Product Characterization Report

for the

SPX1587 Family of Products

SPX1582, SPX1583, SPX1587 Products

Prepared By: William Chou, Salvador Wu & Greg West
Date: November 8, 2006

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Introduction: This product family characterization was done as part of the qualification of Sipex's fabrication site transfer from Sipex's Hillview Fab in Milpitas, CA, to a contract foundry, Silan, in Hangzhou, China. This characterization report summarizes data for key SPX1587 product family characteristics and contains distributions for all parameters. A complete listing of the product numbers covered by the characterization report is included in the "Conclusion" section of this report. The distributions in Appendix A are arranged so that the Hillview and Silan distributions for a given parameter are adjacent. A distribution for a given parameter shows different temperature data which are at -40ºC, 25ºC, and 85ºC.

Wafer Fab: Silan
Fab Location: Hangzhou, China
Process: Silan – bp1
MS: 1612

Characterization Procedure:

Silan Lot number(s): 1612
Hillview Lot number(s): 1400
Temperatures: Ambient (25C), 85C, -40C
Tester: ETS200
Test Program: MS1612_SPX1587_2-5V_qual_DL.08/21/2006

Data Summary:

Key Parameter Across Temperature Data Summary

Key Parameter	Units	Hillview Fab Distribution Mean	Hillview Fab Distribution Variance	Hillview Fab Cpk (across temp)		Silan Fab Distribution Mean	Silan Fab Distribution Variance	Silan Fab Cpk (across temp)
-40C								
4.0: After Final Trim Vref	V	2.489	13.450E-03	0.9620		2.491	11.088E-03	1.2310
6.0: Line Regulation	uV	747.98	171.860	>4.0000		998.573	150.304	>4.0000
10.0: Load Regulation	mV	4.338	1.033	1.0202		3.081	562.942E-03	2.6168
12.0: Dropout	V	1.026	17.654E-03	3.2766		917.812E-03	29.447E-03	3.1943
14.0: Quiscent_Current	mA	3.156	289.008E-03	2.4870		2.841	232.162E-03	2.6438
25C								
4.0: After Final Trim Vref	V	2.498	9.874E-03	0.7680		2.496	8.854E-03	0.7979
6.0: Line Regulation	uV	700.836	244.841	>4.0000		1.030E-03	126.812	>4.0000
10.0: Load Regulation	mV	3.626	1.526	0.8464		3.051	683.762E-03	2.1689
12.0: Dropout	V	1.022	16.734E-03	3.5447		912.668E-03	21.503E-03	>4.0000
14.0: Quiscent_Current	mA	3.953	35.929E-03	>4.0000		3.665	62.521E-03	>4.0000
85C								
4.0: After Final Trim Vref	V	2.499	8.415E-03	1.9581		2.496	8.908E-03	1.7306
6.0: Line Regulation	uV	839.633	187.697	>4.0000		1.258E-03	176.994E-03	>4.0000
10.0: Load Regulation	mV	6.985	1.101	0.1558		5.814	1.179	0.4766
12.0: Dropout	V	988.172E-03	64.192E-03	1.1000		1.026	55.942E-03	1.0390
14.0: Quiscent_Current	mA	8.044	1.154	0.5652		13.166	1.808	-0.5837

Conclusion:

Characterization data over temperature and Vcc range show datasheet parameters meet the spec. Cpk’s for most parameters are comparable between Hillview and Silan although many show a strong temperature dependence that tends to produce lower Cpk’s in this analysis.

The performance of SPX1587 parts fabricated at Silan are comparable to the current SPX1587 parts built from the Hillview fab.

This characterization report applies to the following SPX1587 family of product part numbers:

SPX1582T5
SPX1582T5-1-5
SPX1582T5-1-8
SPX1582T5-2-5
SPX1582T5-2-8
SPX1582T5-2-85
SPX1582T5-3-3
SPX1582T5-5-0
SPX1582T5-L
SPX1582T5-L-1-5
SPX1582T5-L-1-8
SPX1582T5-L-2-5
SPX1582T5-L-2-8
SPX1582T5-L-2-85
SPX1582T5-L-3-3
SPX1582T5-L-5-0
SPX1582U5
SPX1582U5-1-5
SPX1582U5-1-8
SPX1582U5-2-5
SPX1582U5-2-8
SPX1582U5-2-85
SPX1582U5-3-3
SPX1582U5-5-0
SPX1582U5-L
SPX1582U5-L-1-5
SPX1582U5-L-1-8
SPX1582U5-L-2-5
SPX1582U5-L-2-8
SPX1582U5-L-2-85
SPX1582U5-L-3-3
SPX1582U5-L-5-0
SPX1583T5
SPX1583T5-1-5
SPX1583T5-1-8
SPX1583T5-2-5
SPX1583T5-2-8
SPX1583T5-2-85
SPX1583T5-3-3
SPX1583T5-5-0
SPX1583T5-L
SPX1583T5-L-1-5
SPX1583T5-L-1-8
SPX1583T5-L-2-5
SPX1583T5-L-2-8
SPX1583T5-L-2-85
SPX1583T5-L-3-3
SPX1583T5-L-5-0
SPX1583U5
SPX1583U5-1-5
SPX1583U5-1-8
SPX1583U5-2-5
SPX1583U5-2-8
SPX1583U5-2-85
SPX1583U5-3-3
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SPX1587AR-3-3
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SPX1587AT-1-8
SPX1587AT-2-5
SPX1587AT-2-8
SPX1587AT-2-85
SPX1587AT-3-3
SPX1587AT-5-0
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SPX1587AT-L-2-8
SPX1587AT-L-2-85
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SPX1587AU-2-5
SPX1587AU-2-8
SPX1587AU-2-85
SPX1587AU-3-3
SPX1587AU-5-0
SPX1587AU-L
SPX1587AU-L-1-5
SPX1587AU-L-1-8
SPX1587AU-L-2-5
SPX1587AU-L-2-8
SPX1587AU-L-2-85
SPX1587AU-L-3-3
SPX1587AU-L-5-0
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SPX1587R-1-5
SPX1587R-1-8
SPX1587R-2-5
SPX1587R-3-3
SPX1587R-5-0
SPX1587R-L
SPX1587R-L-1-5
SPX1587R-L-1-8
SPX1587R-L-2-5
SPX1587R-L-3-3
SPX1587R-L-5-0
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SPX1587T-1-5
SPX1587T-1-8
SPX1587T-2-5
SPX1587T-2-8
SPX1587T-2-85
SPX1587T-3-3
SPX1587T-5-0
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SPX1587T-L-1-8
SPX1587T-L-2-5
SPX1587T-L-2-8
SPX1587T-L-2-85
SPX1587T-L-3-3
SPX1587T-L-5-0
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SPX1587U-1-8
SPX1587U-2-5
SPX1587U-2-8
SPX1587U-2-85
SPX1587U-3-3
SPX1587U-5-0
SPX1587U-L
SPX1587U-L-1-5
SPX1587U-L-1-8
SPX1587U-L-2-5
SPX1587U-L-2-8
SPX1587U-L-2-85
SPX1587U-L-3-3
SPX1587U-L-5-0

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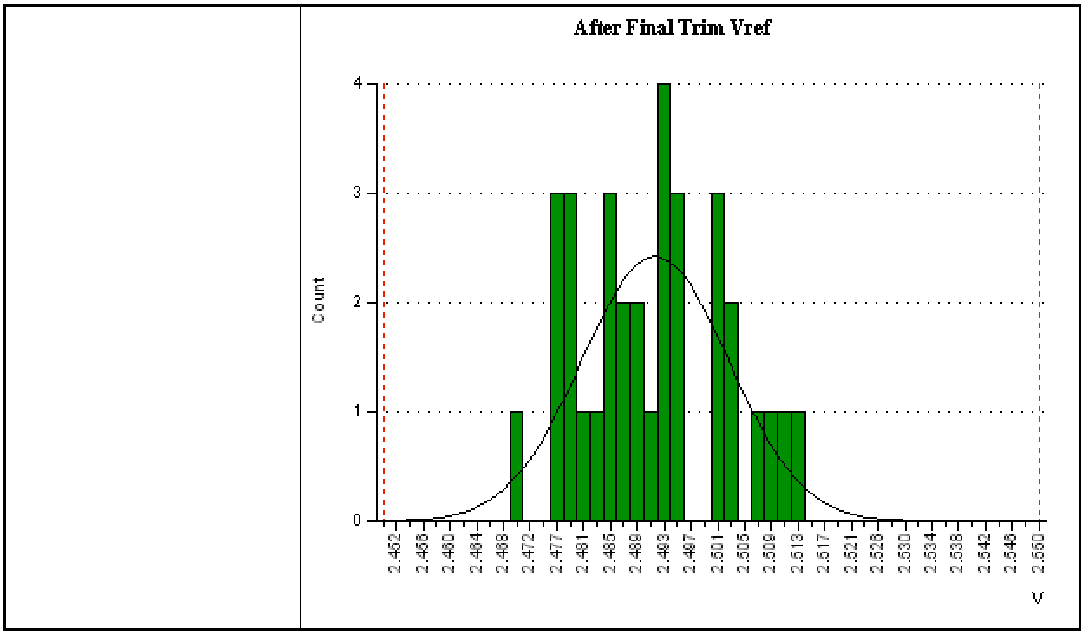
Appendix A
Characterization Data Histograms



Statistics: (V)

Min	2.471	**StatLow**	N/A
Max	2.512	**NWithinSpec**	33
Mean	2.491	**NOutsideSpec**	0
StdDev	11.088E-03	**90%**	2.506
25%	2.483	**Range**	41.200E-03
Mean+3*StdDev	2.524	**NOutsideSpec**	0
		Cp	1.5032
Mean-3*StdDev	2.458	**Cpl**	1.2310
Cpk	1.2310	**Cpu**	1.7754
Skew	0.2580		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_COLD : 01	MS1612	SPX1587	_	CHAR	N/A	N/A	23-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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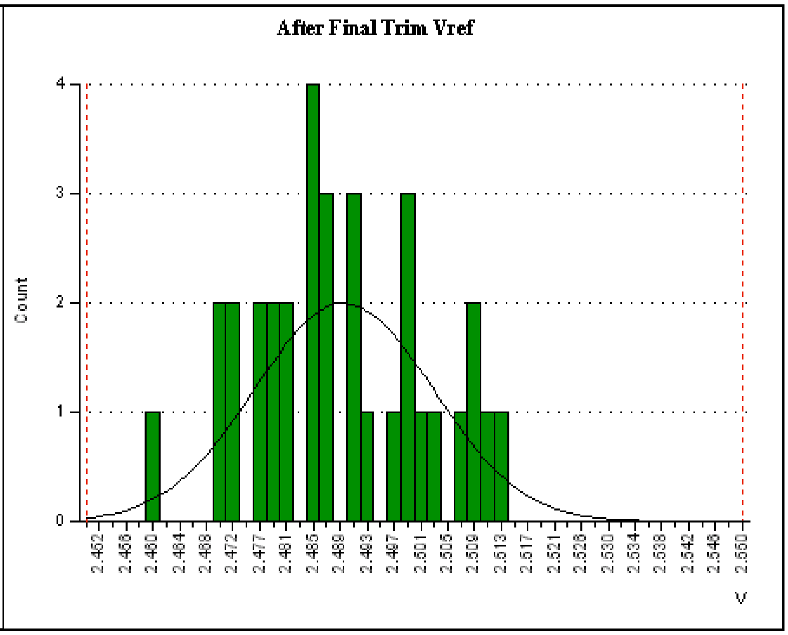

Statistics: (V)

Min	2.459	**StatLow**	N/A
Max	2.514	**NWithinSpec**	33
Mean	2.489	**NOutsideSpec**	0
StdDev	13.450E-03	**90%**	2.509
25%	2.479	**Range**	54.500E-03
Mean+3*StdDev	2.529	**NOutsideSpec**	0
Mean-3*StdDev	2.448	**Cp**	1.2392
Cpk	0.9620	**Cpl**	0.9620
Skew	0.1085	**Cpu**	1.5163
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_cold: N/A	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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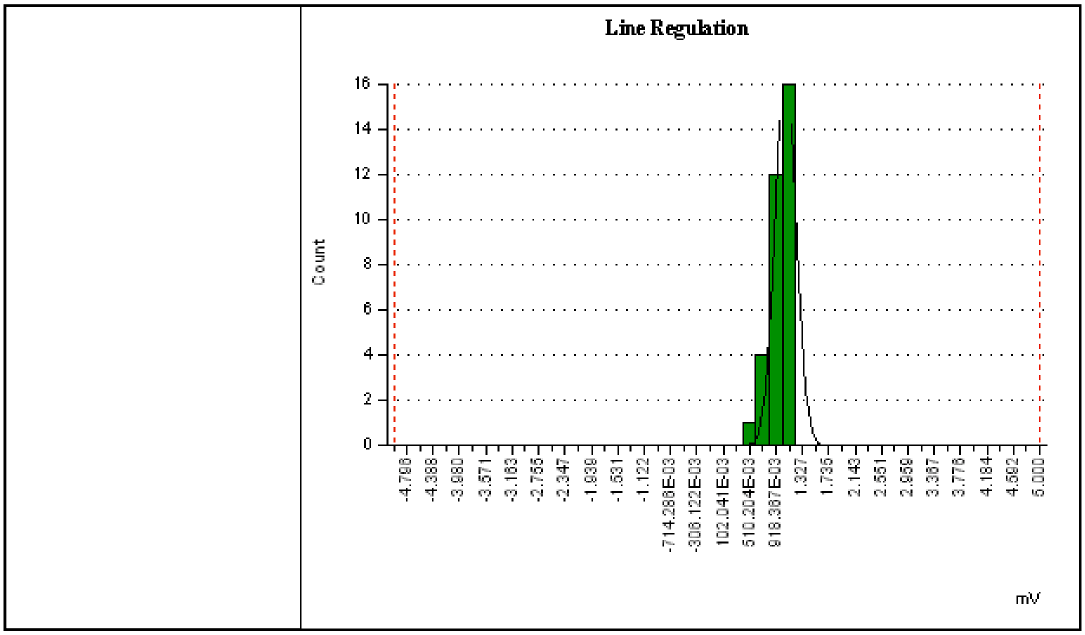

Statistics: (mV)

Min	531.000E-03	**StatLow**	N/A
Max	1.208	**NWithinSpec**	33
Mean	998.573E-03	**NOutsideSpec**	0
StdDev	150.304E-03	**90%**	1.160
25%	952.100E-03	**Range**	677.500E-03
Mean+3*StdDev	1.449	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	547.662E-03	**Cpl**	>4.0000
		Cpu	>4.0000
Cpk	>4.0000		
Skew	-1.2331		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1612_COLD : 01	MS1612	SPX1587	_	CHAR	N/A	N/A	23-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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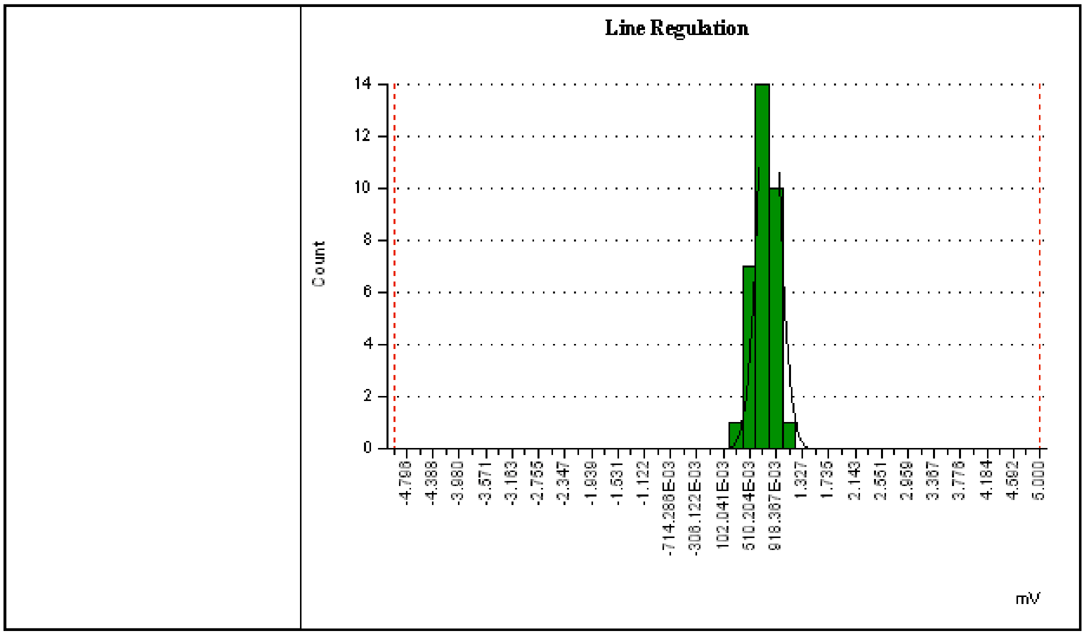

Statistics: (mV)

Min	362.400E-03	**StatLow**	N/A
Max	1.119	**NWithinSpec**	33
Mean	747.982E-03	**NOutsideSpec**	0
StdDev	171.860E-03	**90%**	931.100E-03
25%	643.600E-03	**Range**	756.200E-03
Mean+3*StdDev	1.264	**NOutsideSpec**	0
Mean-3*StdDev	232.402E-03	**Cp**	>4.0000
Cpk	>4.0000	**Cpl**	>4.0000
Skew	-0.3626	**Cpu**	>4.0000
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_cold: N/A	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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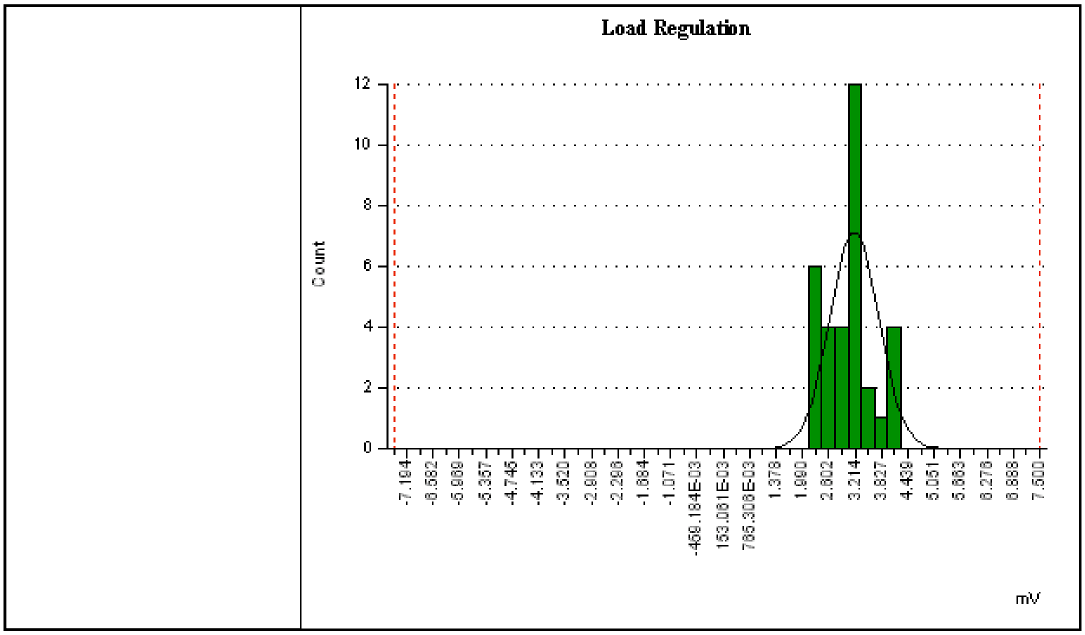

Statistics: (mV)

Min	2.167	**StatLow**	N/A
Max	4.139	**NWithinSpec**	33
Mean	3.081	**NOutsideSpec**	0
StdDev	562.942E-03	**90%**	4.028
25%	2.527	**Range**	1.972
Mean+3*StdDev	4.769	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	1.392	**Cpl**	>4.0000
		Cpu	2.6168
Cpk	2.6168		
Skew	0.2367		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_COLD : 01	MS1612	SPX1587	_	CHAR	N/A	N/A	23-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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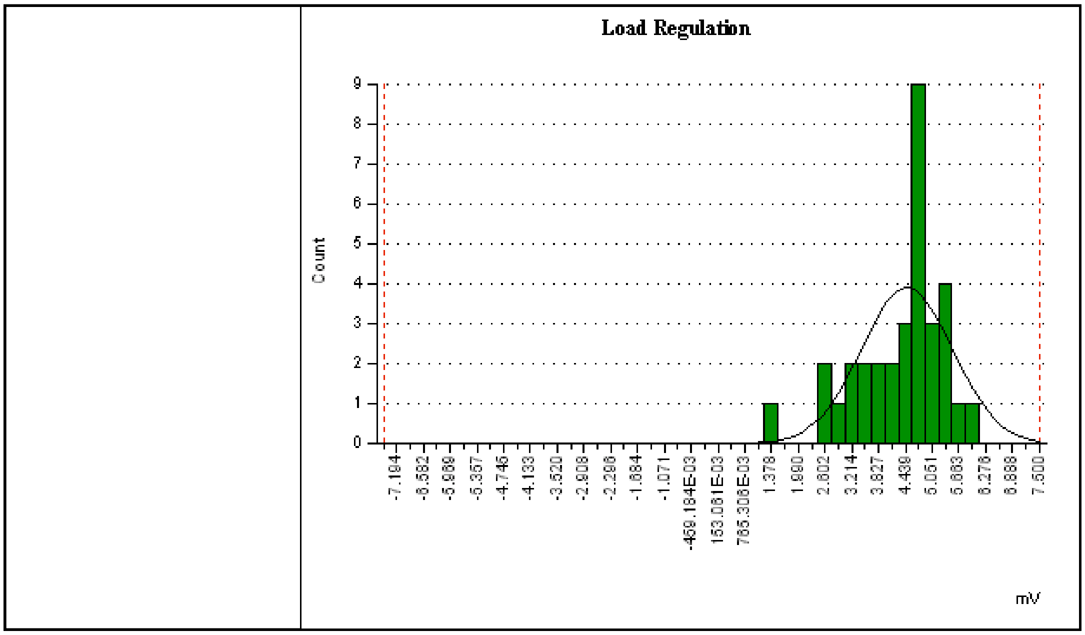

Statistics: (mV)

Min	1.263	**StatLow**	N/A
Max	5.996	**NWithinSpec**	33
Mean	4.338	**NOutsideSpec**	0
StdDev	1.033	**90%**	5.409
25%	3.764	**Range**	4.734
Mean+3*StdDev	7.437	**NOutsideSpec**	0
		Cp	2.4200
Mean-3*StdDev	1.239	**Cpl**	3.8198
Cpk	1.0202	**Cpu**	1.0202
Skew	-1.0331		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_cold: N/A	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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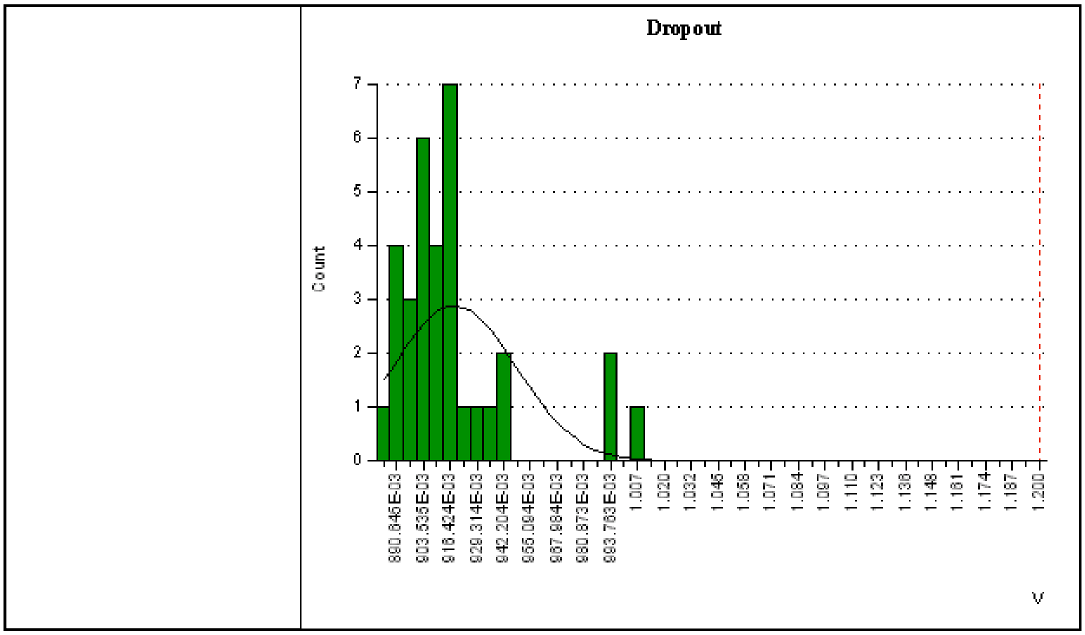

Statistics: (V)

Min	884.200E-03	**StatLow**	N/A
Max	1.006	**NWithinSpec**	33
Mean	917.812E-03	**NOutsideSpec**	0
StdDev	29.447E-03	**90%**	944.900E-03
25%	902.300E-03	**Range**	121.700E-03
Mean+3*StdDev	1.006	**NOutsideSpec**	0
Mean-3*StdDev	829.470E-03	**Cp** **Cpl**	N/A N/A
Cpk	3.1943	**Cpu**	3.1943
Skew	1.8691		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_COLD : 01	MS1612	SPX1587	_	CHAR	N/A	N/A	23-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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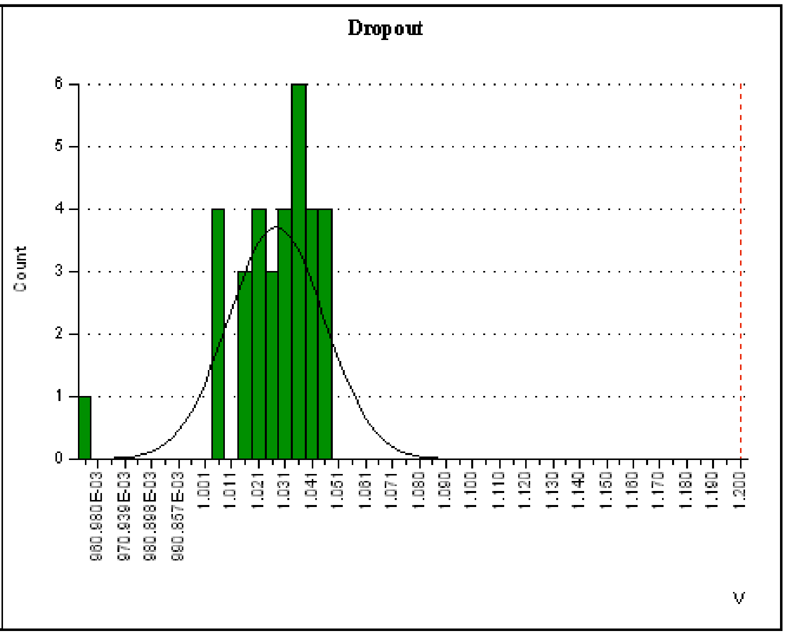

Statistics: (V)

Min	956.000E-03	**StatLow**	N/A
Max	1.046	**NWithinSpec**	33
Mean	1.026	**NOutsideSpec**	0
StdDev	17.654E-03	**90%**	1.044
25%	1.020	**Range**	89.500E-03
Mean+3*StdDev	1.079	**NOutsideSpec**	0
Mean-3*StdDev	973.498E-03	**Cp**	N/A
Cpk	3.2766	**Cpl**	N/A
Skew	-2.1088	**Cpu**	3.2766
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_cold: N/A	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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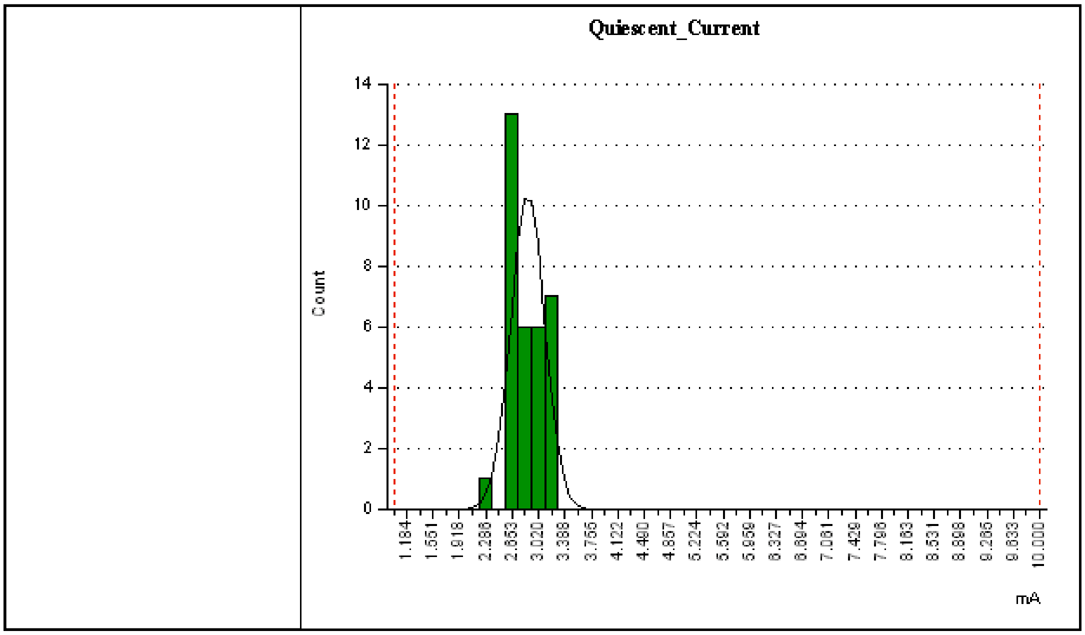

Statistics: (mA)

Min	2.208	**StatLow**	N/A
Max	3.290	**NWithinSpec**	33
Mean	2.841	**NOutsideSpec**	0
StdDev	232.162E-03	**90%**	3.159
25%	2.666	**Range**	1.082
Mean+3*StdDev	3.538	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	2.145	**Cpl**	2.6438
		Cpu	>4.0000
Cpk	2.6438		
Skew	-0.0282		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_COLD : 01	MS1612	SPX1587	_	CHAR	N/A	N/A	23-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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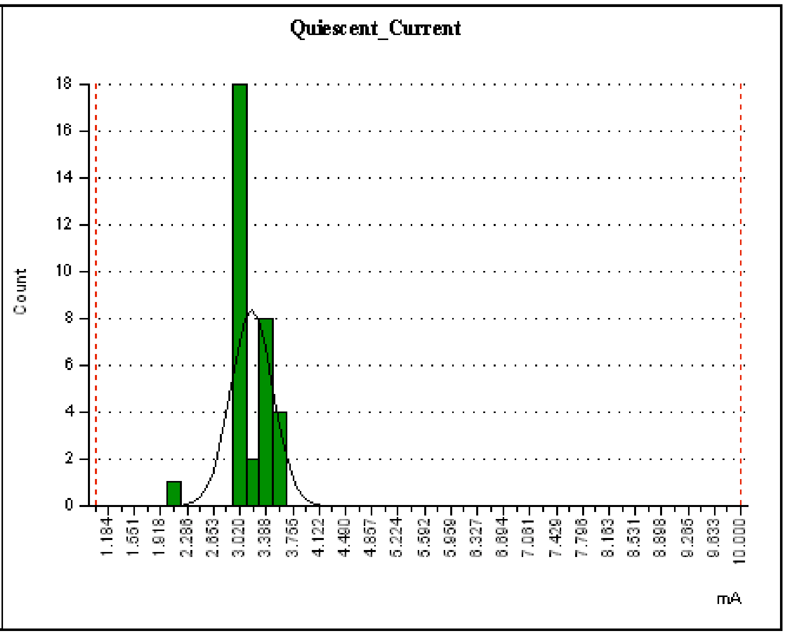

Statistics: (mA)

Min	2.029	**StatLow**	N/A
Max	3.576	**NWithinSpec**	33
Mean	3.156	**NOutsideSpec**	0
StdDev	289.008E-03	**90%**	3.527
25%	3.025	**Range**	1.547
Mean+3*StdDev	4.023	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	2.289	**Cpl**	2.4870
Cpk	2.4870	**Cpu**	>4.0000
Skew	-1.5557		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_cold: N/A	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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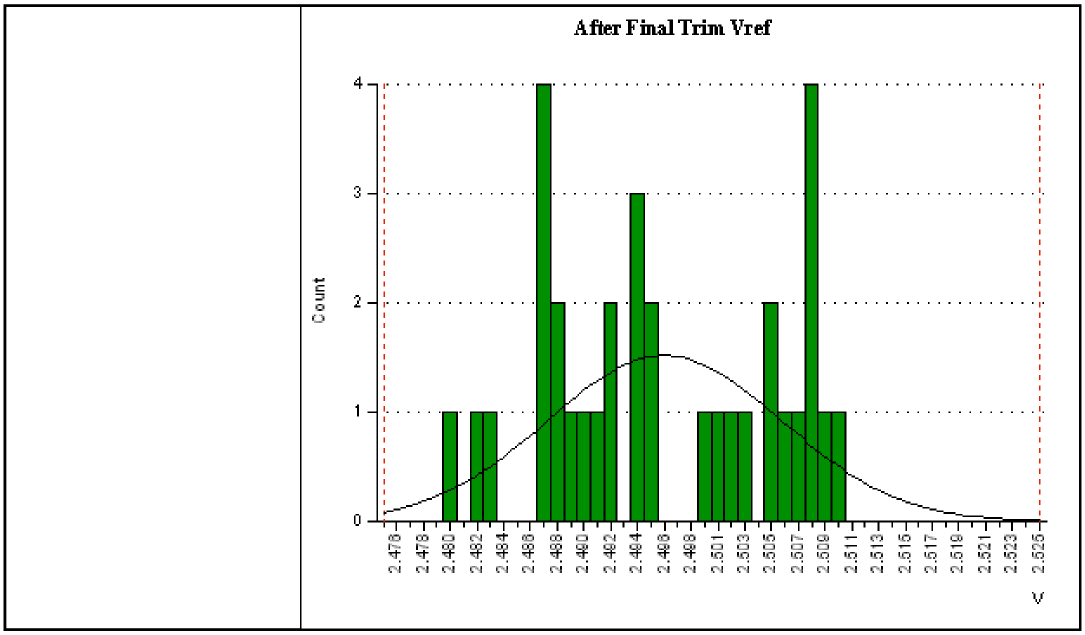

Statistics: (V)

Min	2.480	**StatLow**	N/A
Max	2.510	**NWithinSpec**	33
Mean	2.496	**NOutsideSpec**	0
StdDev	8.854E-03	**90%**	2.508
25%	2.488	**Range**	29.500E-03
Mean+3*StdDev	2.523	**NOutsideSpec**	0
		Cp	0.9412
Mean-3*StdDev	2.470	**Cpl**	0.7979
Cpk	0.7979	**Cpu**	1.0845
Skew	0.0078		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1612_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	21-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/16/2006	-	0

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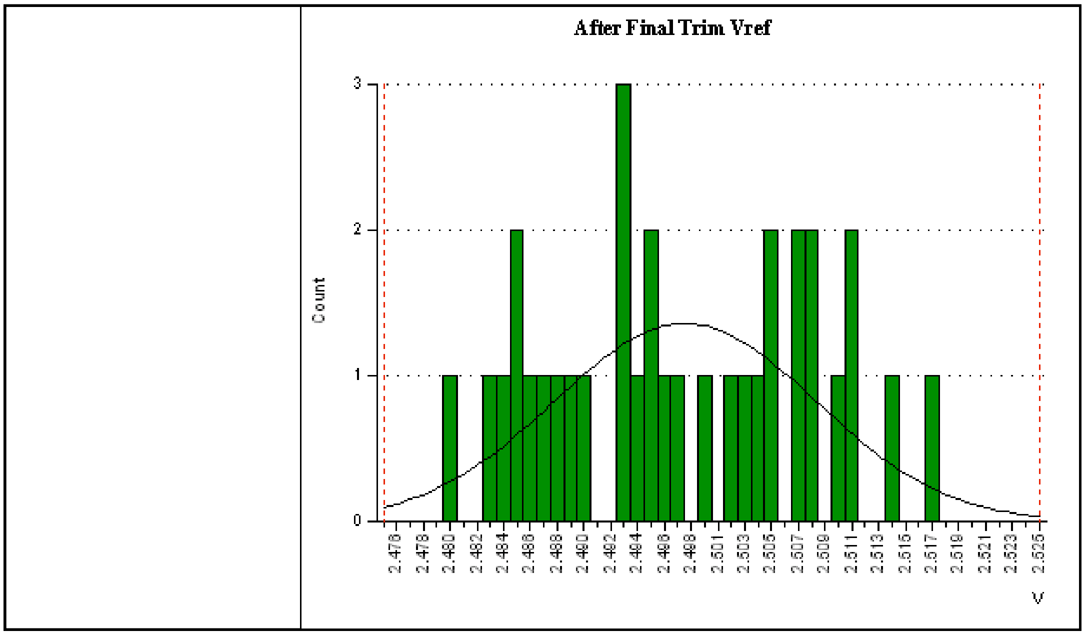

Statistics: (V)

Min	2.481	**StatLow**	N/A
Max	2.516	**NWithinSpec**	33
Mean	2.498	**NOutsideSpec**	0
StdDev	9.874E-03	**90%**	2.511
25%	2.490	**Range**	35.900E-03
Mean+3*StdDev	2.527	**NOutsideSpec**	0
		Cp	0.8440
Mean-3*StdDev	2.468	**Cpl**	0.7680
		Cpu	0.9200
Cpk	0.7680		
Skew	0.0728		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

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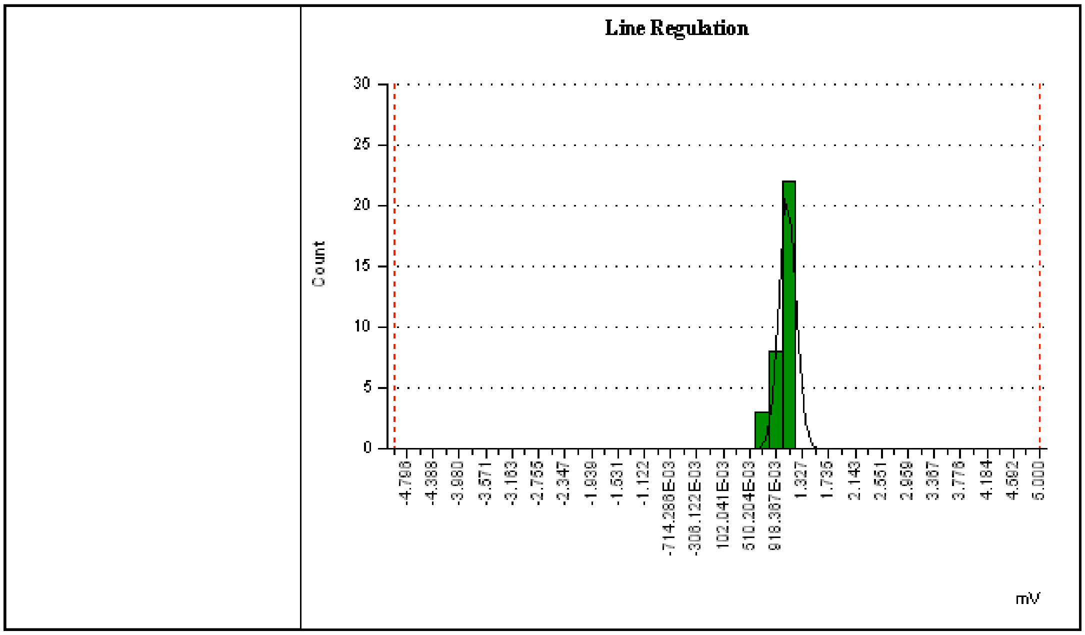


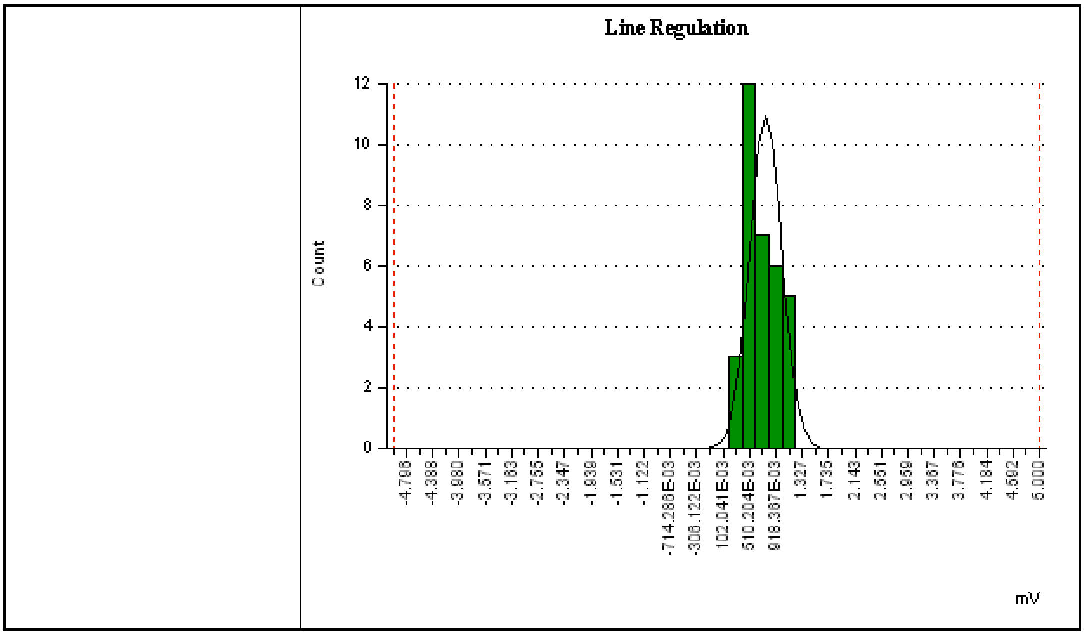
Statistics: (mV)

Min	628.700E-03	**StatLow**	N/A
Max	1.184	**NWithinSpec**	33
Mean	1.030	**NOutsideSpec**	0
StdDev	126.812E-03	**90%**	1.135
25%	952.100E-03	**Range**	555.400E-03
Mean+3*StdDev	1.410	**NOutsideSpec**	0
Mean-3*StdDev	649.578E-03	**Cp**	>4.0000
Cpk	>4.0000	**Cpl**	>4.0000
Skew	-1.3623	**Cpu**	>4.0000
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	21-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/16/2006	-	0

Data: Raw Data



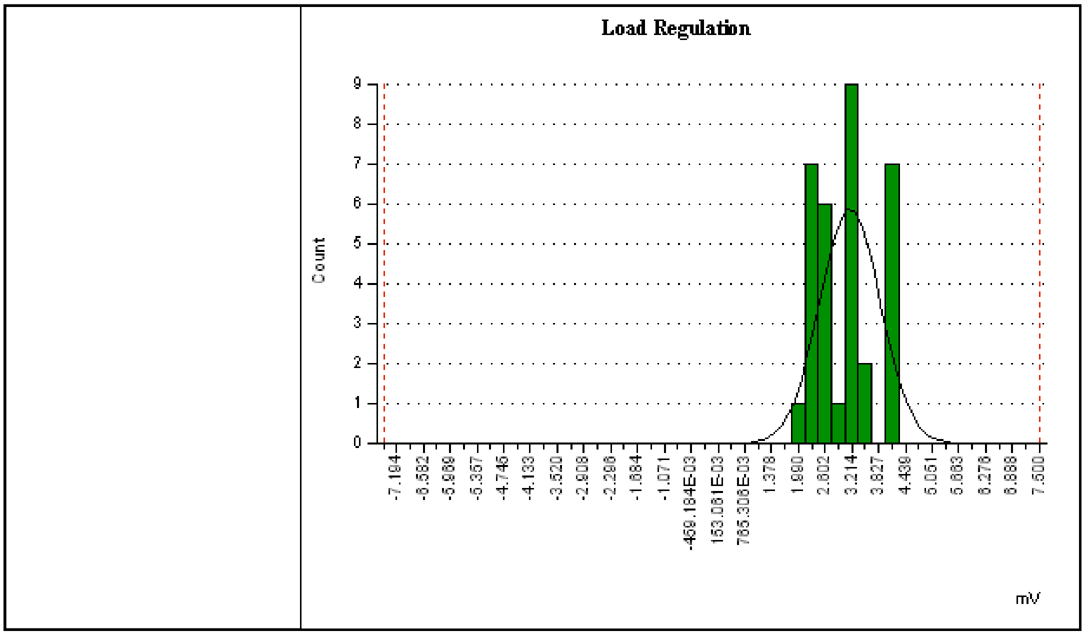
Statistics: (mV)

Min	262.500E-03	**StatLow**	N/A
Max	1.125	**NWithinSpec**	33
Mean	700.836E-03	**NOutsideSpec**	0
StdDev	244.841E-03	**90%**	1.037
25%	512.400E-03	**Range**	862.300E-03
Mean+3*StdDev	1.435	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	-33.687E-03	**Cpl**	>4.0000
		Cpu	>4.0000
Cpk	>4.0000		
Skew	0.2126		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



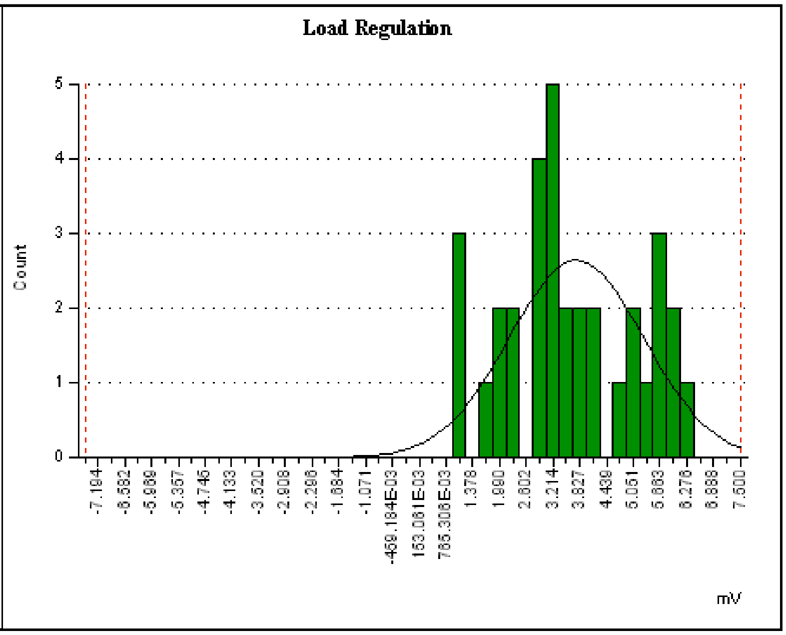
Statistics: (mV)

Min	2.111	**StatLow**	N/A
Max	4.194	**NWithinSpec**	33
Mean	3.051	**NOutsideSpec**	0
StdDev	683.762E-03	**90%**	4.083
25%	2.472	**Range**	2.083
Mean+3*StdDev	5.102	**NOutsideSpec**	0
		Cp	3.6562
Mean-3*StdDev	999.730E-03	**Cpl**	>4.0000
Cpk	2.1689	**Cpu**	2.1689
Skew	0.2813		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	21-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/16/2006	-	0

Data: Raw Data



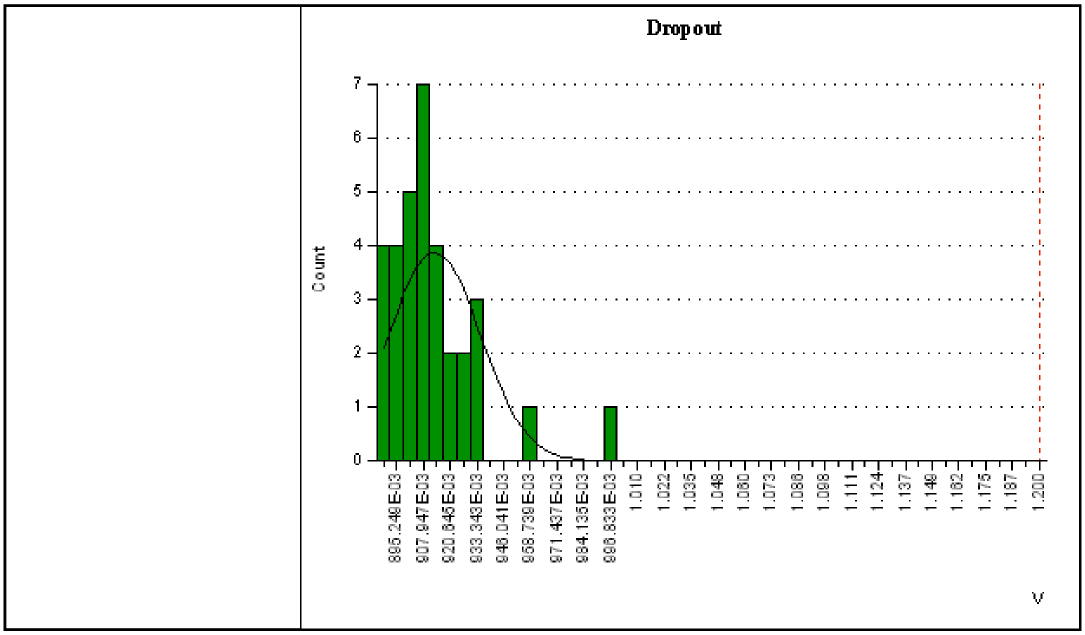
Statistics: (mV)

Min	1.035	**StatLow**	N/A
Max	6.300	**NWithinSpec**	33
Mean	3.626	**NOutsideSpec**	0
StdDev	1.526	**90%**	5.782
25%	2.881	**Range**	5.265
Mean+3*StdDev	8.203	**NOutsideSpec**	0
		Cp	1.6386
Mean-3*StdDev	-951.534E-03	**Cpl**	2.4307
Cpk	0.8464	**Cpu**	0.8464
Skew	0.0997		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



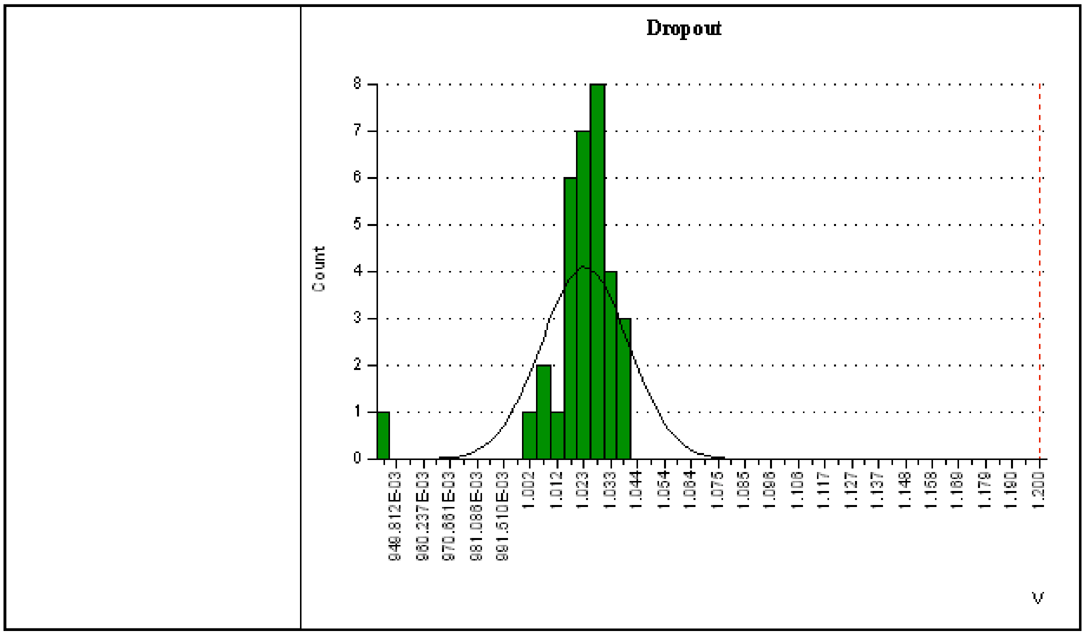
Statistics: (V)

Min	888.900E-03	**StatLow**	N/A
Max	995.800E-03	**NWithinSpec**	33
Mean	912.668E-03	**NOutsideSpec**	0
StdDev	21.503E-03	**90%**	930.900E-03
25%	901.400E-03	**Range**	106.900E-03
Mean+3*StdDev	977.177E-03	**NOutsideSpec**	0
		Cp	N/A
Mean-3*StdDev	848.158E-03	**Cpl**	N/A
Cpk	>4.0000	**Cpu**	>4.0000
Skew	2.1063		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	21-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/16/2006	-	0

Data: Raw Data



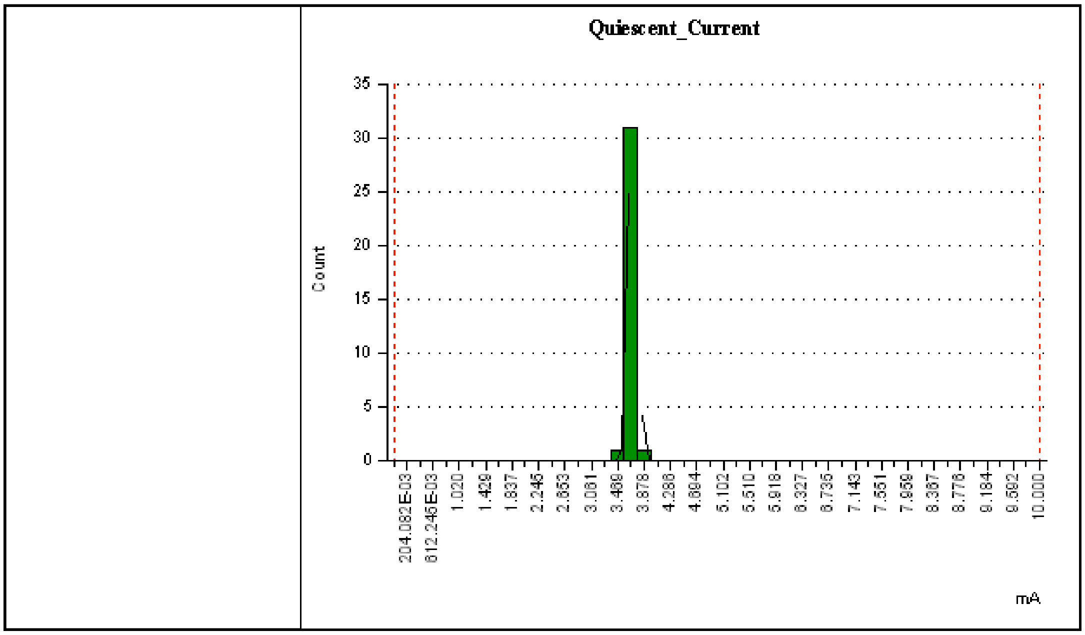
Statistics: (V)

Min	944.600E-03	**StatLow**	N/A
Max	1.040	**NWithinSpec**	33
Mean	1.022	**NOutsideSpec**	0
StdDev	16.734E-03	**90%**	1.035
25%	1.020	**Range**	95.700E-03
Mean+3*StdDev	1.072	**NOutsideSpec**	0
		Cp	N/A
Mean-3*StdDev	971.851E-03	**Cpl**	N/A
Cpk	3.5447	**Cpu**	3.5447
Skew	-3.2341		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



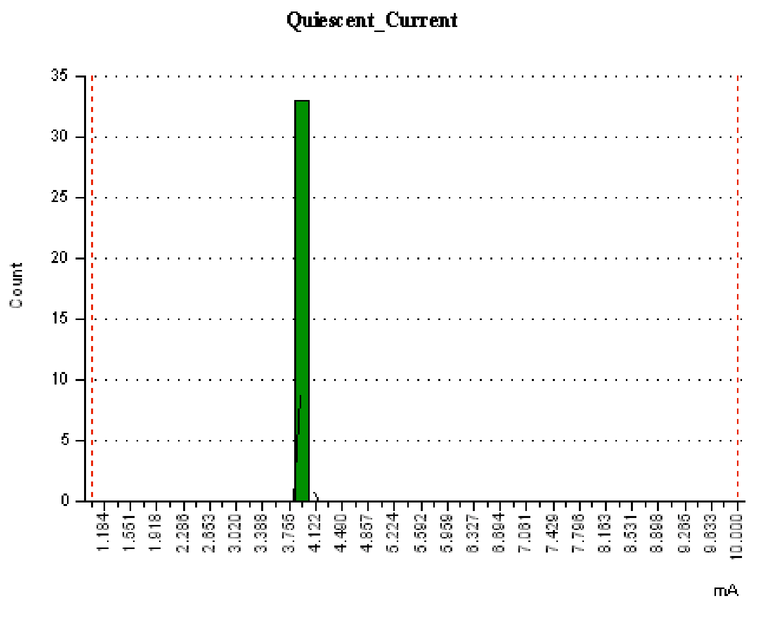
Statistics: (mA)

Min	3.453	**StatLow**	N/A
Max	3.788	**NWithinSpec**	33
Mean	3.665	**NOutsideSpec**	0
StdDev	62.521E-03	**90%**	3.728
25%	3.629	**Range**	335.000E-03
Mean+3*StdDev	3.853	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	3.478	**Cpl**	>4.0000
		Cpu	>4.0000
Cpk	>4.0000		
Skew	-0.9763		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	21-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/16/2006	-	0

Data: Raw Data



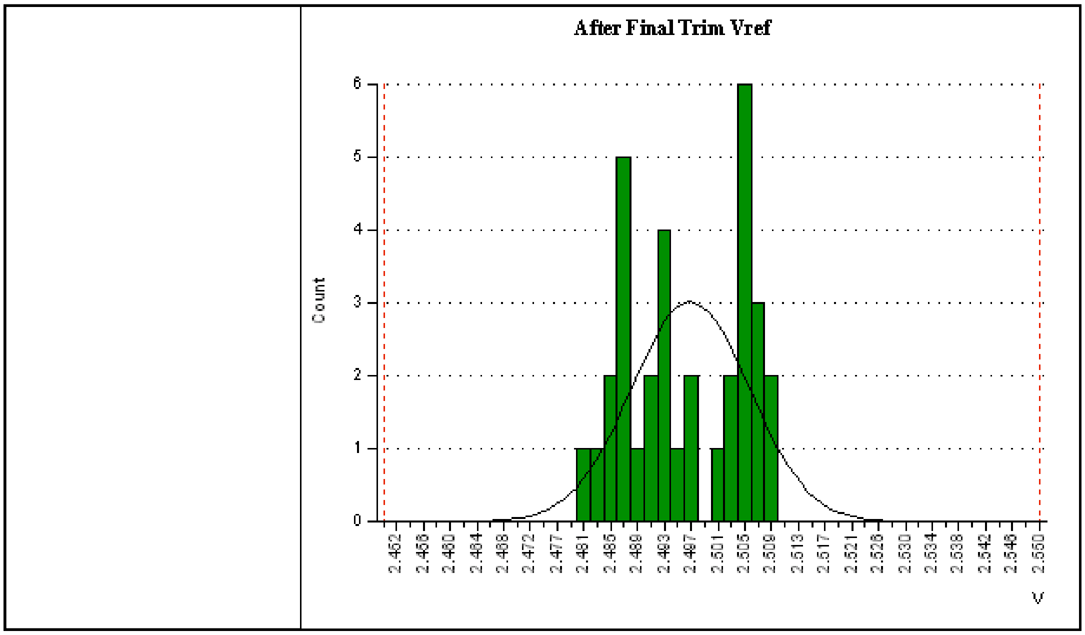
Statistics: (mA)

Min	3.892	**StatLow**	N/A
Max	4.018	**NWithinSpec**	33
Mean	3.953	**NOutsideSpec**	0
StdDev	35.929E-03	**90%**	4.000
25%	3.921	**Range**	126.200E-03
Mean+3*StdDev	4.061	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	3.845	**Cpl**	>4.0000
Cpk	>4.0000	**Cpu**	>4.0000
Skew	-0.0358		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_ROOM: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



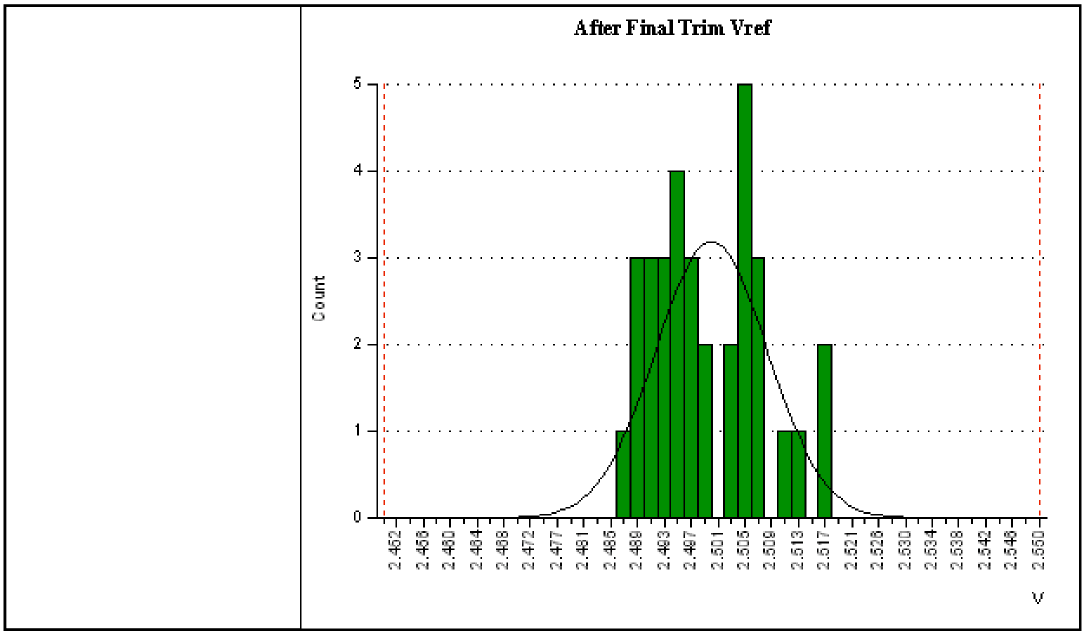
Statistics: (V)

Min	2.481	**StatLow**	N/A
Max	2.510	**NWithinSpec**	33
Mean	2.496	**NOutsideSpec**	0
StdDev	8.908E-03	**90%**	2.506
25%	2.488	**Range**	28.800E-03
Mean+3*StdDev	2.523	**NOutsideSpec**	0
Mean-3*StdDev	2.470	**Cp**	1.8709
Cpk	1.7306	**Cpl**	1.7306
Skew	-0.0493	**Cpu**	2.0112
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_HOT:01	MS1612	SPX1587	_	CHAR	N/A	N/A	29-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



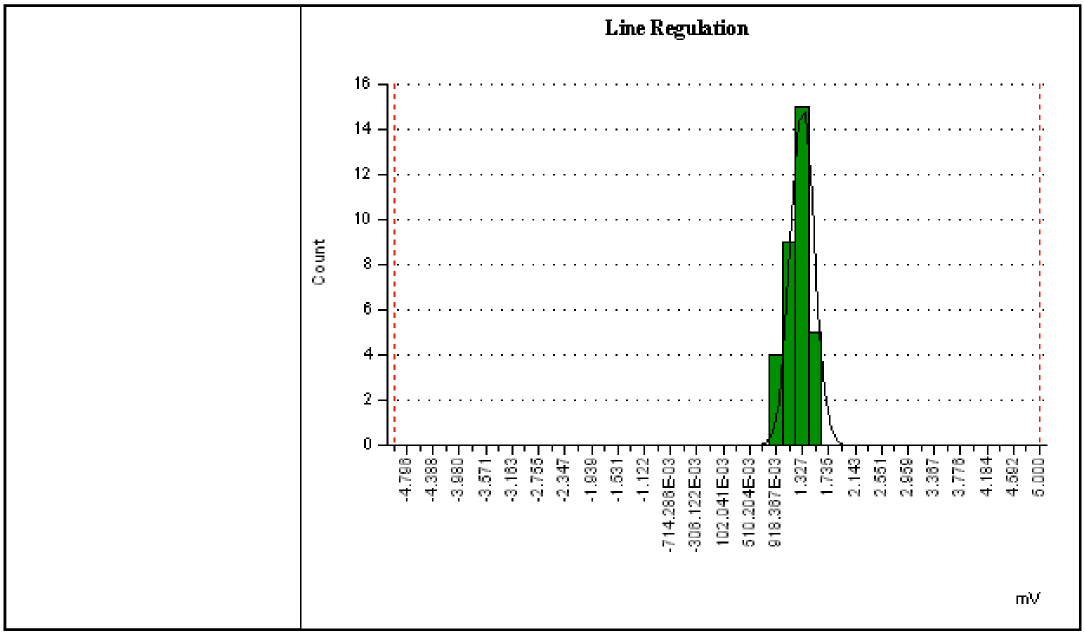
Statistics: (V)

Min	2.487	**StatLow**	N/A
Max	2.517	**NWithinSpec**	33
Mean	2.499	**NOutsideSpec**	0
StdDev	8.415E-03	**90%**	2.510
25%	2.493	**Range**	30.000E-03
Mean+3*StdDev	2.525	**NOutsideSpec**	0
		Cp	1.9806
Mean-3*StdDev	2.474	**Cpl**	1.9581
		Cpu	2.0030
Cpk	1.9581		
Skew	0.4672		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_HOT:01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



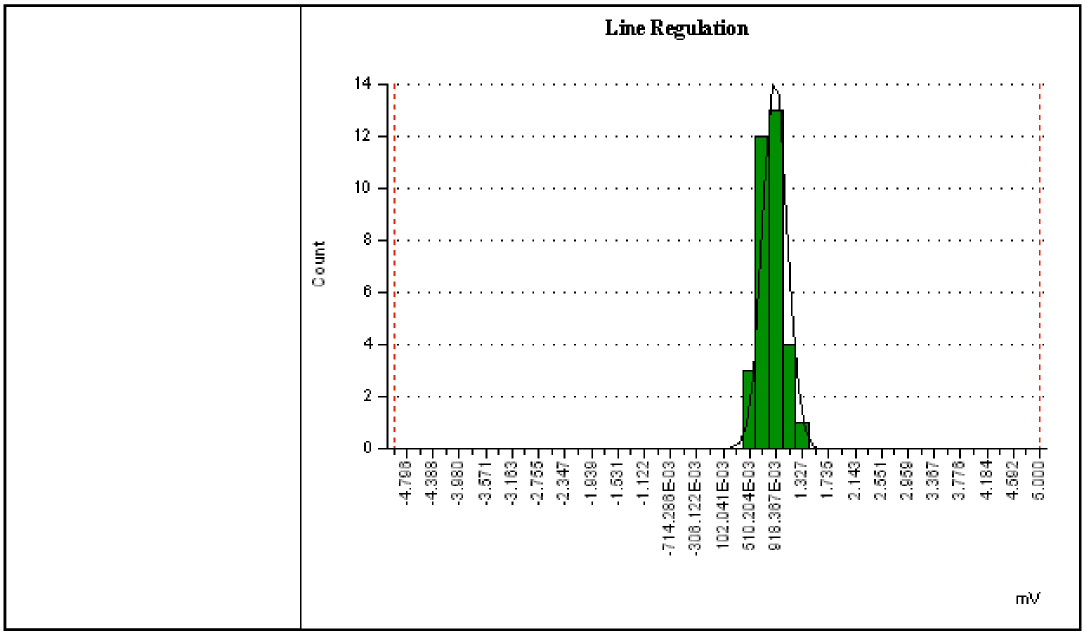
Statistics: (mV)

Min	836.200E-03	**StatLow**	N/A
Max	1.575	**NWithinSpec**	33
Mean	1.258	**NOutsideSpec**	0
StdDev	176.994E-03	**90%**	1.465
25%	1.172	**Range**	738.500E-03
Mean+3*StdDev	1.789	**NOutsideSpec**	0
		Cp	>4.0000
Mean-3*StdDev	727.267E-03	**Cpl**	>4.0000
Cpk	>4.0000	**Cpu**	>4.0000
Skew	-0.4823		
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1612_HOT: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	29-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



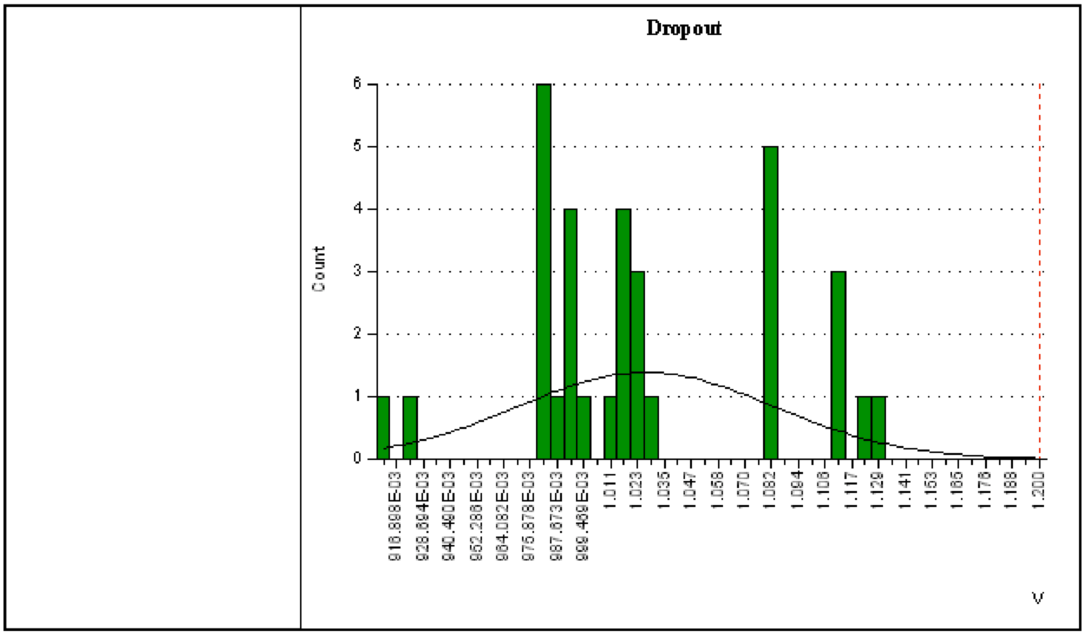
Statistics: (mV)

Min	437.400E-03	**StatLow**	N/A
Max	1.237	**NWithinSpec**	33
Mean	839.633E-03	**NOutsideSpec**	0
StdDev	187.697E-03	**90%**	1.081
25%	706.100E-03	**Range**	799.900E-03
Mean+3*StdDev	1.403	**NOutsideSpec**	0
Mean-3*StdDev	276.543E-03	**Cp**	>4.0000
Cpk	>4.0000	**Cpl**	>4.0000
Skew	-0.1247	**Cpu**	>4.0000
StatHigh	N/A		

Attributes

Lot: Wafers	**Maskset ID**	**Device**	**Device Rev**	**Operation**	**Foundry**	**Process**	**Date Tested**	**Tester**	**Test Program**	**Sequence**	**Retest**
1400_HOT: 01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



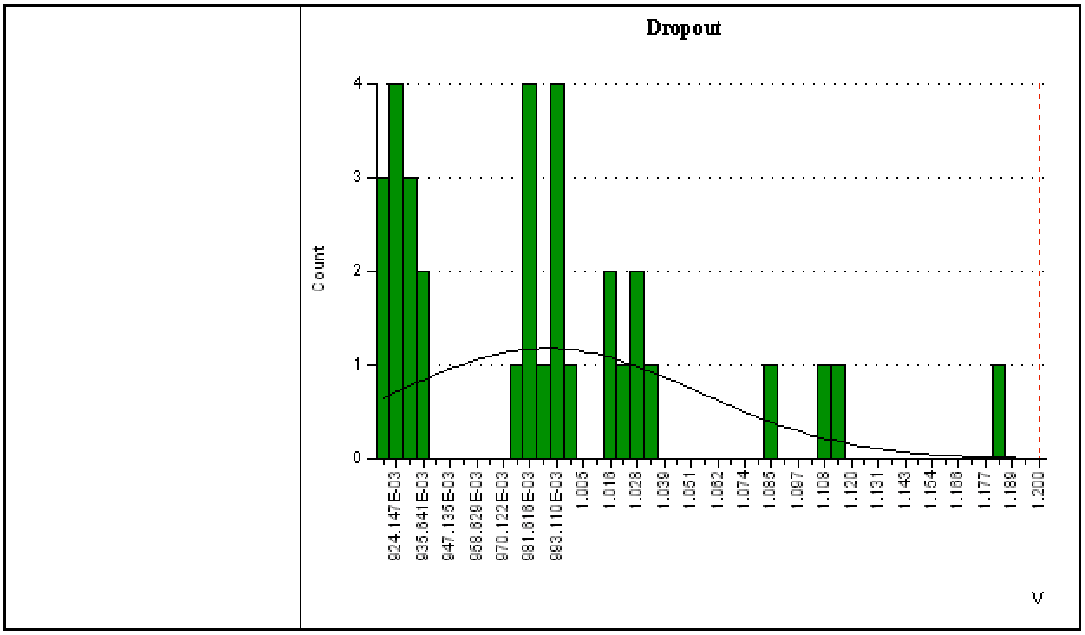
Statistics: (V)

Min	911.000E-03	**StatLow**	N/A
Max	1.129	**NWithinSpec**	33
Mean	1.026	**NOutsideSpec**	0
StdDev	55.942E-03	**90%**	1.109
25%	986.000E-03	**Range**	218.200E-03
Mean+3*StdDev	1.193	**NOutsideSpec**	0
		Cp	N/A
Mean-3*StdDev	857.802E-03	**Cpl**	N/A
Cpk	1.0390	**Cpu**	1.0390
Skew	0.2468		
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1612_HOT:01	MS1612	SPX1587	_	CHAR	N/A	N/A	29-AUG-2006	ETS200	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data



Statistics: (V)

Min	918.400E-03	**StatLow**	N/A
Max	1.181	**NWithinSpec**	33
Mean	988.172E-03	**NOutsideSpec**	0
StdDev	64.192E-03	**90%**	1.082
25%	928.500E-03	**Range**	262.900E-03
Mean+3*StdDev	1.181	**NOutsideSpec**	0
Mean-3*StdDev	795.597E-03	**Cp**	N/A
Cpk	1.1000	**Cpl**	N/A
Skew	1.1591	**Cpu**	1.1000
StatHigh	N/A		

Attributes

Lot: Wafers	Maskset ID	Device	Device Rev	Operation	Foundry	Process	Date Tested	Tester	Test Program	Sequence	Retest
1400_HOT:01	MS1612	SPX1587	_	CHAR	N/A	N/A	18-SEP-2006	ETS300	MS1612_SPX1587_25V_QUAL_DL.08/21/2006	-	0

Data: Raw Data