unisem, Ipoh SPC Program: 2009 / 2010

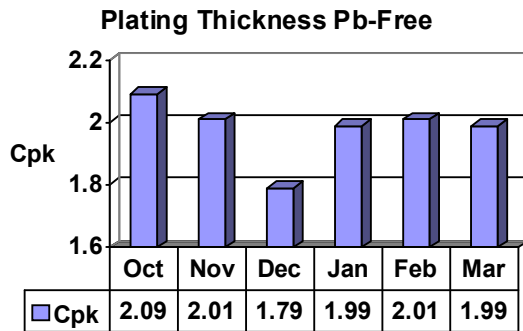
Package Technology: MSOP



LSL = 6 gms



LSL = 20 gms

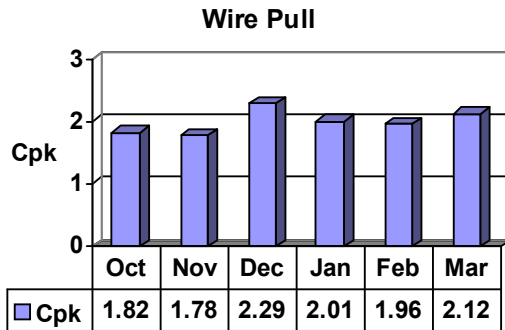


LSL = 300µin

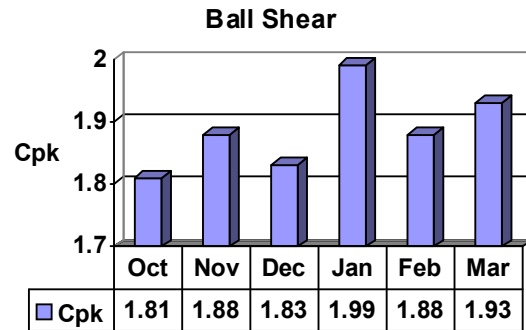
USL = 800µin

Unisem, Ipoh SPC Program: 2009 / 2010

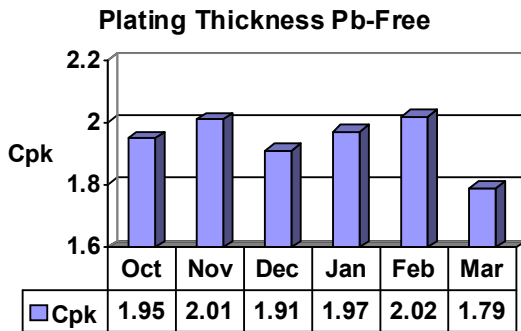
Package Technology: TSSOP



LSL = 6 gms



LSL = 20 gms

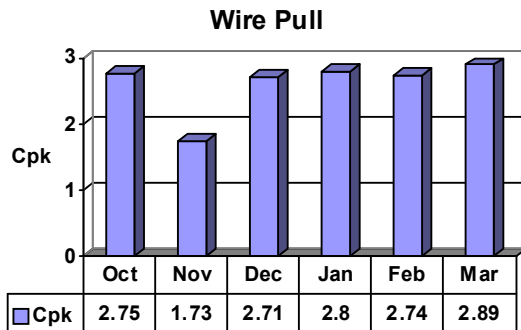


LSL = 300µin

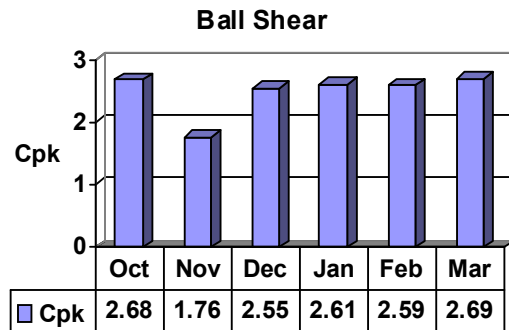
USL = 800µin

Carsem M, Malaysia Program: 2009 / 2010

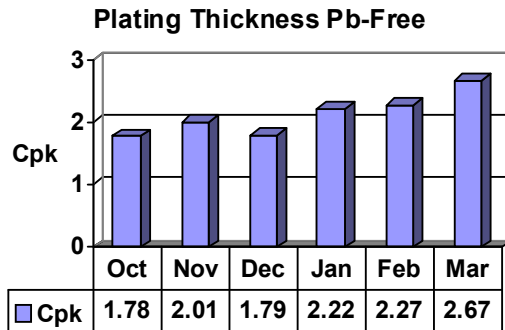
Package Technology: MSOP



LSL = 6 gms

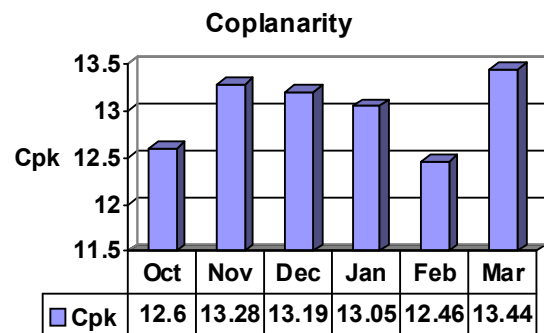


LSL = 20 gms



LSL = 300µin

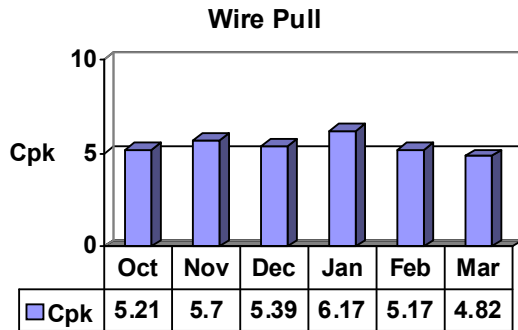
USL = 800µin



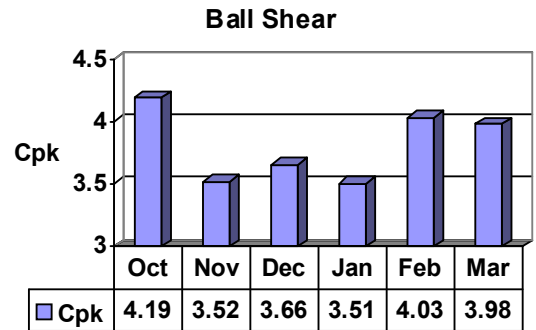
USL = 3.0 mils

Carsem M, Malaysia Program: 2009 / 2010

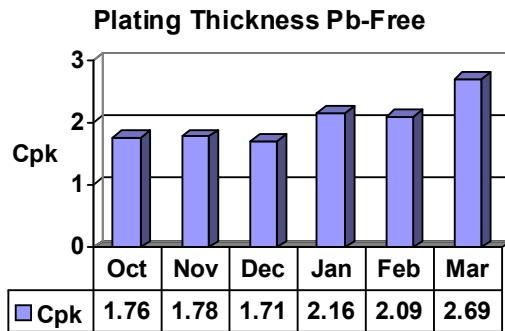
Package Technology: TO220



LSL = 6 gms



LSL = 20 gms

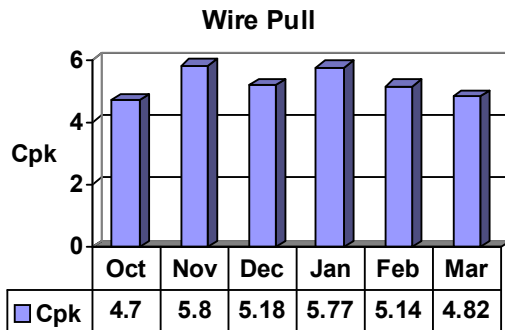


LSL = 300µin

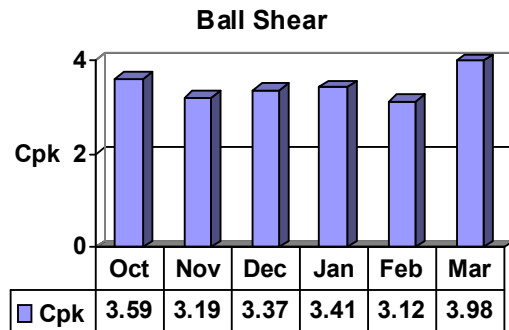
USL = 800µin

Carsem M, Malaysia Program: 2009 / 2010

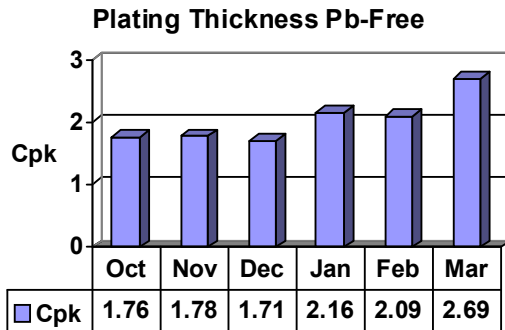
Package Technology: TO263



LSL = 6 gms

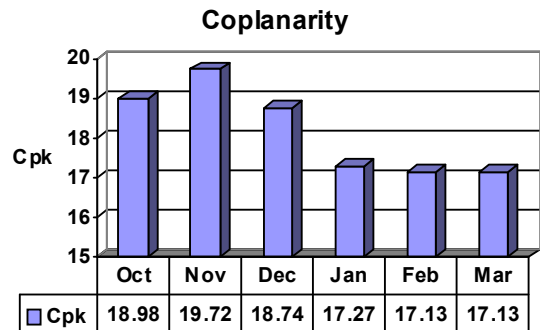


LSL = 20 gms



LSL = 300µin

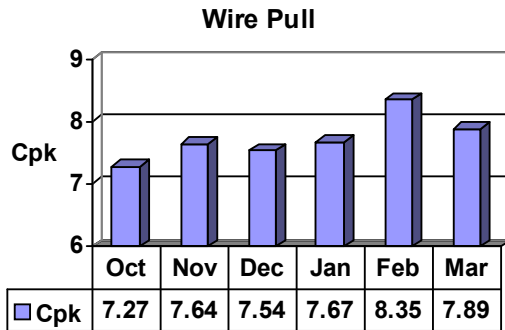
USL = 800µin



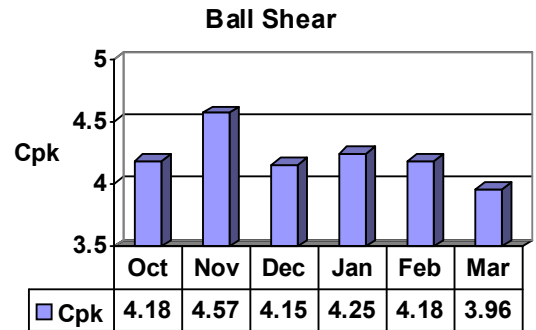
USL = 3.0 mils

Carsem M, Malaysia Program: 2009 / 2010

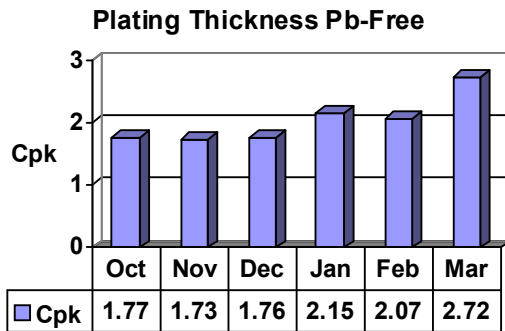
Package Technology: SOT223



LSL = 6 gms



LSL = 20 gms

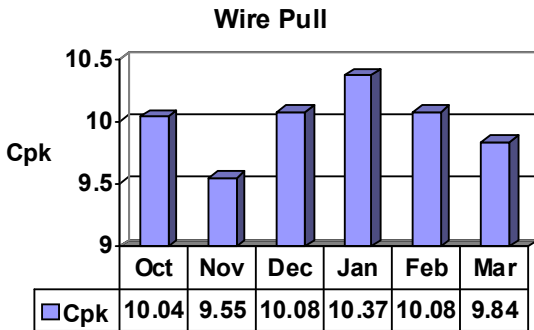


LSL = 300µin

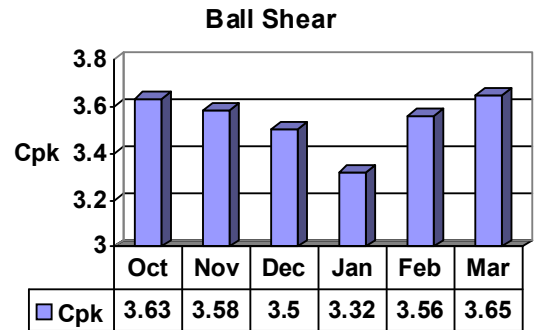
USL = 800µin

Carsem M, Malaysia Program: 2009 / 2010

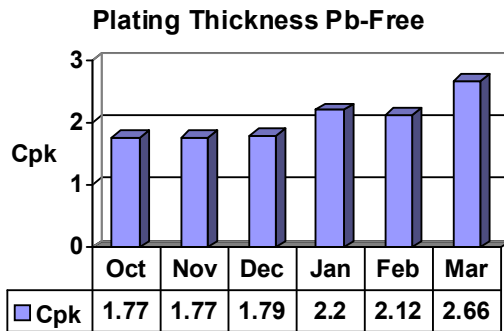
Package Technology: SC70



LSL = 6 gms



LSL = 20 gms

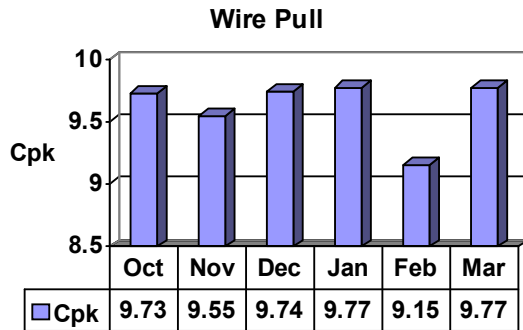


LSL = 300µin

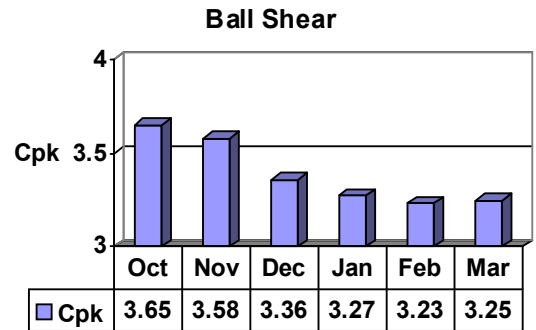
USL = 800µin

Carsem M, Malaysia Program: 2009 / 2010

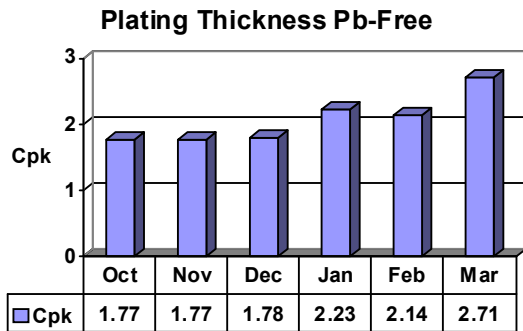
Package Technology: SOT23



LSL = 6 gms



LSL = 20 gms

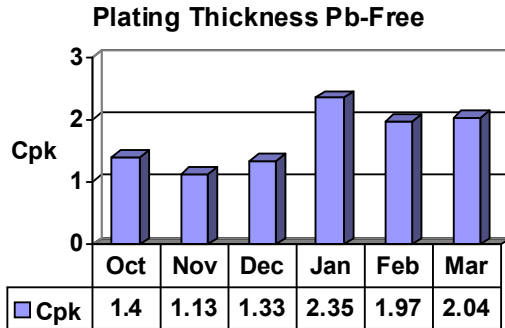


LSL = 300µin

USL = 800µin

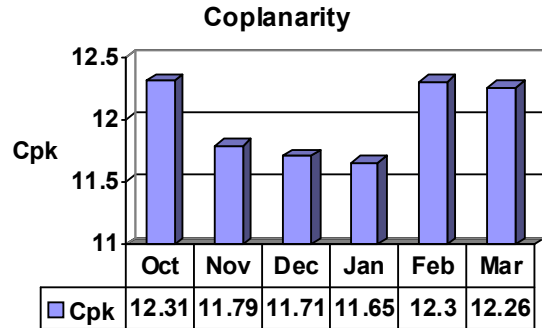
Carsem S, Malaysia Program: 2009 / 2010

Package Technology: TSSOP



LSL = 300 $\mu$ in

USL = 800 $\mu$ in

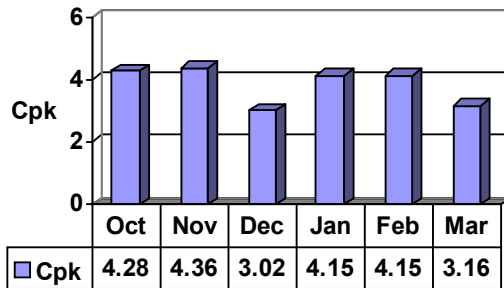


USL = 3.0 mils

Carsem S, Malaysia Program: 2009 / 2010

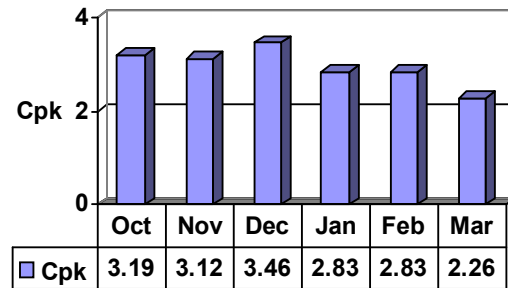
Package Technology: QFP

Wire Pull



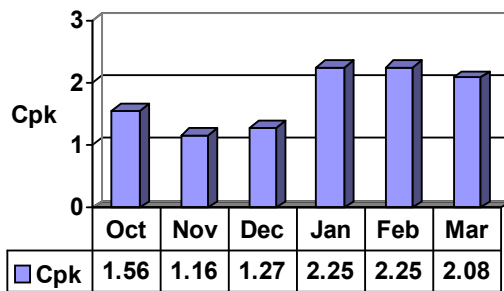
LSL = 6 gms

Ball Shear



LSL = 20 gms

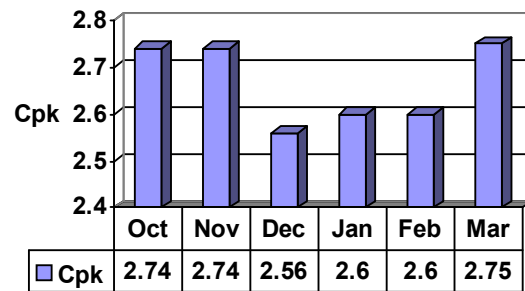
Plating Thickness Pb-Free



LSL = 300µin

USL = 800µin

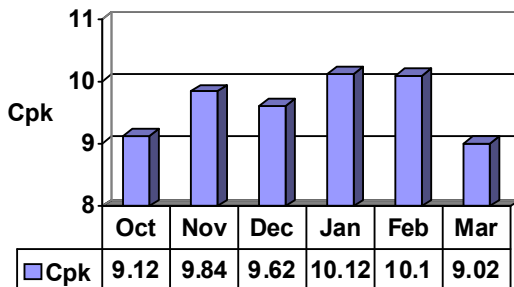
Plating Comp (%Sn)



LSL = 80%

USL = 90%

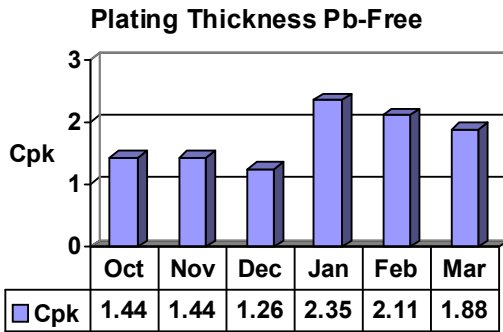
Coplanarity



USL = 3.0 mils

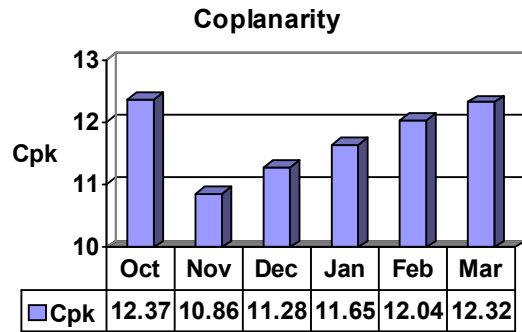
Carsem S, Malaysia Program: 2009 / 2010

Package Technology: SSOP



LSL = 300 $\mu$ in

USL = 800 $\mu$ in

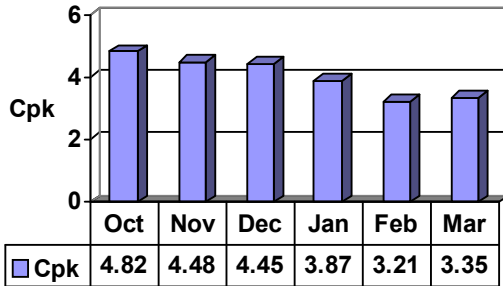


USL = 3.0 mils

Carsem S, Malaysia Program: 2009 / 2010

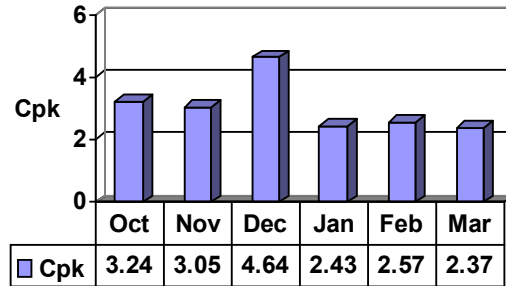
Package Technology: WSOIC

Wire Pull



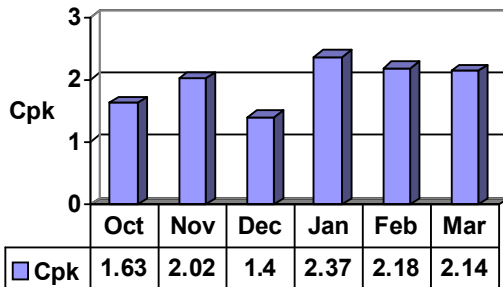
LSL = 6 gms

Ball Shear



LSL = 20 gms

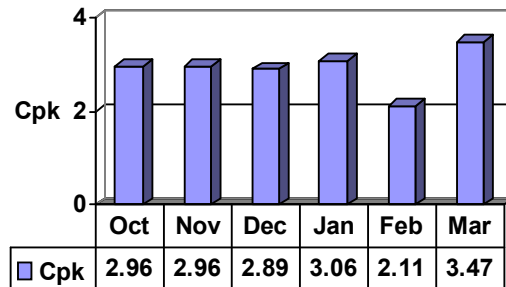
Plating Thickness Pb-Free



LSL = 300µin

USL = 800µin

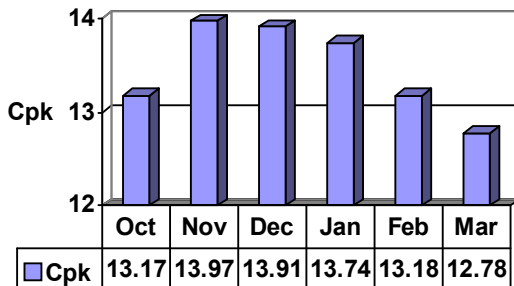
Plating Comp (%Sn)



LSL = 80%

USL = 90%

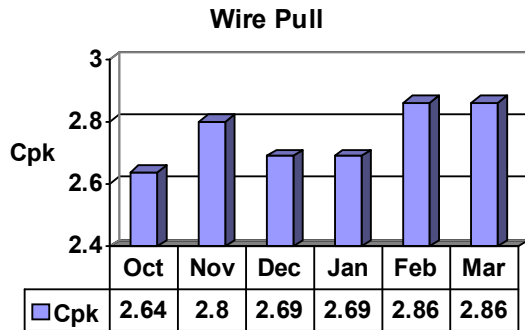
Coplanarity



USL = 3.0 mils

Carsem S, Malaysia Program: 2009 / 2010

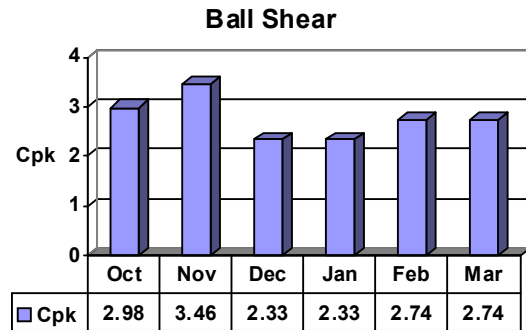
Package Technology: PDIP



LSL = 6 gms

LSL = 300 $\mu$ in

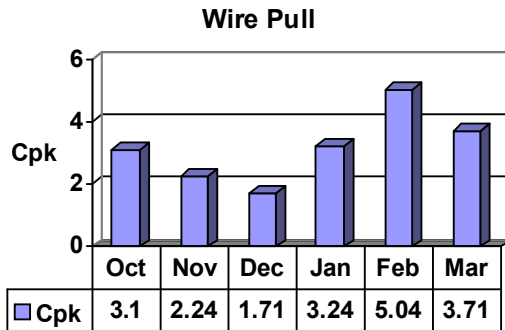
USL = 800 $\mu$ in



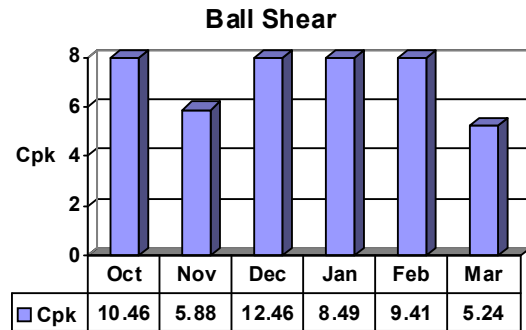
LSL = 20 gms

UTAC, China Program: 2009 / 2010

Package Technology: BGA



LSL = 6 gms

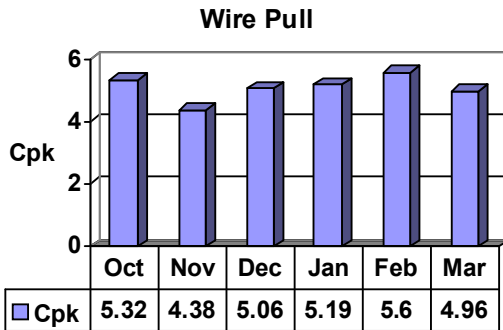


LSL = 20 gms

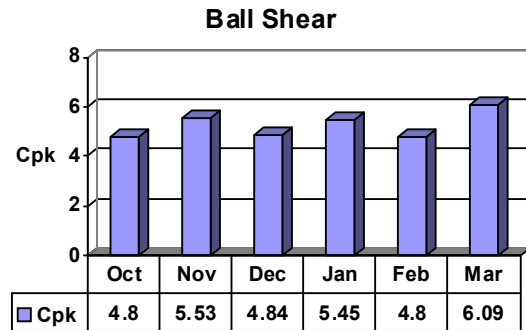
## SPC – Cpk Trends - Assembly

**UTAC China Program:** 2009 / 2010

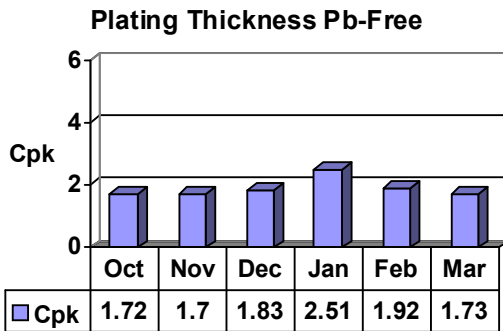
**Package Technology:** QFP



LSL = 6 gms

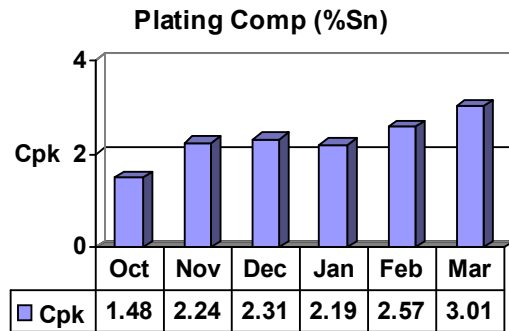


LSL = 20 gms



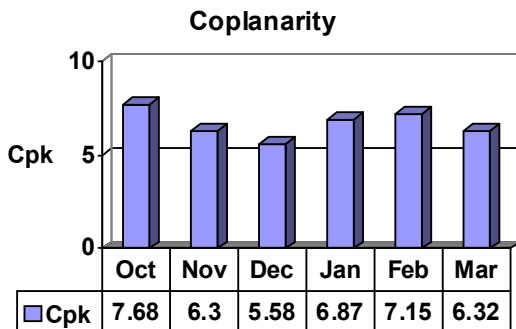
LSL = 300µin

USL = 800µin



LSL = 80%

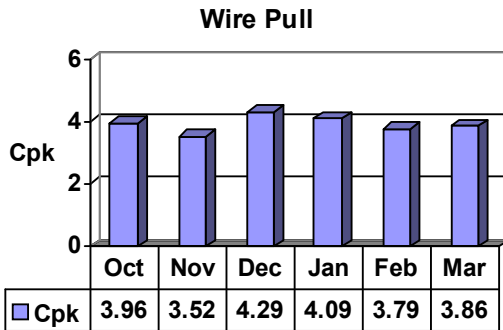
USL = 90%



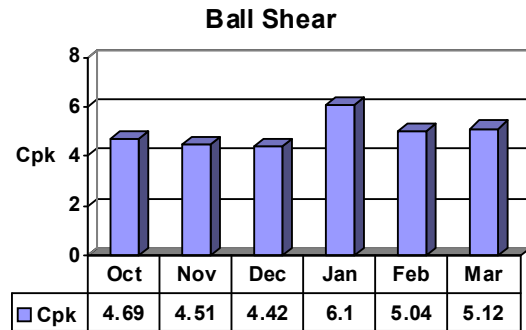
USL = 2.0 mils

UTAC China Program: 2009 / 2010

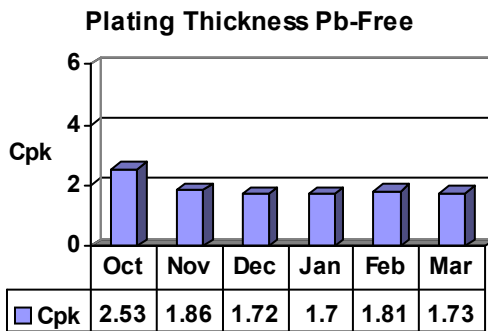
Package Technology: LPCC



LSL = 6 gms



LSL = 20 gms



LSL = 300 $\mu$ in

USL = 800 $\mu$ in

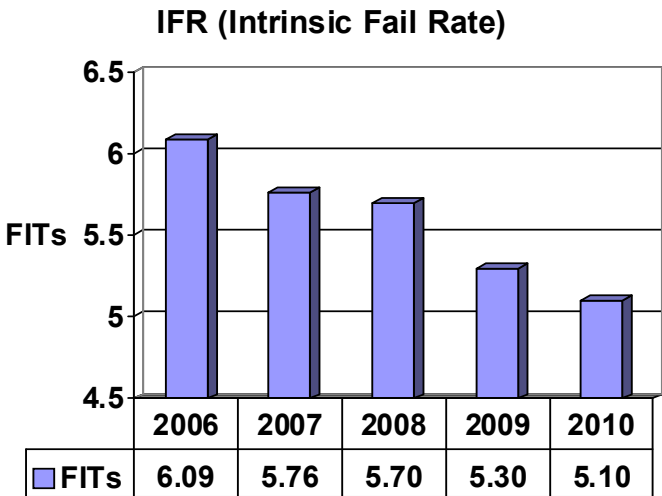
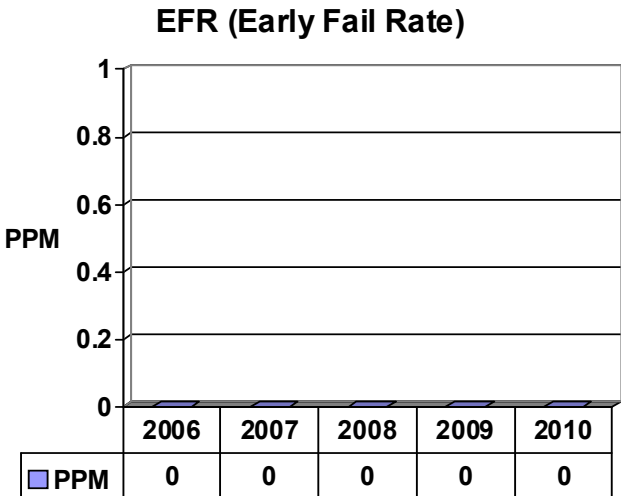
## Reliability

---

Reliability data trends of Exar's wafer fab processes and package types are reported in order to assure our customers that our foundry fabs and assembly subcontractors are continuing to improve their reliability performance.

**Factory:** GLOBALFOUNDRIES, Singapore

**Process:** 0.25μ/0.35μ CMOS



Year	Sample Size	# Fail	PPM
2006	315	0	0
2007	90	0	0
2008	20	0	0
2009	105	0	0
2010	45	0	0

Year	Sample Size	Device Hours	# Fail
2006	270	208,080	0
2007	90	90,000	0
2008	20	20,000	0
2009	105	105,000	0
2010	45	45,000	0

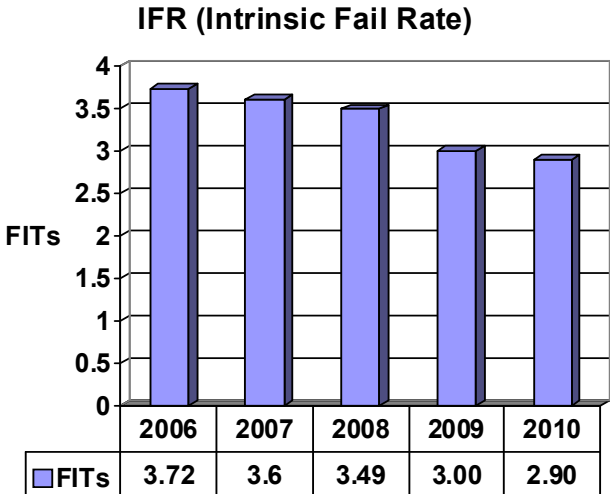
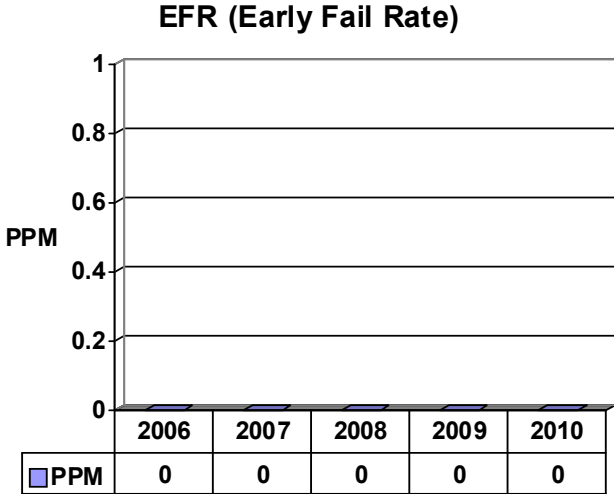
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** GLOBALFOUNDRIES Fab 2, Singapore

**Process:** 0.6 $\mu$  CMOS



Year	Sample Size	# Fail	PPM
2006	498	0	0
2007	90	0	0
2008	100	0	0
2009	180	0	0
2010	45	0	0

Year	Sample Size	Device Hours	# Fail
2006	498	498,000	0
2007	90	90,000	0
2008	100	100,000	0
2009	180	180,000	0
2010	45	45,000	0

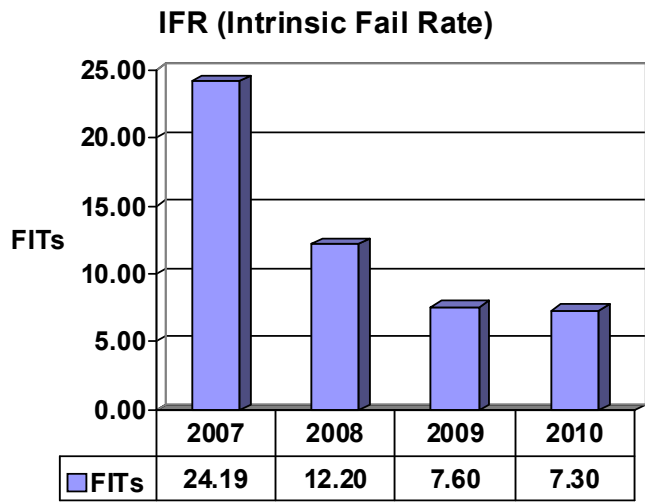
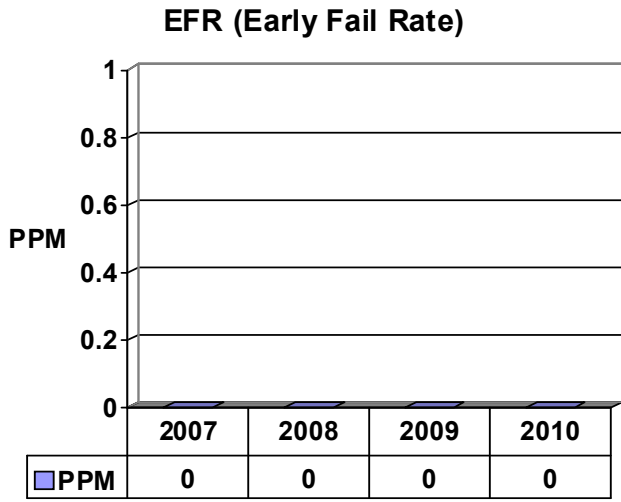
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Tower/Jazz, USA

**Process:** 0.5 $\mu$  CMOS



Year	Sample Size	# Fail	PPM
2007	486	0	0
2008	311	0	0
2009	747	0	0
2010	72	0	0

Year	Sample Size	Device Hours	# Fail
2007	486	486,000	0
2008	311	311,000	0
2009	747	747,000	0
2010	72	72,000	0

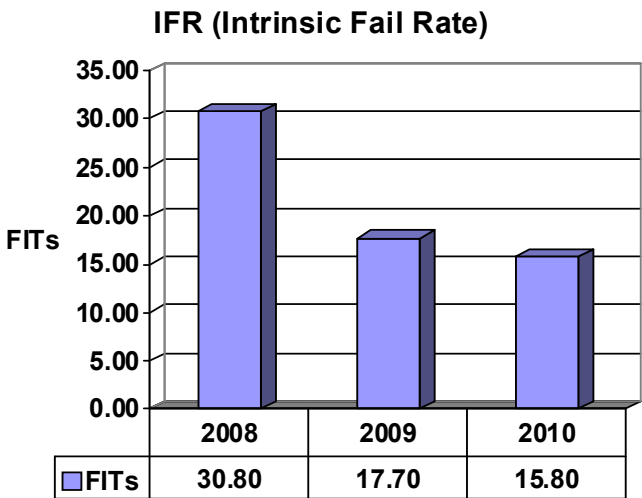
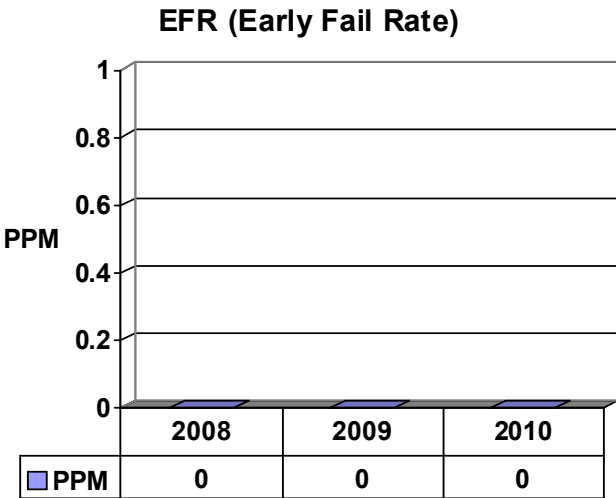
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Polar, USA

**Process:** 0.5 $\mu$  BiCMOS



Year	Sample Size	# Fail	PPM
2008	267	0	0
2009	280	0	0
2010	80	80	0

Year	Sample Size	Device Hours	# Fail
2008	387	387,000	0
2009	280	280,000	0
2010	80	80,000	0

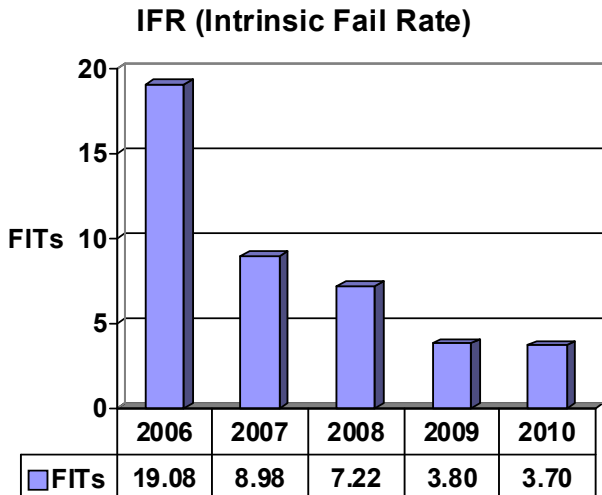
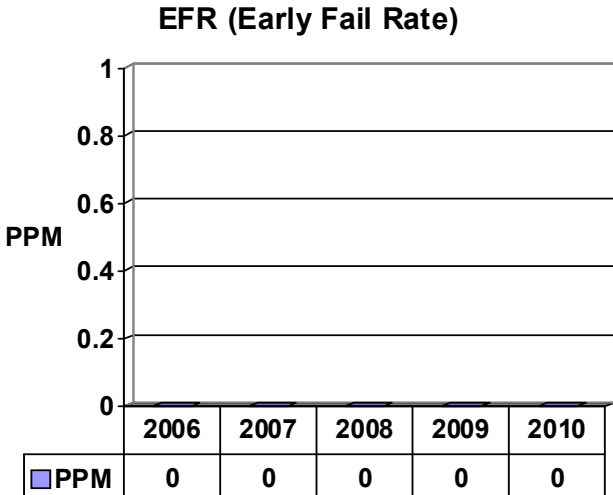
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Episil, Taiwan

**Process:** 1.2 $\mu$  / 2 $\mu$  CMOS



Year	Sample Size	# Fail	PPM
2006	616	0	0
2007	693	0	0
2008	319	0	0
2009	1290	0	0
2010	80	0	0

Year	Sample Size	Device Hours	# Fail
2006	616	616,000	0
2007	693	693,000	0
2008	319	559,000	0
2009	1290	1,290,000	0
2010	80	80,000	0

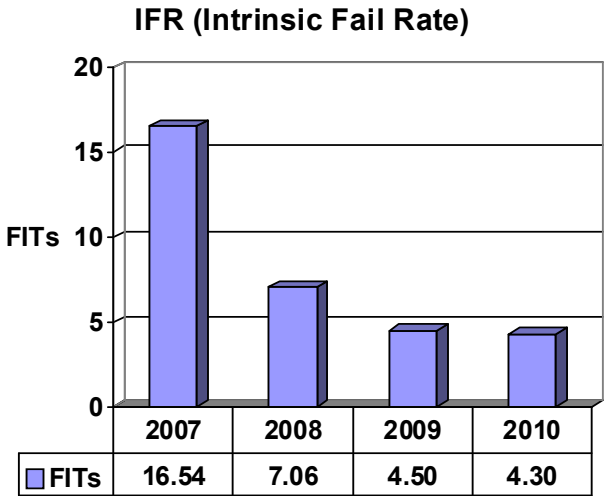
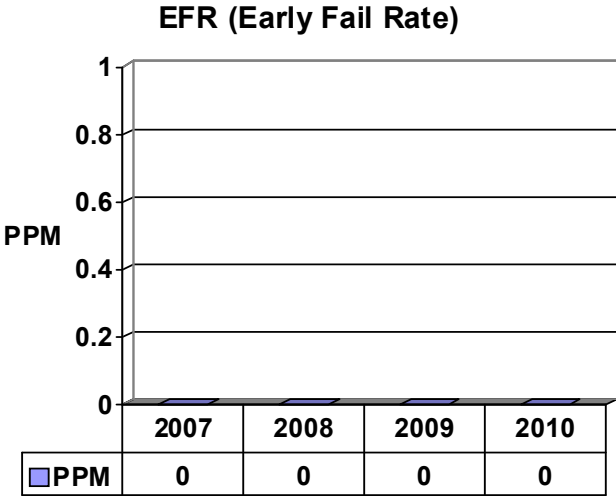
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Silan, China

**Process:** 2 $\mu$  CMOS



Year	Sample Size	# Fail	PPM
2007	711	0	0
2008	953	0	0
2009	946	0	0
2010	77	0	0

Year	Sample Size	Device Hours	# Fail
2007	711	711,000	0
2008	953	953,000	0
2009	946	946,000	0
2010	77	77,000	0

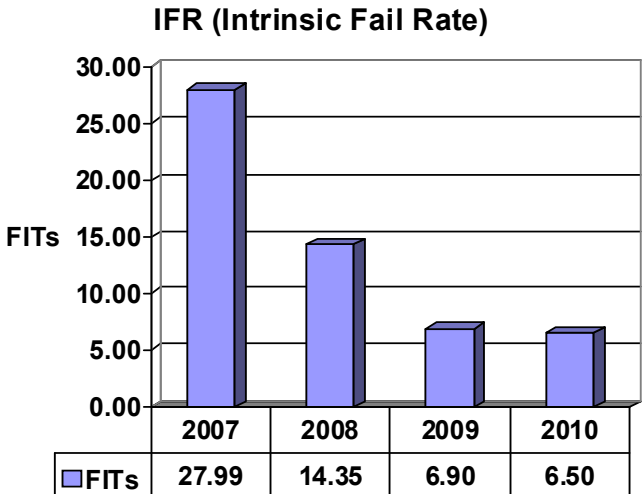
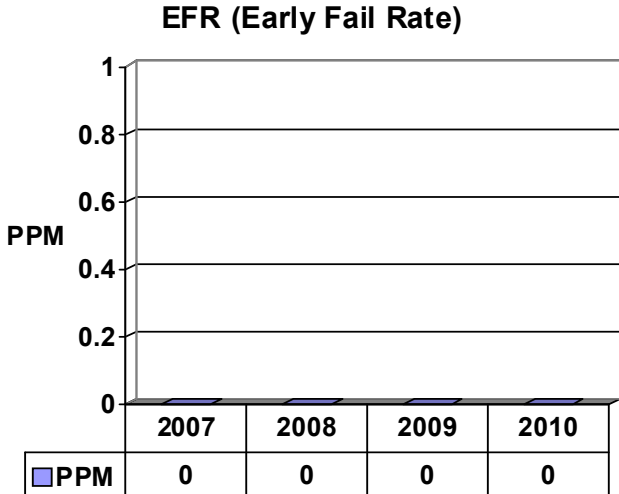
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Silan, China

**Process:** 5 $\mu$  CMOS



Year	Sample Size	# Fail	PPM
2007	420	0	0
2008	399	0	0
2009	893	0	0
2010	80	0	0

Year	Sample Size	Device Hours	# Fail
2007	420	420,000	0
2008	399	399,000	0
2009	893	893,000	0
2010	80	80,000	0

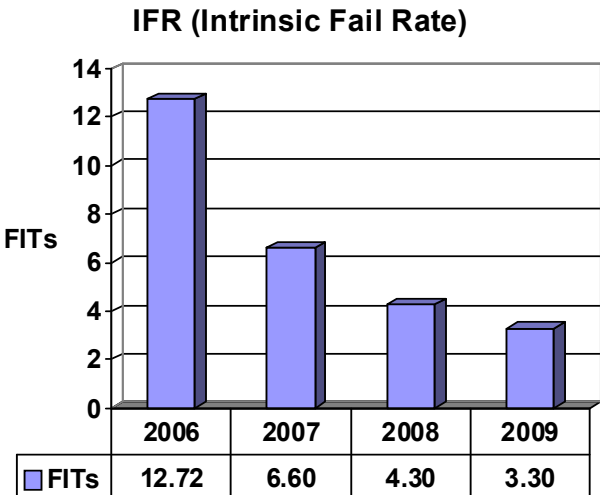
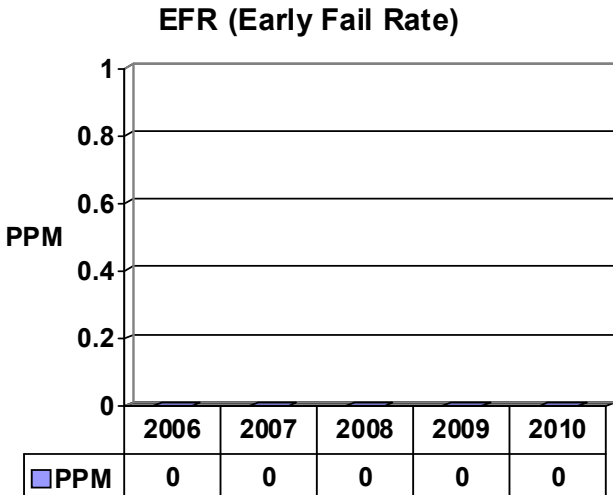
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** Silan, China

**Process:** Bipolar



Year	Sample Size	# Fail	PPM
2006	1,600	0	0
2007	856	0	0
2008	721	0	0
2009	989	0	0
2010	80	0	0

Year	Sample Size	Device Hours	# Fail
2006	924	924,000	0
2007	858	856,000	0
2008	721	721,000	0
2009	989	604,000	0
2010	80	80,000	0

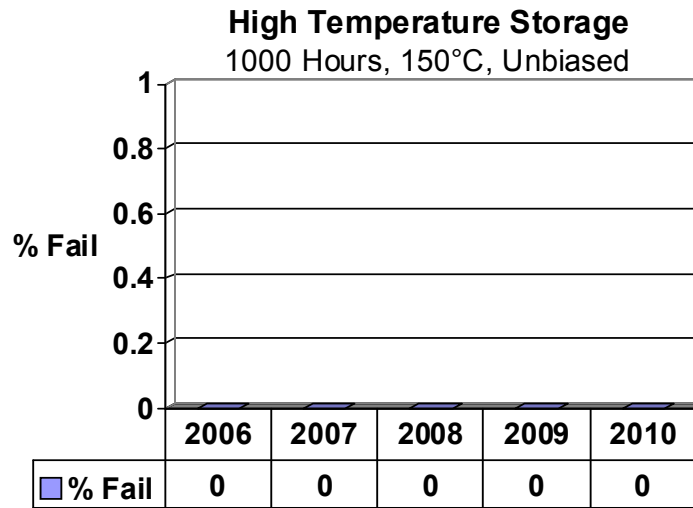
**FIT:** Failure in Time; 60% CL, 55°C, Ea = .7eV

**IFR:** Intrinsic Failure Rate > 168 hours @ the test temperature of 125°C or > 72 hours @ 150°C

**IFR:** Early Failure Rate < 168 hours @ the test temperature of 125°C or < 72 hours @ 150°C

**Factory:** GLOBALFOUNDRIES, Singapore

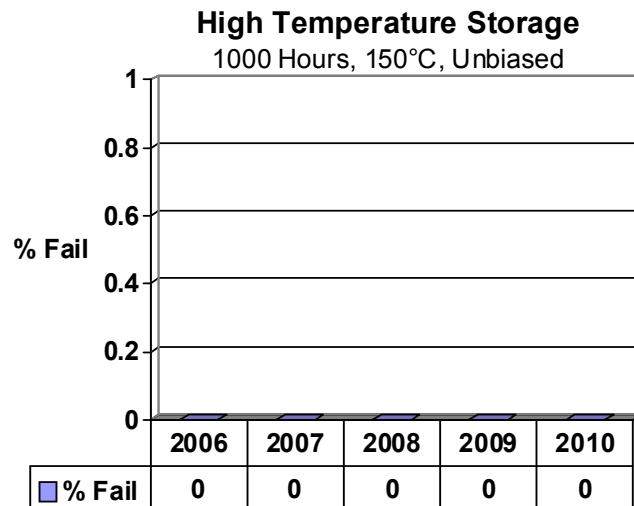
**Process:** 0.35 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2006	322	0	0
2007	157	0	0
2008	75	0	0
2009	170	0	0
2010	45	0	0

**Factory:** GLOBALFOUNDRIES, Singapore

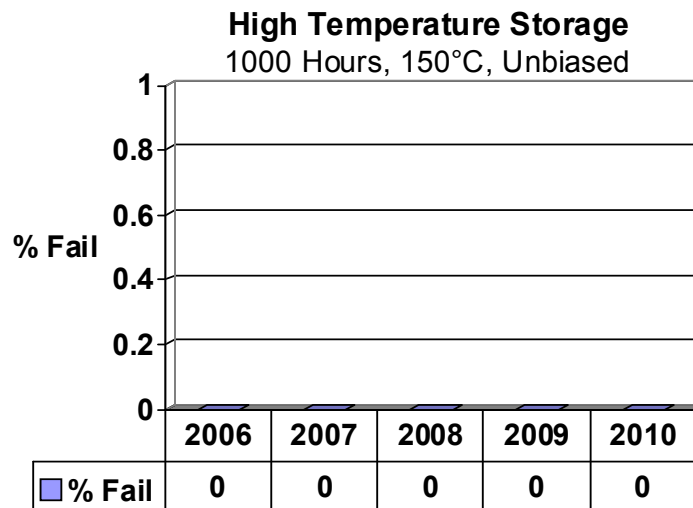
**Process:** 0.18 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2006	75	0	0
2007	83	0	0
2008	45	0	0
2009	65	0	0
2010	30	0	0

**Factory:** GLOBALFOUNDRIES Fab 2, Singapore

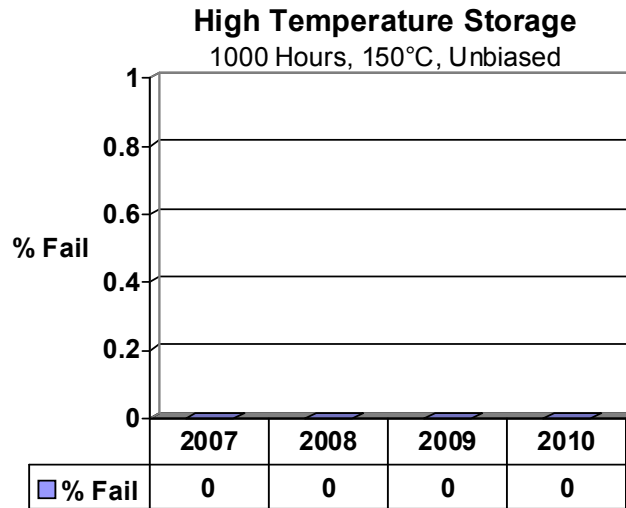
**Process:** 0.6 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2006	579	0	0
2007	135	0	0
2008	100	0	0
2009	180	0	0
2010	45	0	0

**Factory:** Tower/Jazz, CA USA

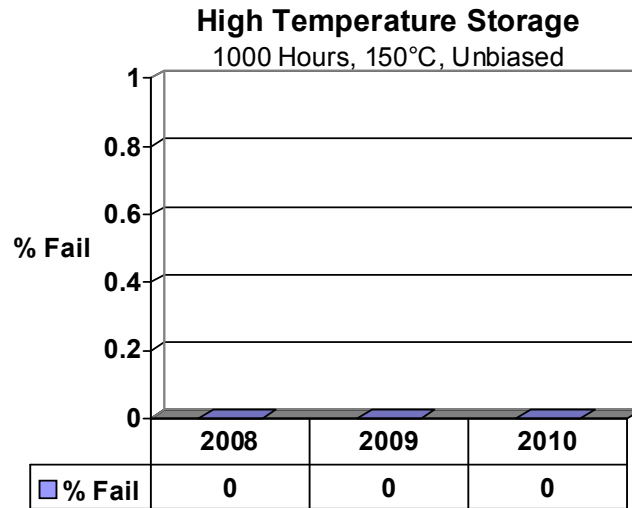
**Process:** 0.5 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2007	231	0	0
2008	25	0	0
2009	282	0	0
2010	45	0	0

**Factory:** Episil, Taiwan

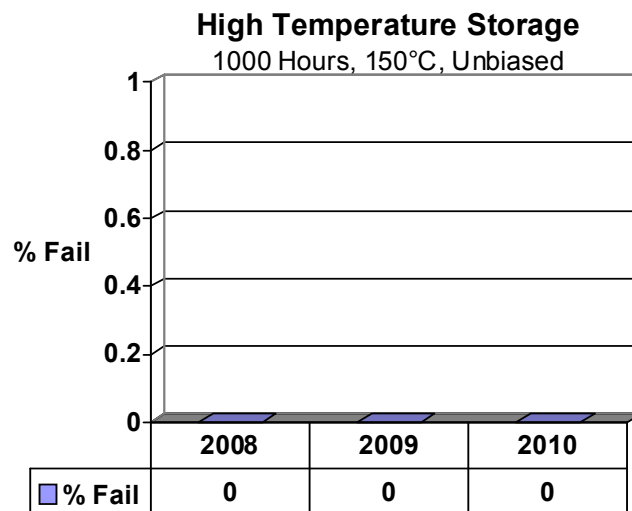
**Process:** 1.2 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2008	80	0	0
2009	225	0	0
2010	45	0	0

**Factory:** Episil, Taiwan

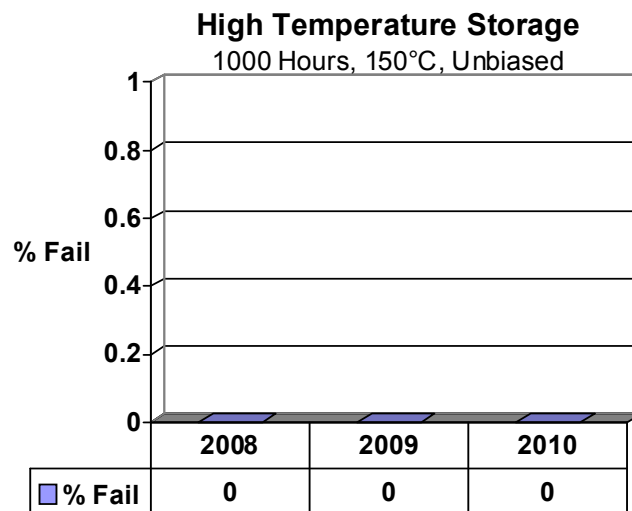
**Process:** 2 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2008	462	0	0
2009	137	0	0
2010	77	0	0

**Factory:** Silan, China

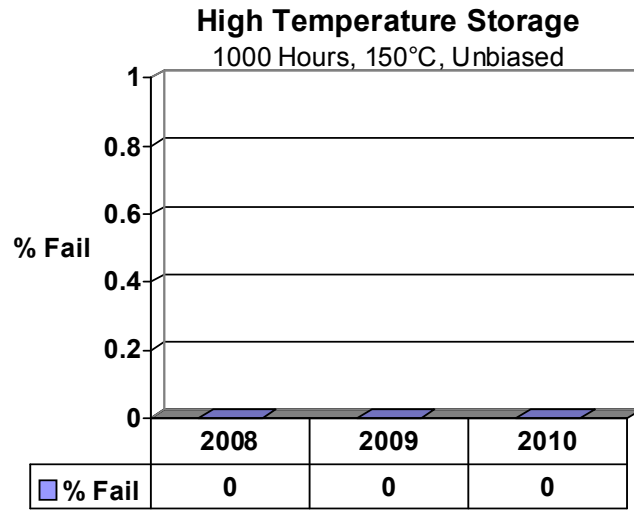
**Process:** 2 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2008	204	0	0
2009	878	0	0
2010	45	0	0

**Factory:** Silan, China

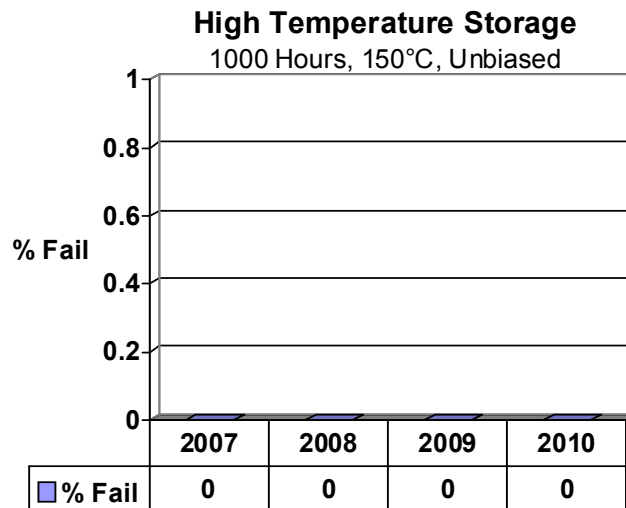
**Process:** 5 $\mu$  CMOS



Year	Sample Size	# Fail	% Fail
2008	77	0	0
2009	185	0	0
2010	77	0	0

**Factory:** Silan, China

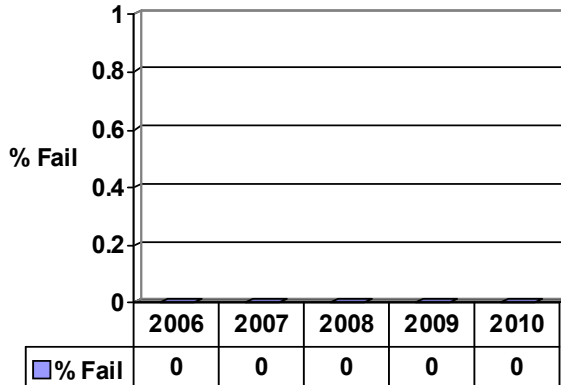
**Process:** Bipolar



Year	Sample Size	# Fail	% Fail
2007	180	0	0
2008	116	0	0
2009	347	0	0
2010	77	0	0

Package: BGA Families

**Temperature Cycle**

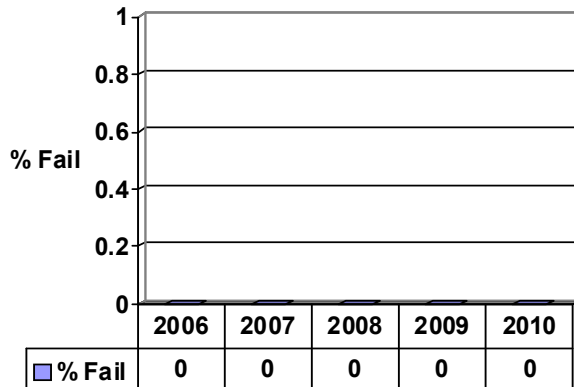


Year	Sample Size	# Fail	% Fail
2006	256	0	0
2007	127	0	0
2008	47	0	0
2009	74	0	0
2010	106	0	0

**Conditions:**

1000 Cycles -55/125°C.

**Pressure Pot/UHAST**



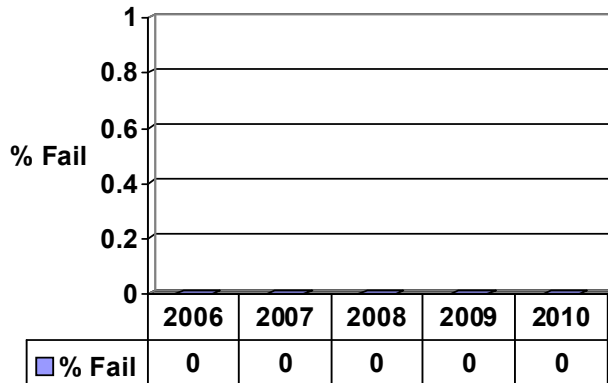
Year	Sample Size	# Fail	% Fail
2006	212	0	0
2007	97	0	0
2008	68	0	0
2009	74	0	0
2010	106	0	0

**Conditions:**

96 Hours, 130°C, 85% RH

Package: PDIP

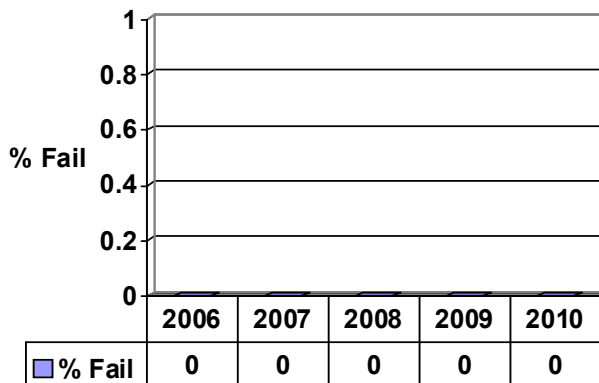
Temperature Cycle



Year	Sample Size	# Fail	% Fail
2006	90	0	0
2007	243	0	0
2008	135	0	0
2009	225	0	0
2010	25	0	0

Conditions:  
1000 Cycles -65/150°C

Pressure Pot/UHAST

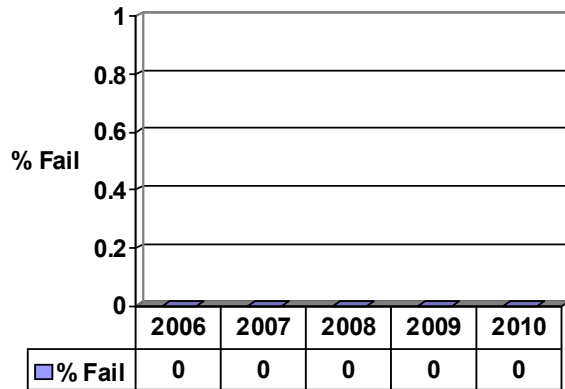


Year	Sample Size	# Fail	% Fail
2005	540	0	0
2006	225	0	0
2007	353	0	0
2008	135	0	0
2009	225	0	0
2010	25	0	0

Conditions:  
96/168 Hours, 121°C, 100% RH / or 96 Hours,  
130°C, 85% RH

Package: PLCC

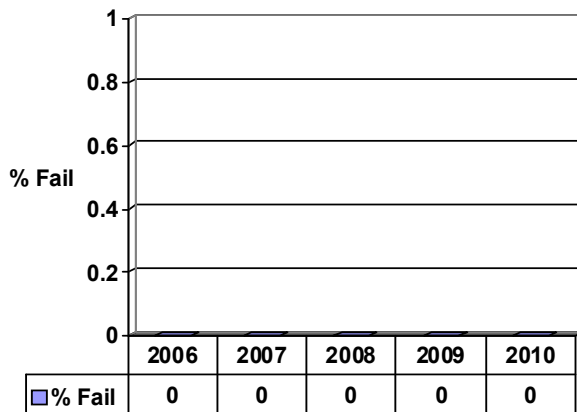
Temperature Cycle



Year	Sample Size	# Fail	% Fail
2006	135	0	0
2007	45	0	0
2008	90	0	0
2009	45	0	0
2010	45	0	0

**Conditions:**  
1000 Cycles -65/150°C

Pressure Pot/UHAST

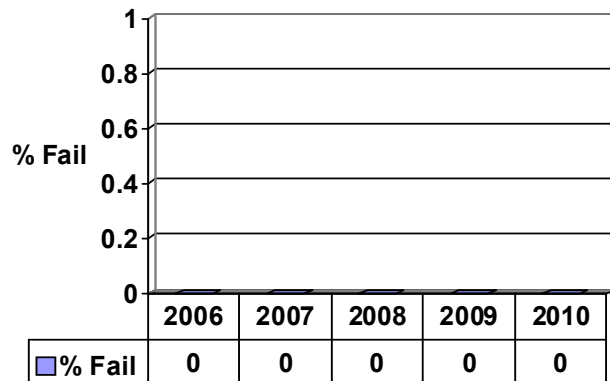


Year	Sample Size	# Fail	% Fail
2006	360	0	0
2007	90	0	0
2008	180	0	0
2009	45	0	0
2010	45	0	0

**Conditions:**  
96 Hours, 130°C, 85% RH

Package: T/S/LQFP

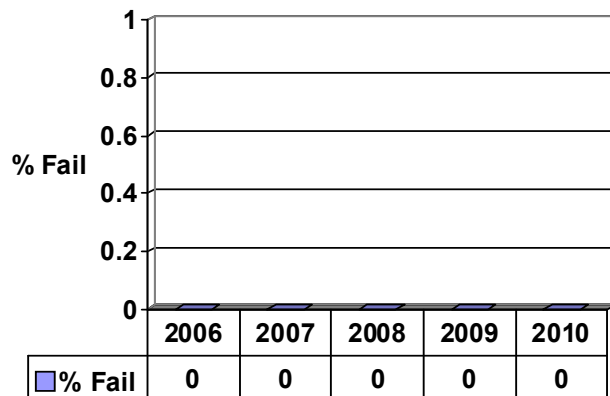
**Temperature Cycle**



Year	Sample Size	# Fail	% Fail
2006	724	0	0
2007	645	0	0
2008	180	0	0
2009	310	0	0
2010	135	0	0

**Conditions:**  
300/1000 Cycles -65/150°C

**Pressure Pot/UHAST**

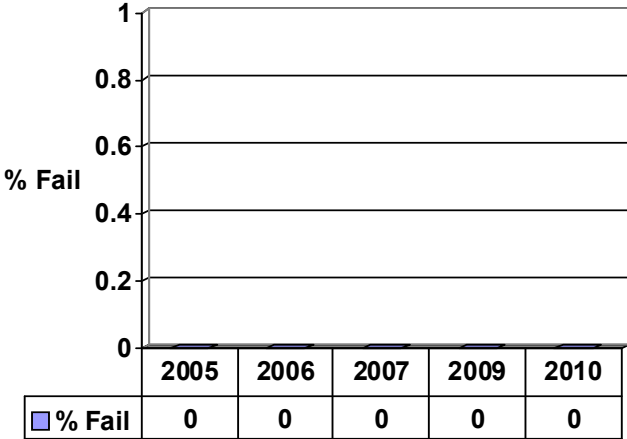


Year	Sample Size	# Fail	% Fail
2006	820	0	0
2007	460	0	0
2008	225	0	0
2009	321	0	0
2010	135	0	0

**Conditions:**  
96 Hours, 130°C, 85% RH

Package: TO

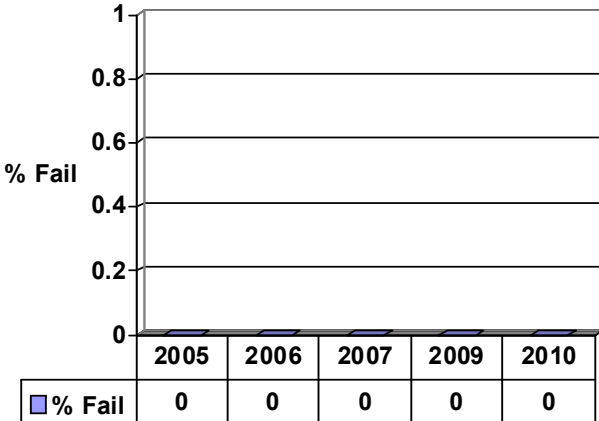
**Temperature Cycle**



Year	Sample Size	# Fail	% Fail
2006	180	0	0
2007	180	0	0
2009	855	0	0
2010	212	0	0

**Conditions:**  
1000Cycles, -65/150°C

**Pressure Pot/UHAST**

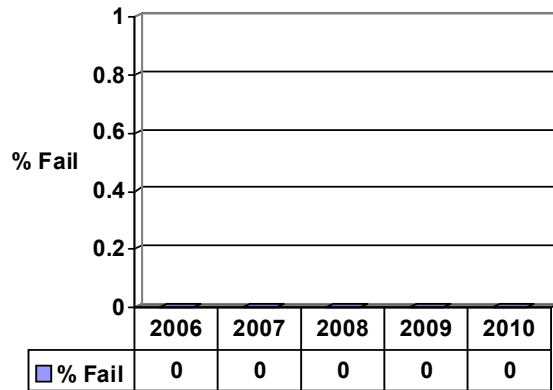


Year	Sample Size	# Fail	% Fail
2006	310	0	0
2007	313	0	0
2009	855	0	0
2010	212	0	0

**Conditions:**  
96 Hours, 130°C, 85% RH

Package: SOT, TSOT, SC-70

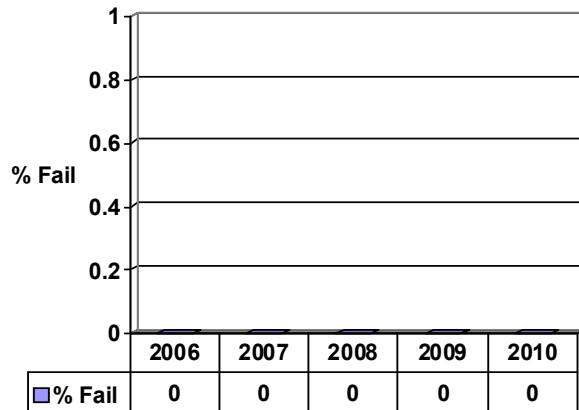
**Temperature Cycle**



Year	Sample Size	# Fail	% Fail
2006	77	0	0
2007	908	0	0
2008	1780	0	0
2009	1042	0	0
2010	244	0	0

**Conditions:**  
500/1000 Cycles -65/150°C

**Pressure Pot/UHAST**

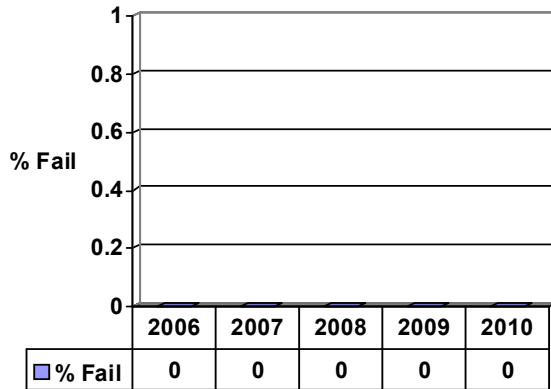


Year	Sample Size	# Fail	% Fail
2006	77	0	0
2007	915	0	0
2008	836	0	0
2009	1042	0	0
2010	244	0	0

**Conditions:**  
96 Hours, 121°C, 100% RH / or 96 Hours,  
130°C, 85% RH

Package: MSOP, TSSOP, SSOP, SOIC

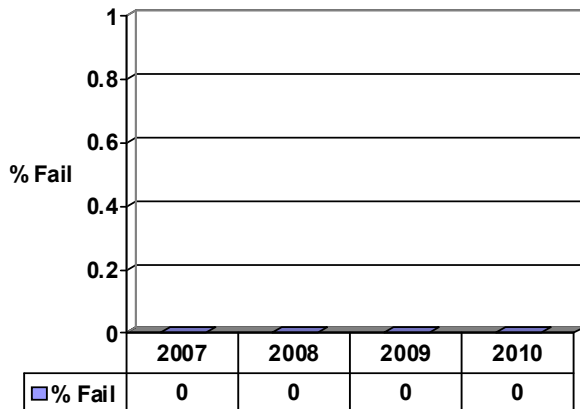
Temperature Cycle



Year	Sample Size	# Fail	% Fail
2006	539	0	0
2007	2731	0	0
2008	2538	0	0
2009	3058	0	0
2010	415	0	0

Conditions:  
300/1000Cycles, -65/150°C

Pressure Pot/UHAST

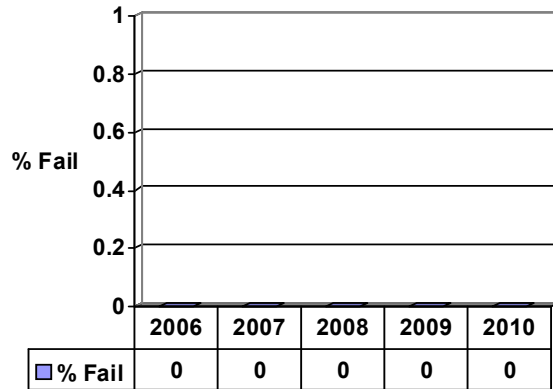


Year	Sample Size	# Fail	% Fail
2007	1131	0	0
2008	2253	0	0
2009	3189	0	0
2010	414	0	0

Conditions:  
96 Hours, 121°C, 100% RH / or 96 Hours,  
130°C, 85% RH

Package: DFN/QFN

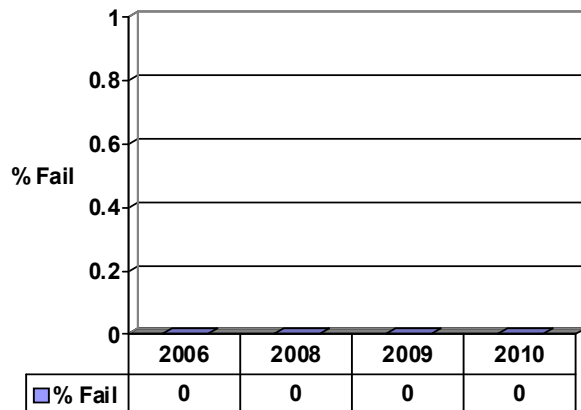
Temperature Cycle



Year	Sample Size	# Fail	% Fail
2006	231	0	0
2007	77	0	0
2008	45	0	0
2009	85	0	0
2010	25	0	0

**Conditions:**  
1000 Cycles -65/150°C,

Pressure Pot/UHAST



Year	Sample Size	# Fail	% Fail
2006	308	0	0
2008	25	0	0
2009	220	0	0
2010	25	0	0

**Conditions:**  
96 Hours, 121°C, 100% RH / or 96 Hours,  
130°C, 85% RH