PRODUCT/PROCESS CHANGE NOTIFICATION

PCN APG-BOD/07/2338
Notification Date 03/09/2007

Transfer of A2SSP Products in BCD4 Tech. from AG8 to AMK6

BOD - CAR BODY

Table 1. Change Identification

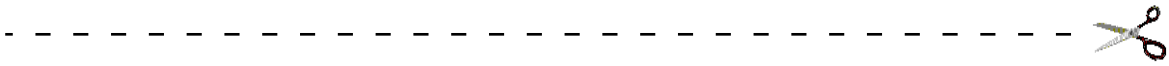
Product Identification (Product Family/Commercial Product)	see enclosed
Type of change	Waferfab location change
Reason for change	To Improve Quality and Service.
Description of the change	Following APCN APG-BOD/06/1836 notice is hereby given that BCD4 qualification in AMK6 plant has been completed. In order to improve Capacities and Service: A2SSP products diffused in BCD4 technology in AG8 will be transferred to AMK6.
Product Line(s) and/or Part Number(s)	See attached
Description of the Qualification Plan	See attached
Change Product Identification	Datacode
Manufacturing Location(s)	

Table 2. Change Implementation Schedule

Forecasted implementation date for change	01-Jun-2007
Forecasted availabillity date of samples for customer	02-Mar-2007
Forecasted date for **STMicroelectronics** change Qualification Plan results availability	02-Mar-2007
Estimated date of changed product first shipment	08-Jun-2007

Table 3. List of Attachments

Customer Part numbers list	
Qualification Plan results	



Customer Acknowledgement of Receipt	**PCN APG-BOD/07/2338**
Please sign and return to STMicroelectronics Sales Office	**Notification Date 03/09/2007**

☐ Qualification Plan Denied	Name:
☐ Qualification Plan Approved	Title:
	Company:
☐ Change Denied	Date:
☐ Change Approved	Signature:

Remark

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DOCUMENT APPROVAL

Name	Function
Russo, Alfio	Division Marketing Manager
Aparo, Sebastiano	Division Product Manager
Parrino, Emanuele	Division Q.A. Manager

PROCESS/PRODUCT CHANGE NOTIFICATION ®
PCN APG-BOD/07/2338

Transfer of A²SSP Products in BCD4 Technology from AG8 Agrate) Plant to AMK6 (S'Pore) Plant.

Following APCN APG-BOD/06/1836, dated 19 June 2006, notice is hereby given that BCD4 qualification in AMK6 plant has been completed.

INVOLVED P&L FAMILY: 54

WHAT
In order to improve Capacities and Service: A²SSP products diffused in BCD4 technology in AG8 (Agrate) plant will be transferred to AMK6 (Singapore) plant.

WHY: To improve service and available capacities.

WHO: All Customers using A²SSP (CAR BODY DIVISION P&L 54) products in BCD4 technology.

WHEN: The change will be implemented according to the following scheduled dates:

-Qualification results availability: enclosed to this PCN.

-Samples availability and 1st shipment : see below table for lines/products involved.

Line	Product	Characterization	ESD/Latch-up	Samples Availability	Start Production
UH22	L9950	available	available	now	wk22/2007*
UH31	L9951	wk14/2007	available	now	wk22/2007*
UH01	L4979	available	wk12/2007	now	wk22/2007
UH21	L4989	wk14/2007	wk14/2007	wk13/2007	wk22/2007

* according to Jedec standard we are available to supply new production parts prior to stated ship date, upon Customer/s approval.

WHERE: The plant involved in this change is ST Singapore AMK6 wafer Fab.

Qualification of BCD4 in AMK6 has been defined taking into account:

-SOP262, OP31 qualification procedures.

-AEC Q100 Automotive qualification guideline.

-The experience gained during the BCD4 CST and AG1/AG8 qualification.

-The differences between the AG1 and AMK processes.

UH22 silicon line has been chosen as test vehicle of products** transfer.

Here following is the qualification results.

**On each product involved in the transfer will be performed characterization and ESD/LU tests.

UH22 BCD4 AMK6
RELIABILITY
EVALUATION REPORT

Abstract

The trials described on this report are related to the reliability evaluation of UH22 BCD4 diffused in AMK 6".

A set of accelerated stress tests have been performed on four diffusion lots.

The key aspects of the diffusion process reliability have been investigated at products level, with a particular attention to the electrical behavior in long term life tests and die-package compatibility.

Conclusion

The positive results obtained, as shown at page 2, point out that the diffusion process transfer from AGR to AMK 6" does not introduce any weakness on the UH22 device.

Reliability test conditions and results:

TEST NAME	CONDITIONS [SPEC]	TV REJ./S.S.	NOTES
JL3 J-STD-020B	24h bake @ 125°C 192h @ 30°C / 60% RH, Tpeak max = 245°C reflow simulation (3 times)	0/135 x 1° lot 0/135 x 2° lot 0/135 x 3° lot	1, 11
OLT	Vs=+16V, Vcc=+5V, Tj=150°C t=1000hrs	0/45 x 1° lot 0/45 x 2° lot 0/45 x 3° lot	2, 3, 5
HTRB	Vs=+40V, Vcc=+5V, Tj=150°C t=1000hrs	0/45 x 1° lot 0/45 x 3° lot 0/45 x 4° lot	2
THB	Vs=16V, Vcc=5V, RH=85%, Ta=85°C, t=1000hrs	0/45 x 1° lot 0/45 x 2° lot 0/45 x 3° lot	4, 6
HTS	Tj=150°C t=1000hrs	0/45 x 1° lot 0/45 x 2° lot 0/45 x 3° lot	
TCT	Ta=-50/+150°C Cy=1000	0/45 x 1° lot 0/45 x 2° lot 0/45 x 3° lot	1, 4, 6, 7,8
PPT	P= 2atm, Ta=121°C	0/45 x 2° lot 0/45 x 3° lot	4, 7
ESD	HBM : R=1500Ω, C=100pF Vpulse ± 4Kv per 3 times (Q100 AEC 002)	0/6 x 1° lot	6
	HBM: Vpulse ± 8Kv per 3 times Out 1 to 11 versus all other pins grounded	0/6 x 1° lot	6
	MM: R=0 ohm; C=200pF Vpulse= ± 200 V per 3 times (Q100 AEC 003)	0/3 x 1° lot	6, 9
	MM: Vpulse ± 400v per 3 times Out 1 to 11 versus all other pins grounded	0/3 x 1° lot	6
	CDM: Vpusle= ± 1500V per 3 times (Q100 AEC 011)	0/3 x 1° lot	6
LU	Current Injection= ±200mA, Tj=125°C	0/8 x1° lot	6
	Overvoltage = 30V, Tj=125°C	0/4 x1° lot	6
ELFR	Vs=+40V, Vcc=+5V t=24 hrs	0/800 x 1° lot 0/800 x 2° lot 0/800 x 3° lot	6
WBS	Low Spec. Limit for 3 mil wire bonding: 150g	0/5 x 1° lot	10
PTC	Vs=+16V Vcc=+5V Tj=-40/+150°C Power cycle : 5 min. ON / 5 min. OFF	0/45 x 1° lot	2, 3, 6

NOTES:

[1] *SAM analysis has been performed before and after the stress-test. No die-resin delamination has been found.*

[2] *Drift analysis has been performed on all electrical parameters with positive results. No remarkable drift*

[3] *The OLT parts have been soldered on Chip-Boards.*

[4] *Performed in sequence after JL3 test*

[5] *Hot and Cold final test has been performed with positive results*

[6] *Hot test has been performed with positive results*

[7] *Destructive Physical Analysis has been done with positive results*

[8] *WBP (Wire Bond Pull) has been performed after TC on the first and second lots with positive result (See attachment No. 4)*

[9] With the exception of CP (pin 26) that withstand $\pm$100V versus Vs, Vcc and all pins as previous Agrate diffusion

[10] *WBS at time zero has been done with positive results (see attachment No. 4)*

[11] *Wettability test has been performed at wafer level with positive results on 2°diffusion lot.*

Construction note

		TV
Technical code	:	A68C*UH22AE6
Diffusion process	:	BCD4
Wafer diameter	:	6"
Diffusion site	:	AMK6
Die size (mm^2)	:	6.94 x 4.37
Metal levels	:	3
Metal composition	:	TiN/Ti/AlSiCu/TiN (metal 1, 0.655 um) Ti/AlSiCu/TiN (metal 2, 1.1um) Ti/AlSiCu/TiN (metal 3, 3 um)
Passivation	:	USG-PSG-SiON-PIX
Back finishing	:	CHROMIUM/NICKEL/GOLD
Package name	:	PowerSO 36 (lot 1, 3 and 4) PowerSSO 36 (lot 2)
Assembly site	:	ST MUAR - MALAYSIA
Die attach	:	Pb/Ag/Sn
Wire bonding	:	Au, 3 mils
Molding compound	:	SUMITOMO 7307A
Diffusion lot	:	Lot1: 662568XQ Lot2: 66257FF Lot3: 662670F Lot4: 6627578

Attachments

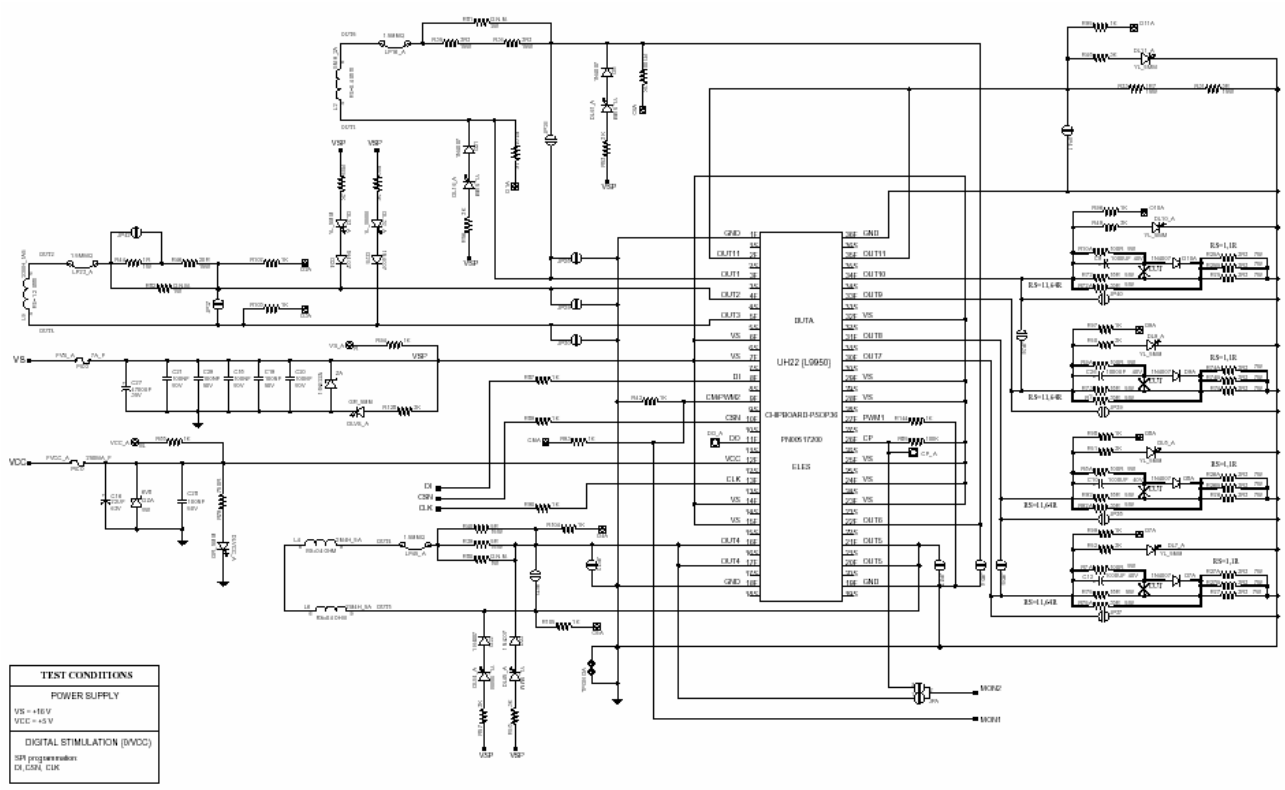
1) Reliability tests description
2) OLT schematic diagram
3) HTRB schematic diagram
4) WBS and WBP results

ATTACHMENT 1: RELIABILITY TESTS DESCRIPTION

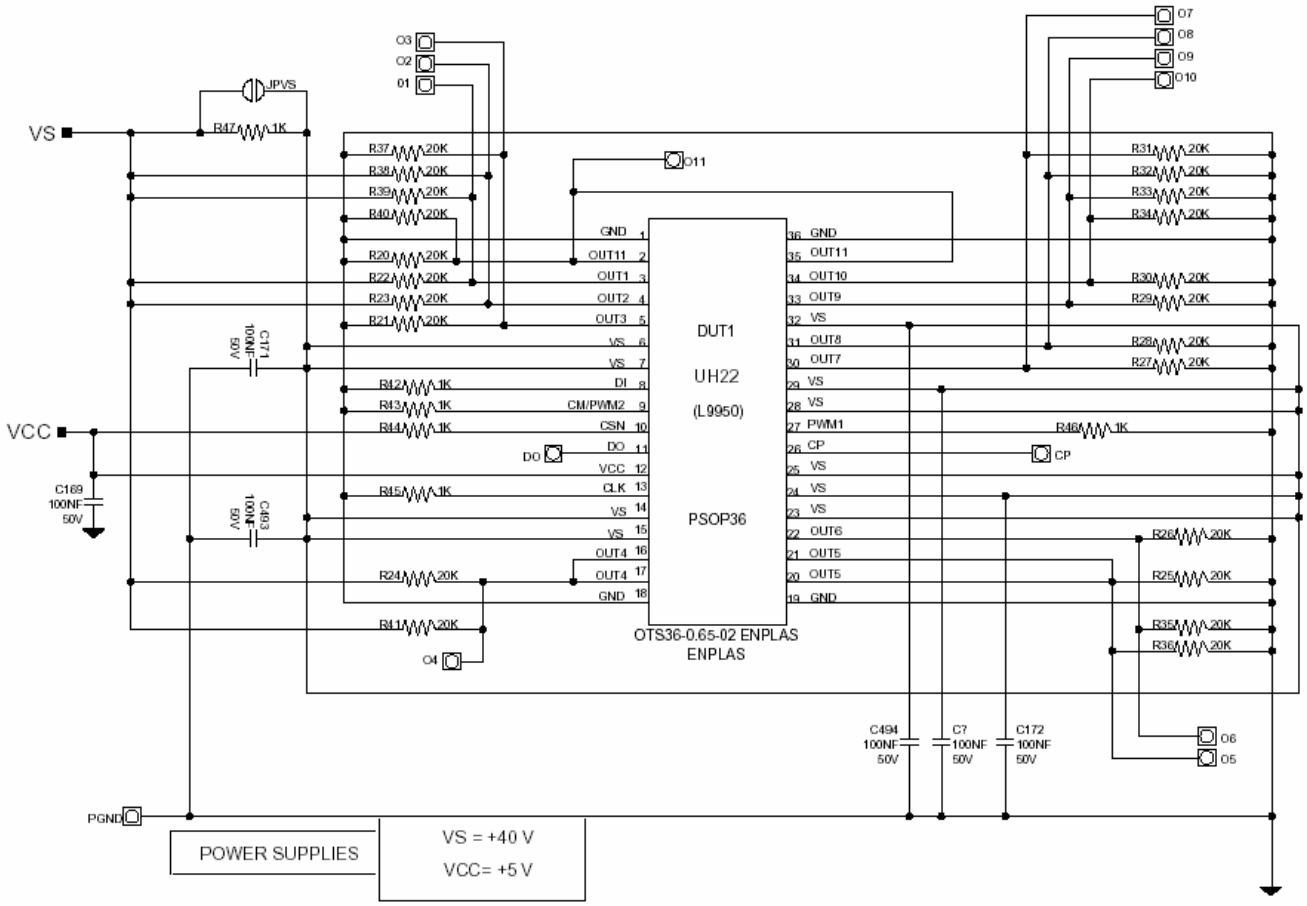
TEST NAME	DESCRIPTION	PURPOSE
JLn: Jedec Level n surface mounting simulation	The device is submitted to a typical temperature profile used for surface mounting, after a controlled moisture absorption.	As stand-alone test: to investigate the level of moisture sensitivity. As preconditioning before other reliability tests: to verify that the surface mounting stress does not impact on the subsequent reliability performance. The typical failure modes are "pop corn" effect and delamination.
OLT: Operating Life Test	The device is stressed in dynamic configuration, approaching the operative max. absolute ratings in terms of junction temperature, load current, internal power dissipation.	To simulate the worst-case application stress conditions. The typical failure modes are related to electromigration, wire-bonds degradation, oxide faults.
HTRB: High Temperature Reverse Bias Test	The device is stressed in static configuration, trying to satisfy as much as possible the following conditions: -) low power dissipation; -) max. supply voltage compatible with diffusion process and internal circuitry limitations; -) max. junction temperature.	To maximize the electrical field across either reverse-biased junctions or dielectric layers, in order to investigate the failure modes linked to mobile contamination, oxide ageing, layout sensitivity to surface effects.
THB: Temperature Humidity Bias Test	The device is biased in static configuration minimizing its internal power dissipation, and stored at controlled conditions of ambient temperature and relative humidity.	To investigate failure mechanisms activated in the die-package environment by electrical field and wet conditions. Typical failure mechanisms are electro-chemical corrosion and surface effects related to the moulding compound.
HTS: High Temperature Storage	The device is stored in unbiased condition at the max. temperature allowed by the package materials, sometimes higher than the max. operative temperature.	To investigate the failure mechanisms activated by high temperature, typically wire-bonds solder joint ageing, data retention faults, metal stress-voiding.
TCT: Temperature Cycles Test	The device is submitted to cycled temperature excursions, between a hot and a cold chamber in air atmosphere.	To investigate failure modes related to the thermo-mechanical stress induced by the different thermal expansion of the materials interacting in the die-package system. Typical failure modes are linked to metal displacement, dielectric cracking, moulding compound delamination, wire-bonds failure, die-attach layer degradation.
PPT: Pressure Pot Test	The device is stored in saturated steam, at fixed and controlled conditions of pressure and temperature.	To investigate corrosion phenomena affecting die or package materials, related to chemical contamination and package hermeticity.
ESD: Electrostatic Discharge	The device is submitted to a high voltage peak on all his pins simulating ESD stress according to different simulation models.	To classify the device according to his susceptibility to damage or degradation by exposure to electrostatic discharge.
LU: Latch-up	The device is submitted to a direct current forced/sinked into the input/output pins. Removing the direct current no change in the supply current must be observed.	To verify the presence of bulk parasitic effects inducing latch-up.
ELFR: Early Life Failure Rate	The device is stressed in biased conditions, close to the maximum allowed junction temperature.	To evaluate the defects inducing failure in early life.

WBP: Wire Bond Pull	The wire is submitted to a pulling force (approximately normal to the surface of the die) able to achieve wire break or interface separation between ball/pad or sticth/lead.	To investigate and measure the integrity and robustness of the interface between wire and die or lead metallizations.
WBS: Wire Bond Shear	The ball bond is submitted to a shear force (parallel to the pad area) able to cause the separation of the bonding surface between ball bond and pad area.	To investigate and measure the integrity and robustness of the bonding surface between ball bond and pad area.
PTC: Power Temperature Cycling	The device is stressed in dynamic configuration with a duty cycle of 50% at cycled ambient temperature.	To simulate the application stress in terms of electrical and environmental conditions. The typical failure modes are related to active thermal fatigue in the die-packge system..

ATTACHMENT 2: OLT schematic diagram



ATTACHMENT 3: HTRB schematic diagram



ATTACHMENT 4: WBS and WBP Results

- ***Wire Bond Shear test at time zero:***

Lower Spec Limit (LSL)	150 gm	**Performed by**	Process Engineer
Equipment N°	Intelli Test	**Wire Diameter**	3.0 mils
Supplier/model	FA 1800	**Sampling requirement : Min 30 balls from 5 devices**	

	S.S: 5 Units				
	1	2	3	4	5
Mean	268.61	269.92	275.09	271.65	275.67
Max	285.36	285.89	293.21	287.56	288.42
Min	251.42	242.30	244.83	252.94	256.56
n	10	10	10	10	10
Range	33.94	43.59	48.38	34.62	31.86
Std. Dev.	10.25	13.25	16.45	11.55	9.77
Cpk	3.86	3.02	2.54	3.51	4.29
SHEAR MODE :					
Al					
Ball	10	10	10	10	10
Cratering					
Overall Mean based on total n balls			269.32		
Overall Max based on total n balls			293.21		
Overall Min based on total n balls			242.30		
Overall Std Dev based on total n balls			12.31		
Overall Cpk based on total n balls			3.07		

- ***Wire Bond Pull test after 1000 thermal cycles:***

UH22 pull test 1000 TC lot 1

Test Group	Wire pull Au 3mil	Die	UH22
Operator	piera	Package	PowerSO 36
Test speed	700.0um/s	Assy plant	ST MUAR - MALAYSIA
Test load	26.00g	Rif. qualifica	AGR200638006
Machine	Series 4000 - 1950199	(Lotto) / prova / :	1 TC 1000
Date saved	11/30/2006 11:18:59	Numero pezzo	5
Sample number	138		
Total number of tests	60		

Destructive Tests Summary

Number of tests	60	Mean - 3*StdDev	31.111 g
Minimum load	44.663 g	Upper Spec Limit	90.000 g
Maximum load	75.298 g	Lower Spec Limit	26.000 g
Mean load	56.912 g	Cpk	1.198
Standard deviation	8.600 g		

Pass / Fail Analysis

Pass / Fail limit	26.000 g
Tests above preset	60
Tests below preset	0
Tests over range	0

Grade Detail

Grade	Description	Number	Mean load	StdDev
2	ball neck break	38	55.786 g	8.467 g
3	wire loop break	22	58.859 g	8.674 g

UH22 pull test @ 1000TC lot2

Test Group	Wire pull Au 3mil	Die	UH22
Operator	piera	Package	PowerSSO 36
Test speed	700.0um/s	Assy plant	ST MUAR - MALAYSIA
Test load	26.00g	Rif. qualifica	AGR200638007
Machine	Series 4000 - 1950199	(Lotto) / prova /	2 TC 1000
Date saved	11/30/2006 12:31:52	Numero pezzo	5
Sample number	139		
Total number of tests	60		

Destructive Tests Summary

Number of tests	60	Mean - 3*StdDev	41.212 g
Minimum load	45.407 g	Upper Spec Limit	90.000 g
Maximum load	64.592 g	Lower Spec Limit	26.000 g
Mean load	51.901 g	Cpk	2.423
Standard deviation	3.563 g		

Pass / Fail Analysis

Pass / Fail limit	26.000 g
Tests above preset	60
Tests below preset	0
Tests over range	0

Grade Detail

Grade	Description	Number	Mean load	StdDev
2	ball neck break	19	51.837 g	3.106 g
3	wire loop break	41	51.931 g	3.792 g

VIPower & A2SSP Product Engineering

and

Characterization Group - Catania

L9950
door actuator driver

Characterization report
8”Agrate Vs 6” AngMoKio

Catania, November, 2006

Authors : M. Di Mauro

Doc. Vers. : July 2004

Samples informations

Line	:	**UH22**
Technology	:	**BCD 4**
Package	:	**Power SO36 & PowerPSSO36**
Diffusion lot	:	**66257FF (AMK), 662670F (AMK), 6627578(AMK) , characterized on tester EAGLE ETS 364.** **1515AJR (AGR) ,1515AJR (AGR) characterized on tester Teradyne A565 .**
Samples size	:	**1500 samples**
Temperature	:	**-45ºC, 25ºC, 130ºC**

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
ABS MAX RATINGS																			
Vcc @ 5.5V	uA				28.07	0.78	26.30	46.31		52.45	1.24	49.58	69.59		67.06	2.21	59.40	75.66	
CSN @ Vcc+0.3V	uA				30.40	0.92	27.93	32.97		21.43	1.69	19.50	42.13		27.34	2.21	18.26	36.24	
CLK @ Vcc+0.3V	uA				71.04	1.14	67.15	74.77		63.29	19.86	58.19	340.04		186.18	16.02	108.47	249.37	
DI @ VCC+0.3V	uA				75.70	1.28	70.52	79.92		65.24	24.38	59.55	409.79		205.14	18.94	113.18	279.93	
DO @ VCC+0.3V	uA				-0.02	0.01	-0.02	0.01		0.01	0.01	0.01	0.04		3.06	0.47	1.34	5.52	
PWM1 @VCC+0.3V	uA				0.03	0.02	0.03	0.62		-0.11	0.01	-0.40	0.19		-0.13	0.04	-0.14	0.45	
CM @ VCC+0.3V	uA				-0.18	0.21	-1.18	0.86		-0.14	0.21	-1.61	1.64		-0.11	0.21	-0.63	0.62	
CP @ VS+11V	uA				19.25	33.61	-35.93	273.30		32.85	51.74	-36.39	317.41		139.99	26.31	-0.63	206.05	
CP @-25V	uA				-0.10	0.19	-0.90	1.11		-0.07	0.20	-1.11	1.14		-0.13	0.47	-5.63	0.37	
VS @ 40V out to VS	uA				0.83	0.02	0.71	1.00		0.73	0.02	0.57	0.79		0.59	0.02	0.53	0.69	
VS @ 40V out to GND	mA				0.01	0.01	0.01	0.21		0.01	0.00	0.01	0.06		0.05	0.01	0.03	0.09	
VS @ 40V out floating	uA				12.27	3.24	8.92	70.64		9.25	1.69	7.19	45.82		52.54	7.34	30.41	92.22	
Qiuscent current																			
IS stby Vcc=16V,Vs=0V	uA		4.0	12.0	2.94	0.11	2.65	5.80	5.82	2.55	0.40	1.89	6.05	2.10	40.10	19.58	19.20	63.15	
ICC stby Vcc=16V,Vs=5.3V	uA		25.0	50.0	22.68	0.49	21.76	24.20	14.71	19.39	0.57	18.56	23.22	10.68	36.92	2.20	25.43	52.62	
IS+ICC stby Vcc=16V,Vs=5.3V	uA		31.0	75.0	25.62	0.49	24.54	31.99	16.73	21.94	0.72	20.78	28.32	9.67	34.85	19.53	19.03	80.59	
IQLH stby mode Vcc=8V																			
OUT1__HS	uA	-5.0	-2.0	0.0	-0.0001	0.0066	-0.0214	0.0000		-0.0041	0.0035	-0.0188	0.0000		-0.053	0.012	-0.118	-0.005	
OUT2__HS	uA	-5.0	-2.0	0.0	-0.0015	0.0062	-0.0217	0.0000		0.0069	0.0036	-0.0090	0.0000		-0.025	0.006	-0.052	-0.009	
OUT3__HS	uA	-5.0	-2.0	0.0	0.0036	0.0036	-0.0103	0.0000		-0.0055	0.0036	-0.0190	0.0000		-0.013	0.005	-0.038	0.005	
OUT4__HS	uA	-5.0	-2.0	0.0	0.0004	0.0070	-0.0279	0.0000		0.0064	0.0049	-0.0140	0.0000		-0.123	0.024	-0.260	-0.054	
OUT5__HS	uA	-5.0	-2.0	0.0	0.0008	0.0067	-0.0268	0.0000		-0.0023	0.0050	0.0020	0.0000		-0.123	0.024	-0.263	-0.047	
OUT6__HS	uA	-5.0	-2.0	0.0	-0.0021	0.0084	-0.0259	0.0000		0.0114	0.1621	-0.0083	0.0000		-0.062	0.012	-0.013	-0.031	
OUT7__HS	uA	-5.0	-2.0	0.0	0.0017	0.0011	-0.0032	0.0000		0.0031	0.0017	-0.0008	0.0000		-0.028	0.004	-0.052	-0.016	
OUT8__HS	uA	-5.0	-2.0	0.0	-0.0026	0.0035	-0.0097	0.0000		-0.0009	0.0014	-0.0072	0.0000		-0.020	0.004	-0.045	-0.008	
OUT9__HS	uA	-5.0	-2.0	0.0	0.0053	0.0014	-0.0027	0.0000		0.0017	0.0469	0.0040	0.0000		-0.015	0.004	-0.039	-0.002	
OUT10_HS	uA	-5.0	-2.0	0.0	-0.0077	0.0045	-0.0166	0.0000		-0.0064	0.0466	-0.0116	0.0000		-0.032	0.004	-0.056	-0.020	
OUT11_HS	uA	-5.0	-2.0	0.0	0.0049	0.0041	-0.0139	0.0000		-0.0079	0.0128	-0.0525	0.0000		-0.189	0.084	-0.033	-0.080	
IQLH stby mode Vcc=16V																			
OUT1__HS	uA	-5.0	-2.0	0.0	-0.006	0.007	-0.025	0.000		-0.009	0.004	-0.025	0.000		-0.07	0.01	-0.25	-0.03	
OUT2__HS	uA	-5.0	-2.0	0.0	-0.008	0.006	-0.028	0.000		0.001	0.003	-0.014	0.000		-0.04	0.01	-0.06	-0.02	
OUT3__HS	uA	-5.0	-2.0	0.0	-0.004	0.004	-0.019	0.000		-0.013	0.004	-0.028	0.000		-0.03	0.01	-0.05	-0.01	
OUT4__HS	uA	-5.0	-2.0	0.0	-0.007	0.007	-0.034	0.000		-0.001	0.005	-0.051	0.000		-0.18	0.03	-0.31	-0.10	
OUT5__HS	uA	-5.0	-2.0	0.0	-0.016	0.007	-0.068	0.000		-0.012	0.009	-0.329	0.000		-0.18	0.02	-0.31	-0.10	
OUT6__HS	uA	-5.0	-2.0	0.0	-0.009	0.008	-0.030	0.000		-0.001	0.004	-0.093	0.000		-0.08	0.01	-0.16	-0.05	
OUT7__HS	uA	-5.0	-2.0	0.0	0.001	0.001	-0.002	0.000		0.002	0.001	-0.002	0.000		-0.03	0.00	-0.06	-0.02	

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
IQLH stby mode Vcc=16V																			
OUT8__HS	uA	-5.0	-2.0	0.0	-0.005	0.003	-0.015	0.000		-0.003	0.001	-0.011	0.000		-0.026	0.004	-0.053	-0.015	
OUT9__HS	uA	-5.0	-2.0	0.0	0.003	0.001	-0.001	0.000		0.002	0.033	-0.005	0.000		-0.021	0.004	-0.044	-0.012	
OUT10_HS	uA	-5.0	-2.0	0.0	-0.009	0.036	-1.475	0.000		-0.012	0.068	-2.414	0.000		-0.037	0.004	-0.064	-0.027	
OUT11_HS	uA	-5.0	-2.0	0.0	0.001	0.084	-3.421	0.000		-0.013	0.109	-4.415	0.000		-0.291	0.059	-1.150	-0.167	
IQLL stby mode Vcc=8V																			
OUT1_LS	uA	0.0	80.0	180.0	108.15	3.98	88.69	117.51	6.02	88.43	3.91	70.00	97.20	7.53	60.14	2.06	53.59	66.04	9.75
OUT2_LS	uA	0.0	80.0	180.0	111.45	4.11	91.67	120.92	5.55	90.73	4.01	66.43	99.97	7.43	61.33	2.22	54.22	67.87	9.19
OUT3_LS	uA	0.0	80.0	180.0	112.91	4.14	97.45	122.49	5.40	88.72	3.78	72.38	97.90	7.82	58.80	2.13	53.55	64.40	9.22
OUT4_LS	uA	0.0	80.0	180.0	115.87	4.25	92.63	124.75	5.03	93.92	4.06	66.65	101.93	7.07	64.04	2.28	55.37	68.80	9.38
OUT5_LS	uA	0.0	80.0	180.0	109.54	4.01	87.92	118.07	5.86	90.24	3.93	63.94	98.40	7.61	62.11	2.19	54.45	67.30	9.47
OUT6_LS	uA	0.0	80.0	180.0	114.86	4.30	91.25	123.73	5.05	93.36	4.10	65.52	101.56	7.04	63.56	2.27	54.42	68.87	9.35
IQLL stby mode Vcc=16V																			
OUT1_LS	uA	0.0	80.0	180.0	118.12	3.82	98.63	127.00	5.39	102.67	3.68	83.00	110.62	7.01	75.57	2.84	66.44	82.54	8.87
OUT2_LS	uA	0.0	80.0	180.0	121.55	3.96	101.84	130.49	4.92	105.10	3.76	79.50	113.49	6.64	77.20	2.91	67.87	84.65	8.84
OUT3_LS	uA	0.0	80.0	180.0	123.30	3.98	108.02	132.46	4.75	103.05	3.52	86.38	111.58	7.28	74.27	2.81	67.03	80.58	8.82
OUT4_LS	uA	0.0	80.0	180.0	126.28	4.14	102.74	139.23	4.32	108.65	3.87	79.87	116.73	6.15	80.31	2.98	68.97	86.02	9.00
OUT5_LS	uA	0.0	80.0	180.0	119.50	3.89	97.61	127.84	5.18	104.54	3.74	76.69	112.36	6.73	78.00	2.88	67.88	83.83	9.04
OUT6_LS	uA	0.0	80.0	180.0	125.20	4.19	101.24	133.87	4.36	108.04	3.91	78.59	115.80	6.14	79.83	2.98	67.89	85.77	8.92
IQLH active mode Vcc=8V																			
OUT1__HS	uA	-40.0	-15.0	0.0	-13.34	0.54	-14.65	-11.58	8.21	-14.74	0.58	-16.75	-12.89	8.42	-14.80	0.63	-15.59	-12.98	7.82
OUT2__HS	uA	-40.0	-15.0	0.0	-13.30	0.54	-14.62	-11.55	8.23	-14.69	0.58	-15.77	-12.87	8.46	-14.75	0.64	-15.56	-12.90	7.71
OUT3__HS	uA	-40.0	-15.0	0.0	-13.15	0.53	-14.42	-11.42	8.21	-14.59	0.57	-15.59	-12.73	8.47	-14.61	0.62	-15.48	-12.83	7.80
OUT4__HS	uA	-40.0	-15.0	0.0	-13.47	0.55	-14.87	-11.64	8.21	-14.79	0.58	-15.86	-12.93	8.45	-14.84	0.64	-15.64	-12.98	7.74
OUT5__HS	uA	-40.0	-15.0	0.0	-13.51	0.55	-14.82	-11.70	8.16	-14.84	0.59	-15.88	-13.02	8.42	-15.00	0.64	-15.88	-13.12	7.79
OUT6__HS	uA	-40.0	-15.0	0.0	-13.41	0.55	-14.69	-11.63	8.19	-14.78	0.58	-15.79	-12.96	8.45	-14.82	0.64	-15.64	-12.99	7.73
OUT7__HS	uA	-40.0	-15.0	0.0	-9.34	0.38	-10.29	-8.11	8.21	-10.21	0.40	-10.98	-8.91	8.46	-10.17	0.44	-10.69	-8.94	7.75
OUT8__HS	uA	-40.0	-15.0	0.0	-9.08	0.37	-9.89	-7.91	8.08	-10.07	0.40	-10.77	-8.79	8.37	-10.14	0.44	-10.68	-8.84	7.69
OUT9__HS	uA	-40.0	-15.0	0.0	-9.37	0.38	-10.21	-8.14	8.15	-10.25	0.41	-10.97	-8.91	8.41	-10.18	0.44	-10.73	-8.89	7.74
OUT10_HS	uA	-40.0	-15.0	0.0	-9.18	0.37	-10.03	-7.94	8.16	-10.09	0.40	-10.75	-8.82	8.43	-10.17	0.44	-10.75	-8.85	7.77
OUT11_HS	uA	-40.0	-15.0	0.0	-9.30	0.38	-10.17	-8.07	8.19	-10.21	0.40	-11.04	-8.93	8.43	-10.37	0.45	-10.87	-9.07	7.75
IQLH active mode Vcc=16V																			
OUT1__HS	uA	-40.0	-15.0	0.0	-13.45	0.54	-14.72	-11.69	8.35	-14.81	0.58	-16.15	-12.97	8.53	-14.85	0.63	-15.61	-13.06	7.91
OUT2__HS	uA	-40.0	-15.0	0.0	-13.41	0.53	-14.67	-11.63	8.37	-14.75	0.57	-15.80	-12.92	8.55	-14.79	0.63	-15.58	-12.95	7.79
OUT3__HS	uA	-40.0	-15.0	0.0	-13.27	0.53	-14.57	-11.52	8.37	-14.66	0.57	-15.66	-12.81	8.56	-14.67	0.62	-15.53	-12.90	7.88
OUT4__HS	uA	-40.0	-15.0	0.0	-13.56	0.54	-14.94	-11.71	8.37	-14.84	0.58	-15.91	-12.98	8.53	-14.89	0.63	-15.66	-13.03	7.83
OUT5__HS	uA	-40.0	-15.0	0.0	-13.61	0.55	-14.89	-11.77	8.32	-14.90	0.58	-15.90	-13.05	8.49	-15.05	0.64	-15.93	-13.17	7.88

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
IQLH active mode Vcc=16V																			
OUT6__HS	uA	-40.0	-15.0	0.0	-13.51	0.54	-14.77	-11.73	8.34	-14.82	0.58	-15.81	-13.01	8.52	-14.85	0.64	-15.67	-13.04	7.80
OUT7__HS	uA	-40.0	-15.0	0.0	-9.43	0.38	-10.37	-8.21	8.36	-10.28	0.40	-11.01	-9.03	8.55	-10.21	0.44	-10.74	-8.99	7.83
OUT8__HS	uA	-40.0	-15.0	0.0	-9.17	0.37	-10.02	-7.99	8.22	-10.13	0.40	-10.82	-8.84	8.44	-10.20	0.44	-10.73	-8.89	7.76
OUT9__HS	uA	-40.0	-15.0	0.0	-9.46	0.38	-10.29	-8.21	8.28	-10.31	0.41	-10.99	-8.96	8.46	-10.23	0.44	-10.78	-8.94	7.84
OUT10_HS	uA	-40.0	-15.0	0.0	-9.28	0.37	-11.15	-8.07	8.26	-10.15	0.40	-12.90	-8.87	8.37	-10.21	0.43	-10.80	-8.90	7.84
OUT11_HS	uA	-40.0	-15.0	0.0	-9.39	0.39	-13.13	-8.14	8.10	-10.28	0.42	-14.97	-9.01	8.16	-10.44	0.45	-11.49	-9.16	7.80
IQLL active mode Vcc=8V																			
OUT1_LS	uA	-40.0	-15.0	0.0	-7.46	0.29	-7.26	-6.21	7.40	-7.65	0.33	-8.33	-6.94	7.20	-7.82	0.35	-8.01	-6.84	7.10
OUT2_LS	uA	-40.0	-15.0	0.0	-5.78	0.26	-7.23	-5.00	7.33	-6.39	0.27	-8.23	-5.46	7.75	-6.37	0.32	-8.04	-5.51	6.73
OUT3_LS	uA	-40.0	-15.0	0.0	-6.70	0.28	-7.34	-5.72	8.02	-7.46	0.30	-8.18	-6.50	8.36	-7.44	0.32	-8.06	-6.48	7.67
OUT4_LS	uA	-40.0	-15.0	0.0	-7.36	0.32	-8.14	-5.04	7.78	-8.05	0.35	-8.66	-6.79	7.77	-7.82	0.61	-8.31	-6.62	4.27
OUT5_LS	uA	-40.0	-15.0	0.0	-7.22	0.30	-7.98	-6.24	8.02	-7.92	0.32	-8.53	-6.89	8.33	-7.76	0.34	-8.22	-6.76	7.53
OUT6_LS	uA	-40.0	-15.0	0.0	-7.30	0.30	-8.10	-6.32	8.03	-8.04	0.32	-8.66	-7.00	8.38	-7.95	0.35	-8.42	-6.93	7.57
IQLL active mode Vcc=16V																			
OUT1_LS	uA	-40.0	-15.0	0.0	-7.38	0.30	-8.09	-6.39	8.23	-8.08	0.32	-8.64	-7.05	8.45	-7.95	0.35	-8.38	-6.75	7.68
OUT2_LS	uA	-40.0	-15.0	0.0	-7.29	0.30	-8.02	-6.33	8.19	-8.02	0.32	-8.56	-6.99	8.42	-7.98	0.35	-8.46	-6.99	7.64
OUT3_LS	uA	-40.0	-15.0	0.0	-7.17	0.29	-7.85	-6.15	8.13	-7.96	0.31	-8.48	-6.94	8.44	-7.92	0.34	-8.37	-6.92	7.76
OUT4_LS	uA	-40.0	-15.0	0.0	-7.41	0.39	-8.17	-6.29	6.31	-8.08	0.43	-8.68	-6.13	6.33	-7.87	0.35	-8.31	-6.87	7.49
OUT5_LS	uA	-40.0	-15.0	0.0	-7.41	0.32	-8.17	-6.17	7.84	-8.10	0.34	-8.72	-6.87	7.94	-7.90	0.35	-8.38	-6.89	7.52
OUT6_LS	uA	-40.0	-15.0	0.0	-7.36	0.30	-8.14	-6.39	8.14	-8.08	0.32	-8.69	-7.04	8.40	-7.97	0.35	-8.45	-6.95	7.58
Supply current																			
ICC supply Vcc=16V,Vs=5.3V	mA		1.0	3.0	1.54	0.04	1.41	1.68	10.06	1.60	0.04	1.46	1.69	10.98	1.56	0.05	1.41	1.64	9.54
IS supply Vcc=16V,Vs=5.3V	mA		7.0	20.0	3.93	0.15	3.40	4.28	8.04	4.17	0.16	3.63	4.44	8.47	4.07	0.17	3.55	4.30	7.68
Under voltage detect.																			
VS_underV_on	V	5.9		7.2	6.53	0.06	6.32	6.76	3.37	6.58	0.06	6.39	6.79	3.29	6.44	0.06	6.27	6.59	3.03
VS_underV_off	V	5.5		6.5	5.97	0.06	5.79	6.19	2.69	6.02	0.06	5.84	6.21	2.74	6.02	0.05	5.86	6.16	2.94
VS_under_V_Hyst	V		0.5		0.55	0.01	0.53	0.58	8.00	0.56	0.01	0.53	0.60	6.80	0.42	0.01	0.38	0.46	3.07
Over voltage detect.																			
VS_overV_on	V	18.0		24.5	19.53	0.17	18.79	20.18	3.06	19.63	0.17	18.92	20.18	3.25	20.14	0.20	19.59	20.91	3.58
VS_overV_off	V	17.5		22.0	18.91	0.16	18.37	19.50	2.92	19.01	0.16	18.50	19.56	3.15	19.51	0.19	18.97	20.29	3.44
VS_overV_Hyst	V		1.0		0.62	0.03	0.09	0.68	7.59	0.62	0.03	0.09	0.68	7.70	0.63	0.03	0.62	0.68	7.64
Power on reset htreshold																			
VPOR_thresh_HI	V			4.4	3.92	0.05	3.74	4.15	2.91	3.93	0.06	3.72	4.17	2.80	3.90	0.06	3.68	4.05	2.92
VPOR_thresh_LO	V	3.1			3.59	0.05	3.42	3.81	3.15	3.58	0.05	3.39	3.81	2.97	3.54	0.05	3.33	3.69	2.70
VPOR_thresh_HYS	V		0.3		0.33	0.00	0.32	0.35	20.42	0.34	0.00	0.33	0.36	23.18	0.36	0.00	0.35	0.37	24.39

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
RDSon HSDs @ 8V																			
Ron HSD1@ -1.5A	mO		300.0	400.0	196.43	2.99	188.26	211.14	21.93	279.98	3.14	271.36	300.28	12.74	414.76	5.04	394.51	432.85	
Ron HSD2 @ -0.8A	mO		800.0	1100.0	471.33	7.96	449.41	506.80	19.73	683.24	8.86	658.71	737.91	15.67	1038.76	14.39	986.38	1087.70	
Ron HSD3 @ -0.8A	mO		800.0	1100.0	482.09	8.06	460.02	518.73	19.94	698.98	9.02	673.53	755.70	14.82	1060.56	14.65	1008.54	1110.88	
Ron HSD4 @ -3A	mO		150.0	200.0	98.07	1.69	89.97	105.75	19.34	138.88	1.87	132.33	149.72	10.92	206.45	2.84	197.12	216.43	
Ron HSD5 @ -3A	mO		150.0	200.0	102.47	1.58	95.71	109.04	20.59	145.38	1.63	140.17	155.20	11.19	211.33	3.14	200.62	219.49	
Ron HSD6@ -1.5A	mO		300.0	400.0	170.01	3.00	161.56	183.47	18.89	246.21	3.18	236.76	265.25	16.11	369.07	5.47	350.49	383.28	
Ron HSD7 @ -0.8A	mO		800.0	1100.0	443.16	8.06	419.49	474.50	18.33	652.22	8.70	626.94	701.02	17.17	990.72	14.69	937.39	1039.67	
Ron HSD8 @ -0.8A	mO		800.0	1100.0	439.51	8.00	416.97	470.84	18.30	648.01	8.68	623.37	697.80	17.37	985.26	14.69	931.42	1031.65	
Ron HSD9 @ -0.8A	mO		800.0	1100.0	455.63	8.29	431.70	505.57	18.32	664.64	9.36	638.13	729.67	15.51	1018.90	15.48	967.36	1084.22	
Ron HSD10 @ -0.8A	mO		800.0	1100.0	460.03	8.19	435.78	501.23	18.73	669.65	9.08	643.62	721.50	15.80	1025.04	15.21	972.90	1075.10	
Ron HSD11 @ -3A	mO		100.0	150.0	85.85	1.19	81.75	93.15	17.95	118.65	1.36	113.60	126.01	7.66	171.44	3.16	149.34	183.97	
RDSon HSDs @ 13.5V			Tc=25C																
Ron HSD1@ -1.5A	mO		300.0	400.0	195.91	8.34	190.00	211.06	7.83	279.27	11.56	270.00	300.16	3.48					
Ron HSD2 @ -0.8A	mO		800.0	1100.0	470.30	19.39	450.00	506.88	8.08	681.75	27.18	660.00	737.60	5.13					
Ron HSD3 @ -0.8A	mO		800.0	1100.0	481.16	19.79	58.32	518.89	8.11	697.56	27.77	82.25	755.39	4.83					
Ron HSD4 @ -3A	mO		150.0	200.0	97.81	1.67	91.97	105.42	19.58	138.46	1.88	131.35	150.34	10.94					
Ron HSD5 @ -3A	mO		150.0	200.0	102.44	1.59	95.63	108.97	20.50	145.52	1.64	140.23	155.08	11.05					
Ron HSD6@ -1.5A	mO		300.0	400.0	169.34	7.40	160.00	180.81	7.63	245.28	10.35	14.58	265.75	4.98					
Ron HSD7 @ -0.8A	mO		800.0	1100.0	442.05	8.06	418.16	472.93	18.27	650.37	8.67	625.30	699.07	17.29					
Ron HSD8 @ -0.8A	mO		800.0	1100.0	438.24	8.01	415.17	469.27	18.24	646.01	8.64	621.73	695.46	17.52					
Ron HSD9 @ -0.8A	mO		800.0	1100.0	454.29	8.27	430.76	504.55	18.30	662.38	9.31	635.95	727.16	15.67					
Ron HSD10 @ -0.8A	mO		800.0	1100.0	458.76	8.17	434.61	499.74	18.71	667.48	9.02	641.43	719.16	15.98					
Ron HSD11 @ -3A	mO		100.0	150.0	85.67	1.18	81.83	92.90	18.16	118.32	1.38	113.17	125.74	7.68					
RDSon HSDs @ 13.5V			Tc=125C																
Ron HSD1@ -1.5A	mO		450.0	600.0											414.38	5.03	394.21	432.47	12.29
Ron HSD2 @ -0.8A	mO		1250.0	1700.0											1038.02	14.37	985.60	1086.77	15.36
Ron HSD3 @ -0.8A	mO		1250.0	1700.0											1059.84	14.64	1007.84	1109.94	14.57
Ron HSD4 @ -3A	mO		225.0	300.0											205.98	2.85	195.91	215.84	11.00
Ron HSD5 @ -3A	mO		225.0	300.0											211.04	3.13	200.18	219.24	9.47
Ron HSD6@ -1.5A	mO		450.0	600.0											368.23	5.43	348.74	383.61	14.22
Ron HSD7 @ -0.8A	mO		1250.0	1700.0											986.70	14.44	932.93	1035.30	16.47
Ron HSD8 @ -0.8A	mO		1250.0	1700.0											980.96	14.40	926.73	1026.72	16.64
Ron HSD9 @ -0.8A	mO		1250.0	1700.0											1013.99	15.34	962.91	1078.90	14.91
Ron HSD10 @ -0.8A	mO		1250.0	1700.0											1020.32	15.07	968.91	1069.86	15.03
Ron HSD11 @ -3A	mO		150.0	200.0											171.02	3.13	149.00	183.36	3.09

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
RDSon LSDs @ 8V																			
Ron LSD1@ 1.5A	mO		300.0	400.0	186.36	11.86	168.00	226.49	5.24	267.41	16.73	237.00	310.70	2.64	399.57	5.04	378.36	417.54	
Ron LSD2 @ 0.8A	mO		800.0	1100.0	465.96	28.88	443.00	500.63	5.38	679.11	40.67	650.00	722.70	3.45	1038.78	14.57	982.99	1087.46	
Ron LSD3 @ 0.8A	mO		800.0	1100.0	482.70	31.43	450.00	941.72	5.12	700.41	41.59	665.00	842.27	3.20	1067.94	15.33	1013.41	1121.07	
Ron LSD4 @ 3A	mO		150.0	200.0	94.26	1.46	90.23	101.07	21.46	134.91	1.62	130.47	145.99	13.43	200.39	2.46	191.77	207.65	
Ron LSD5 @ 3A	mO		150.0	200.0	98.36	1.45	94.51	105.20	22.54	140.19	1.59	135.79	150.71	12.55	207.25	2.41	198.27	215.18	
Ron LSD6@ 1.5A	mO		300.0	400.0	176.52	11.15	165.00	190.62	5.28	254.92	15.93	236.00	275.50	3.04	385.13	4.98	367.10	400.41	
RDSon LSDs @ 13.5V			Tc=25C																
Ron LSD1@ -1.5A	mO		300.0	400.0	186.94	3.36	178.92	226.41	18.52	268.24	3.61	259.38	310.53	12.16					
Ron LSD2 @ -0.8A	mO		800.0	1100.0	467.24	10.93	445.24	506.77	14.25	680.92	11.48	656.13	730.07	12.17					
Ron LSD3 @ -0.8A	mO		800.0	1100.0	483.90	14.21	461.45	907.16	11.35	702.28	10.52	677.54	841.18	12.61					
Ron LSD4 @ -3A	mO		150.0	200.0	94.14	1.46	90.21	101.01	21.45	134.73	1.61	130.26	145.79	13.49					
Ron LSD5 @ -3A	mO		150.0	200.0	98.24	1.45	94.40	105.03	22.52	140.01	1.58	135.62	150.48	12.62					
Ron LSD6@ -1.5A	mO		300.0	400.0	177.09	3.02	168.40	189.78	19.57	255.78	3.37	245.82	277.63	14.25					
RDSon HSDs @ 13.5V			Tc=125C																
Ron LSD1@ -1.5A	mO		450.0	600.0											399.23	5.04	378.07	417.21	13.27
Ron LSD2 @ -0.8A	mO		1250.0	1700.0											1037.53	14.54	981.66	1086.21	15.18
Ron LSD3 @ -0.8A	mO		1250.0	1700.0											1066.57	15.26	1012.47	1119.66	13.84
Ron LSD4 @ -3A	mO		225.0	300.0											200.05	2.45	191.42	207.30	13.58
Ron LSD5 @ -3A	mO		225.0	300.0											206.90	2.41	197.89	214.82	12.90
Ron LSD6@ -1.5A	mO		450.0	600.0											384.76	5.08	366.10	399.29	14.13
Curr. Limit. HSDs @ VS=13.5V																			
|IOUT1|	A	3.0		5.0	4.10	0.15	3.54	4.60	2.00	4.20	0.13	3.80	4.80	2.14	4.30	0.13	3.80	4.90	1.87
|IOUT6|	A	3.0		5.0	4.00	0.19	3.49	4.59	1.79	4.10	0.13	3.77	4.85	2.30	4.05	0.13	3.77	4.91	2.40
|IOUT2|	A	1.5		2.5	2.02	0.09	1.76	2.30	1.88	2.14	0.05	1.87	2.42	2.20	2.15	0.06	1.87	2.44	1.88
|IOUT3|	A	1.5		2.5	1.98	0.07	1.70	2.35	2.20	2.14	0.06	1.85	2.46	2.00	2.13	0.06	1.86	2.43	2.00
|IOUT4|	A	6.0		10.0	8.40	0.22	7.26	9.40	2.35	8.65	0.14	7.76	9.70	3.10	8.79	0.19	7.67	9.65	2.00
|IOUT5|	A	6.0		10.0	8.25	0.26	7.04	9.44	2.20	8.85	0.17	7.63	9.79	2.20	8.79	0.16	7.64	9.61	2.50
|IOUT7|	A	1.5		2.5	2.04	0.08	1.77	2.25	1.96	2.19	0.04	1.93	2.35	2.50	2.19	0.05	1.91	2.30	2.30
|IOUT9|	A	1.5		2.5	2.05	0.08	1.78	2.25	1.89	2.20	0.05	1.91	2.35	2.20	2.17	0.05	1.90	2.30	2.20
|IOUT8|	A	1.5		2.5	2.04	0.08	1.78	2.22	1.96	2.19	0.05	1.92	2.35	2.10	2.16	0.04	1.90	2.29	2.50
|IOUT10|	A	1.5		2.5	2.04	0.08	1.77	2.24	1.95	2.19	0.05	1.92	2.34	2.10	2.17	0.05	1.91	2.28	2.10
|IOUT11|	A	6.0		10.0	8.06	0.32	6.94	8.91	2.00	8.65	0.18	7.53	9.37	2.50	8.59	0.24	7.41	9.10	1.95
Curr. Limit. LSDs @ VS=13.5V																			
|IOUT2|	A	1.5		2.5	1.88	0.07	1.64	2.19	1.72	2.01	0.08	1.72	2.25	2.05	2.00	0.08	1.77	2.11	1.98
|IOUT3|	A	1.5		2.5	1.84	0.05	1.61	2.08	2.20	1.99	0.08	1.73	2.17	2.03	1.97	0.08	1.73	2.08	1.85
|IOUT1|	A	3.0		5.0	3.82	0.16	3.33	4.54	1.77	4.13	0.17	3.59	4.71	1.72	4.00	0.18	3.63	4.35	1.85

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
Curr. Limit. LSDs @ VS=13.5V																			
|IOUT6|	A	3.0		5.0	3.89	0.16	3.37	4.31	1.89	4.10	0.17	3.60	4.45	1.76	4.08	0.18	3.56	4.32	1.70
|IOUT4|	A	6.0		10.0	7.85	0.32	6.71	8.67	1.92	8.37	0.25	7.23	8.99	2.10	8.15	0.36	7.19	8.67	1.70
|IOUT5|	A	6.0		10.0	7.97	0.32	6.87	8.80	2.03	8.48	0.25	7.26	9.07	2.00	8.34	0.27	7.29	8.77	2.00
Charge Pump output voltage																			
VCP_volt_8V_60uA	V	6.0		13.0	7.80	0.06	7.60	7.98	10.68	7.49	0.09	7.25	7.79	5.68	7.06	0.14	6.78	7.48	2.55
VCP_volt_10V_80uA	V	8.0		13.0	11.15	0.05	10.94	11.29	13.48	10.74	0.08	10.46	11.03	9.08	10.17	0.13	9.87	10.53	5.53
VCP_volt_13.5V_100uA	V	10.0		13.0	11.27	0.05	11.14	11.39	9.02	11.14	0.05	11.00	11.27	7.36	10.92	0.06	10.75	11.07	5.35
Charge Pump output curr.																			
ICP	uA	95.0	150.0	300.0	152.71	6.44	130.41	168.06	2.99	163.32	6.63	140.11	175.19	3.44	161.15	7.18	139.04	170.74	3.07
Td(on) HSDs @ Vs=13.5V																			
OUT1H_tdon	uS	20.0	40.0	80.0	33.82	1.46	30.40	39.20	3.15	30.68	1.99	33.00	40.50	1.79	32.68	1.66	36.40	47.80	2.54
OUT2H_tdon	uS	20.0	40.0	80.0	38.71	1.68	34.80	45.20	3.71	35.81	1.54	32.80	41.20	3.42	42.33	2.12	37.20	49.40	3.51
OUT3H_tdon	uS	20.0	40.0	80.0	38.83	1.71	35.00	45.20	3.67	35.67	1.56	32.60	41.00	3.36	42.46	2.18	37.20	49.60	3.44
OUT4H_tdon	uS	20.0	40.0	80.0	30.74	1.34	27.60	36.00	2.67	27.84	1.19	25.40	32.00	2.19	28.44	1.34	26.20	32.80	2.10
OUT5H_tdon	uS	20.0	40.0	80.0	31.32	1.37	28.20	36.20	2.76	28.09	1.22	26.00	32.40	2.22	28.61	1.34	26.40	32.80	2.15
OUT6H_tdon	uS	20.0	40.0	80.0	34.14	1.47	30.60	39.60	3.20	30.97	1.33	28.40	36.20	2.75	33.25	1.58	30.20	38.40	2.79
OUT7H_tdon	uS	20.0	40.0	80.0	37.55	1.67	33.20	44.20	3.51	34.29	1.50	31.40	39.60	3.17	38.81	2.04	35.20	45.20	3.08
OUT8H_tdon	uS	20.0	40.0	80.0	38.99	1.73	34.80	45.80	3.66	35.38	1.55	32.60	41.00	3.32	40.01	2.11	36.00	47.40	3.16
OUT9H_tdon	uS	20.0	40.0	80.0	37.57	1.67	33.80	44.00	3.50	34.54	1.52	31.60	40.00	3.19	39.59	2.06	36.40	46.60	3.17
OUT10H_tdon	uS	20.0	40.0	80.0	38.85	1.72	35.20	44.80	3.66	35.63	1.55	32.80	41.20	3.35	40.53	2.14	37.00	47.80	3.20
OUT11H_tdon	uS	20.0	40.0	80.0	31.80	1.37	28.60	36.80	2.87	28.27	1.21	26.00	32.60	2.29	28.25	1.34	26.00	32.40	2.05
Td(off) HSDs @ Vs=13.5V																			
OUT1H_tdoff	uS	50.0	150.0	300.0	156.87	7.22	140.00	186.40	4.93	143.62	6.30	131.40	167.00	4.96	140.38	6.65	129.60	162.60	4.53
OUT2H_tdoff	uS	50.0	150.0	300.0	140.74	6.63	123.60	166.00	4.56	123.95	5.52	104.40	145.40	4.46	111.82	5.35	103.00	129.00	3.85
OUT3H_tdoff	uS	50.0	150.0	300.0	138.32	6.61	120.00	166.40	4.45	121.98	5.55	101.40	143.80	4.33	109.82	5.32	100.00	128.00	3.75
OUT4H_tdoff	uS	50.0	150.0	300.0	185.10	8.53	164.80	218.60	4.49	171.88	7.55	158.00	200.00	5.38	172.24	8.18	160.60	199.40	4.98
OUT5H_tdoff	uS	50.0	150.0	300.0	183.65	8.57	109.60	214.60	4.53	170.41	7.63	101.60	196.80	5.26	169.76	7.93	158.20	195.60	5.03
OUT6H_tdoff	uS	50.0	150.0	300.0	156.26	7.30	138.60	184.00	4.85	142.83	6.37	130.00	167.20	4.86	139.05	6.68	128.00	161.00	4.44
OUT7H_tdoff	uS	50.0	150.0	300.0	140.91	6.76	125.40	166.40	4.48	124.27	5.61	114.00	145.00	4.41	114.68	5.61	105.20	132.80	3.84
OUT8H_tdoff	uS	50.0	150.0	300.0	146.67	7.14	129.20	174.80	4.51	127.25	5.80	115.40	150.00	4.44	116.11	5.77	105.80	135.20	3.82
OUT9H_tdoff	uS	50.0	150.0	300.0	140.56	6.65	124.00	164.40	4.54	124.23	5.59	111.40	145.60	4.43	114.84	5.64	104.80	133.80	3.83
OUT10H_tdoff	uS	50.0	150.0	300.0	141.78	6.78	124.60	166.20	4.51	124.85	5.64	112.80	146.00	4.43	115.44	5.77	106.80	134.60	3.78
OUT11H_tdoff	uS	50.0	150.0	300.0	174.26	8.12	156.80	209.00	5.10	160.75	6.95	148.80	185.80	5.32	163.03	7.77	151.60	187.40	4.85

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
Td(on) LSDs @ Vs=13.5V																			
OUT1L_tdon	uS	15.0	30.0	70.0	30.53	1.35	27.60	36.00	3.83	27.58	1.23	25.40	32.60	3.41	27.85	1.34	26.00	32.00	3.19
OUT2L_tdon	uS	15.0	30.0	70.0	34.61	1.54	22.40	40.00	4.24	32.10	1.41	29.40	37.00	4.05	34.80	1.70	32.20	40.40	3.89
OUT3L_tdon	uS	15.0	30.0	70.0	35.58	1.60	28.00	42.00	4.28	33.45	1.48	30.60	38.80	4.16	35.06	1.71	32.60	40.60	3.91
OUT4L_tdon	uS	15.0	30.0	70.0	29.82	1.35	26.20	35.00	3.65	26.56	1.20	24.40	30.80	3.20	26.00	1.31	24.20	29.80	2.79
OUT5L_tdon	uS	15.0	30.0	70.0	29.45	1.31	26.60	34.60	3.67	26.23	1.17	24.20	30.80	3.19	25.70	1.27	24.00	29.60	2.81
OUT6L_tdon	uS	15.0	30.0	70.0	31.37	1.41	28.40	37.20	3.88	28.65	1.28	26.20	33.60	3.56	28.73	1.42	26.60	32.80	3.22
Td(off) LSDs @ Vs=13.5V																			
OUT1L_tdoff	uS	80.0	150.0	300.0	163.14	7.60	143.00	191.25	3.65	148.57	6.67	136.00	173.50	3.43	147.98	6.92	137.25	169.25	3.28
OUT2L_tdoff	uS	80.0	150.0	300.0	145.57	6.88	123.00	168.25	3.18	130.54	5.96	119.00	153.25	2.83	125.02	6.10	112.75	143.75	2.46
OUT3L_tdoff	uS	80.0	150.0	300.0	147.47	7.02	120.50	176.50	3.20	131.84	6.03	118.75	155.75	2.86	127.05	6.17	116.00	147.50	2.54
OUT4L_tdoff	uS	80.0	150.0	300.0	196.19	9.17	174.00	236.75	3.77	180.33	8.22	165.50	213.25	4.07	182.90	8.79	169.75	212.50	3.90
OUT5L_tdoff	uS	80.0	150.0	300.0	195.32	9.11	166.50	230.50	3.83	180.24	8.13	164.50	211.75	4.11	182.20	8.71	169.25	211.50	3.91
OUT6L_tdoff	uS	80.0	150.0	300.0	161.76	7.55	137.00	195.50	3.61	148.80	6.73	135.75	177.25	3.41	149.06	7.23	137.50	174.50	3.18
tD HL																			
OUT1_src_sink	uS		200.0	400.0	125.34	6.15	110.20	151.40	6.52	115.03	5.28	104.40	135.40	6.94	111.60	5.58	101.80	131.00	6.36
OUT2_src_sink	uS		200.0	400.0	105.13	5.53	90.80	126.20	6.04	90.85	4.47	71.60	108.40	6.40	76.04	4.16	68.00	89.80	5.70
OUT3_src_sink	uS		200.0	400.0	101.74	5.50	86.40	125.00	5.86	87.53	4.47	67.20	105.00	6.15	73.79	4.12	65.20	87.40	5.56
OUT4_src_sink	uS		200.0	400.0	154.27	7.46	136.40	183.40	6.67	144.32	6.56	131.40	169.40	7.08	145.33	7.13	134.80	170.00	6.56
OUT5_src_sink	uS		200.0	400.0	153.20	7.53	79.20	181.60	6.56	143.18	6.66	74.60	167.00	6.92	143.16	6.87	132.80	166.60	6.70
OUT6_src_sink	uS		200.0	400.0	123.89	6.20	107.60	148.20	6.40	113.18	5.34	101.60	134.40	6.76	109.40	5.51	100.20	127.40	6.32
tD LH																			
OUT1_sink_src	uS		200.0	400.0	130.33	6.46	111.60	154.85	6.46	118.94	5.60	107.65	141.10	6.78	116.25	5.65	105.85	134.85	6.56
OUT2_sink_src	uS		200.0	400.0	107.86	5.65	86.20	127.75	6.07	95.73	4.77	84.20	114.85	6.33	83.67	4.67	71.55	99.75	5.61
OUT3_sink_src	uS		200.0	400.0	109.63	5.79	83.90	135.70	6.02	97.17	4.85	85.15	117.55	6.33	85.55	4.65	76.80	101.50	5.78
OUT4_sink_src	uS		200.0	400.0	166.45	8.10	145.20	203.55	6.64	153.49	7.22	139.90	183.05	6.86	155.44	7.59	143.35	181.50	6.61
OUT5_sink_src	uS		200.0	400.0	165.00	8.03	137.50	196.70	6.64	153.14	7.12	138.10	181.75	6.93	154.58	7.54	142.25	181.10	6.61
OUT6_sink_src	uS		200.0	400.0	128.62	6.42	105.80	158.10	6.41	118.84	5.65	106.75	143.25	6.71	116.79	5.92	106.10	137.90	6.30
Open load detect. Curr.																			
OUT1HS_opl_thresh	mA	5.0	30.0	80.0	32.36	5.10	19.00	53.43	1.79	36.92	4.40	20.86	52.29	2.42	37.51	4.18	23.43	51.10	2.60
OUT1LS_opl_thresh	mA	5.0	30.0	80.0	34.48	5.18	21.29	55.71	1.90	36.25	4.42	22.00	54.00	2.35	34.50	4.08	24.43	46.00	2.41
OUT2HS_opl_thresh	mA	15.0	40.0	60.0	37.26	2.52	26.93	45.14	2.95	40.41	2.32	30.00	47.71	2.81	40.00	2.28	32.71	45.79	2.92
OUT3HS_opl_thresh	mA	15.0	40.0	60.0	36.27	2.38	26.71	44.29	2.98	39.37	2.27	30.36	45.57	3.02	38.94	2.28	32.71	47.71	3.07
OUT2LS_opl_thresh	mA	15.0	40.0	60.0	36.38	2.43	27.36	43.43	2.94	38.16	2.27	28.43	44.29	3.21	36.89	2.15	31.21	41.29	3.40
OUT3LS_opl_thresh	mA	15.0	40.0	60.0	36.05	2.41	26.50	43.00	2.91	37.85	2.21	28.43	44.07	3.34	36.13	2.28	27.79	42.36	3.09
OUT4HS_opl_thresh	mA	60.0	150.0	300.0	167.98	11.78	124.14	206.71	3.06	178.21	10.94	137.50	215.21	3.60	172.23	10.58	139.93	194.57	3.54
OUT5HS_opl_thresh	mA	60.0	150.0	300.0	164.80	12.27	124.14	210.36	2.85	175.54	11.68	127.79	216.43	3.30	171.52	11.24	135.07	200.64	3.31

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
Open load detect. Curr.																			
OUT4LS_opl_thresh	mA	60.0	150.0	300.0	150.58	11.90	102.29	183.64	2.54	159.62	11.17	109.57	192.14	2.97	151.68	11.19	113.21	175.14	2.73
OUT5LS_opl_thresh	mA	60.0	150.0	300.0	152.39	12.07	102.29	201.86	2.55	160.70	10.97	114.43	193.36	3.06	154.72	10.52	121.71	190.93	3.00
OUT6HS_opl_thresh	mA	30.0	70.0	150.0	74.92	5.67	48.29	93.43	2.64	81.58	5.28	59.14	96.86	3.26	78.55	5.51	58.00	92.29	2.94
OUT6LS_opl_thresh	mA	30.0	70.0	150.0	77.65	5.86	57.43	92.29	2.71	80.05	5.24	54.00	94.00	3.18	76.40	4.89	61.43	94.57	3.16
OUT7HS_opl_thresh	mA	15.0	40.0	60.0	36.27	2.42	27.14	44.29	2.93	40.03	2.28	31.21	46.00	2.92	39.97	2.26	32.71	44.50	2.96
OUT8HS_opl_thresh	mA	15.0	40.0	60.0	38.25	2.45	29.29	46.00	2.95	41.21	2.26	33.57	47.29	2.77	40.35	2.17	33.14	45.57	3.01
OUT9HS_opl_thresh	mA	15.0	40.0	60.0	39.45	2.44	30.79	46.00	2.81	41.41	2.29	32.50	47.50	2.70	39.71	2.19	32.50	44.71	3.09
OUT10HS_opl_thresh	mA	15.0	40.0	60.0	40.09	2.49	31.86	46.86	2.66	41.80	2.28	33.57	47.50	2.66	39.75	2.30	31.86	45.36	2.94
OUT11HS_opl_thresh	mA	30.0	150.0	300.0	147.85	14.90	101.07	211.57	2.64	162.18	12.64	122.93	203.07	3.49	158.51	11.24	122.93	184.86	3.81
tdOL																			
OUT1HS_opl_filter_t	uS	500.0		3000.0	1700.63	106.64	1450.00	2550.00	3.75	1626.86	98.23	1400.00	2225.00	3.82	1680.30	103.65	1475.00	2300.00	3.80
OUT2HS_opl_filter_t	uS	500.0		3000.0	1698.66	106.17	1450.00	2375.00	3.76	1626.78	100.61	1400.00	2175.00	3.73	1682.44	109.24	1475.00	2325.00	3.61
OUT3HS_opl_filter_t	uS	500.0		3000.0	1697.04	102.38	1450.00	2275.00	3.90	1624.05	93.57	1400.00	2075.00	4.00	1679.55	100.34	1475.00	2250.00	3.92
OUT4HS_opl_filter_t	uS	500.0		3000.0	1694.74	102.45	1450.00	2150.00	3.89	1623.94	101.53	1400.00	2300.00	3.69	1674.73	97.30	1475.00	2050.00	4.02
OUT5HS_opl_filter_t	uS	500.0		3000.0	1695.98	104.63	1450.00	2225.00	3.81	1623.13	98.40	1400.00	2175.00	3.80	1678.24	107.74	1475.00	2250.00	3.65
OUT6HS_opl_filter_t	uS	500.0		3000.0	1695.20	100.02	1450.00	2050.00	3.98	1622.72	94.08	1400.00	2175.00	3.98	1678.10	101.61	1475.00	2150.00	3.86
OUT7HS_opl_filter_t	uS	500.0		3000.0	1625.22	96.88	1400.00	1950.00	3.87	1552.44	87.79	1350.00	1875.00	4.00	1607.09	96.25	1425.00	1900.00	3.83
OUT8HS_opl_filter_t	uS	500.0		3000.0	1625.22	96.88	1400.00	1950.00	3.87	1552.58	87.84	1350.00	1875.00	3.99	1607.09	96.25	1425.00	1900.00	3.83
OUT9HS_opl_filter_t	uS	500.0		3000.0	1624.58	96.59	1400.00	1950.00	3.88	1551.14	87.60	1350.00	1875.00	4.00	1607.09	96.25	1425.00	1900.00	3.83
OUT10HS_opl_filter_t	uS	500.0		3000.0	1624.89	96.64	1400.00	1950.00	3.88	1551.72	87.73	1350.00	1875.00	4.00	1607.09	96.25	1425.00	1900.00	3.83
OUT11HS_opl_filter_t	uS	500.0		3000.0	1623.84	96.62	1400.00	1950.00	3.88	1550.40	87.35	1350.00	1850.00	4.01	1605.10	97.15	1425.00	1900.00	3.79
OUT1LS_opl_filter_t	uS	500.0		3000.0	1700.63	106.64	1450.00	2550.00	3.75	1626.86	98.23	1400.00	2225.00	3.82	1680.30	103.65	1475.00	2300.00	3.80
OUT2LS_opl_filter_t	uS	500.0		3000.0	1698.66	106.17	1450.00	2375.00	3.76	1626.78	100.61	1400.00	2175.00	3.73	1682.44	109.24	1475.00	2325.00	3.61
OUT3LS_opl_filter_t	uS	500.0		3000.0	1697.04	102.38	1450.00	2275.00	3.90	1624.05	93.57	1400.00	2075.00	4.00	1679.55	100.34	1475.00	2250.00	3.92
OUT4LS_opl_filter_t	uS	500.0		3000.0	1694.74	102.45	1450.00	2150.00	3.89	1623.94	101.53	1400.00	2300.00	3.69	1674.73	97.30	1475.00	2050.00	4.02
OUT5LS_opl_filter_t	uS	500.0		3000.0	1695.98	104.63	1450.00	2225.00	3.81	1623.13	98.40	1400.00	2175.00	3.80	1678.24	107.74	1475.00	2250.00	3.65
OUT6LS_opl_filter_t	uS	500.0		3000.0	1695.20	100.02	1450.00	2050.00	3.98	1622.72	94.08	1400.00	2175.00	3.98	1678.10	101.61	1475.00	2150.00	3.86
tiSC																			
OUT2H_ovc_filter_t	uS	10.0		100.0	68.35	3.28	60.00	80.00	3.21	65.93	3.18	58.00	77.00	3.57	68.57	3.47	61.00	80.00	3.02
OUT7H_ovc_filter_t	uS	10.0		100.0	68.56	3.24	61.00	81.00	3.24	66.31	2.96	60.00	77.00	3.79	69.03	3.12	63.00	78.00	3.31
OUT9H_ovc_filter_t	uS	10.0		100.0	68.41	3.33	60.00	80.00	3.16	66.16	2.95	60.00	76.00	3.83	69.21	3.15	63.00	80.00	3.26
OUT3H_ovc_filter_t	uS	10.0		100.0	68.01	3.25	60.00	80.00	3.28	65.79	3.01	59.00	76.00	3.79	68.70	3.16	62.00	78.00	3.30
OUT8H_ovc_filter_t	uS	10.0		100.0	68.90	3.30	61.00	80.00	3.15	66.67	3.00	60.00	78.00	3.70	69.36	3.02	64.00	79.00	3.39
OUT10H_ovc_filter_t	uS	10.0		100.0	68.50	3.31	60.00	81.00	3.17	66.22	2.92	60.00	78.00	3.86	68.98	3.12	63.00	79.00	3.32
OUT1H_ovc_filter_t	uS	10.0		100.0	68.05	3.34	60.00	81.00	3.19	65.42	3.04	59.00	76.00	3.79	67.46	3.31	61.00	79.00	3.28
OUT6H_ovc_filter_t	uS	10.0		100.0	67.80	3.35	59.00	82.00	3.20	65.04	3.14	58.00	76.00	3.72	66.98	3.01	61.00	76.00	3.65

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
tiSC																			
OUT4H_ovc_filter_t	uS	10.0		100.0	62.38	3.25	55.00	75.00	3.85	59.77	2.98	53.00	71.00	4.50	61.75	3.12	56.00	70.00	4.09
OUT5H_ovc_filter_t	uS	10.0		100.0	62.55	3.32	54.00	76.00	3.75	59.96	3.01	54.00	70.00	4.43	62.07	3.15	55.00	72.00	4.01
OUT11H_ovc_filter_t	uS	10.0		100.0	62.82	3.24	55.00	73.00	3.83	60.32	3.02	54.00	71.00	4.38	62.35	3.15	56.00	74.00	3.99
OUT2L_ovc_filter_t	uS	10.0		100.0	68.00	3.27	60.00	81.00	3.27	66.05	2.95	60.00	77.00	3.84	68.43	3.09	63.00	79.00	3.40
OUT3L_ovc_filter_t	uS	10.0		100.0	68.48	3.31	60.00	81.00	3.17	66.41	3.01	60.00	77.00	3.72	68.84	2.97	63.00	78.00	3.49
OUT1L_ovc_filter_t	uS	10.0		100.0	67.75	3.25	61.00	80.00	3.31	65.29	2.95	59.00	76.00	3.92	67.28	3.09	61.00	78.00	3.53
OUT6L_ovc_filter_t	uS	10.0		100.0	67.79	3.27	60.00	80.00	3.29	65.24	2.96	59.00	75.00	3.91	67.43	3.06	61.00	78.00	3.55
OUT4L_ovc_filter_t	uS	10.0		100.0	67.54	3.33	60.00	81.00	3.25	65.25	3.03	59.00	77.00	3.83	67.35	3.13	61.00	78.00	3.47
OUT5L_ovc_filter_t	uS	10.0		100.0	67.45	3.25	60.00	79.00	3.34	65.12	2.95	59.00	75.00	3.95	67.40	3.30	61.00	77.00	3.29
Slew rate on HSDs																			
OUT1H_sw_on	V/uS	0.1	0.2	0.4	0.19	0.01	0.17	0.21	3.95	0.20	0.01	0.17	0.21	4.10	0.16	0.01	0.14	0.17	2.93
OUT2H_sw_on	V/uS	0.09	0.2	0.4	0.16	0.01	0.14	0.18	3.59	0.17	0.01	0.14	0.18	3.79	0.13	0.01	0.11	0.14	2.29
OUT3H_sw_on	V/uS	0.09	0.2	0.4	0.16	0.01	0.14	0.17	3.42	0.16	0.01	0.14	0.18	3.63	0.13	0.01	0.11	0.13	2.14
OUT4H_sw_on	V/uS	0.1	0.2	0.4	0.22	0.01	0.19	0.24	4.37	0.22	0.01	0.19	0.24	4.52	0.18	0.01	0.16	0.20	3.43
OUT5H_sw_on	V/uS	0.1	0.2	0.4	0.21	0.01	0.19	0.24	4.28	0.22	0.01	0.19	0.24	4.42	0.18	0.01	0.16	0.19	3.40
OUT6H_sw_on	V/uS	0.1	0.2	0.4	0.20	0.01	0.17	0.22	3.99	0.20	0.01	0.17	0.22	4.15	0.17	0.01	0.14	0.18	2.98
OUT7H_sw_on	V/uS	0.09	0.2	0.4	0.14	0.01	0.12	0.15	2.70	0.14	0.01	0.12	0.15	2.81	0.13	0.01	0.11	0.13	2.01
OUT8H_sw_on	V/uS	0.09	0.2	0.4	0.14	0.01	0.12	0.16	2.96	0.15	0.01	0.13	0.16	3.06	0.12	0.01	0.10	0.13	1.90
OUT9H_sw_on	V/uS	0.09	0.2	0.4	0.15	0.01	0.13	0.17	3.11	0.15	0.01	0.13	0.16	3.15	0.12	0.01	0.11	0.13	1.96
OUT10H_sw_on	V/uS	0.09	0.2	0.4	0.14	0.01	0.12	0.16	2.96	0.15	0.01	0.13	0.16	3.04	0.12	0.01	0.10	0.13	1.81
OUT11H_sw_on	V/uS	0.1	0.2	0.4	0.20	0.01	0.17	0.22	4.17	0.20	0.01	0.18	0.22	4.31	0.19	0.01	0.16	0.20	3.57
Slew rate off HSDs																			
OUT1H_sw_off	V/uS	0.1	0.2	0.4	0.23	0.01	0.19	0.25	4.13	0.23	0.01	0.20	0.25	4.76	0.20	0.01	0.17	0.22	3.69
OUT2H_sw_off	V/uS	0.09	0.2	0.4	0.20	0.01	0.16	0.22	3.55	0.21	0.01	0.18	0.23	4.98	0.19	0.01	0.16	0.20	4.19
OUT3H_sw_off	V/uS	0.09	0.2	0.4	0.20	0.01	0.16	0.22	3.47	0.21	0.01	0.18	0.24	5.02	0.19	0.01	0.16	0.20	4.26
OUT4H_sw_off	V/uS	0.1	0.2	0.4	0.21	0.01	0.18	0.24	3.95	0.21	0.01	0.18	0.23	4.04	0.18	0.01	0.15	0.19	3.14
OUT5H_sw_off	V/uS	0.1	0.2	0.4	0.22	0.01	0.18	0.32	3.89	0.21	0.01	0.18	0.34	3.86	0.18	0.01	0.15	0.19	3.21
OUT6H_sw_off	V/uS	0.1	0.2	0.4	0.23	0.01	0.19	0.25	4.17	0.23	0.01	0.20	0.25	4.81	0.20	0.01	0.18	0.22	3.69
OUT7H_sw_off	V/uS	0.09	0.2	0.4	0.19	0.01	0.16	0.22	3.50	0.19	0.01	0.16	0.21	4.23	0.17	0.01	0.15	0.19	3.58
OUT8H_sw_off	V/uS	0.09	0.2	0.4	0.19	0.01	0.16	0.22	3.77	0.18	0.01	0.16	0.20	4.11	0.17	0.01	0.15	0.18	3.48
OUT9H_sw_off	V/uS	0.09	0.2	0.4	0.19	0.01	0.16	0.21	3.44	0.19	0.01	0.16	0.21	4.24	0.17	0.01	0.15	0.18	3.56
OUT10H_sw_off	V/uS	0.09	0.2	0.4	0.19	0.01	0.16	0.22	3.49	0.18	0.01	0.16	0.20	4.21	0.17	0.01	0.15	0.19	3.44
OUT11H_sw_off	V/uS	0.1	0.2	0.4	0.22	0.01	0.18	0.24	4.36	0.22	0.01	0.19	0.24	4.44	0.21	0.01	0.18	0.22	3.78
Slew rate on LSDs																			
OUT1L_sr_f_b20=1	V/uS	0.1	0.2	0.4	0.24	0.01	0.20	0.27	4.57	0.25	0.01	0.21	0.29	4.61	0.21	0.01	0.19	0.26	4.05
OUT2L_sr_f_b20=1	V/uS	0.09	0.2	0.4	0.21	0.01	0.18	0.25	4.34	0.21	0.01	0.19	0.26	4.23	0.18	0.01	0.15	0.23	3.45

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
Slew rate on LSDs																			
OUT3L_sr_f_b20=1	V/uS	0.09	0.2	0.4	0.20	0.01	0.17	0.25	4.11	0.21	0.01	0.18	0.25	4.11	0.18	0.01	0.15	0.22	2.94
OUT4L_sr_f_b20=1	V/uS	0.1	0.2	0.4	0.24	0.01	0.21	0.28	4.68	0.26	0.01	0.22	0.31	4.41	0.23	0.01	0.20	0.26	4.36
OUT5L_sr_f_b20=1	V/uS	0.1	0.2	0.4	0.25	0.01	0.21	0.29	4.68	0.26	0.01	0.22	0.31	4.32	0.23	0.01	0.20	0.26	4.43
OUT6L_sr_f_b20=1	V/uS	0.1	0.2	0.4	0.23	0.01	0.20	0.28	4.35	0.24	0.01	0.21	0.29	4.52	0.21	0.01	0.18	0.25	3.65
Slew rate off LSDs																			
OUT1L_sr_r_b20=1	V/uS	0.1	0.2	0.4	0.22	0.01	0.18	0.25	3.99	0.23	0.01	0.20	0.26	4.31	0.20	0.01	0.17	0.21	3.58
OUT2L_sr_r_b20=1	V/uS	0.09	0.2	0.4	0.20	0.01	0.16	0.23	3.91	0.20	0.01	0.17	0.22	4.20	0.17	0.01	0.14	0.18	3.31
OUT3L_sr_r_b20=1	V/uS	0.09	0.2	0.4	0.19	0.01	0.16	0.21	3.79	0.19	0.01	0.17	0.22	4.04	0.16	0.01	0.14	0.18	3.11
OUT4L_sr_r_b20=1	V/uS	0.1	0.2	0.4	0.19	0.01	0.16	0.23	3.44	0.20	0.01	0.17	0.23	3.77	0.18	0.01	0.15	0.20	2.96
OUT5L_sr_r_b20=1	V/uS	0.1	0.2	0.4	0.19	0.01	0.16	0.23	3.48	0.20	0.01	0.17	0.23	3.73	0.17	0.01	0.15	0.21	2.76
OUT6L_sr_r_b20=1	V/uS	0.1	0.2	0.4	0.22	0.01	0.18	0.25	4.06	0.23	0.01	0.19	0.25	4.32	0.20	0.01	0.17	0.21	3.53
OC HSDs recovery d.c. 0:12%																			
OUT2H_recovery0	%				13.74	0.42	12.67	14.88		13.99	0.46	12.74	15.08		14.11	0.49	12.95	15.19	
OUT7H_recovery0	%				13.77	0.43	12.78	14.75		14.05	0.42	13.05	15.03		14.21	0.45	13.20	15.29	
OUT9H_recovery0	%				13.75	0.42	12.77	14.71		14.03	0.43	12.98	15.03		14.34	0.44	13.27	15.22	
OUT3H_recovery0	%				13.69	0.42	12.69	14.62		13.96	0.43	12.95	15.04		14.11	0.41	13.11	14.92	
OUT8H_recovery0	%				13.84	0.42	12.84	14.93		14.15	0.45	13.13	15.23		14.30	0.47	13.20	15.31	
OUT10H_recovery0	%				13.78	0.43	12.70	14.70		14.06	0.44	12.95	15.16		14.30	0.45	13.23	15.31	
OUT1H_recovery0	%				13.71	0.43	12.59	14.62		13.89	0.43	12.76	14.75		13.88	0.42	12.79	14.70	
OUT6H_recovery0	%				13.67	0.42	12.50	14.56		13.82	0.43	12.32	14.74		13.80	0.43	12.90	14.70	
OUT4H_recovery0	%				12.73	0.42	11.70	13.55		12.84	0.43	11.99	13.74		12.85	0.42	11.90	13.62	
OUT5H_recovery0	%				12.76	0.43	11.70	13.62		12.86	0.42	11.95	13.72		12.88	0.44	12.01	13.68	
OUT11H_recovery0	%				12.84	0.42	11.97	13.74		12.94	0.42	12.06	13.79		12.95	0.41	12.08	13.73	
OC HSDs recovery d.c. 1:25%																			
OUT2H_recovery1	%				25.23	0.69	22.89	27.04		25.50	0.86	22.07	27.35		25.49	1.01	22.16	27.25	
OUT7H_recovery1	%				25.30	0.68	23.70	26.84		25.68	0.72	22.96	27.14		25.40	1.01	22.80	27.17	
OUT9H_recovery1	%				25.26	0.68	22.62	26.78		25.52	0.84	22.55	27.16		24.44	1.02	22.55	27.08	
OUT3H_recovery1	%				25.15	0.68	22.36	26.63		25.55	0.72	22.53	27.07		25.76	0.71	22.99	27.10	
OUT8H_recovery1	%				25.36	0.69	22.44	26.80		25.44	0.99	22.66	27.20		25.20	1.12	22.84	27.13	
OUT10H_recovery1	%				25.29	0.69	22.93	26.76		25.38	0.92	22.59	27.06		24.54	1.10	22.65	27.06	
OUT1H_recovery1	%				25.20	0.68	23.08	26.64		25.48	0.69	23.68	26.84		25.47	0.67	23.72	26.77	
OUT6H_recovery1	%				25.15	0.67	23.14	26.57		25.37	0.69	22.95	26.84		25.34	0.68	23.90	26.77	
OUT4H_recovery1	%				23.61	0.68	21.98	24.94		23.79	0.69	22.40	25.25		23.82	0.68	22.26	25.06	
OUT5H_recovery1	%				23.65	0.69	21.92	25.02		23.78	0.68	22.31	25.16		23.83	0.72	22.40	25.12	
OUT11H_recovery1	%				23.80	0.67	22.37	25.25		23.96	0.69	22.51	25.33		23.98	0.67	22.56	25.23	

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
OC LSDs recovery d.c. 0:12%																			
OUT2L_recovery0	%				13.91	0.43	12.78	14.89		14.14	0.45	12.94	15.52		14.05	0.44	13.06	14.97	
OUT3L_recovery0	%				14.00	0.43	12.88	14.95		14.28	0.44	13.25	15.44		14.12	0.42	13.17	14.95	
OUT1L_recovery0	%				13.88	0.43	12.80	14.97		13.99	0.44	12.88	14.99		13.84	0.43	12.87	14.66	
OUT6L_recovery0	%				13.89	0.43	12.91	14.85		14.03	0.44	12.85	14.97		13.87	0.42	12.85	14.70	
OUT4L_recovery0	%				13.64	0.42	12.59	14.53		13.84	0.41	12.88	14.66		13.83	0.42	12.93	14.68	
OUT5L_recovery0	%				13.66	0.42	12.58	14.57		13.82	0.42	12.85	14.79		13.84	0.42	12.83	14.67	
OC LSDs recovery d.c. 1:25%																			
OUT2L_recovery1	%				23.12	0.67	21.55	25.96		24.37	1.21	21.97	27.11		25.73	0.69	24.15	27.17	
OUT3L_recovery1	%				23.21	0.64	21.53	24.61		23.74	0.78	22.09	27.07		25.85	0.67	24.32	27.15	
OUT1L_recovery1	%				23.06	0.66	21.62	26.16		23.98	1.15	21.85	26.93		25.39	0.68	23.84	26.69	
OUT6L_recovery1	%				23.06	0.65	21.58	25.98		23.64	0.99	21.85	26.53		25.42	0.68	22.55	26.75	
OUT4L_recovery1	%				25.06	0.67	23.37	26.48		25.39	0.66	23.84	26.67		25.37	0.67	23.93	26.72	
OUT5L_recovery1	%				25.09	0.67	23.35	26.52		25.35	0.66	23.79	26.88		25.38	0.67	23.77	26.69	
OC/OC test mode HSDs																			
OUT2H_ovc_ratio					4.12	0.11	3.57	4.75	1.84	4.05	0.17	3.61	4.72		4.03	0.20	3.62	4.71	
OUT7H_ovc_ratio					4.15	0.03	4.07	4.26	7.99	4.14	0.02	4.05	4.21		4.14	0.02	4.06	4.20	
OUT9H_ovc_ratio					4.17	0.03	4.05	4.27	6.70	4.17	0.03	4.08	4.26		4.16	0.02	4.12	4.23	
OUT3H_ovc_ratio					4.18	0.14	3.65	4.79	1.67	4.16	0.12	4.05	4.72		4.16	0.11	4.06	4.72	
OUT8H_ovc_ratio					4.17	0.02	4.09	4.26	10.59	4.15	0.02	4.08	4.20		4.15	0.02	4.11	4.21	
OUT10H_ovc_ratio					4.15	0.02	4.06	4.25	9.03	4.15	0.02	4.07	4.21		4.14	0.02	4.08	4.20	
OUT1H_ovc_ratio					4.11	0.11	3.66	4.52	1.77	4.09	0.12	3.70	4.50		4.07	0.15	3.66	4.51	
OUT6H_ovc_ratio					4.10	0.12	3.66	4.56	1.67	4.09	0.14	3.70	4.53		4.12	0.16	3.70	4.58	
OUT4H_ovc_ratio					4.10	0.07	4.01	4.44	2.87	4.11	0.08	4.03	4.40		4.10	0.07	4.04	4.41	
OUT5H_ovc_ratio					4.11	0.08	4.02	4.47	2.46	4.10	0.06	4.03	4.46		4.10	0.05	4.05	4.48	
OUT11H_ovc_ratio					4.14	0.02	4.06	4.23	8.56	4.14	0.02	4.08	4.21		4.16	0.01	4.11	4.20	
OC/OC test mode LSDs																			
OUT2L_ovc_ratio					4.12	0.03	4.01	4.22	6.84	4.13	0.03	4.01	4.24		4.12	0.03	4.05	4.23	
OUT3L_ovc_ratio					4.12	0.02	4.04	4.24	8.74	4.14	0.02	4.04	4.24		4.14	0.01	4.10	4.21	
OUT1L_ovc_ratio					4.11	0.02	4.02	4.19	9.18	4.14	0.02	4.04	4.20		4.16	0.02	4.08	4.23	
OUT6L_ovc_ratio					4.12	0.02	4.05	4.20	8.87	4.14	0.02	4.07	4.21		4.14	0.02	4.08	4.20	
OUT4L_ovc_ratio					4.09	0.02	4.01	4.15	10.37	4.09	0.01	4.04	4.13		4.09	0.01	4.06	4.12	
OUT5L_ovc_ratio					4.09	0.02	4.04	4.15	10.56	4.10	0.01	4.05	4.14		4.10	0.01	4.07	4.13	
ICSN in																			
i_CSN_pull_up	uA	-40.0	-20.0	-8.0	-27.39	0.76	-29.89	-25.47	5.55	-18.92	0.61	-21.38	-17.25	5.96	-12.11	0.44	-13.26	-10.61	3.11
IDI in																			
i_DI_pull_dwn	uA	10.0	25.0	50.0	30.75	0.59	28.50	32.62	10.79	27.38	0.43	25.81	28.74	13.50	22.88	0.34	22.18	23.94	12.77

L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
ICLK in																			
i_CLK_pull_dwn	uA	10.0	25.0	50.0	30.40	0.61	28.49	32.30	10.76	27.13	0.44	25.70	28.63	12.89	23.00	0.33	22.06	23.82	12.97
IPWM1 in																			
i_PWM1_pull_dwn	uA				30.90	0.61	28.93	33.06	10.43	27.37	0.44	25.86	28.81	13.05	22.80	0.36	21.99	23.76	11.87
Vin DI																			
DI_thresh_HI	V		3.0	3.5	2.99	0.01	2.96	3.02	18.21	2.97	0.01	2.93	2.99	20.76	2.94	0.01	2.92	2.97	25.16
DI_thresh_LO	V	1.5	2.0		2.02	0.01	2.01	2.05	27.64	2.01	0.01	2.00	2.03	30.68	2.03	0.01	2.01	2.04	34.10
DI_thresh_HYS	V	0.5			0.97	0.01	0.94	0.99	18.05	0.96	0.01	0.93	0.98	20.51	0.92	0.01	0.90	0.93	24.01
Vin CLK																			
CLK_thresh_HI	V		3.0	3.5	3.01	0.01	2.98	3.04	19.69	2.98	0.01	2.95	3.00	23.15	2.95	0.01	2.92	2.97	27.22
CLK_thresh_LO	V	1.5	2.0		2.04	0.01	2.02	2.06	26.99	2.02	0.01	2.01	2.04	29.45	2.03	0.01	2.01	2.04	32.99
CLK_thresh_HYS	V	0.5			0.97	0.01	0.94	0.99	18.63	0.96	0.01	0.93	0.97	21.44	0.92	0.01	0.90	0.93	24.49
Vin PWM1																			
PWM1_thresh_HI	V		3.0	3.5	3.02	0.01	2.99	3.04	19.78	2.98	0.01	2.95	3.00	23.93	2.95	0.01	2.93	2.97	26.40
PWM1_thresh_LO	V	1.5	2.0		2.03	0.01	2.01	2.05	27.75	2.02	0.01	2.00	2.04	28.80	2.02	0.01	2.01	2.04	34.92
PWM1_thresh_HYS	V	0.5			0.99	0.01	0.96	1.01	22.18	0.96	0.01	0.94	0.98	22.75	0.92	0.01	0.91	0.94	25.82
Vin PWM2																			
PWM2_thresh_HI	V		3.0	3.5	3.03	0.01	3.00	3.05	20.55	2.99	0.01	2.97	3.01	26.59	2.95	0.01	2.94	2.97	31.93
PWM2_thresh_LO	V	1.5	2.0		2.03	0.01	2.02	2.05	32.50	2.02	0.00	2.00	2.03	36.35	2.02	0.00	2.01	2.03	44.33
PWM2_thresh_HYS	V	0.5			0.99	0.01	0.96	1.01	21.54	0.97	0.01	0.95	0.99	26.34	0.93	0.00	0.92	0.94	31.18
Vin CSN																			
CSN_thresh_HI	V		3.0	3.5	3.01	0.01	2.98	3.03	22.17	2.97	0.01	2.95	2.99	26.49	2.94	0.01	2.92	2.96	30.95
CSN_thresh_LO	V	1.5	2.0		2.00	0.00	1.99	2.01	38.10	1.99	0.00	1.98	2.00	38.32	2.01	0.00	2.00	2.02	41.00
CSN_thresh_HYS	V	0.5			1.01	0.01	0.99	1.02	28.36	0.98	0.00	0.96	0.99	32.71	0.93	0.00	0.92	0.95	32.39
IDOLK																			
DO_3-state_leak_H	uA	-10.0		10.0	-0.01	0.01	-0.02	0.03	259.21	0.01	0.01	-0.02	0.04	283.48	0.01	0.01	0.00	0.02	248.86
DO_3-state_leak_L	uA	-10.0		10.0	-0.02	0.004	-0.02	0.01	741.95	0.01	0.00	-0.02	0.06	684.45	0.00	0.00	0.00	0.05	746.38
VDOL & VDOH																			
DO_High_Lev	V	5.6	5.8		4.87	0.003	4.86	4.88	12.44	4.83	0.00	4.82	4.84	17.60	4.77	0.01	4.74	4.78	10.54
DO_Low_Level	V		0.2	0.4	0.10	0.002	0.10	0.12	14.07	0.15	0.00	0.14	0.16	19.65	0.22	0.01	0.20	0.25	5.71
tr DO																			
DO_low_to_high	nS		80.0	140.0	69.76	3.70	61.55	80.80	6.19	93.77	2.19	86.92	98.52	7.04	109.47	2.35	104.36	117.69	4.32
tf DO																			
DO_high_to_low	nS		50.0	100.0	34.87	0.57	33.19	36.88	19.69	43.63	0.57	41.98	46.21	25.05	62.06	1.99	57.85	69.69	6.35
td DO																			
td do vdo <0.3v	nS		50.0	250.0	53.90	0.45	52.58	55.82	39.01	61.17	0.43	59.78	63.21	46.23	71.19	0.67	68.99	73.48	35.04
td do vdo >0.7v	nS		50.0	250.0	55.32	0.51	53.91	57.42	35.28	64.98	0.93	62.26	68.21	23.00	78.81	0.95	75.66	81.49	27.36

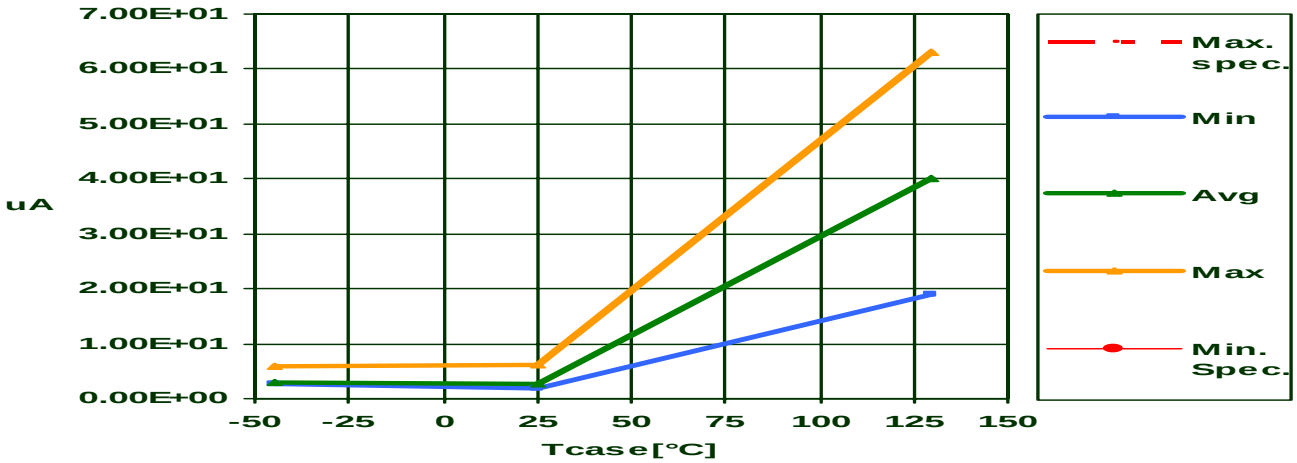
L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
ten DO tri L																			
DO_ena_t_GND	nS		100.0	250.0	79.37	0.65	77.57	81.57	40.13	90.01	0.80	87.48	93.67	36.88	108.92	1.00	105.51	111.75	35.82
ten DO tri H																			
DO_ena_t_VCC	ns		100.0	250.0	98.84	1.02	95.45	102.00	31.99	111.48	1.02	108.31	114.64	35.93	127.91	1.35	124.04	131.59	30.12
tdis DO L tri																			
DO_disa_t_GND	nS		380.0	450.0	354.03	1.13	351.26	358.18	28.34	355.11	1.21	352.05	358.77	26.14	359.00	1.68	352.94	362.76	18.04
tdis DO H tri																			
DO_disa_t_VCC	nS		380.0	450.0	364.01	10.33	348.90	439.52	2.77	357.81	2.45	351.65	410.78	12.55	363.14	2.57	355.18	384.17	11.28
t set																			
OUT1H_tdelay	uS		160.0	300.0	86.18	3.37	78.40	100.60	6.54	83.37	5.76	77.80	97.00	3.67	85.91	3.03	81.40	98.00	7.25
OUT2H_tdelay	uS		160.0	300.0	87.95	3.43	79.60	102.00	6.61	84.95	2.92	79.40	96.60	7.43	84.56	3.03	79.80	97.20	7.11
OUT3H_tdelay	uS		160.0	300.0	88.11	3.44	80.20	102.60	6.60	85.05	2.92	79.60	96.40	7.42	84.50	3.04	79.80	97.40	7.08
OUT4H_tdelay	uS		160.0	300.0	85.45	3.35	77.60	99.60	6.51	82.58	2.84	77.20	94.00	7.33	86.34	3.01	82.00	98.00	7.34
OUT5H_tdelay	uS		160.0	300.0	85.44	3.36	77.60	99.60	6.50	82.56	2.84	77.20	93.80	7.35	86.27	3.02	81.80	97.80	7.32
OUT6H_tdelay	uS		160.0	300.0	86.18	3.38	78.20	100.40	6.53	83.22	2.86	77.60	94.60	7.37	85.88	3.02	81.40	98.00	7.27
OUT7H_tdelay	uS		160.0	300.0	86.64	3.38	79.60	100.20	6.58	84.45	2.89	79.20	95.60	7.44	85.41	3.09	80.40	96.40	7.07
OUT8H_tdelay	uS		160.0	300.0	86.61	3.38	79.80	100.40	6.58	84.46	2.89	79.00	95.60	7.44	85.22	3.09	80.20	96.60	7.05
OUT9H_tdelay	uS		160.0	300.0	86.68	3.38	79.60	100.20	6.58	84.50	2.89	79.20	95.60	7.44	85.29	3.09	80.20	96.60	7.04
OUT10H_tdelay	uS		160.0	300.0	86.72	3.39	79.60	99.80	6.56	84.57	2.89	79.20	95.40	7.44	85.26	3.08	80.20	96.40	7.07
OUT11H_tdelay	uS		160.0	300.0	84.35	3.31	77.40	97.80	6.49	82.02	2.81	76.80	93.00	7.35	85.61	3.00	81.20	96.00	7.30
OUT1L_tdelay	uS		160.0	300.0	85.01	3.35	77.60	98.80	6.48	82.43	2.83	77.20	93.60	7.36	86.58	3.04	82.40	97.20	7.31
OUT2L_tdelay	uS		160.0	300.0	85.56	3.40	78.00	99.20	6.43	82.94	2.87	77.80	94.20	7.32	86.32	3.07	81.80	96.80	7.19
OUT3L_tdelay	uS		160.0	300.0	85.33	3.39	77.80	99.40	6.42	82.09	2.84	77.00	93.60	7.28	86.82	3.12	82.60	97.40	7.15
OUT4L_tdelay	uS		160.0	300.0	84.78	3.34	77.20	98.60	6.47	82.04	2.81	77.00	93.20	7.36	86.52	3.02	82.20	97.00	7.35
OUT5L_tdelay	uS		160.0	300.0	84.76	3.33	77.00	98.40	6.47	82.20	2.81	77.20	93.40	7.38	86.53	3.01	82.40	97.00	7.36
OUT6L_tdelay	uS		160.0	300.0	85.02	3.35	77.40	98.80	6.47	82.22	2.82	77.20	93.60	7.34	86.61	3.05	82.40	97.20	7.28
ICM,r & ICM acc																			
CM_OUT1_0v(0.5a)	uA				49.52	0.57	47.79	51.61		49.49	0.44	47.94	50.88		49.30	0.35	48.52	50.28	
CM_OUT1_3.8v(0.5a)	uA				49.40	0.57	47.79	51.31		49.34	0.44	47.65	50.88		49.09	0.32	48.22	49.98	
CM_OUT4_0v(0.5a)	uA				48.75	0.88	45.44	51.61		48.75	0.64	46.47	50.88		48.55	0.51	47.34	50.28	
CM_OUT4_3.8v(0.5a)	uA				48.63	0.87	45.44	51.31		48.61	0.64	46.47	50.88		48.42	0.52	47.05	49.98	
CM_OUT5_0v(0.5a)	uA				48.97	0.93	45.73	52.20		48.73	0.68	46.47	51.17		48.58	0.54	47.05	49.98	
CM_OUT5_3.8v(0.5a)	uA				48.85	0.92	45.73	52.20		48.61	0.68	45.89	50.88		48.43	0.53	46.75	49.98	
CM_OUT6_0v(0.5a)	uA				49.51	0.53	47.79	51.31		49.62	0.40	48.24	50.88		49.80	0.32	49.10	50.86	
CM_OUT6_3.8v(0.5a)	uA				49.39	0.52	47.79	51.02		49.47	0.40	48.24	50.58		49.58	0.31	48.81	50.57	
CM_OUT11_0v(0.5a)	uA				51.71	1.34	46.61	57.19		51.12	0.97	48.24	54.69		50.64	0.70	48.52	52.33	
CM_OUT11_3.8v(0.5a)	uA				51.61	1.33	46.61	57.19		51.01	0.97	48.24	54.40		50.50	0.70	48.52	52.33	

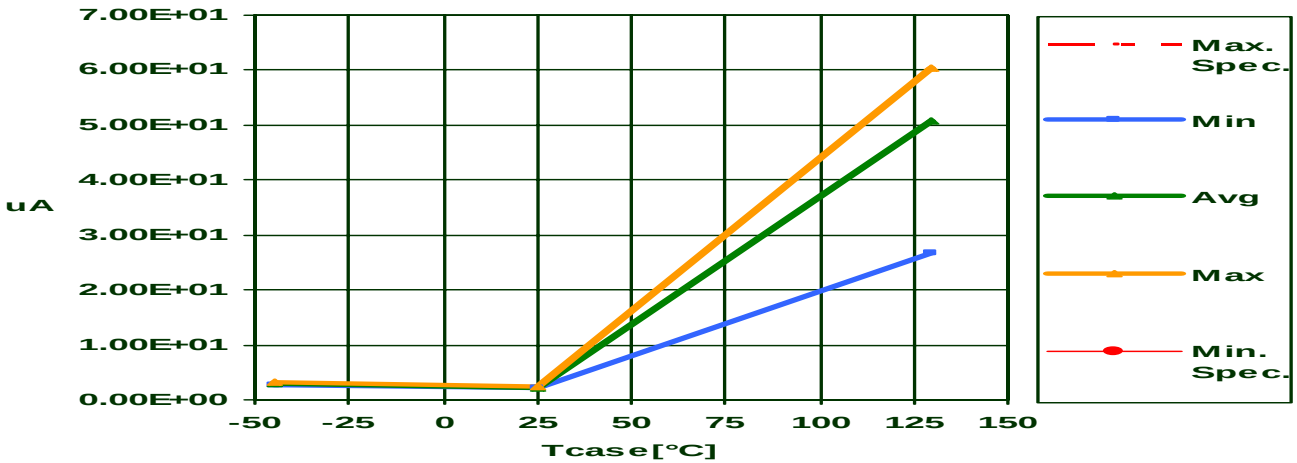
L9950 (6" Ang Mo Kio) - STATISTICAL CHARACTERIZATION

		spec	spec	spec	-45°C					25°C					130°C				
PARAMETERS	unit	min	typ	max	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk	mean	std dv	min	max	cpk
ICM,r & ICM acc																			
CM_OUT6_0v(1a)	uA				99.14	0.71	96.68	101.43		99.38	0.54	97.43	101.18		99.43	0.47	98.28	100.66	
CM_OUT6_3.8v(1a)	uA				98.88	0.71	96.56	101.05		99.02	0.54	97.06	100.81		98.52	0.44	97.41	99.66	
CM_OUT6_0v(2.9a)	uA				287.09	1.72	281.06	292.69		286.85	1.37	281.30	291.56		287.73	1.28	284.16	291.16	
CM_OUT6_3.8v(2.9a)	uA				283.81	1.67	277.80	289.19		279.58	1.29	274.79	283.93		276.46	1.17	273.03	279.53	
CM_OUT11_0v(2a)	uA				206.94	1.82	201.26	215.01		205.51	1.37	201.50	210.38		202.72	1.10	199.48	205.86	
CM_OUT11_3.8v(2a)	uA				206.92	1.81	201.51	214.76		205.48	1.37	201.37	210.38		202.67	1.10	199.48	205.73	
CM_OUT11_0v(5.9a)	uA				606.75	3.89	592.89	620.79		601.54	3.09	590.37	610.51		596.45	2.79	588.23	604.49	
CM_OUT11_3.8v(5.9a)	uA				603.37	3.82	589.76	617.41		591.82	2.97	581.36	600.75		579.41	2.64	571.85	587.36	
CM_OUT1_0v(1a)	uA				98.88	0.76	96.31	101.44		98.99	0.59	97.06	101.06		98.58	0.49	96.66	99.79	
CM_OUT1_3.8v(1a)	uA				98.67	0.76	96.06	101.31		98.69	0.58	96.81	100.68		97.72	0.47	95.91	98.91	
CM_OUT1_0v(2.9a)	uA				285.60	1.78	279.31	291.57		285.53	1.46	280.42	289.80		285.75	1.39	280.91	289.29	
CM_OUT1_3.8v(2.9a)	uA				282.37	1.71	275.81	288.19		278.35	1.36	273.42	282.42		274.65	1.25	270.02	277.90	
CM_OUT4_0v(2a)	uA				197.81	1.40	193.00	203.01		196.84	1.16	192.12	201.00		194.50	0.91	192.35	197.60	
CM_OUT4_3.8v(2a)	uA				197.82	1.39	192.87	203.01		196.96	1.09	192.87	201.12		194.54	0.89	192.22	197.73	
CM_OUT4_0v(5.9a)	uA				583.82	3.42	570.25	595.02		581.36	2.84	569.86	591.12		580.82	2.65	574.47	589.23	
CM_OUT4_3.8v(5.9a)	uA				576.73	3.30	563.62	587.64		566.09	2.66	555.35	574.48		557.25	2.38	551.71	564.59	
CM_OUT5_0v(2a)	uA				198.16	1.40	193.61	202.38		196.94	1.06	193.62	200.00		194.72	0.94	192.10	196.98	
CM_OUT5_3.8v(2a)	uA				198.11	1.40	193.61	202.26		196.85	1.06	193.37	199.87		194.56	0.94	192.10	196.72	
CM_OUT5_0v(5.9a)	uA				585.46	3.29	574.00	595.40		581.97	2.67	573.23	589.49		581.94	2.66	575.10	588.23	
CM_OUT5_3.8v(5.9a)	uA				578.25	3.18	567.50	587.39		566.53	2.49	558.72	573.48		558.17	2.41	551.71	563.72	

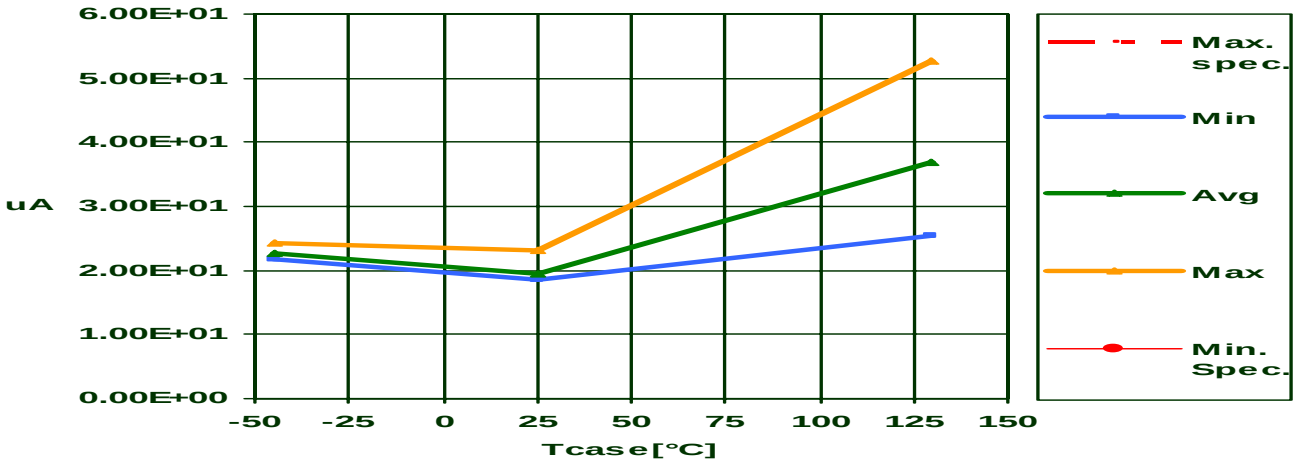
IS stby @ Vcc=16V, Vs=0V – 6”AMK



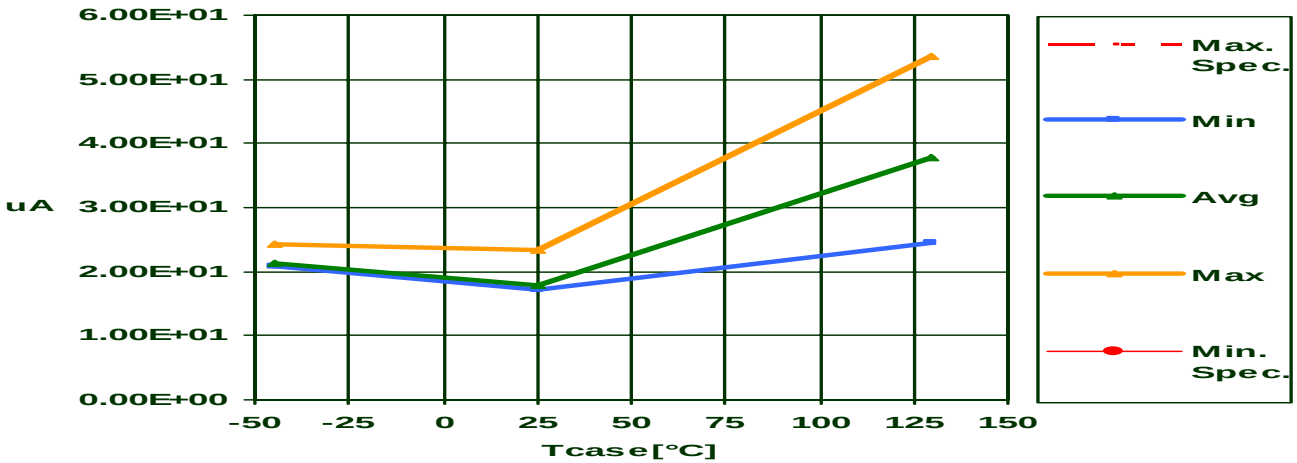
IS stby @ Vcc=16V, Vs=0V – 8”AGR



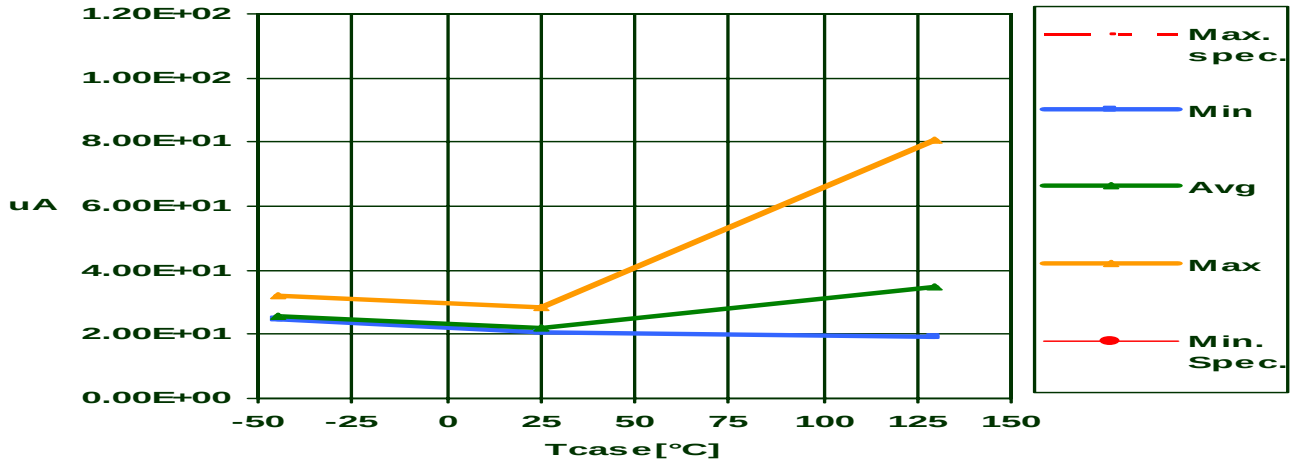
ICC stby @ Vcc=16V, Vs=5.3V – 6”AMK



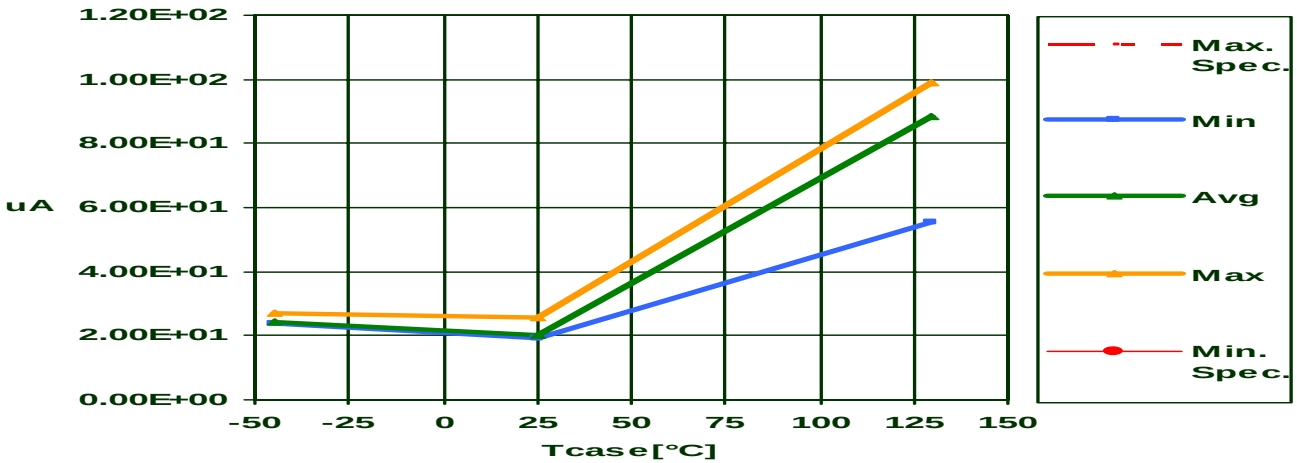
ICC stby @ Vcc=16V, Vs=5.3V – 8”AGR



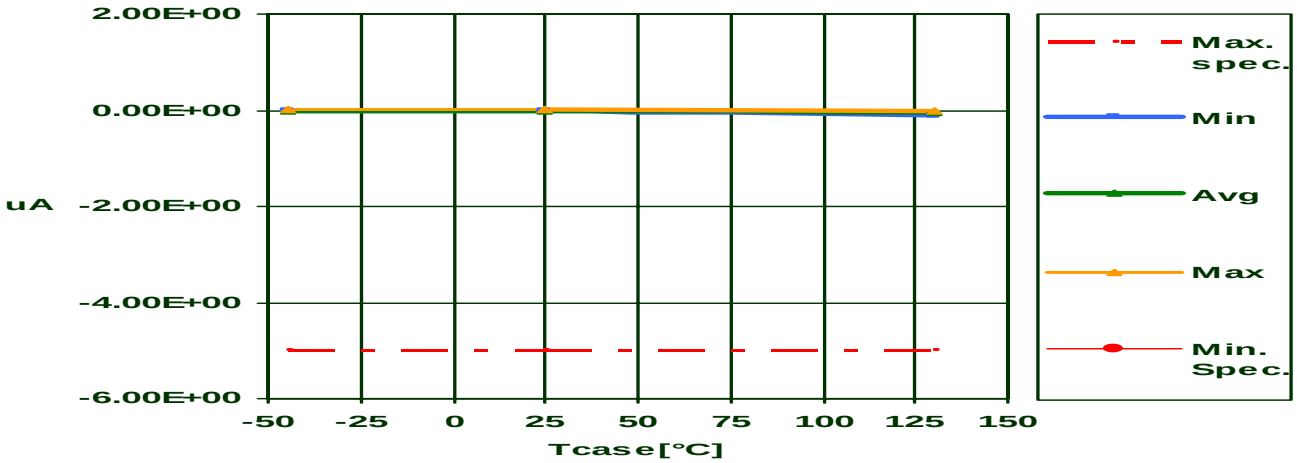
ICC+IS stby @ Vcc=16V, Vs=5.3V – 6”AMK



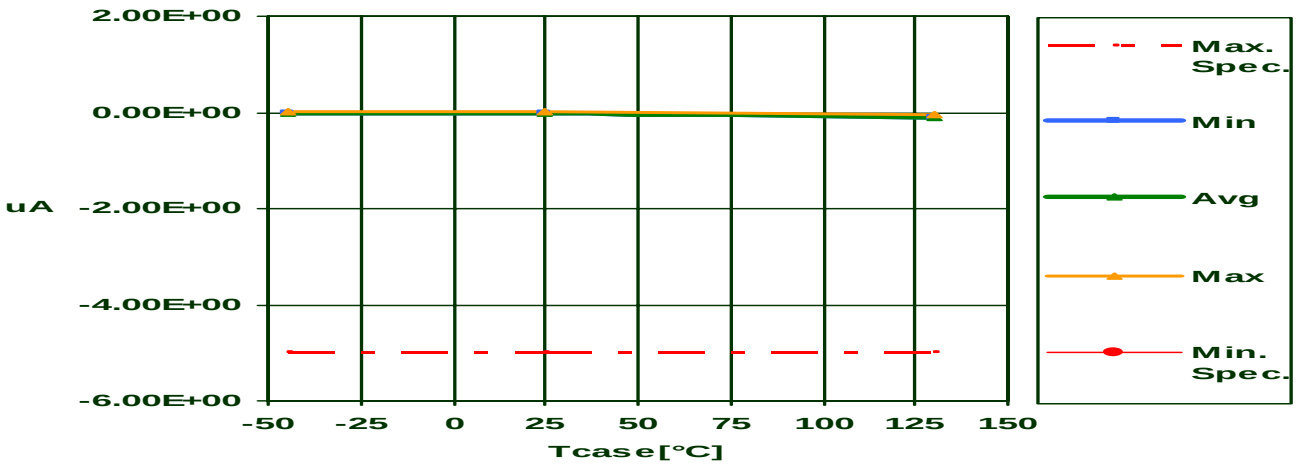
ICC+IS stby @ Vcc=16V, Vs=5.3V – 8”AGR



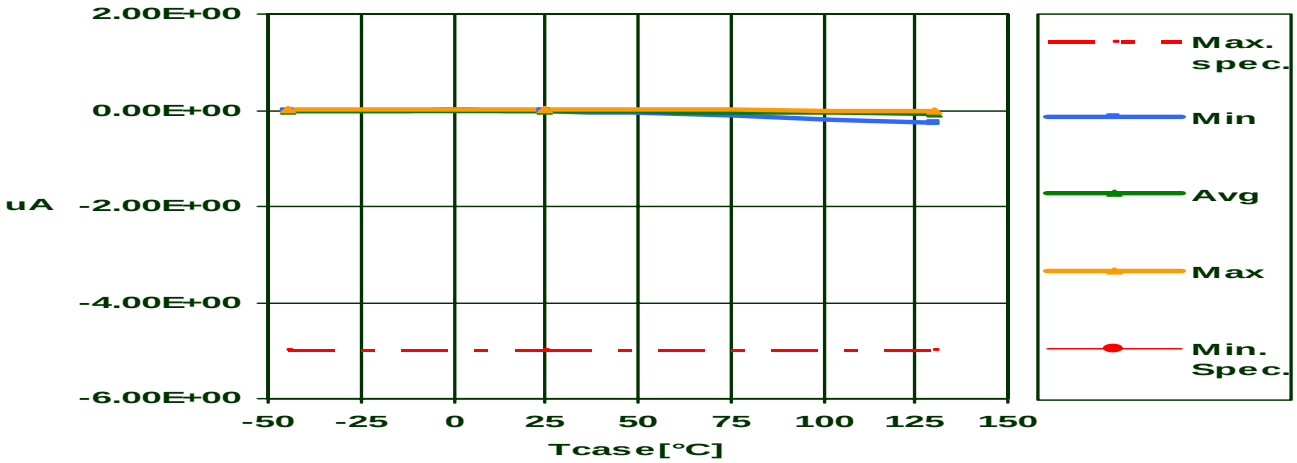
IQLH stby mode @ Vcc=8V – 6”AMK



IQLH stby mode @ Vcc=8V – 8”AGR



IQLH stby mode @ Vcc=16V – 6”AMK



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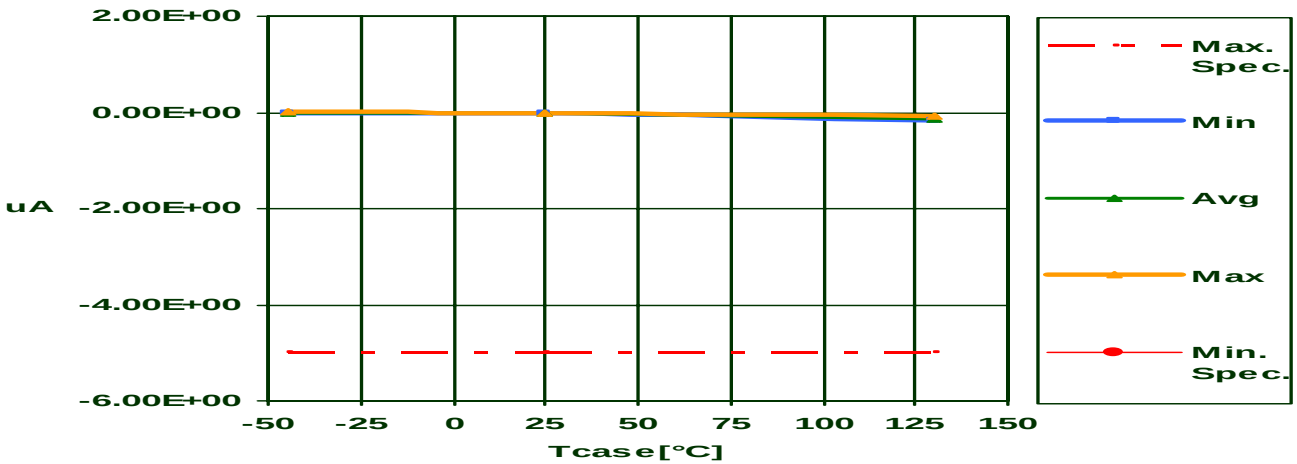
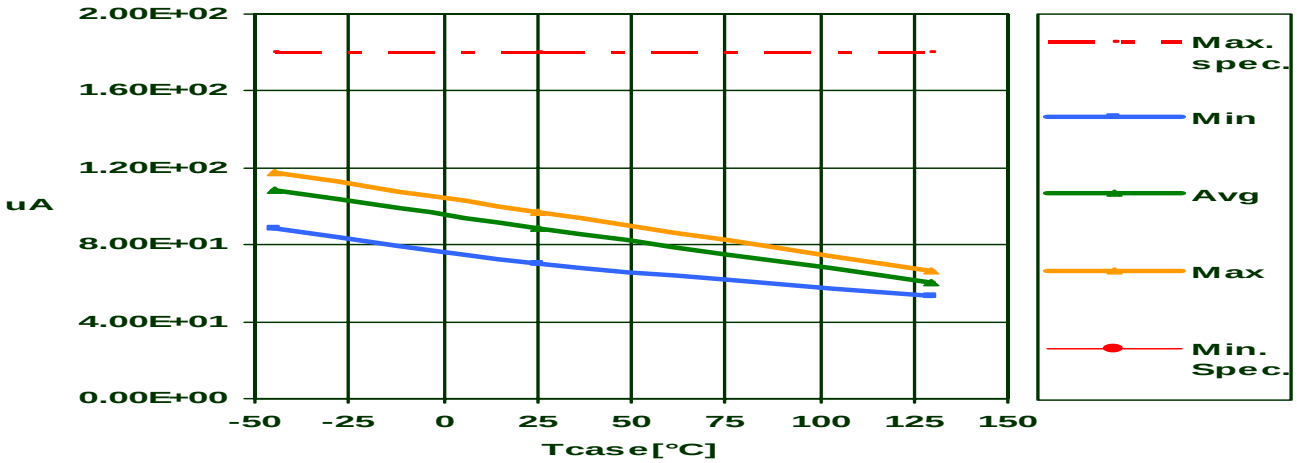
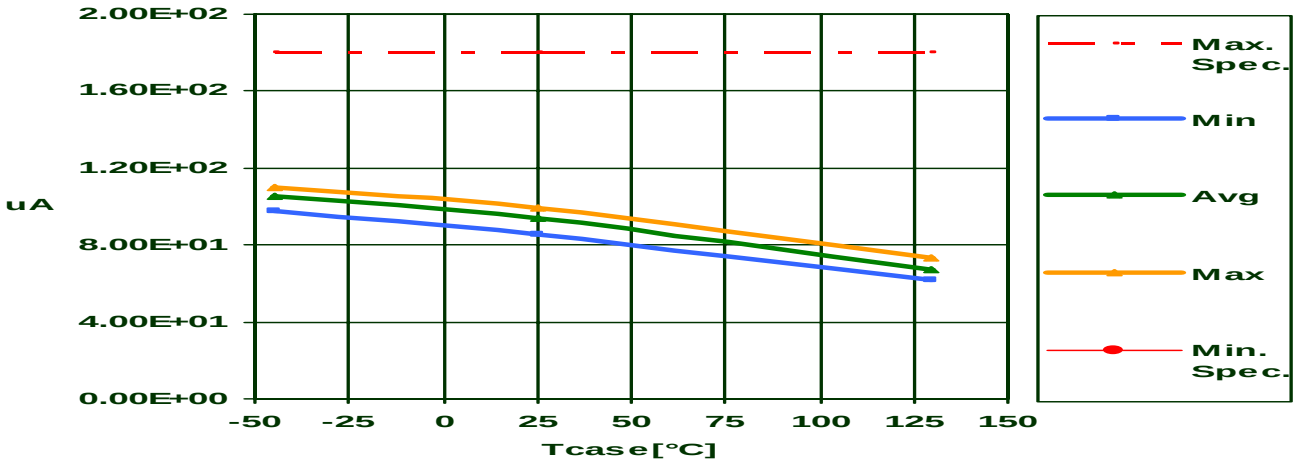


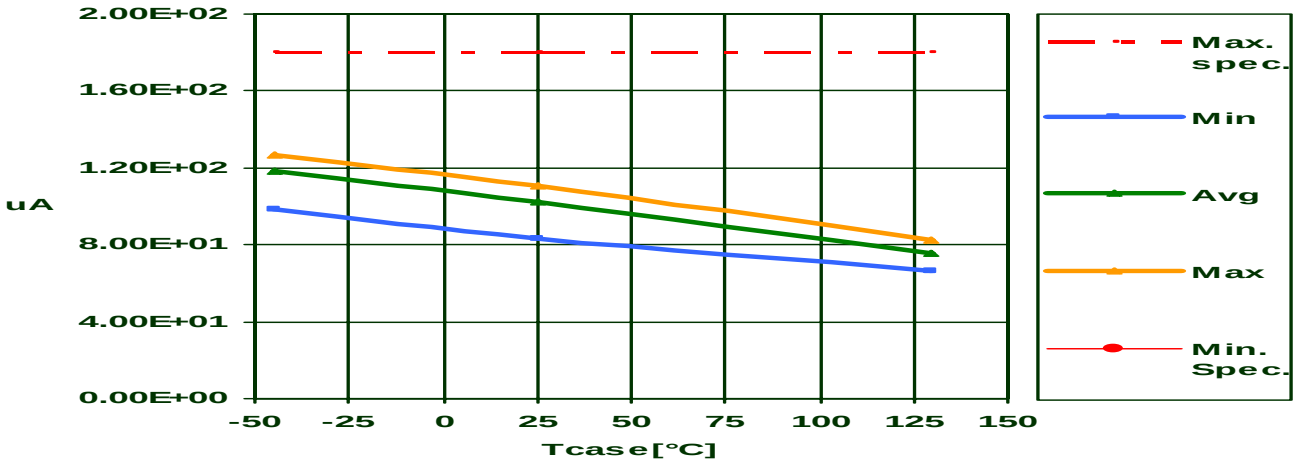
IQLL stby mode @ Vcc=8V – 6”AMK



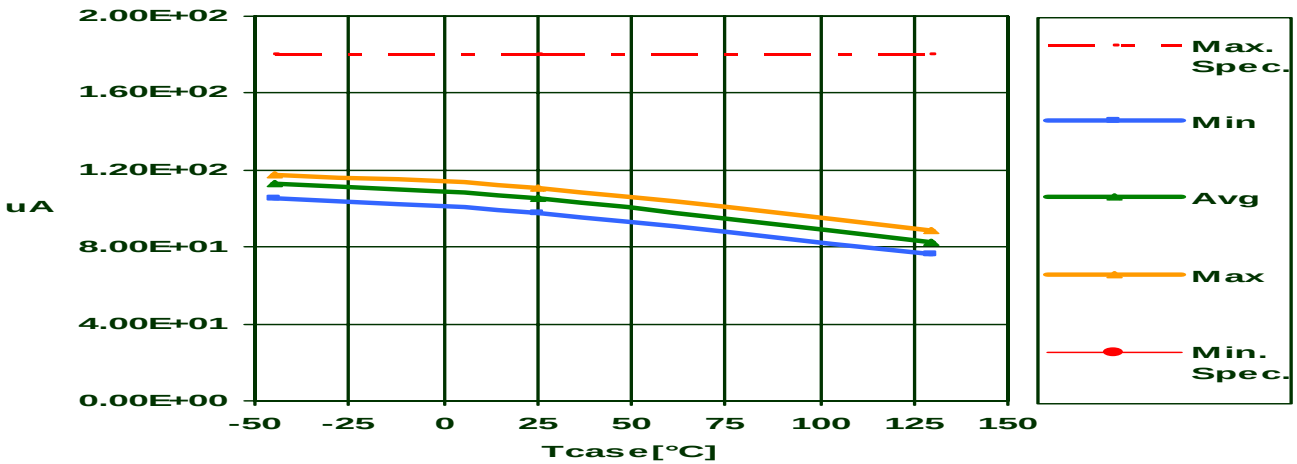
IQLL stby mode @ Vcc=8V – 8”AGR



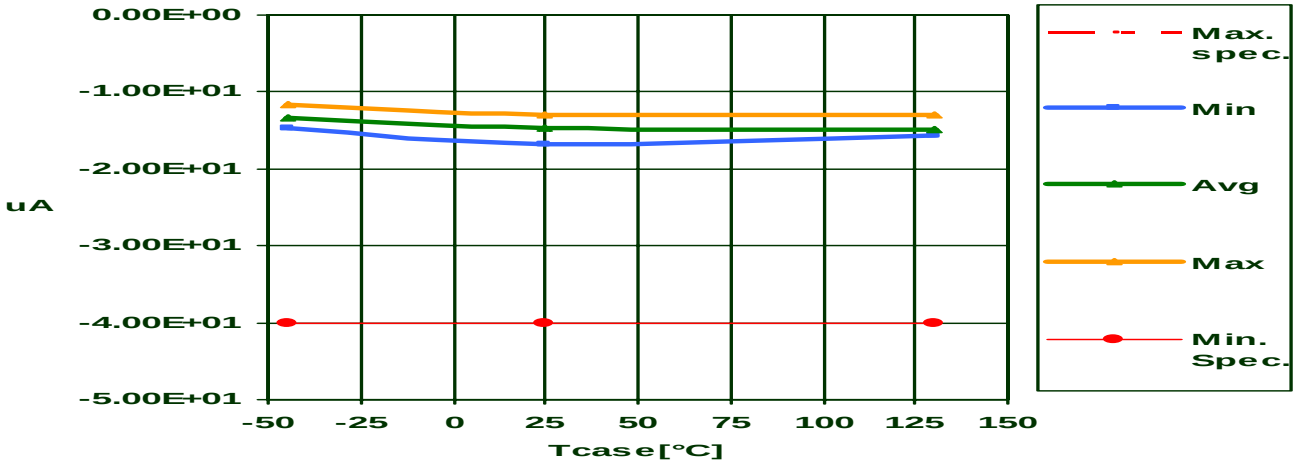
IQLL stby mode @ Vcc=16V – 6”AMK



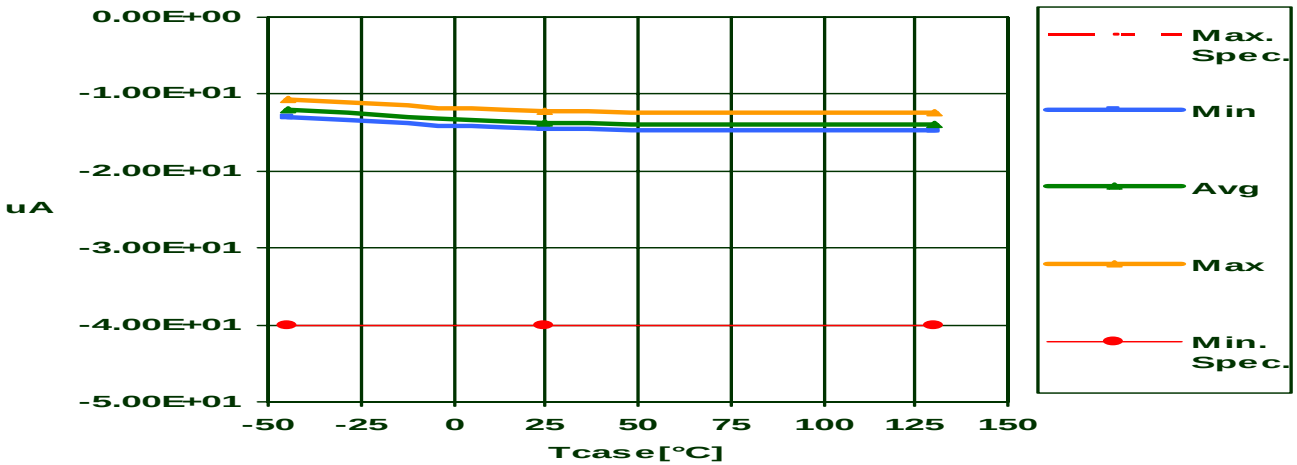
IQLL stby mode @ Vcc=16V – 8”AGR



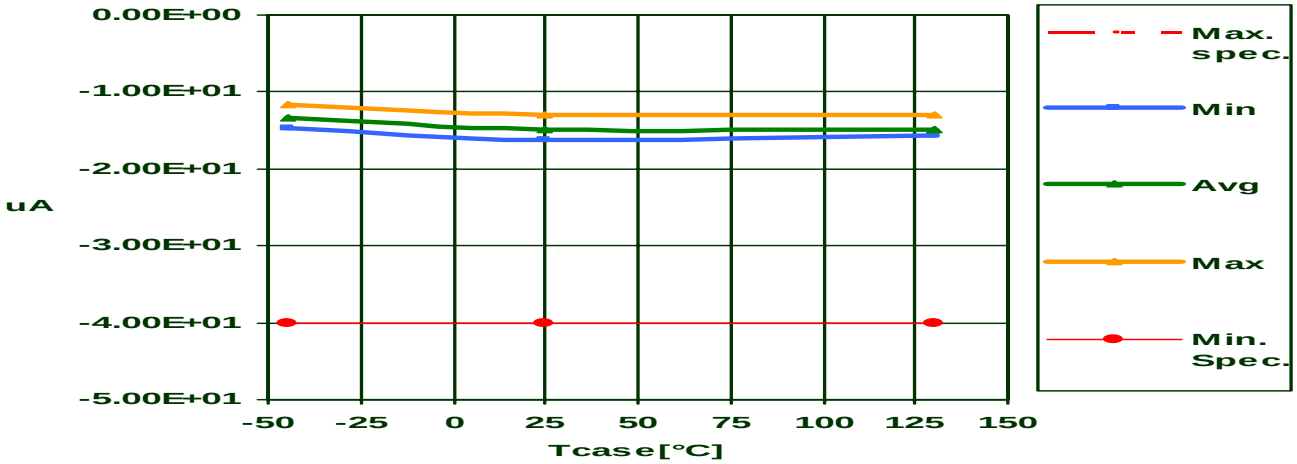
IQLH active mode @ Vcc=8V – 6”AMK



IQLH active mode @ Vcc=8V – 8”AGR



IQLH active mode @ Vcc=16V – 6”AMK



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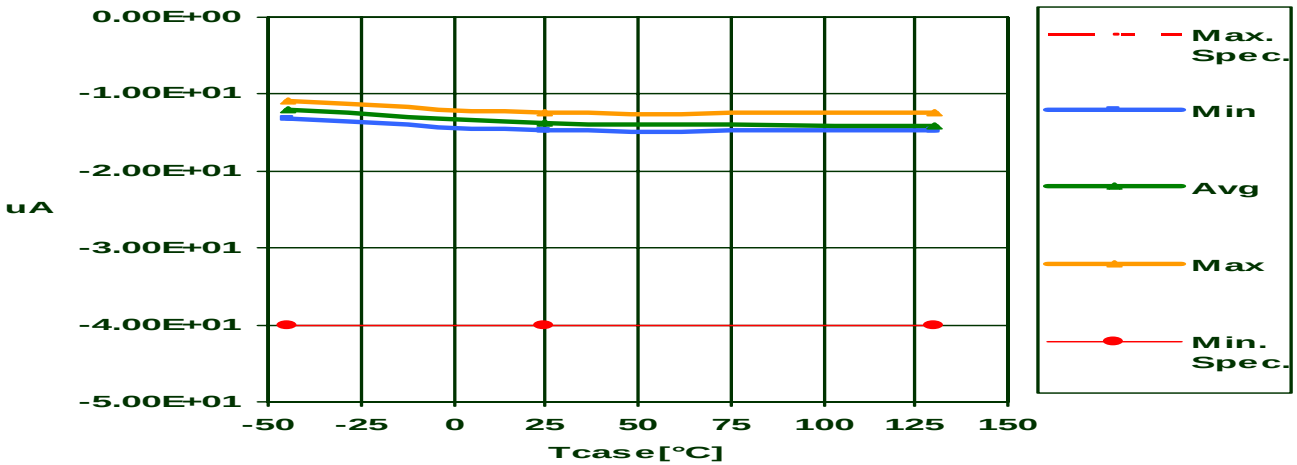
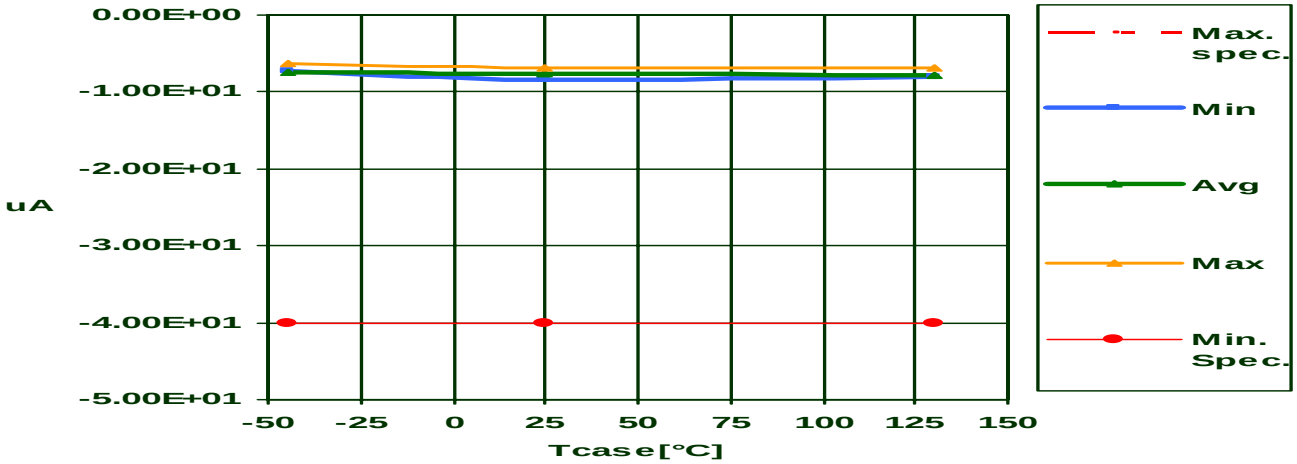


IQLL active mode @ Vcc=8V – 6”AMK



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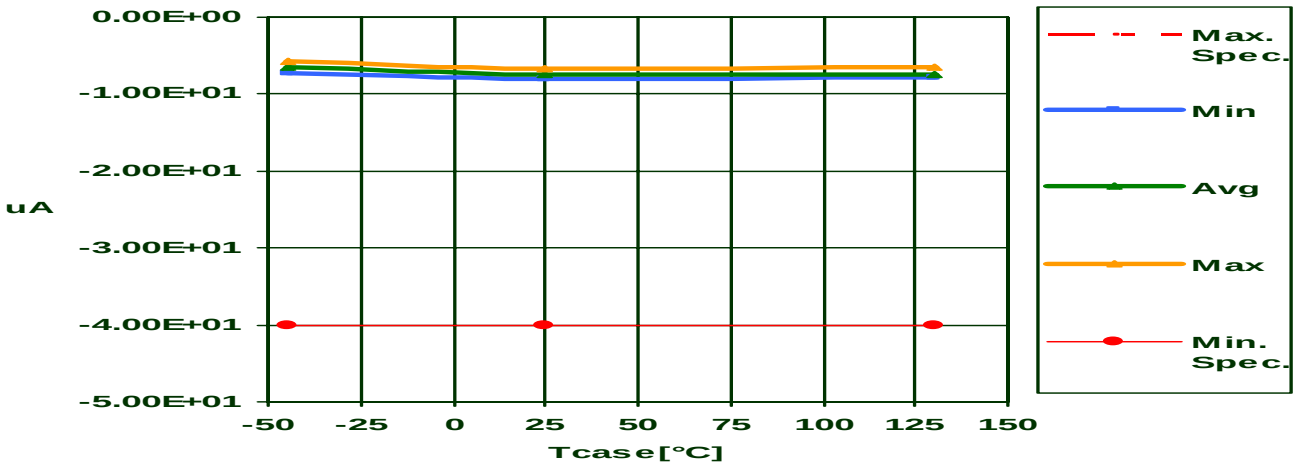
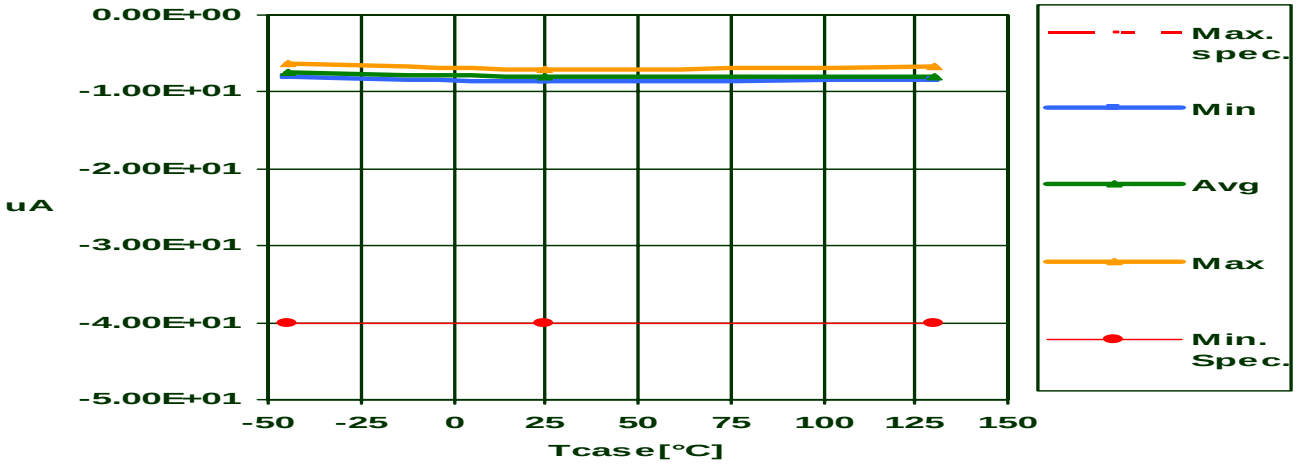
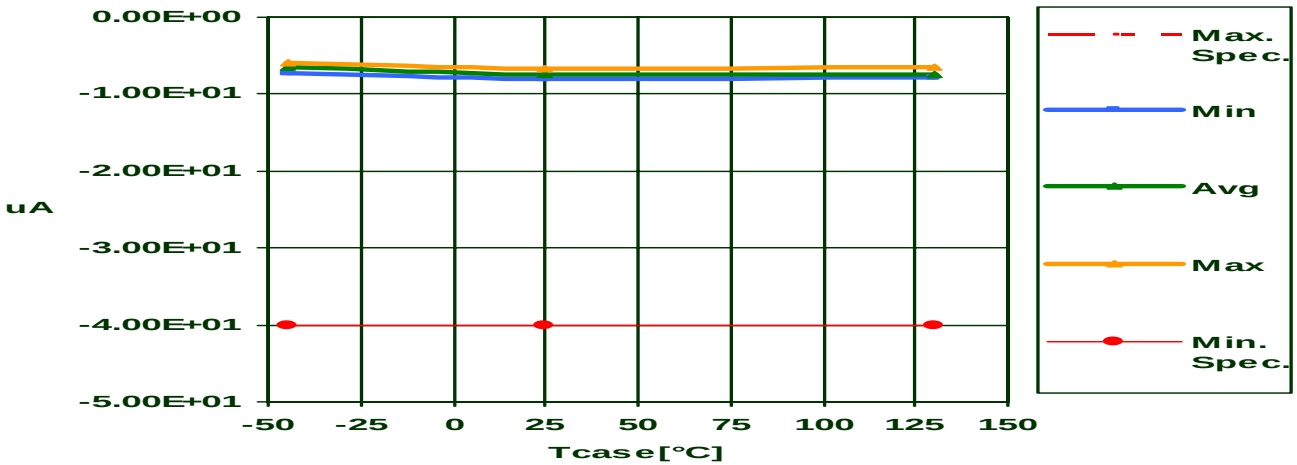


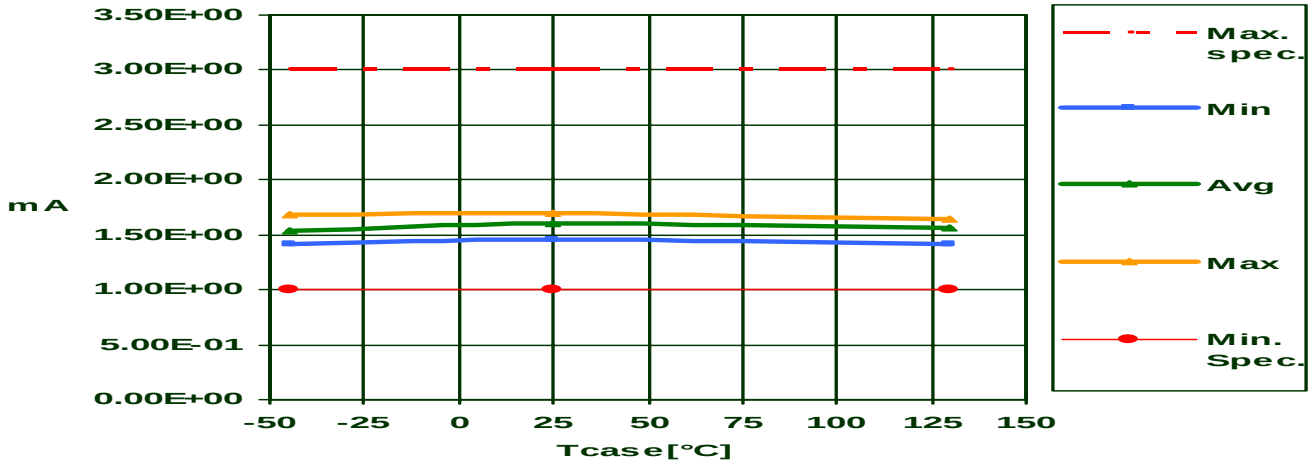
IQLL active mode @ Vcc=16V – 6”AMK



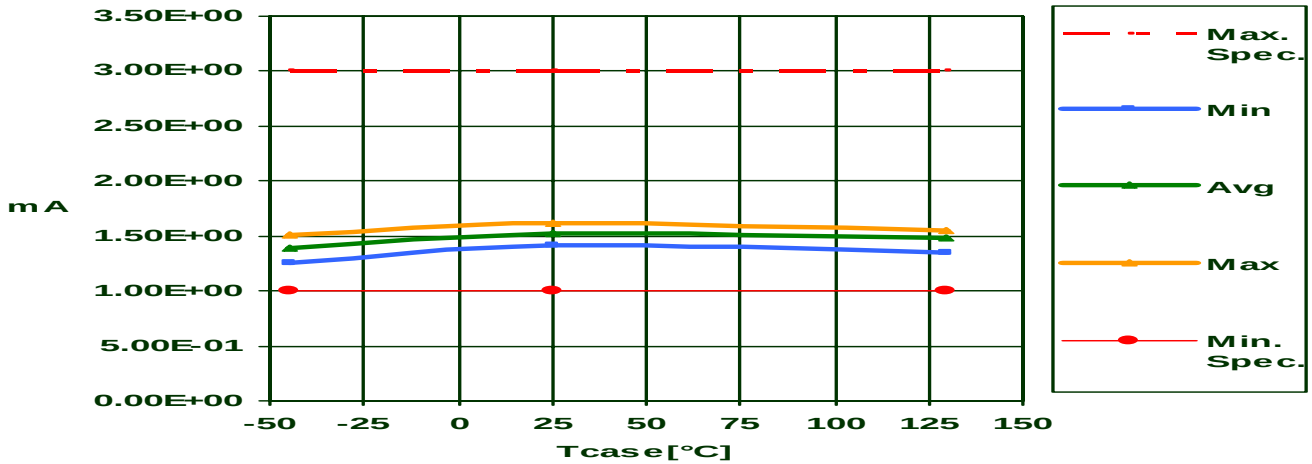
IQLL active mode @ Vcc=16V – 8”AGR



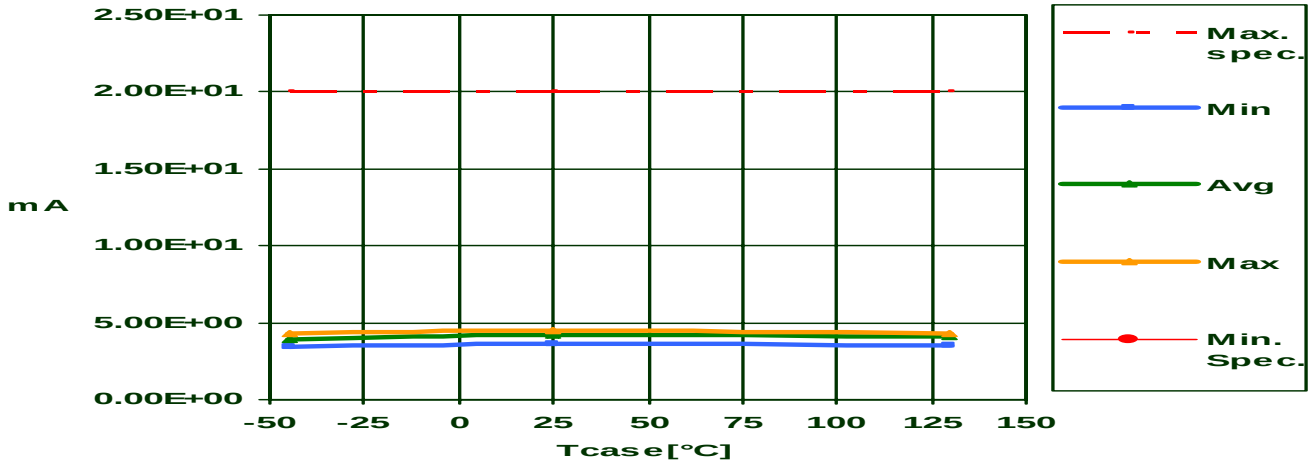
ICC supply @ Vcc=16V, Vs=5.3V – 6”AMK



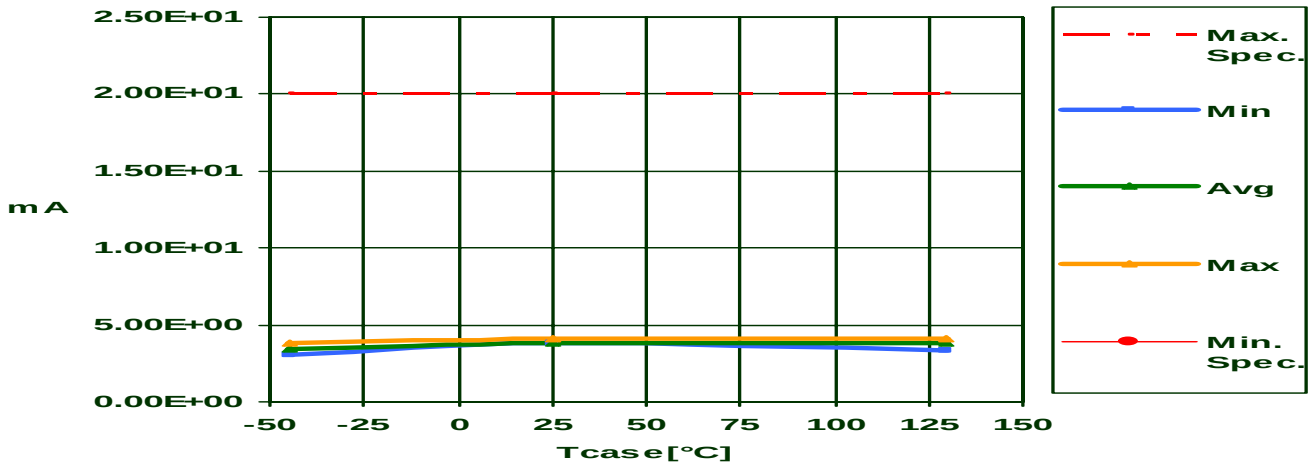
ICC supply @ Vcc=16V, Vs=5.3V – 8”AGR



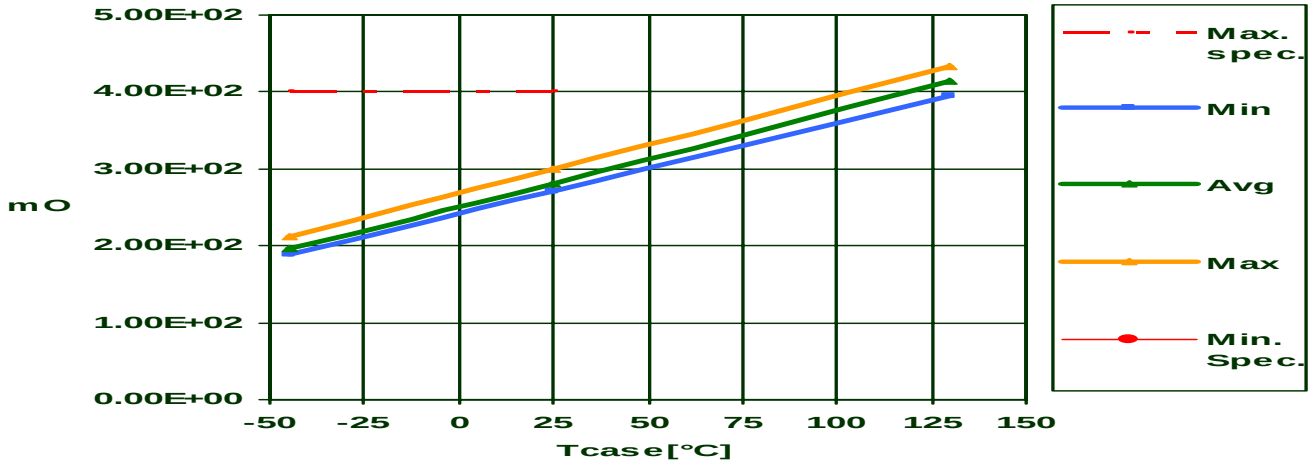
IS supply @ Vcc=16V, Vs=5.3V – 6”AMK



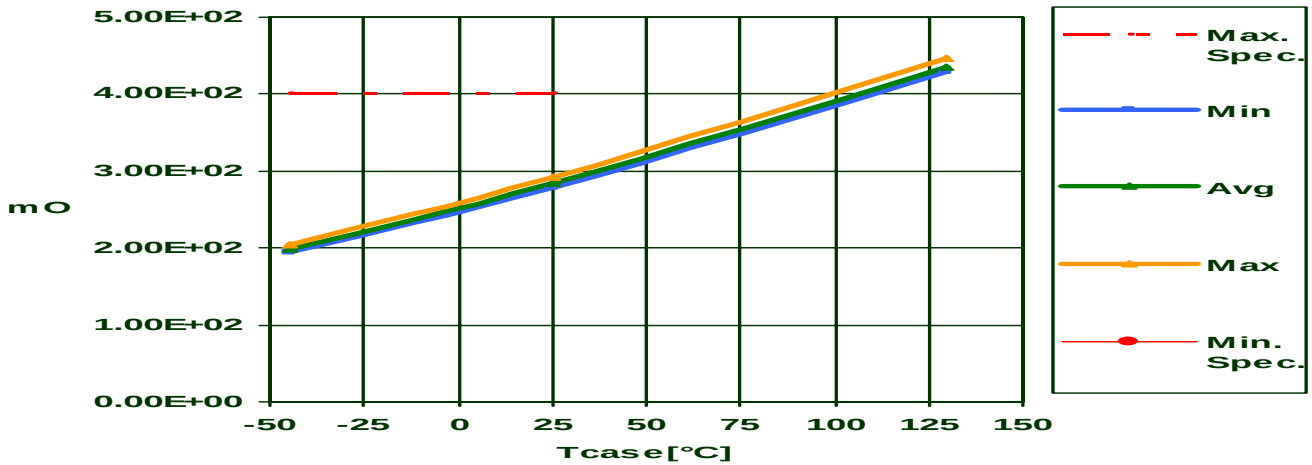
IS supply @ Vcc=16V, Vs=5.3V – 8”AGR



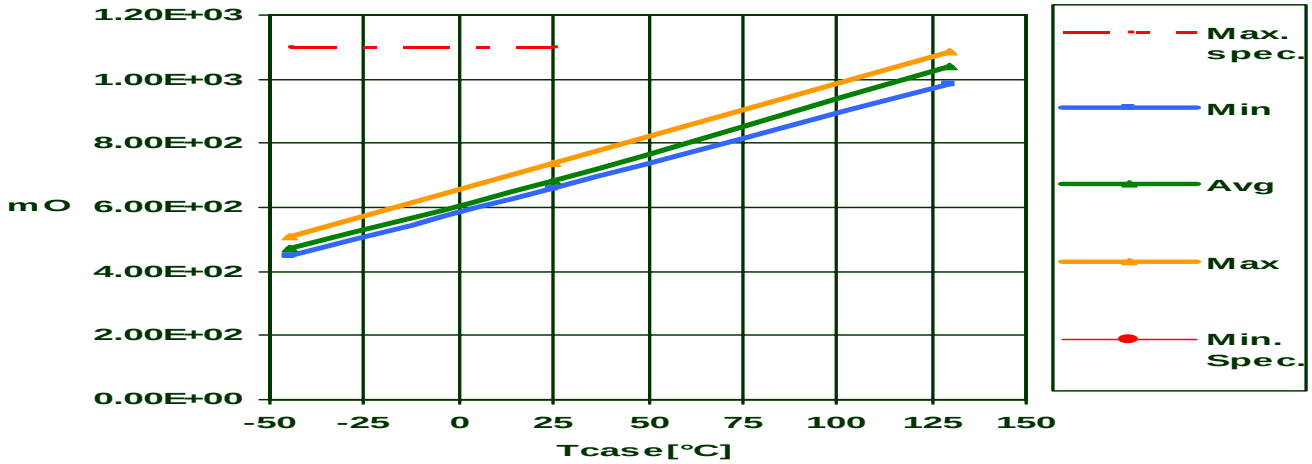
RDSon HSD @ Vcc=8V, Ion=-1.5A – 6”AMK



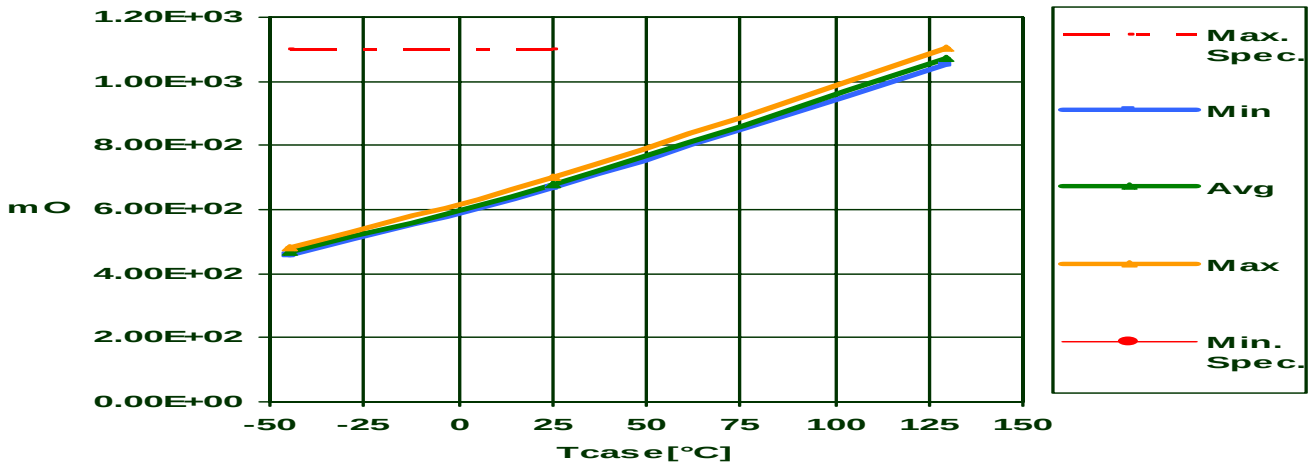
RDSon HSD @ Vcc=8V, Ion=-1.5A – 8”AGR



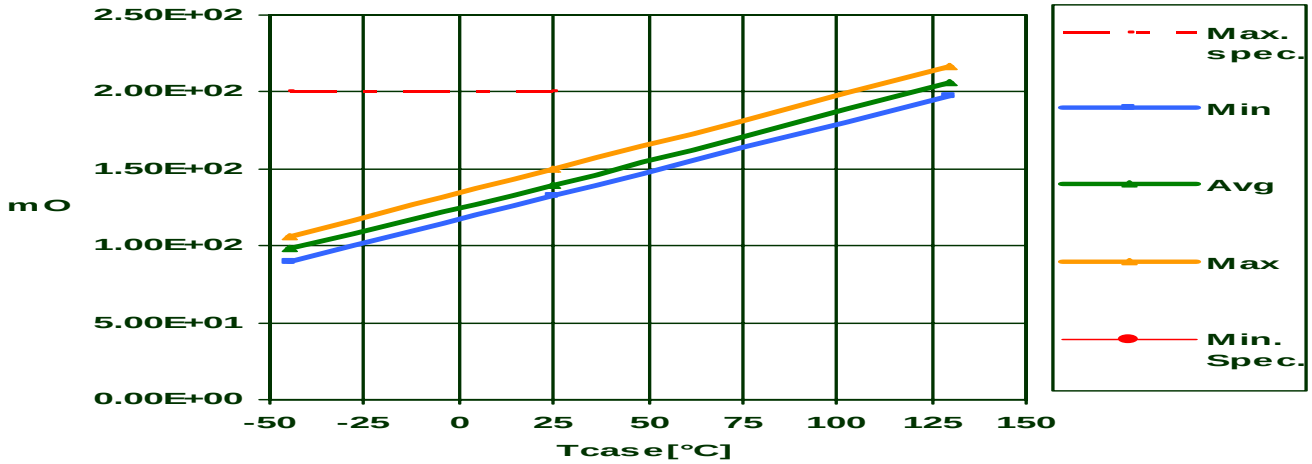
RDSon HSD @ Vcc=8V, Ion=-0.8A – 6”AMK



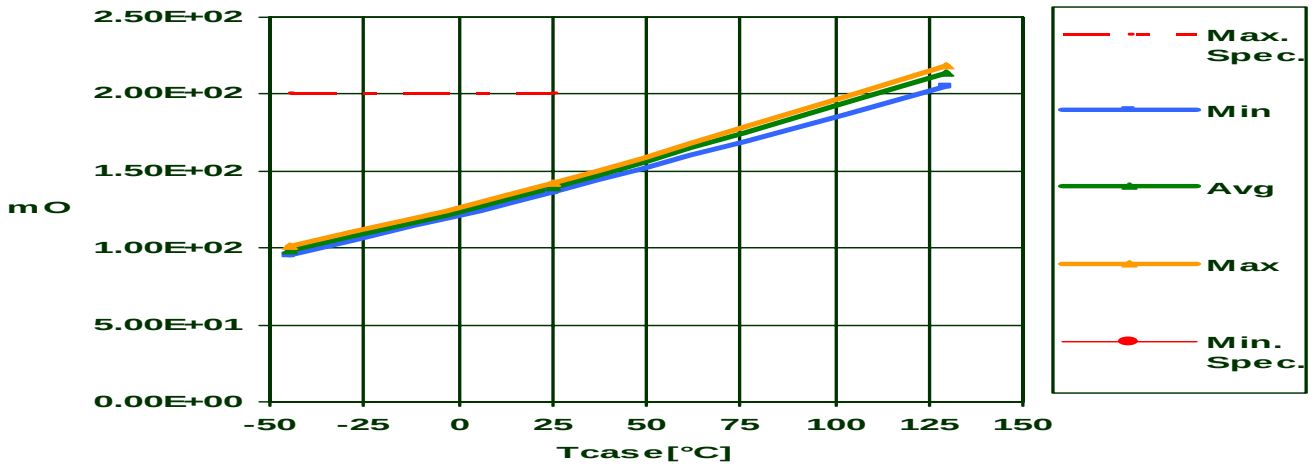
RDSon HSD @ Vcc=8V, Ion=-0.8A – 8”AGR



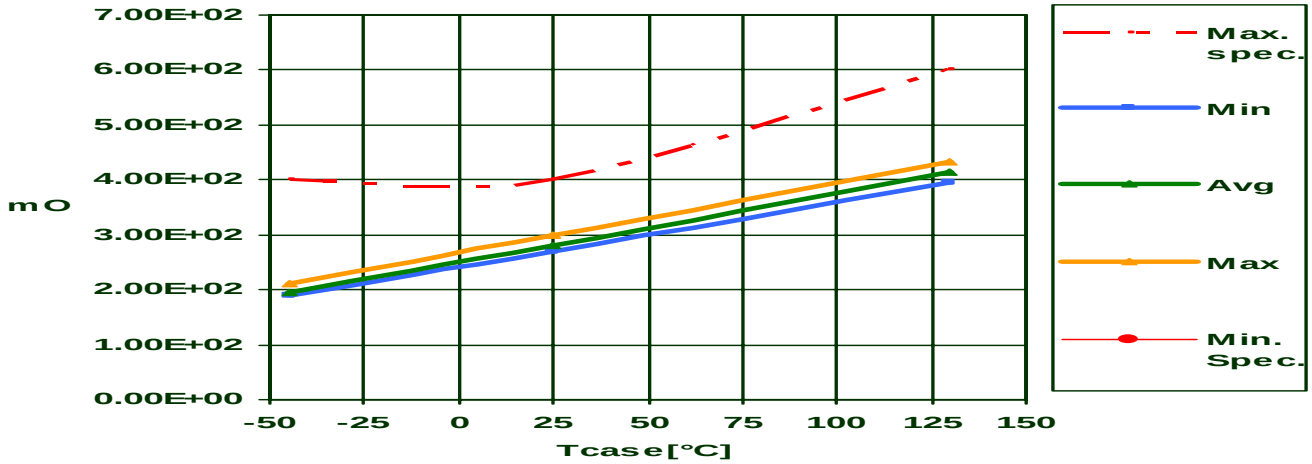
RDSon HSD @ Vcc=8V, Ion=-3A – 6”AMK



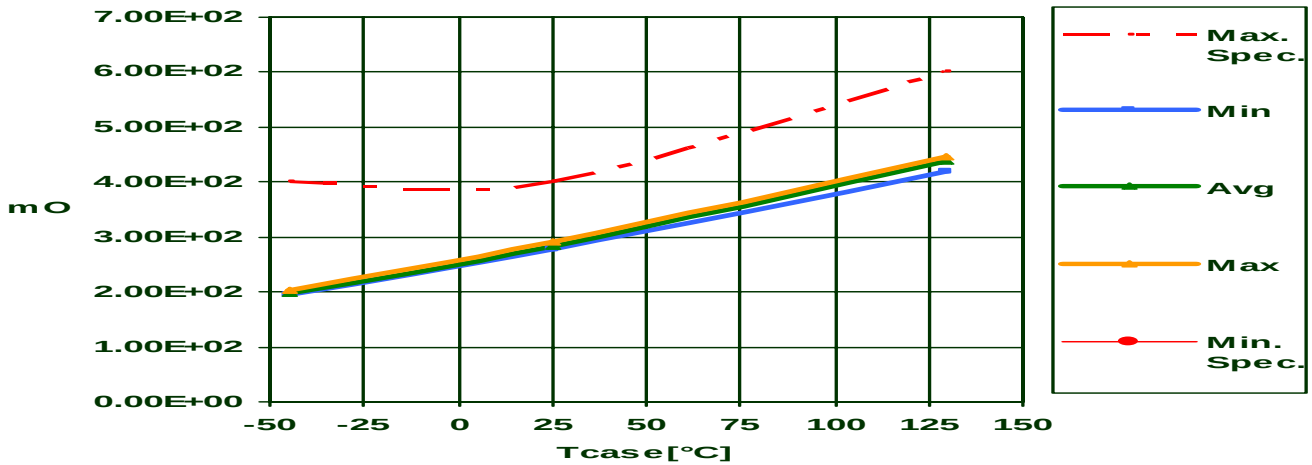
RDSon HSD @ Vcc=8V, Ion=-3A – 8”AGR



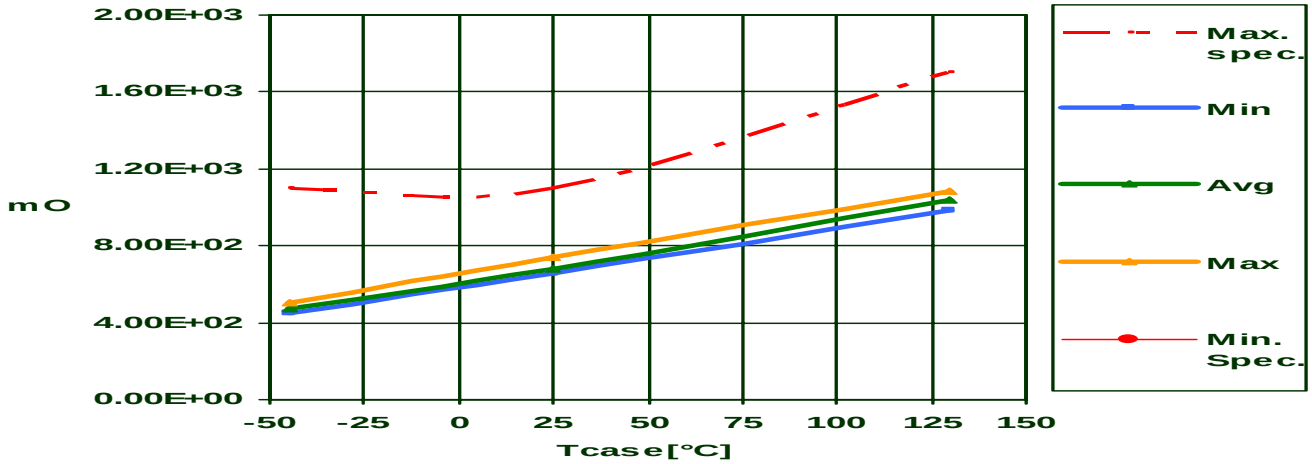
RDSon HSD @ Vcc=13.5V, Ion=-1.5A – 6”AMK



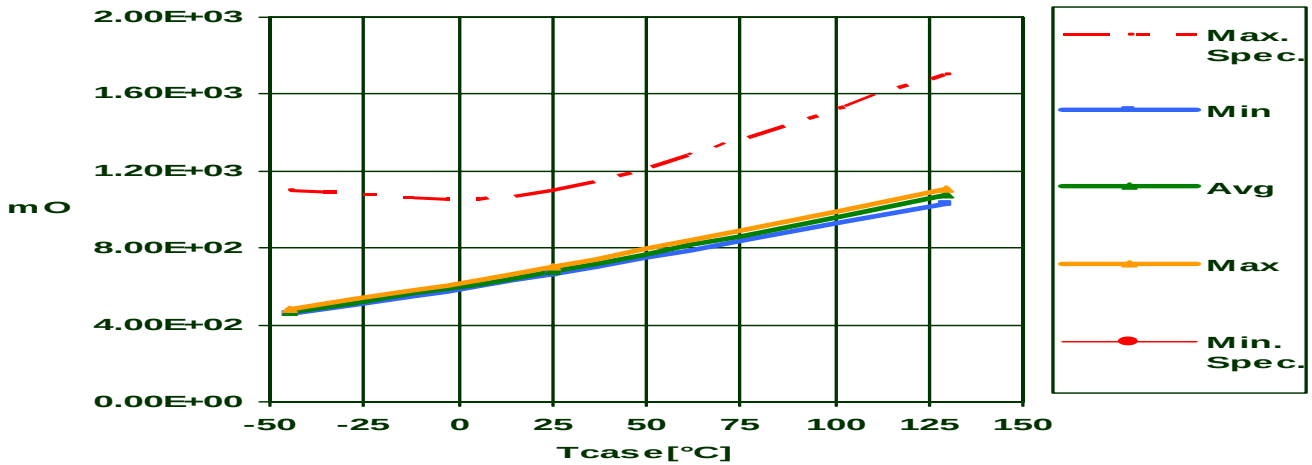
RDSon HSD @ Vcc=13.5V, Ion=-1.5A – 8”AGR



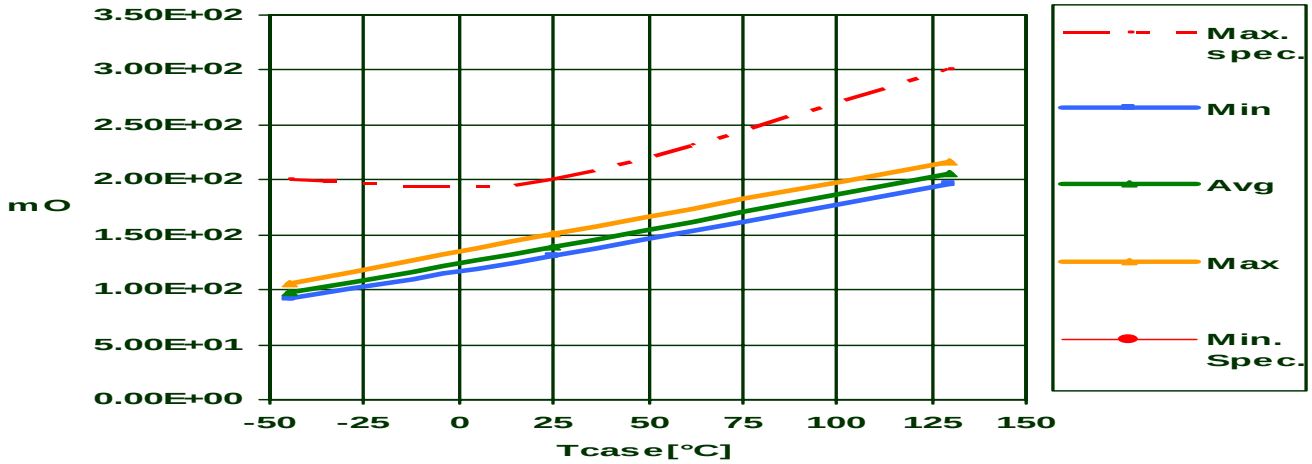
RDSon HSD @ Vcc=13.5V, Ion=-0.8A – 6”AMK



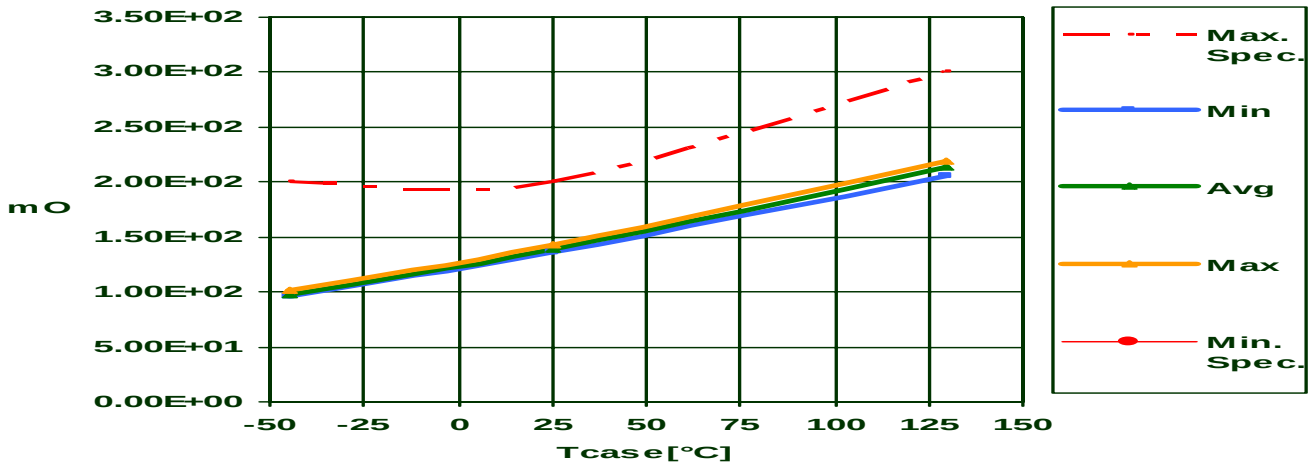
RDSon HSD @ Vcc=13.5V, Ion=-0.8A – 8”AGR



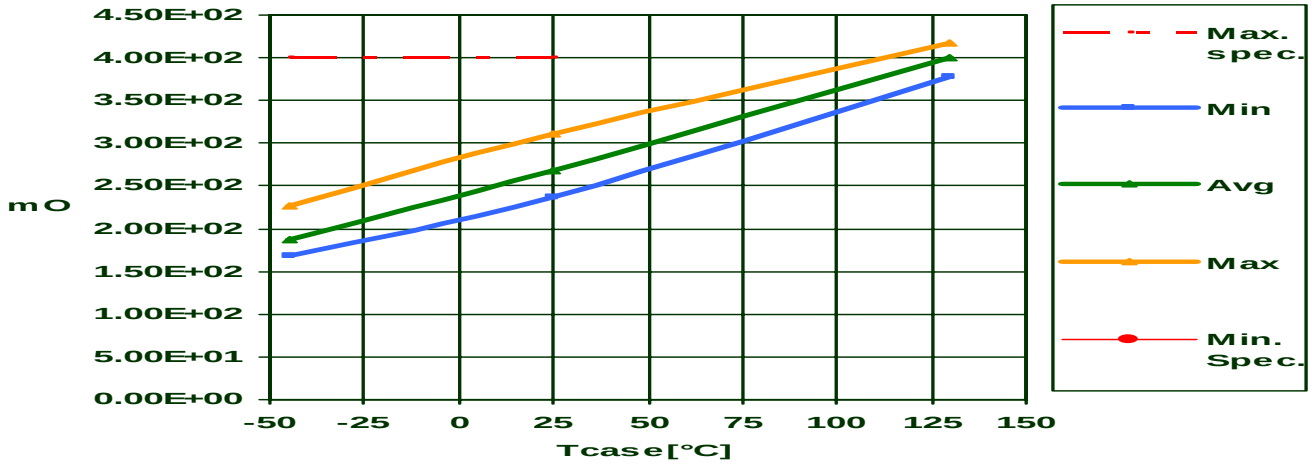
RDSon HSD @ Vcc=13.5V, Ion=-3A – 6”AMK



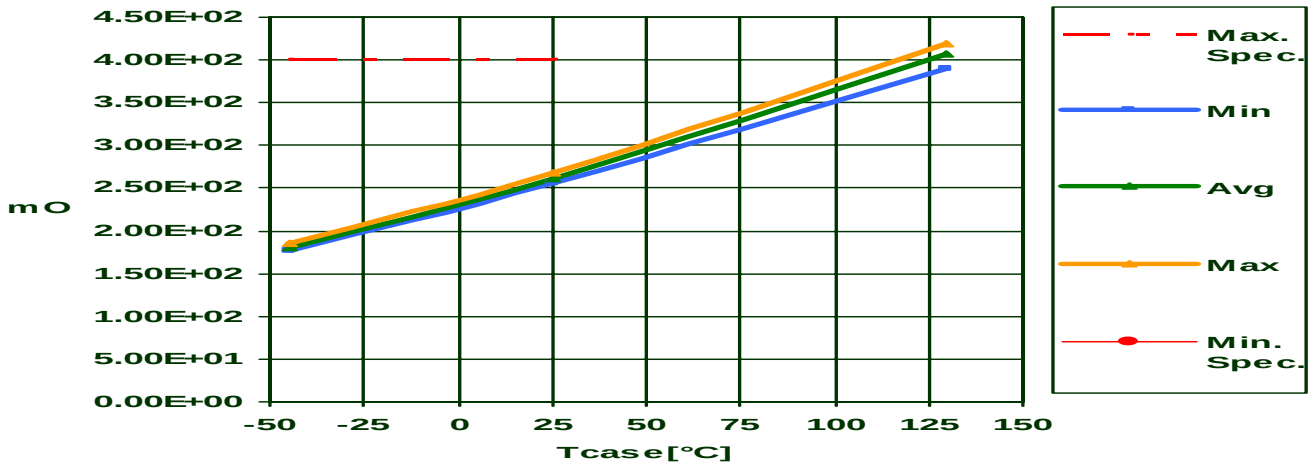
RDSon HSD @ Vcc=13.5V, Ion=-3A – 8”AGR



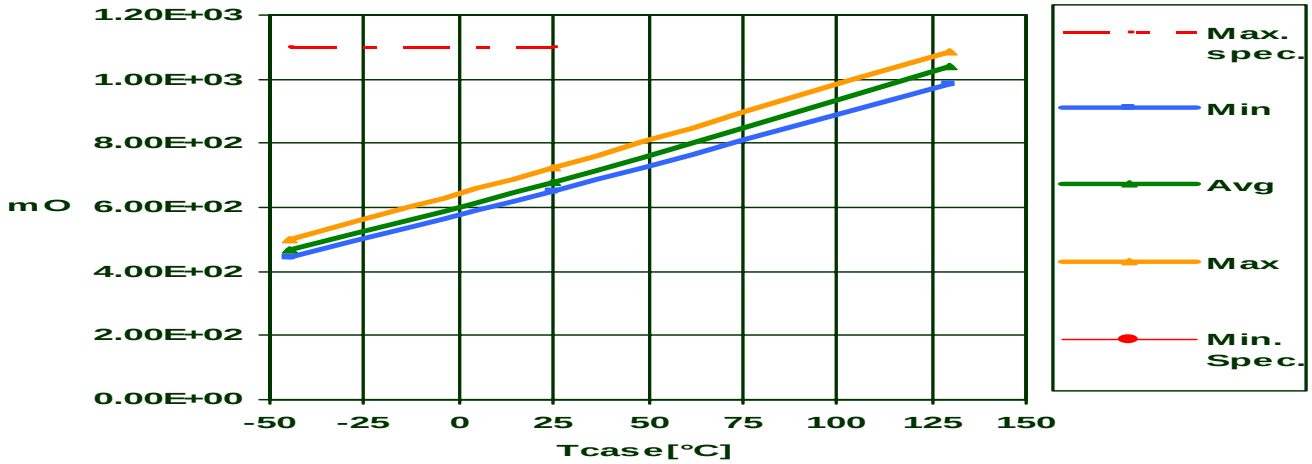
RDSon LSD @ Vcc=8V, Ion=1.5A – 6”AMK



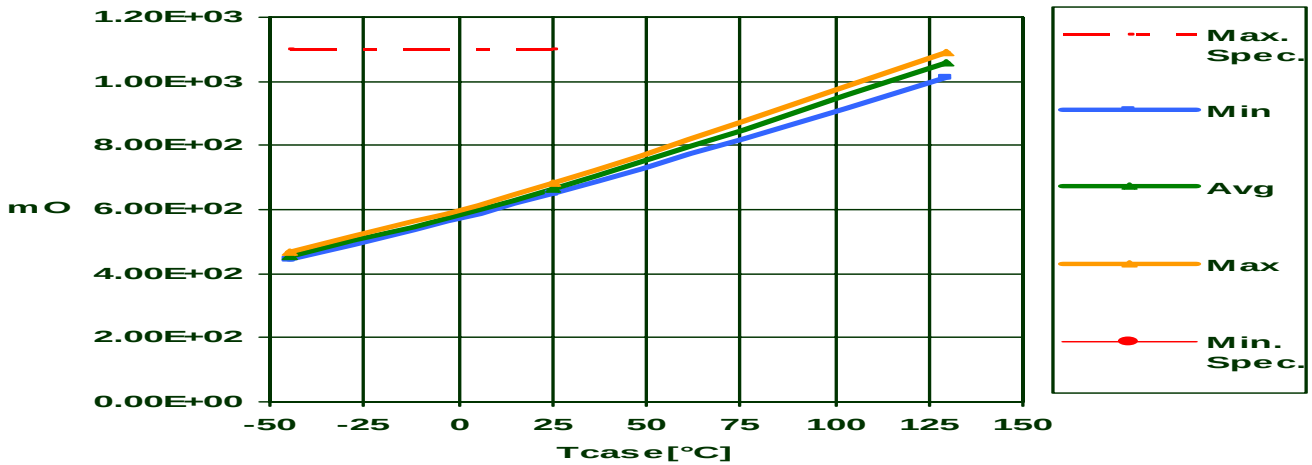
RDSon LSD @ Vcc=8V, Ion=1.5A – 8”AGR



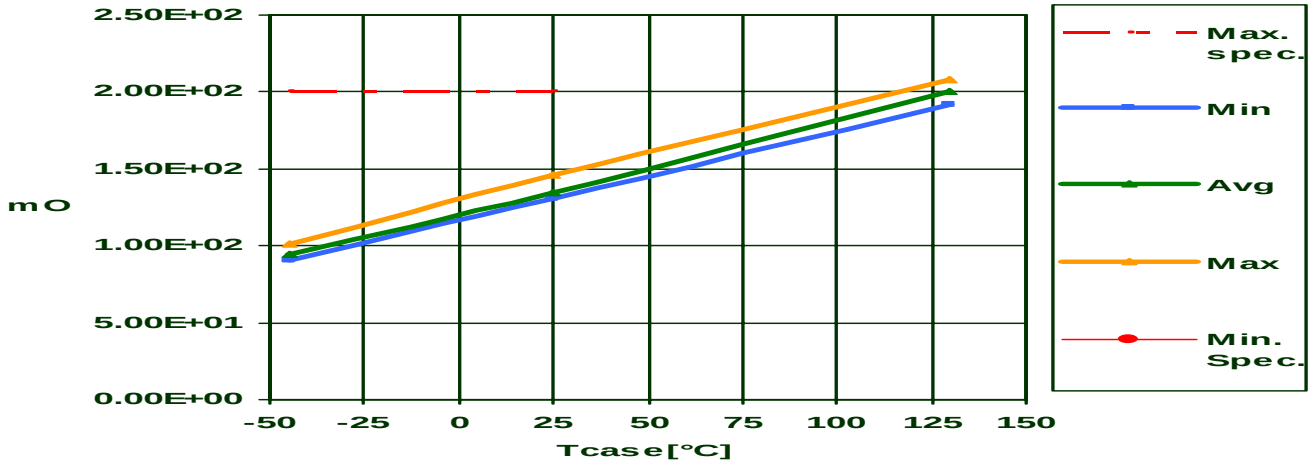
RDSon LSD @ Vcc=8V, Ion=0.8A – 6”AMK



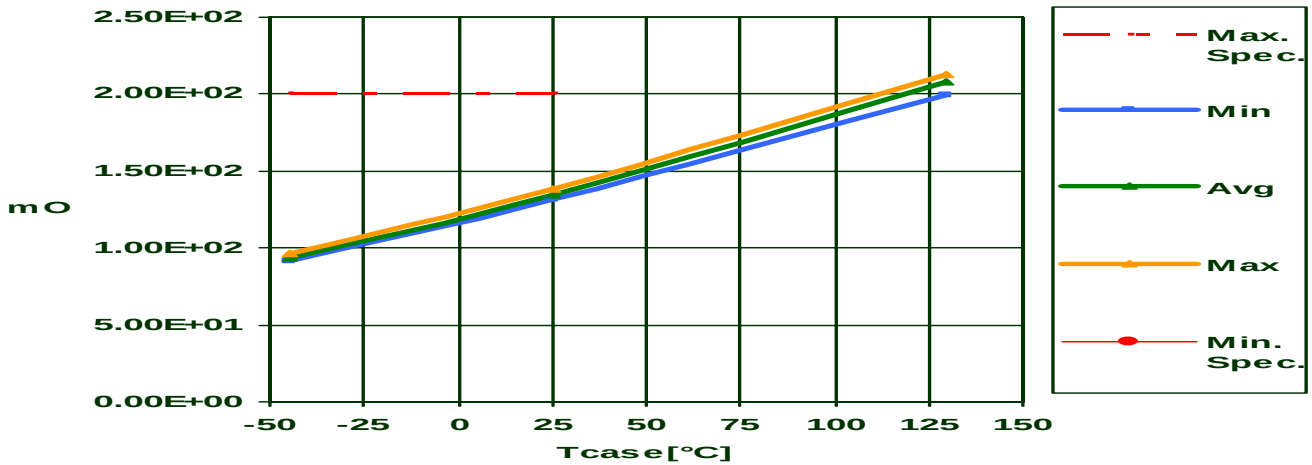
RDSon LSD @ Vcc=8V, Ion=0.8A – 8”AGR



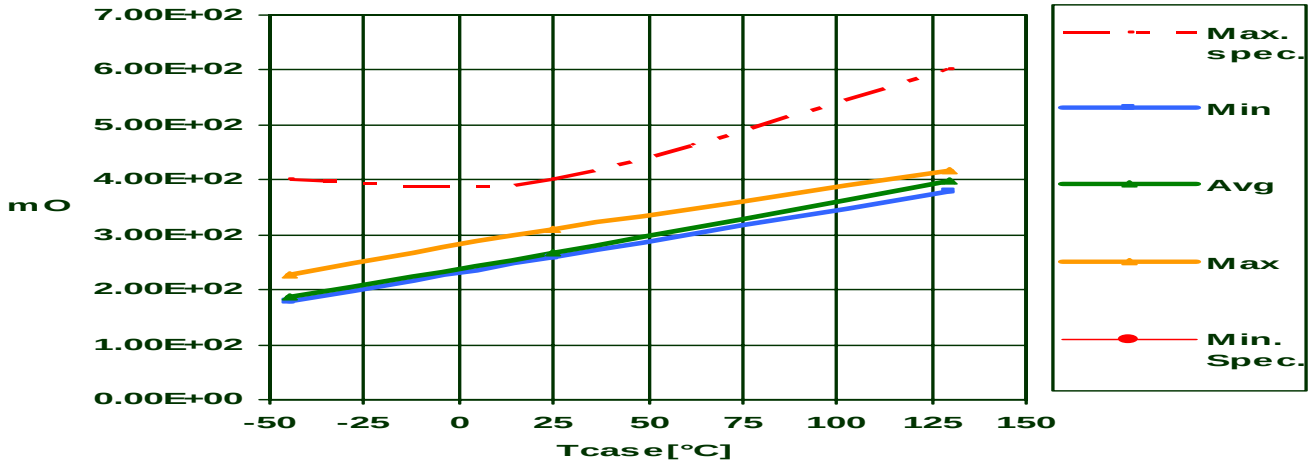
RDSon LSD @ Vcc=8V, Ion=3A – 6”AMK



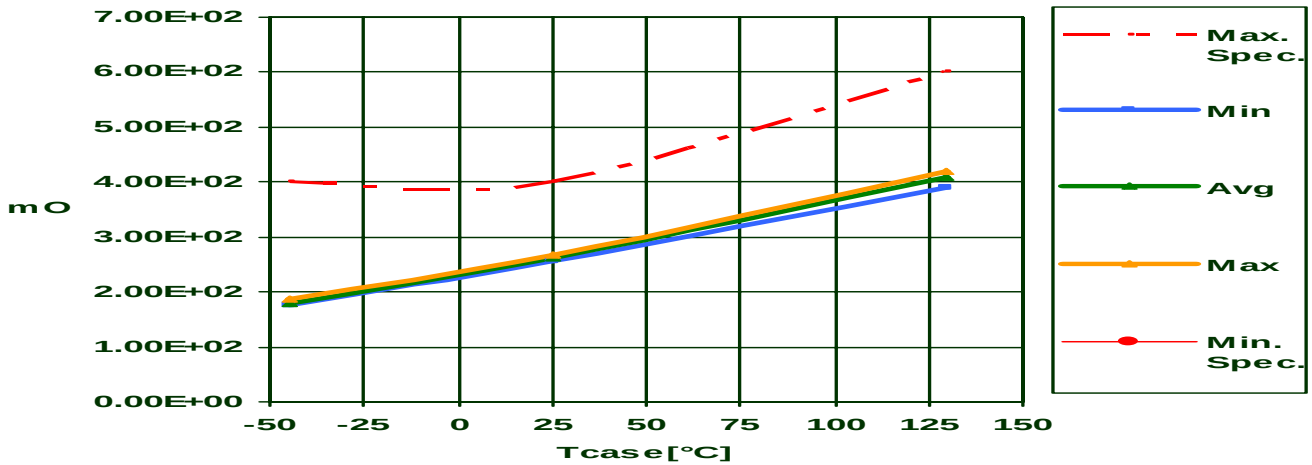
RDSon LSD @ Vcc=8V, Ion=3A – 8”AGR



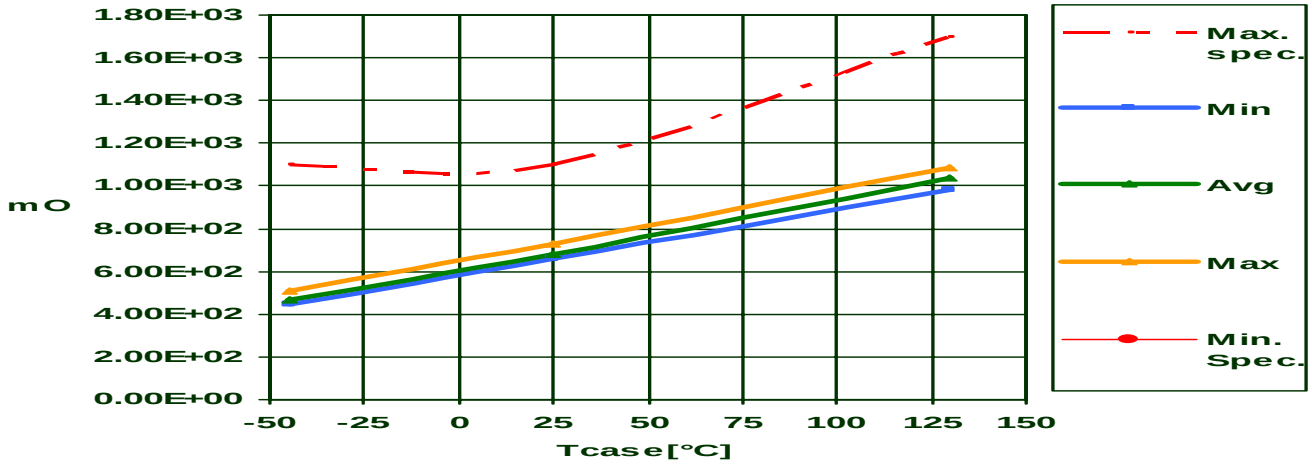
RDSon LSD @ Vcc=13.5V, Ion=1.5A – 6”AMK



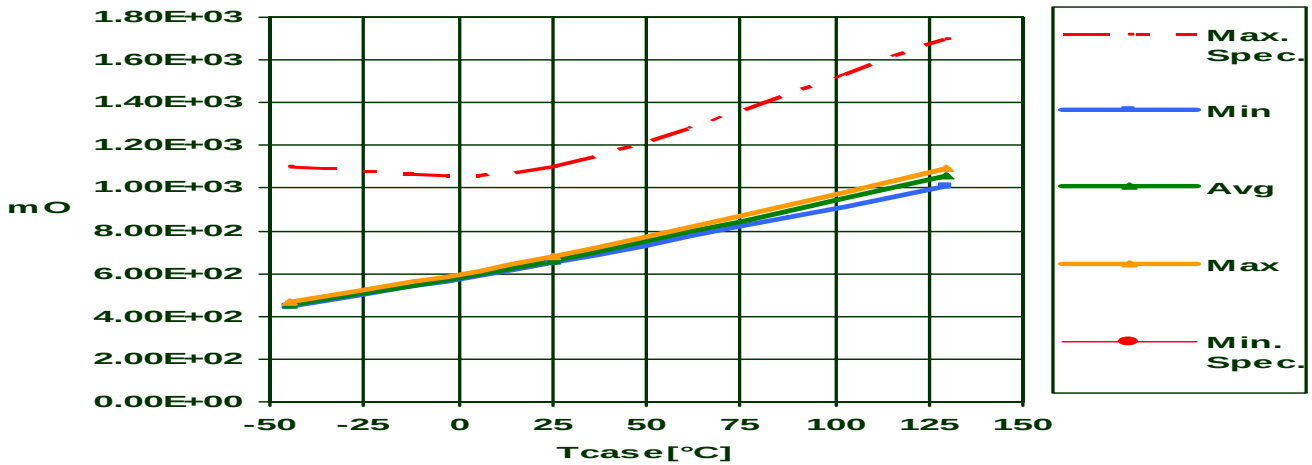
RDSon LSD @ Vcc=13.5V, Ion=1.5A – 8”AGR



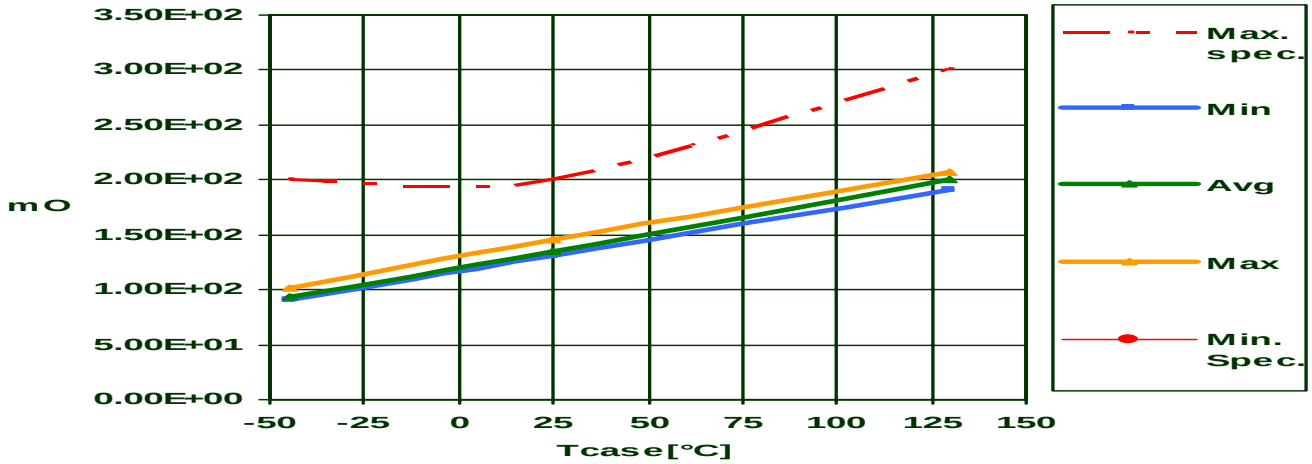
RDSon LSD @ Vcc=13.5V, Ion=0.8A – 6”AMK



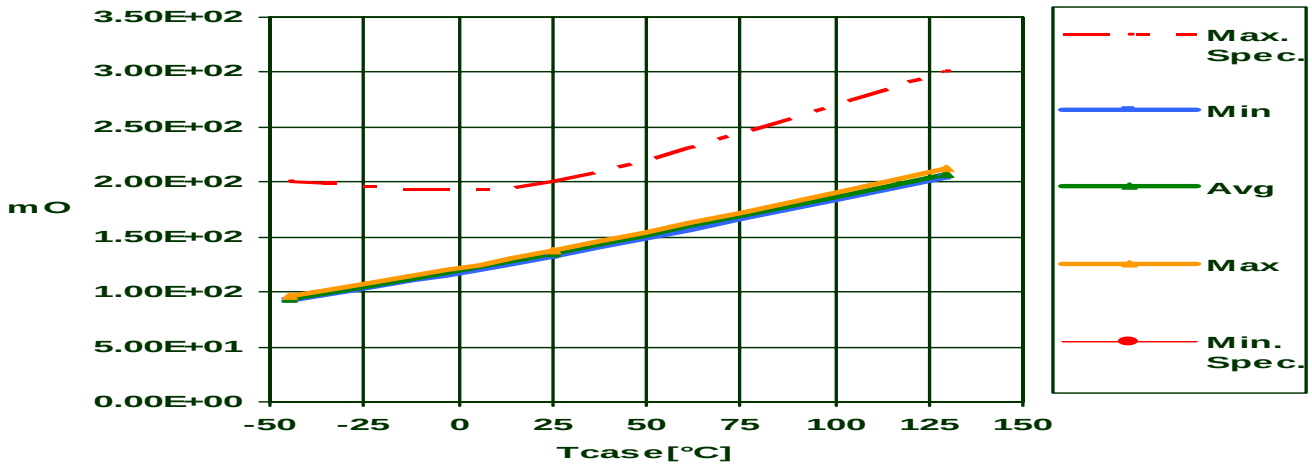
RDSon LSD @ Vcc=13.5V, Ion=0.8A – 8”AGR



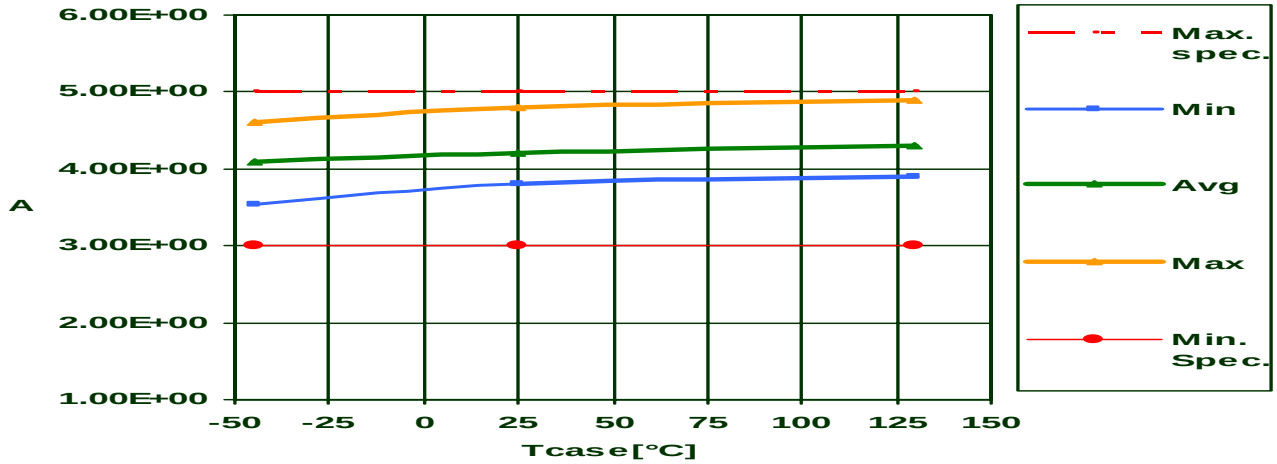
RDSon LSD @ Vcc=13.5V, Ion=3A – 6”AMK



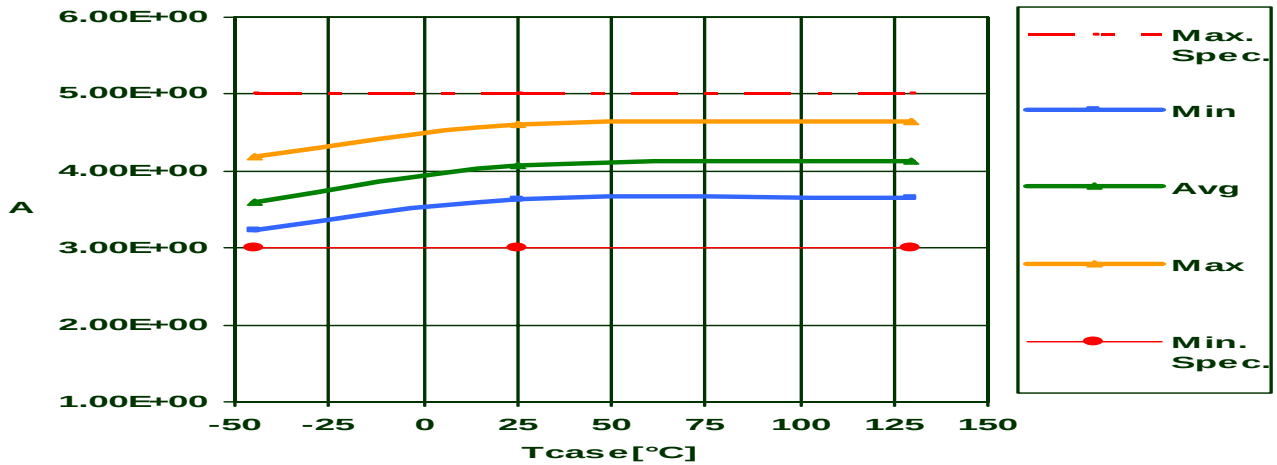
RDSon LSD @ Vcc=13.5V, Ion=3A – 8”AGR



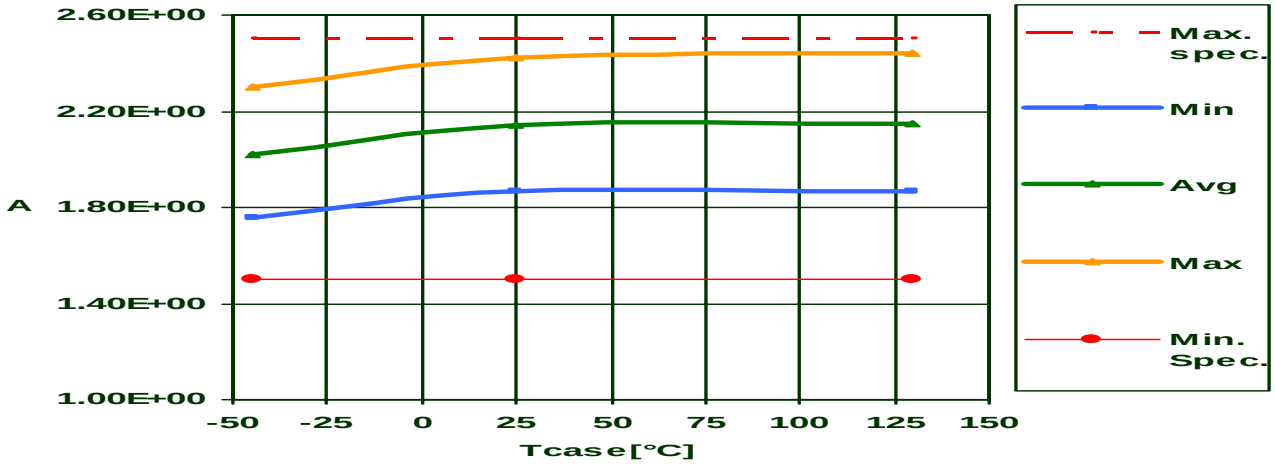
Output current limitation HSD 1&6 @ Vcc=13.5V – 6”AMK



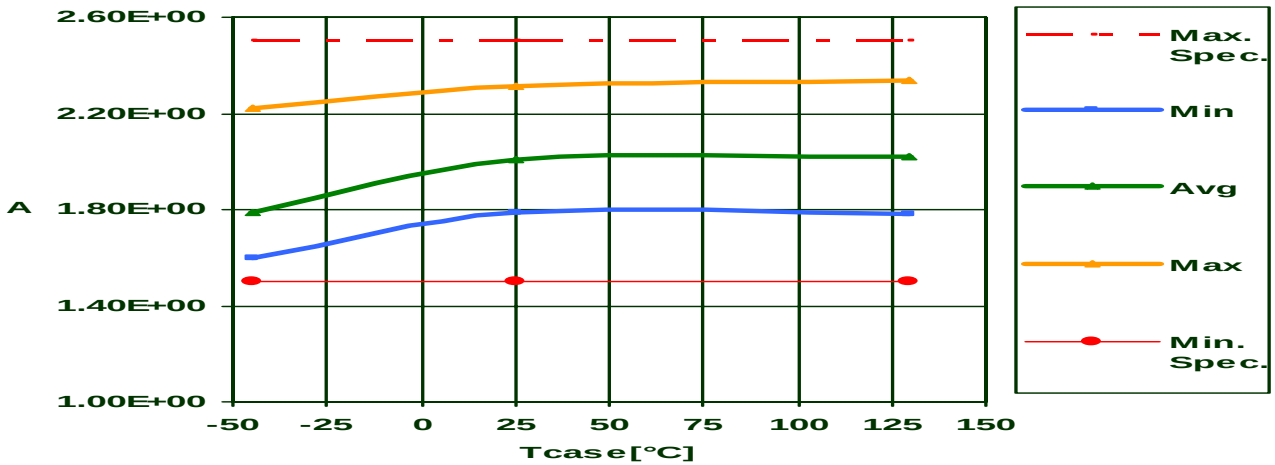
Output current limitation HSD 1&6 @ Vcc=13.5V – 8”AGR



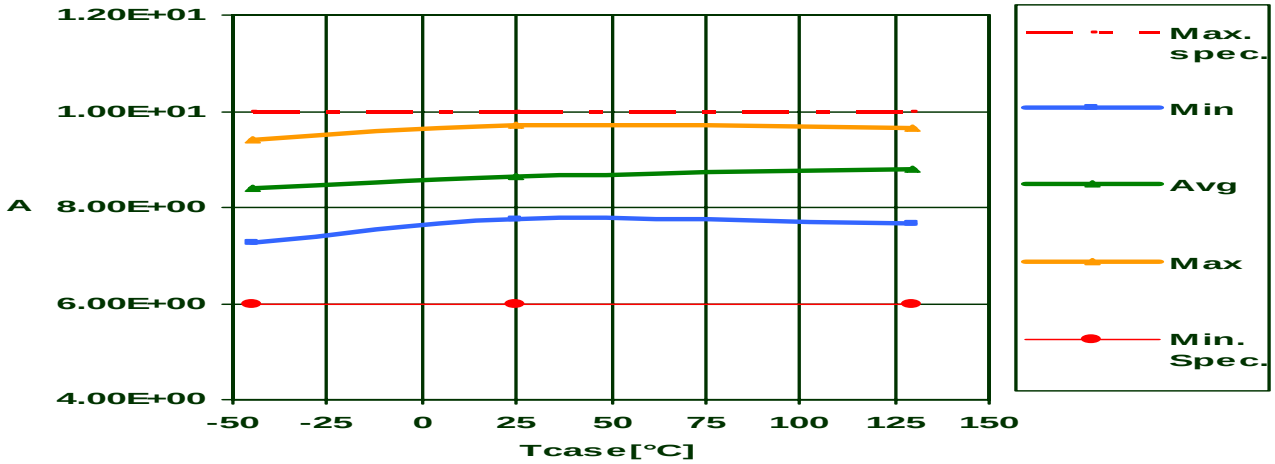
Output current limitation HSD 2,3,7,8,9,10 @ Vcc=13.5V – 6”AMK



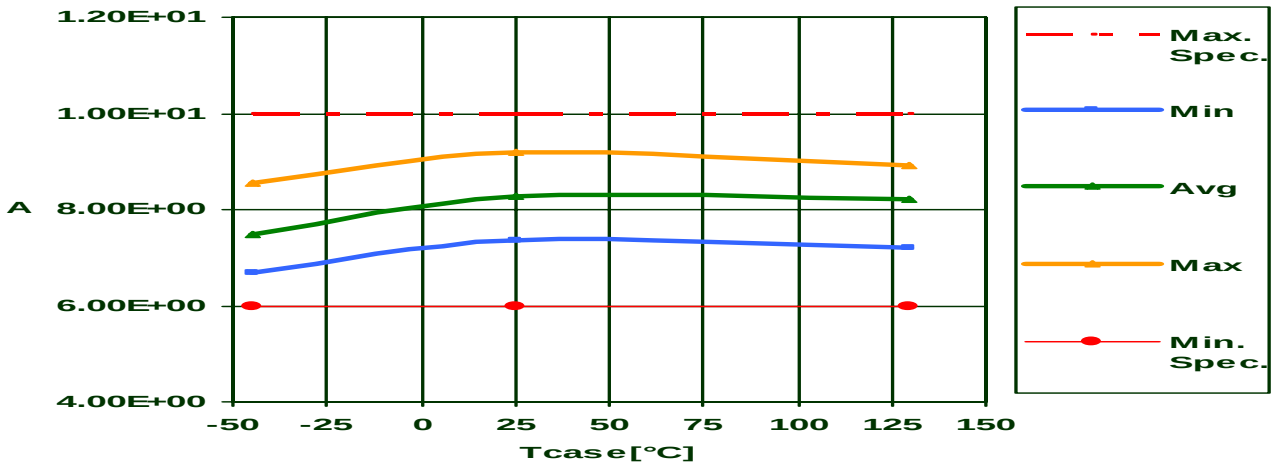
Output current limitation HSD 2,3,7,8,9,10 @ Vcc=13.5V – 8”AGR



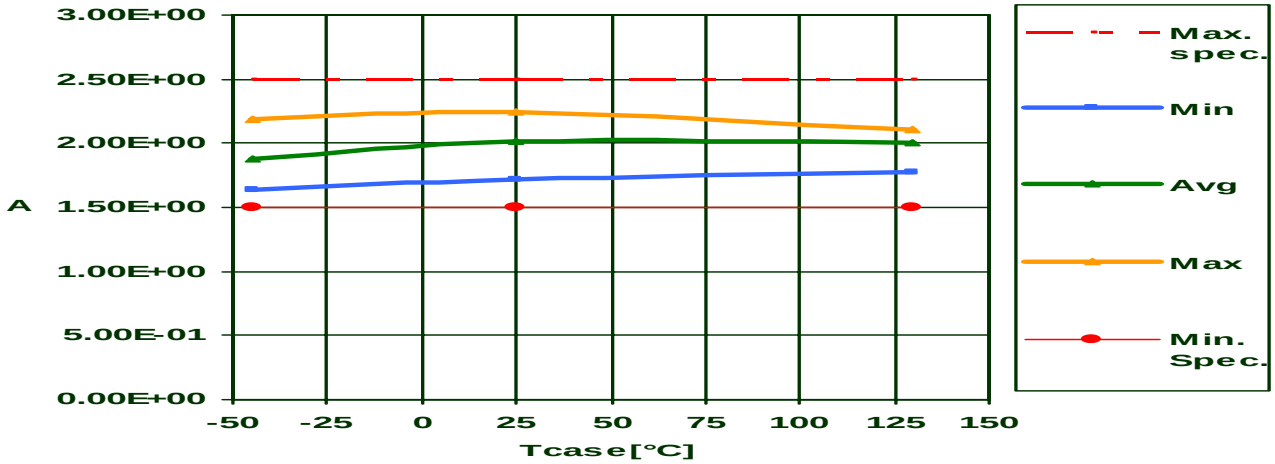
Output current limitation HSD 4,5,11 @ Vcc=13.5V – 6”AMK



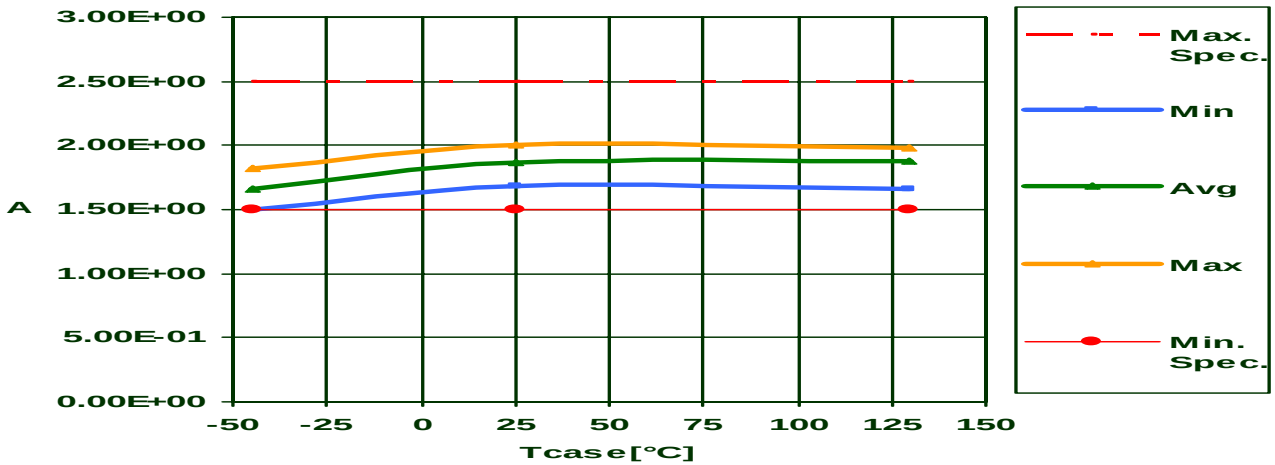
Output current limitation HSD 4,5,11 @ Vcc=13.5V – 8”AGR



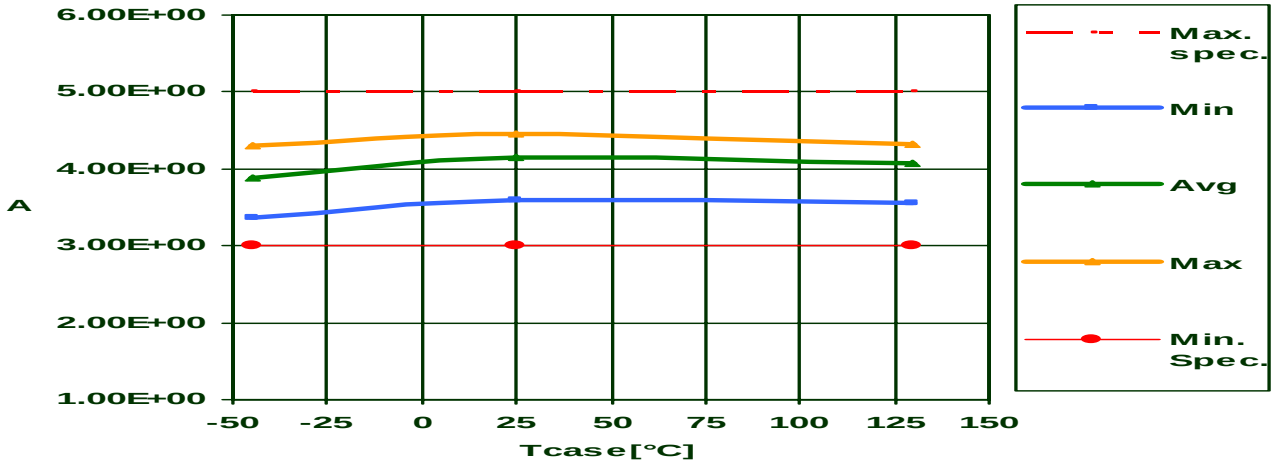
Output current limitation LSD 2,3 @ Vcc=13.5V – 6”AMK



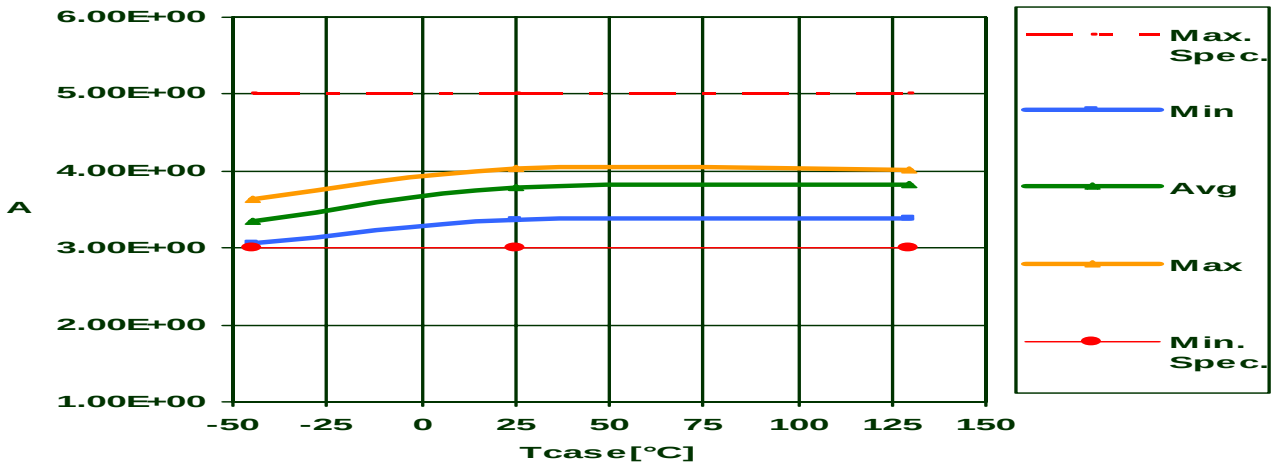
Output current limitation LSD 2,3 @ Vcc=13.5V – 8”AGR



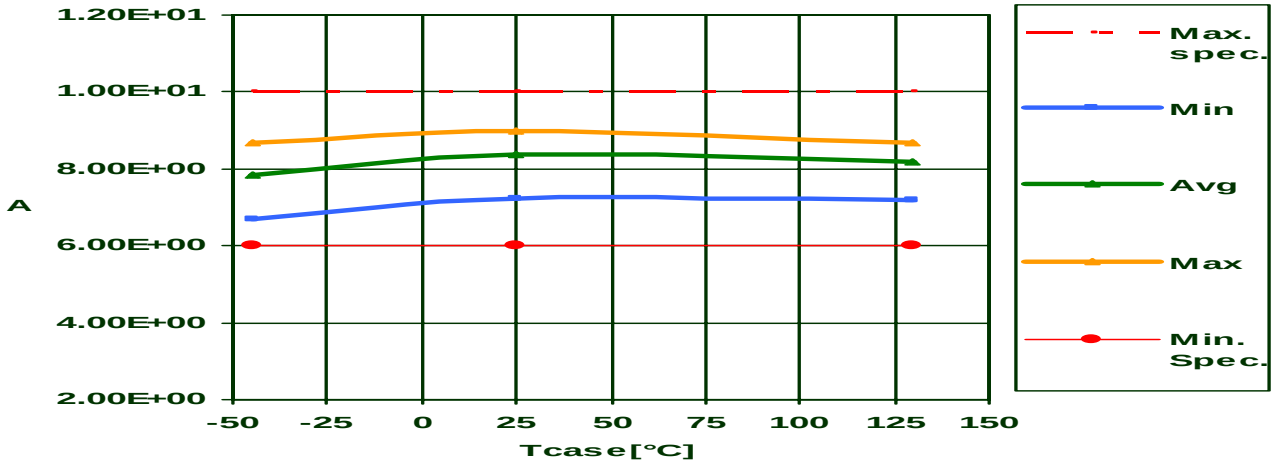
Output current limitation LSD 1,6 @ Vcc=13.5V – 6”AMK



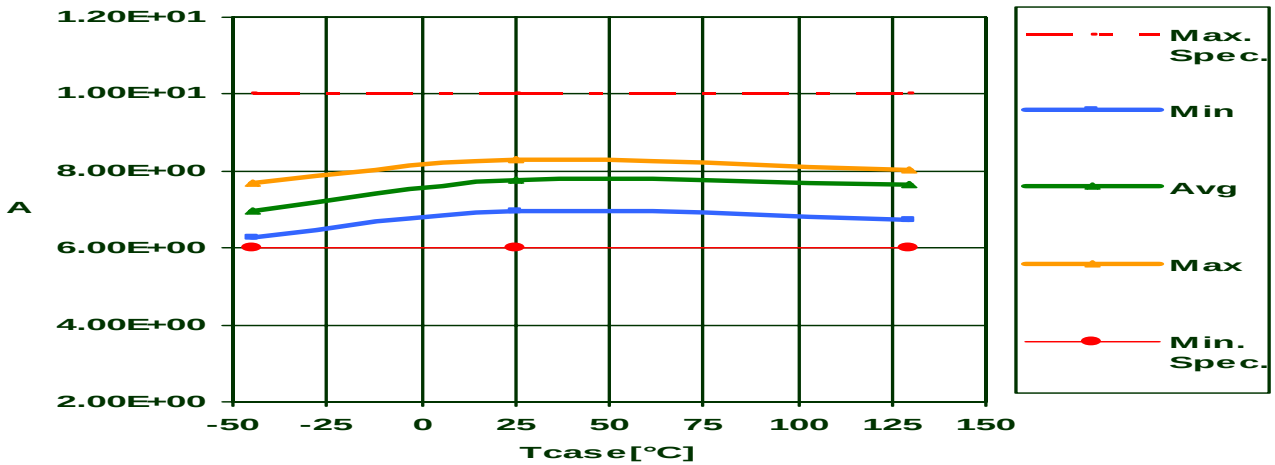
Output current limitation LSD 1,6 @ Vcc=13.5V – 8”AGR



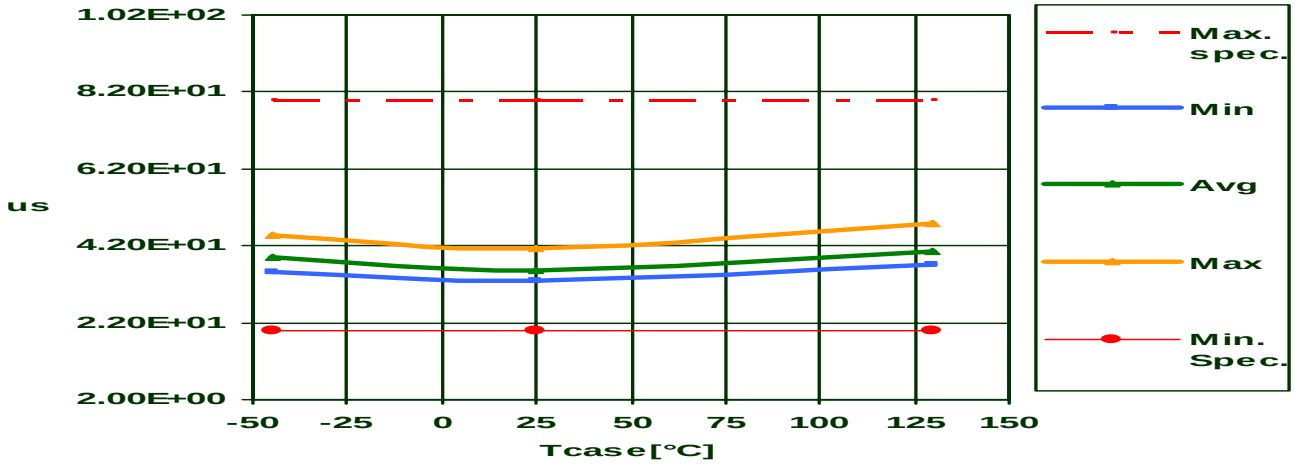
Output current limitation LSD 4,5 @ Vcc=13.5V – 6”AMK



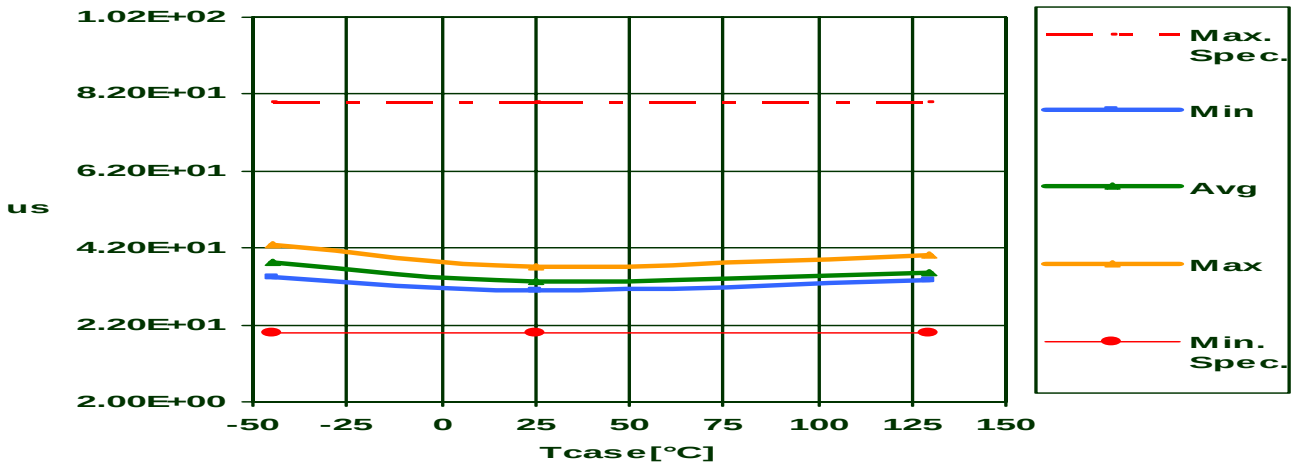
Output current limitation LSD 4,5 @ Vcc=13.5V – 8”AGR



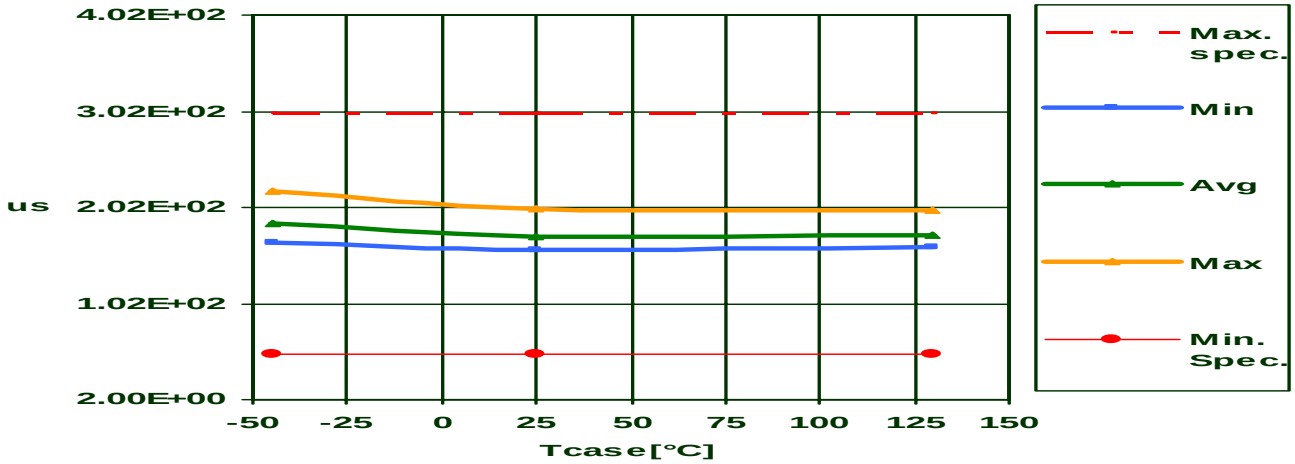
Td(on) HSD @ Vcc=13.5V – 6”AMK



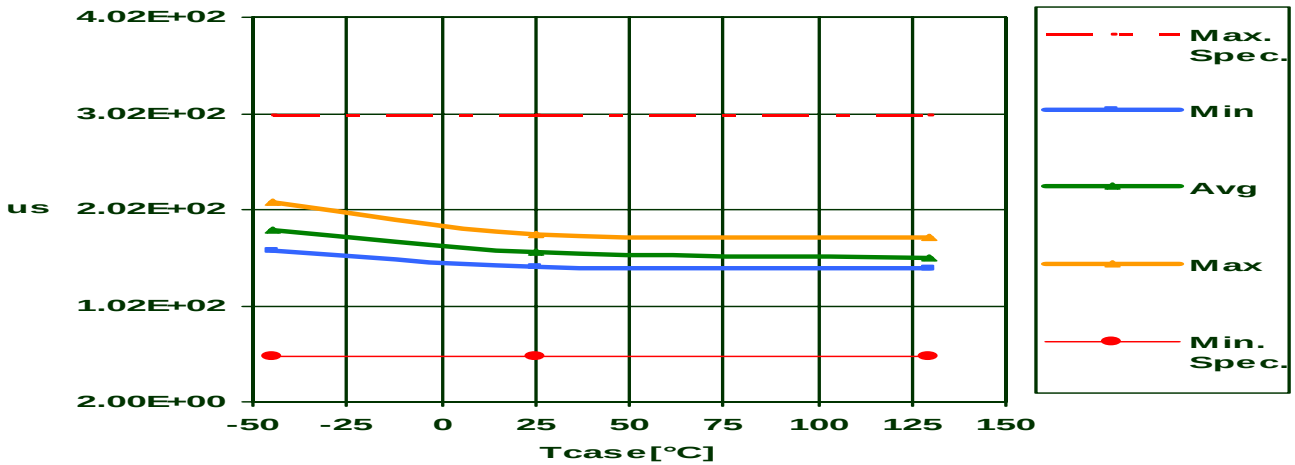
Td(on) HSD @ Vcc=13.5V – 8”AGR



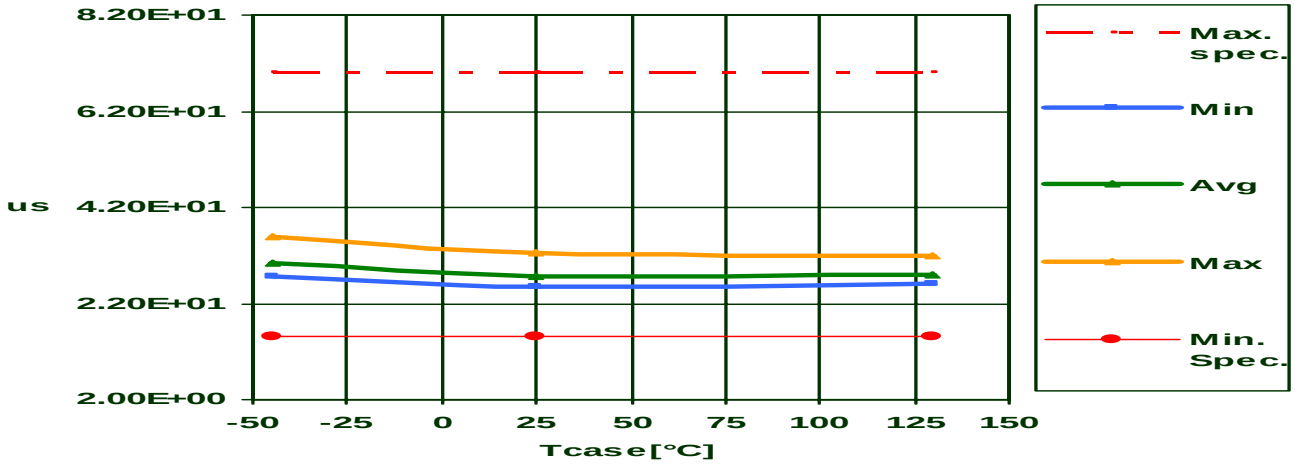
Td(off) HSD @ Vcc=13.5V – 6”AMK



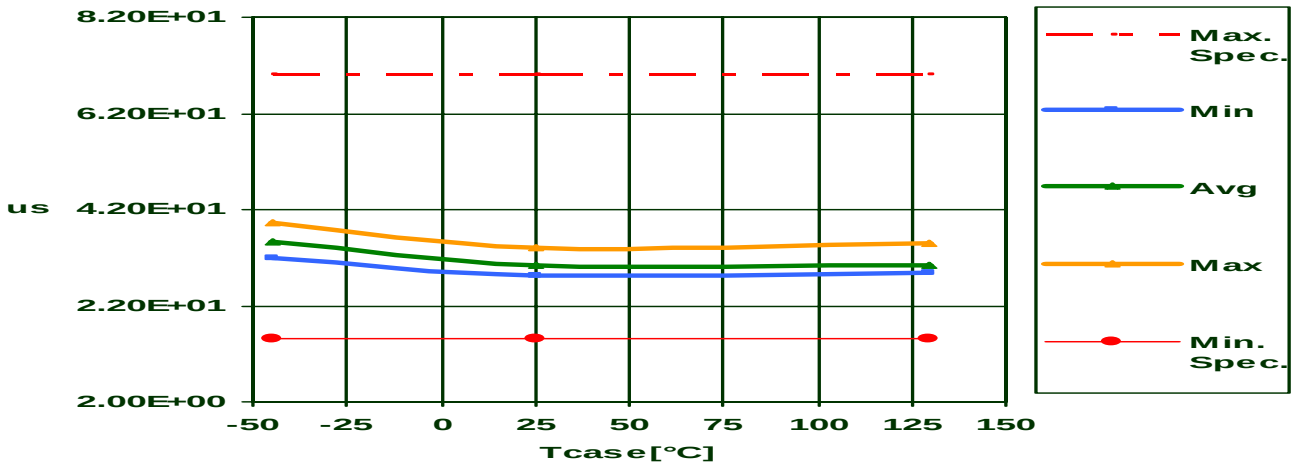
Td(off) HSD @ Vcc=13.5V – 8”AGR



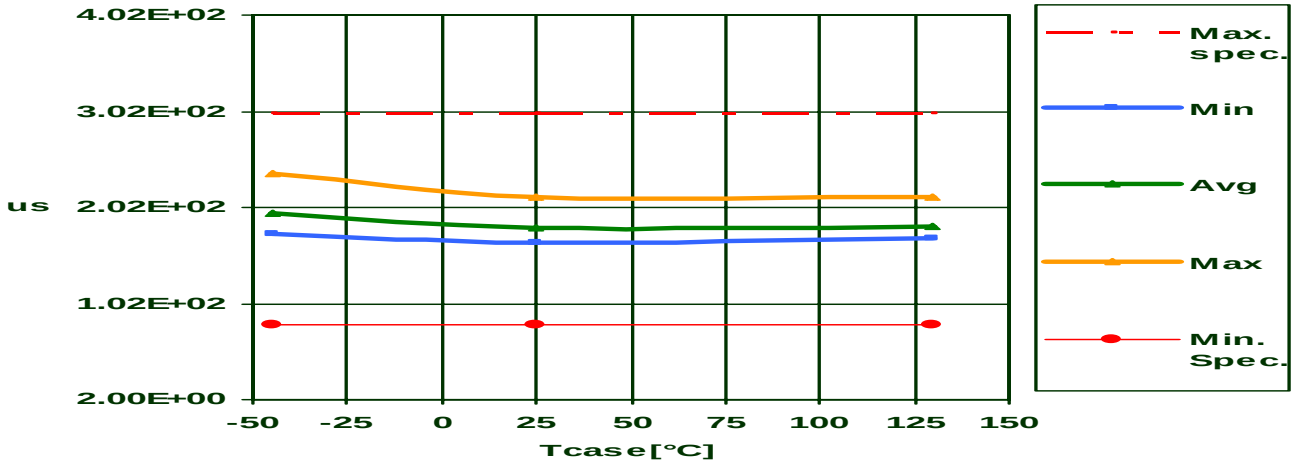
Td(on) LSD @ Vcc=13.5V – 6”AMK



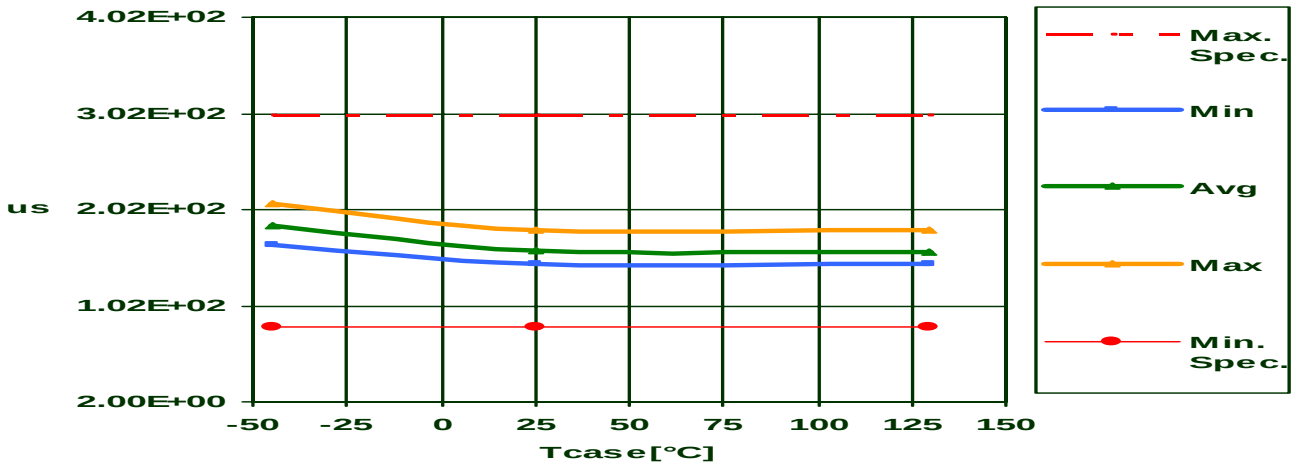
Td(on) LSD @ Vcc=13.5V – 8”AGR



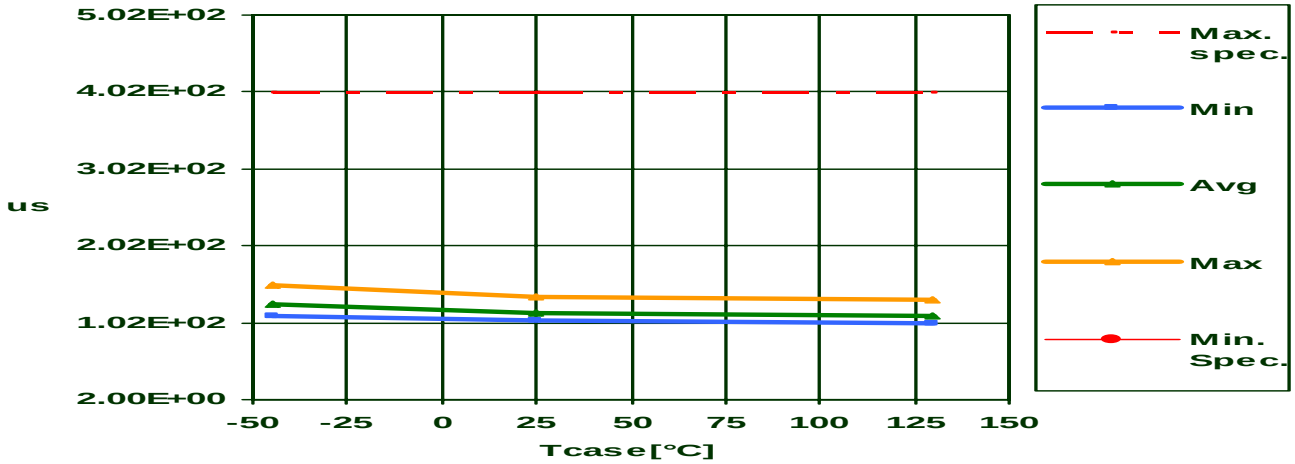
Td(off) LSD @ Vcc=13.5V – 6”AMK



Td(off) LSD @ Vcc=13.5V – 8”AGR



td HL – 6”AMK



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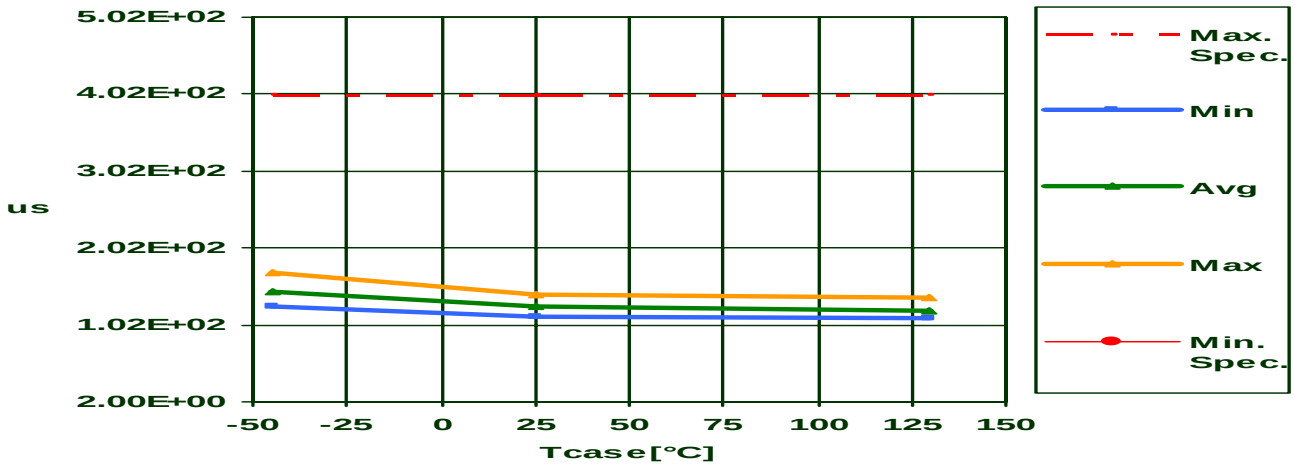

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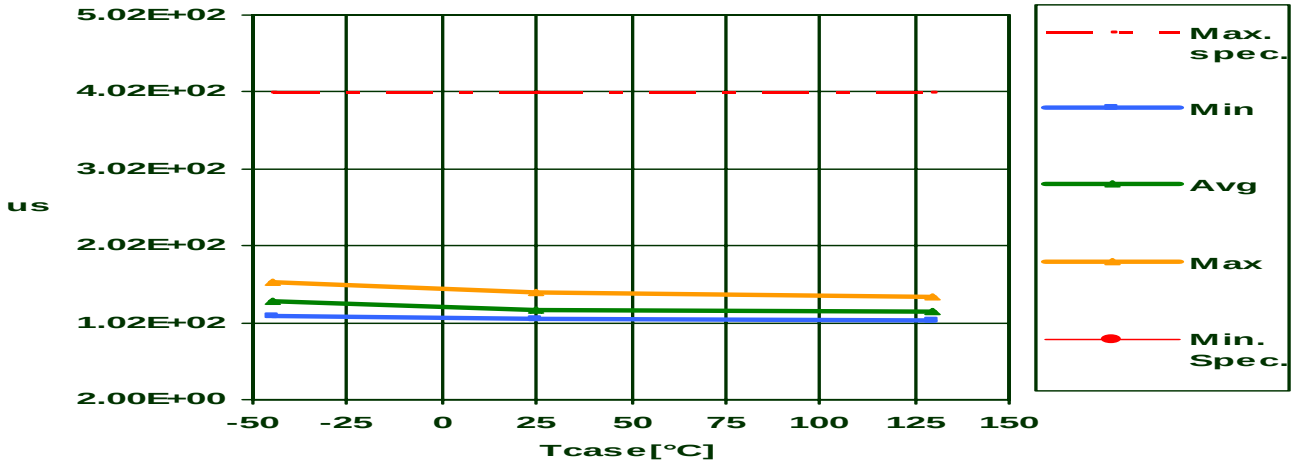
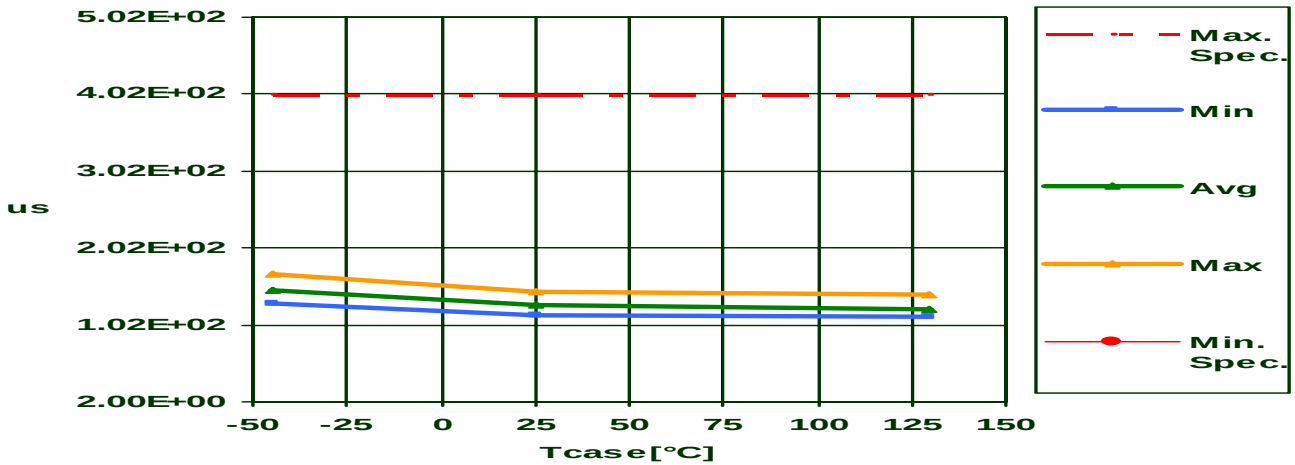
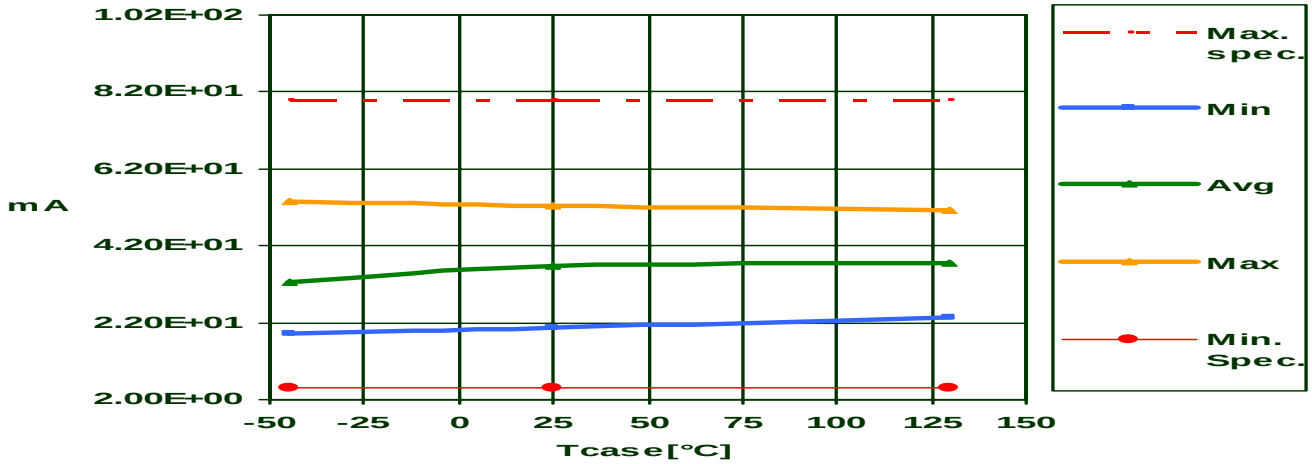


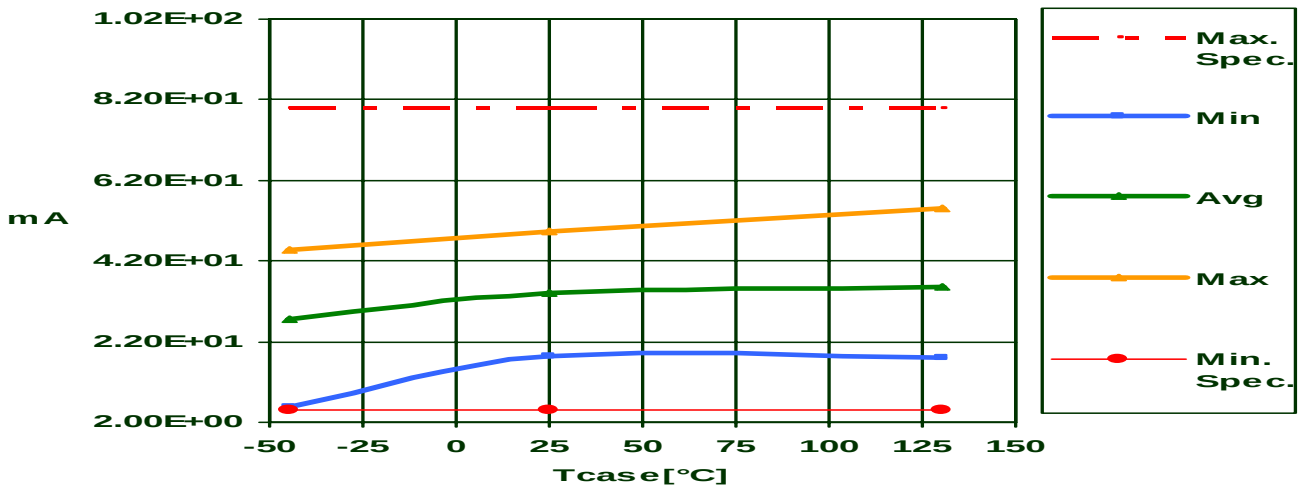
td LH – 8”AGR



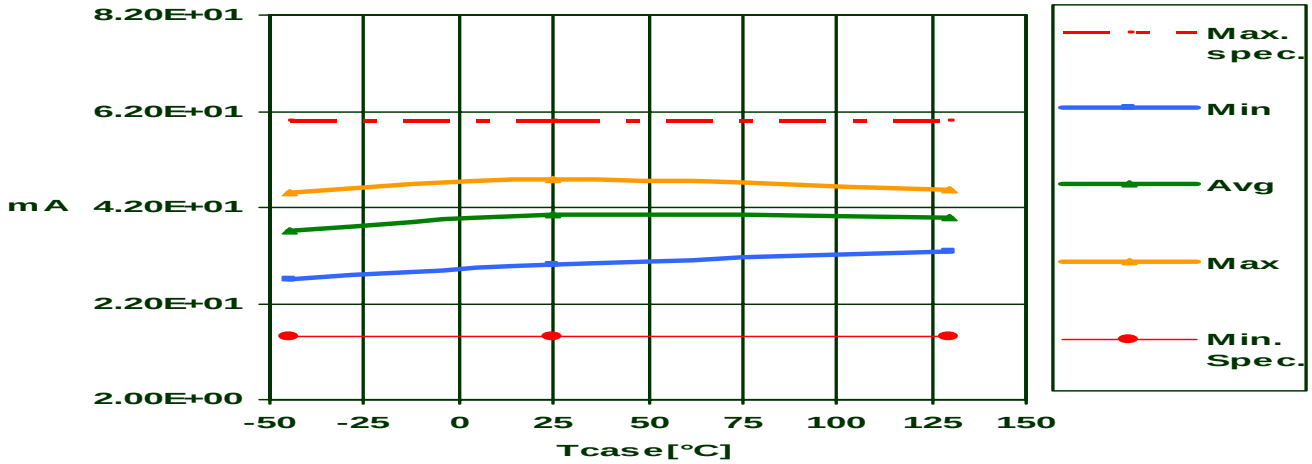
Open load current H/LSD 1 – 6”AMK



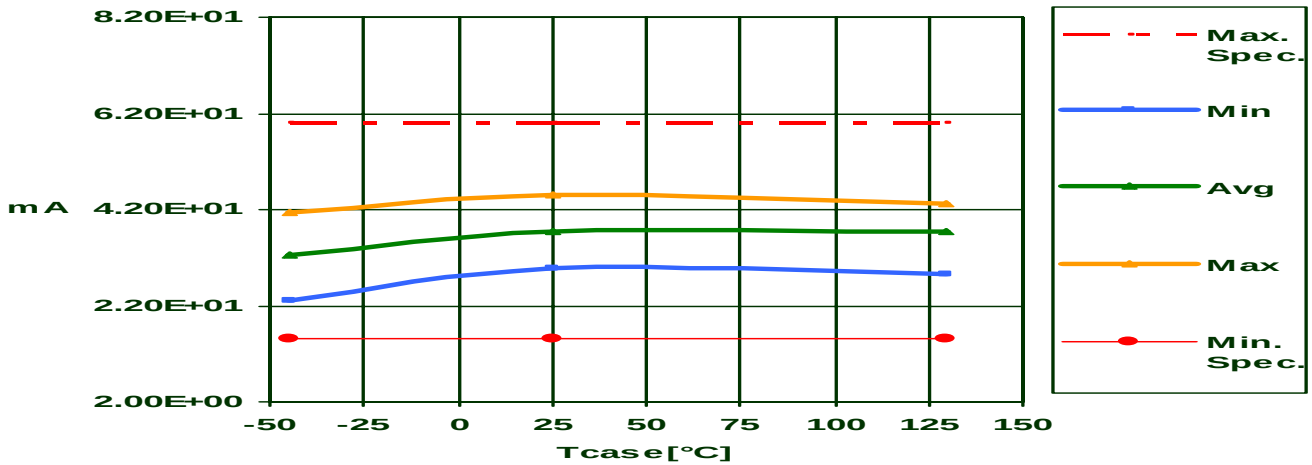
Open load current H/LSD 1 – 8”AGR



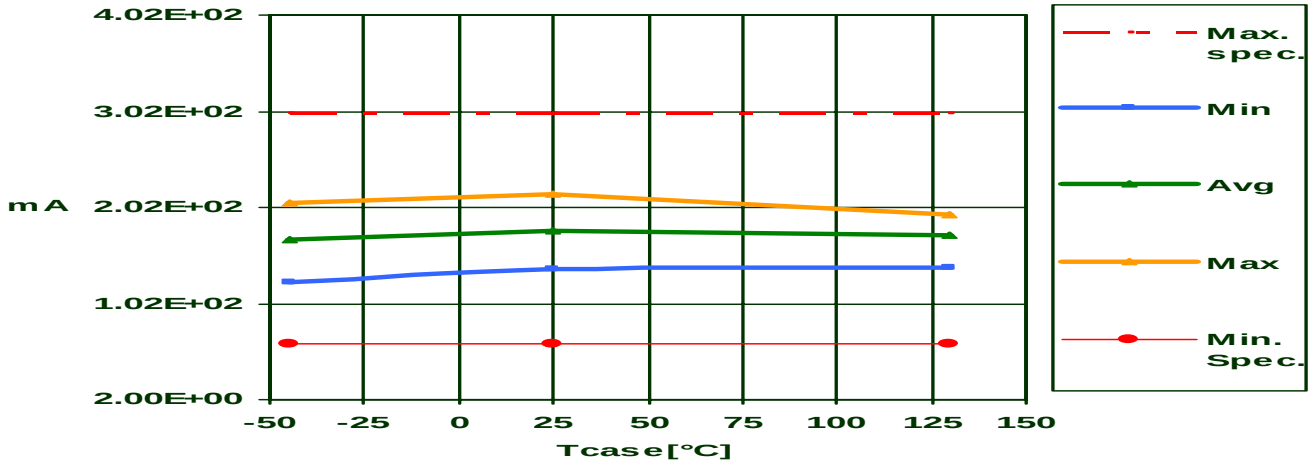
Open load current H/LSD 2,3, HSD 7,8,9,10 – 6”AMK



Open load current H/LSD 2,3, HSD 7,8,9,10 – 8”AGR



Open load current H/LSD 4,5 – 6”AMK



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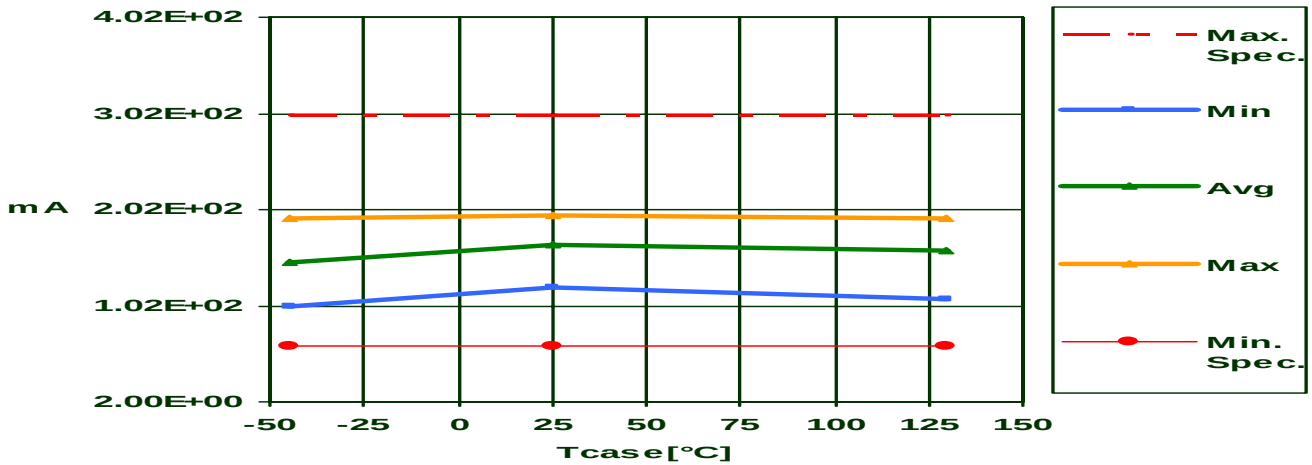
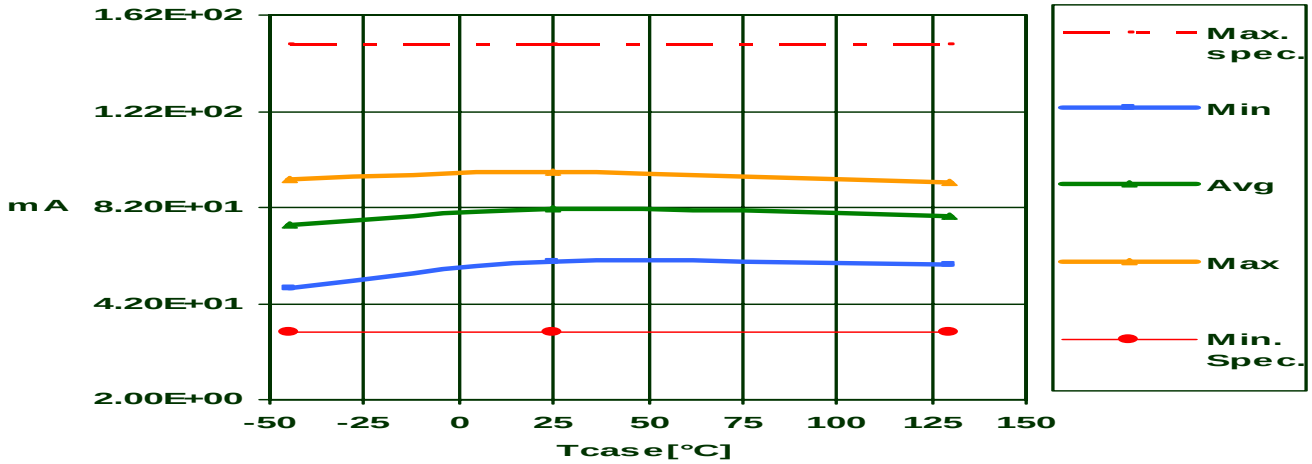
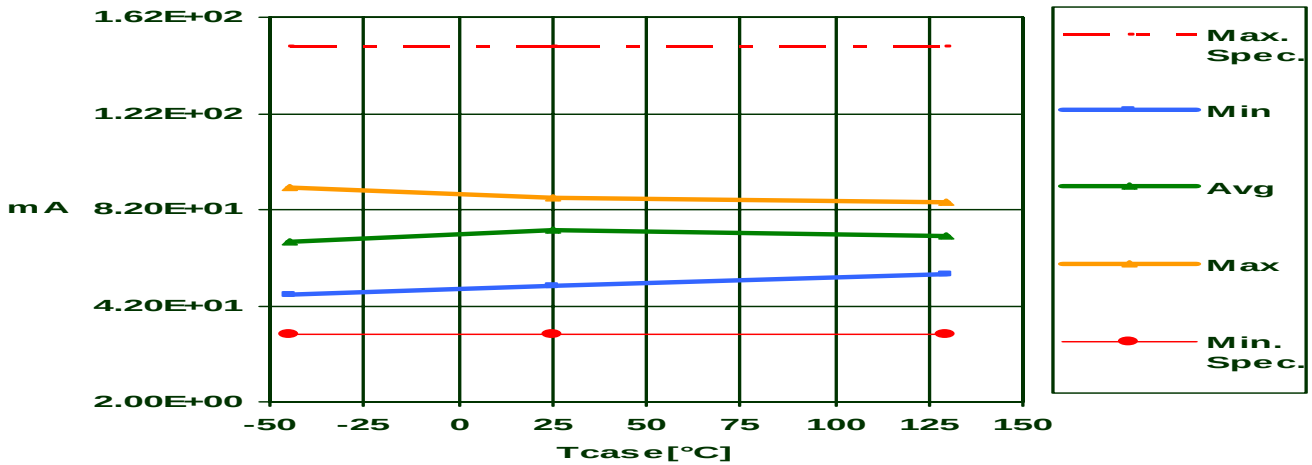


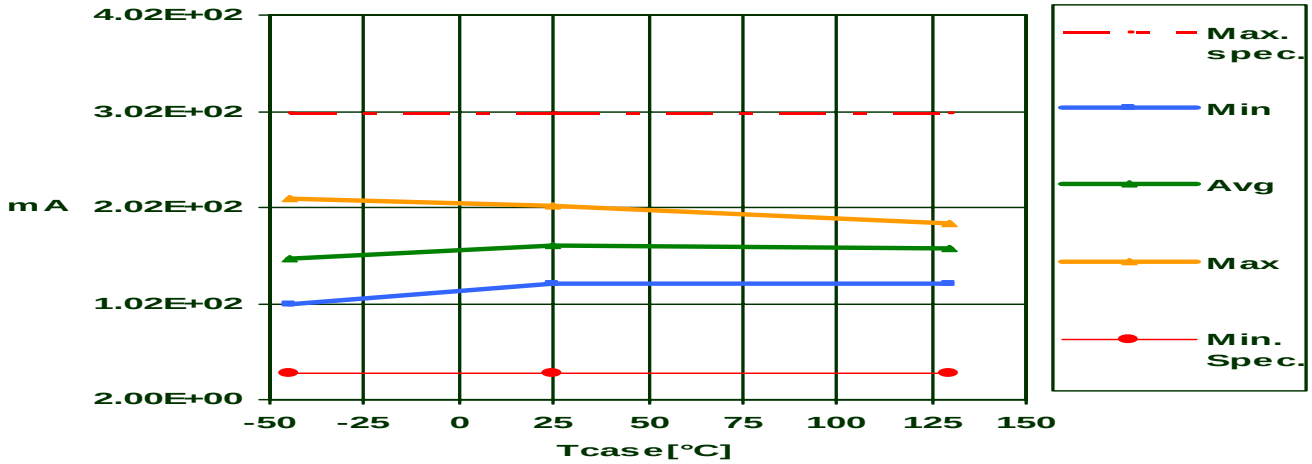
Open load current H/LSD 6 – 6”AMK



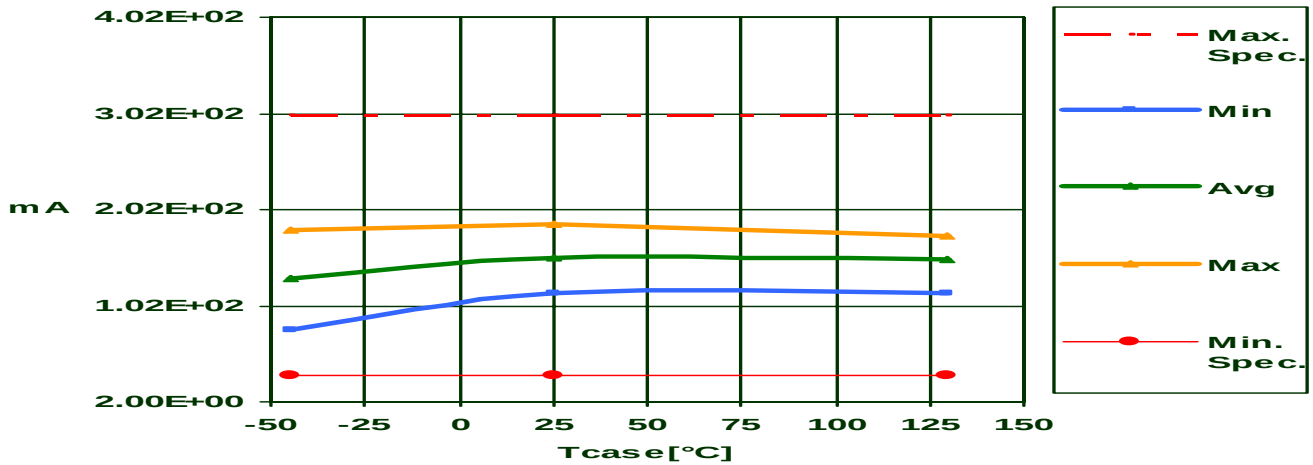
Open load current H/LSD 6 – 8”AGR



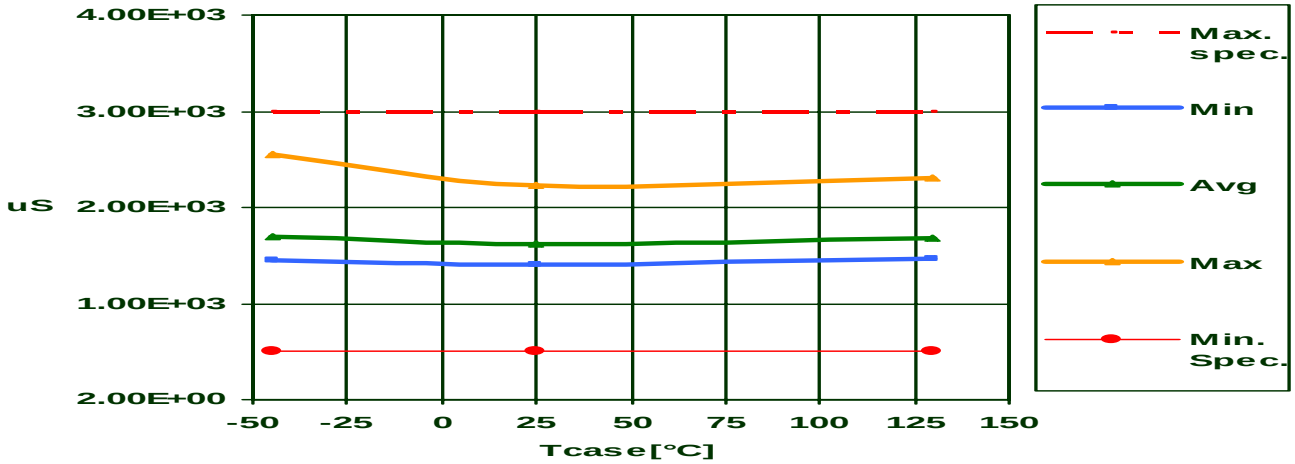
Open load current HSD 11 – 6”AMK



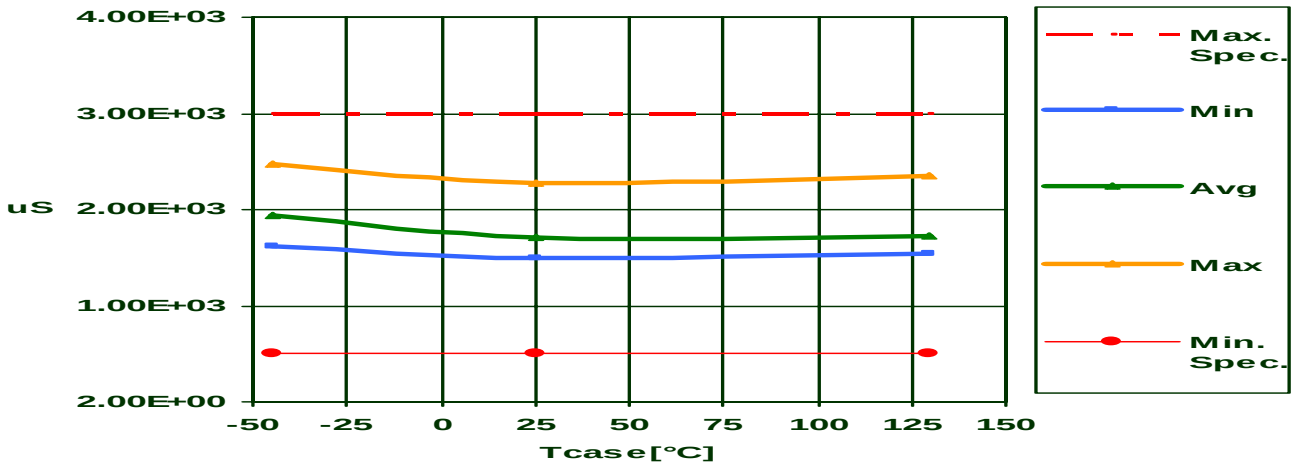
Open load current HSD 11 – 8”AGR



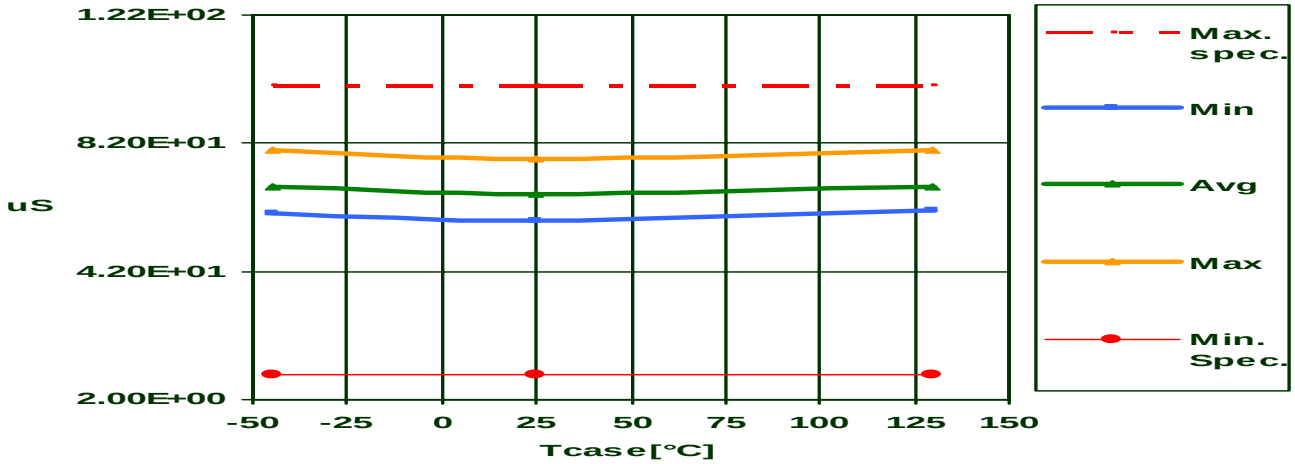
td OL – 6”AMK



td OL – 8”AGR



ti SC H/LSD – 6”AMK



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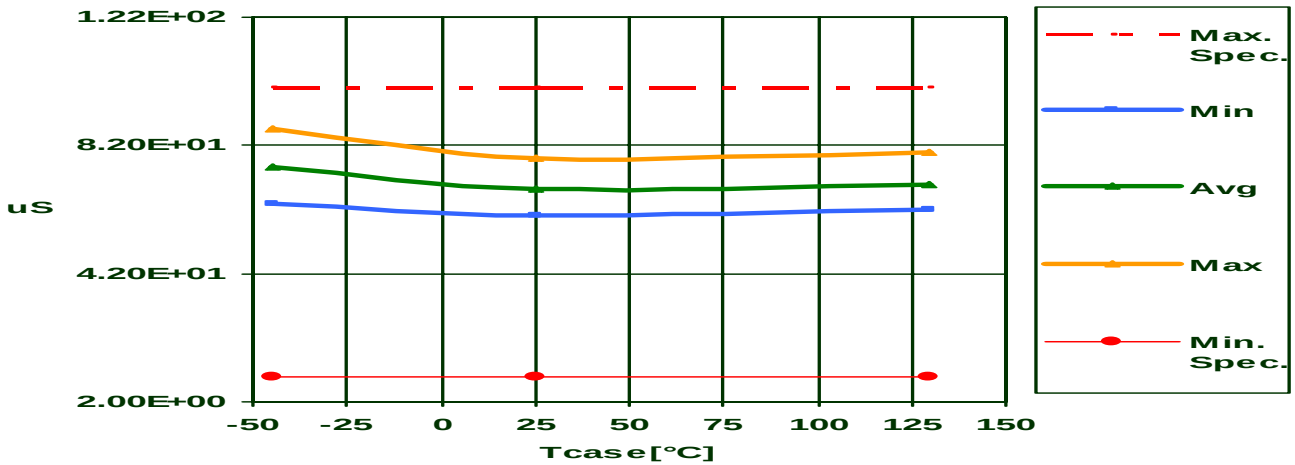
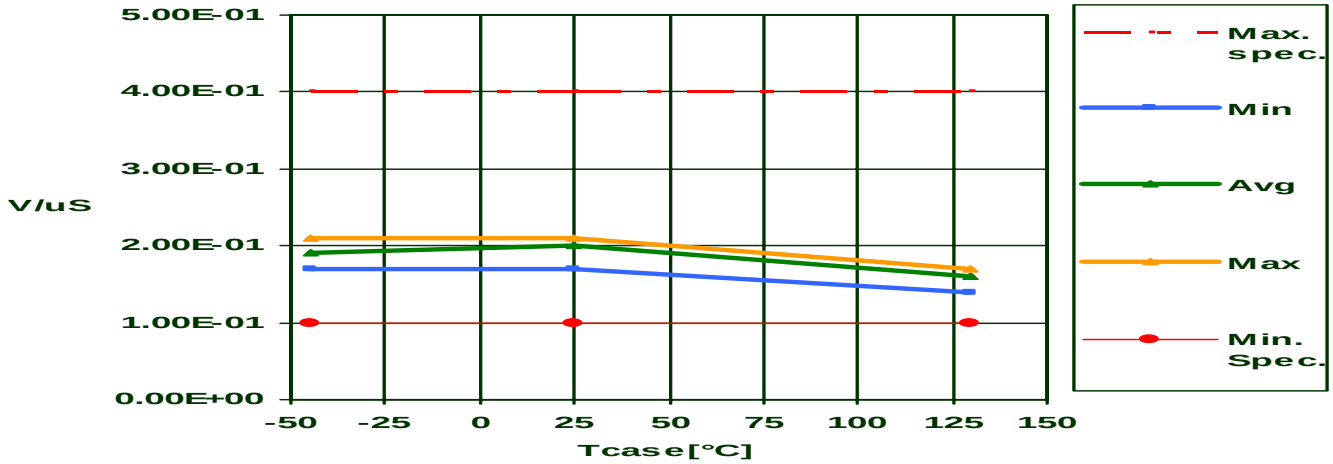
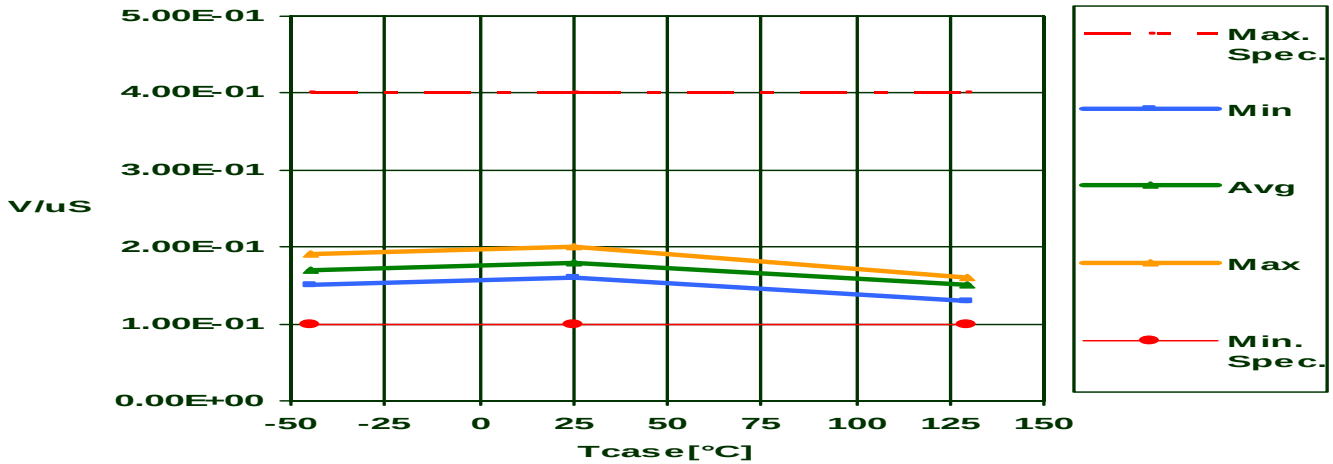


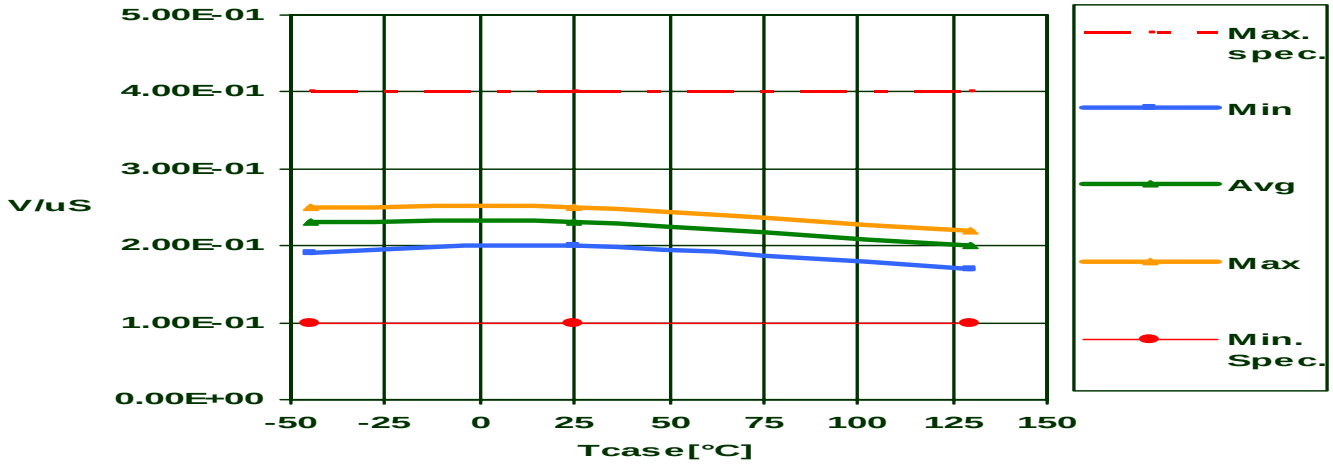
Slew rate on HSD – 6”AMK



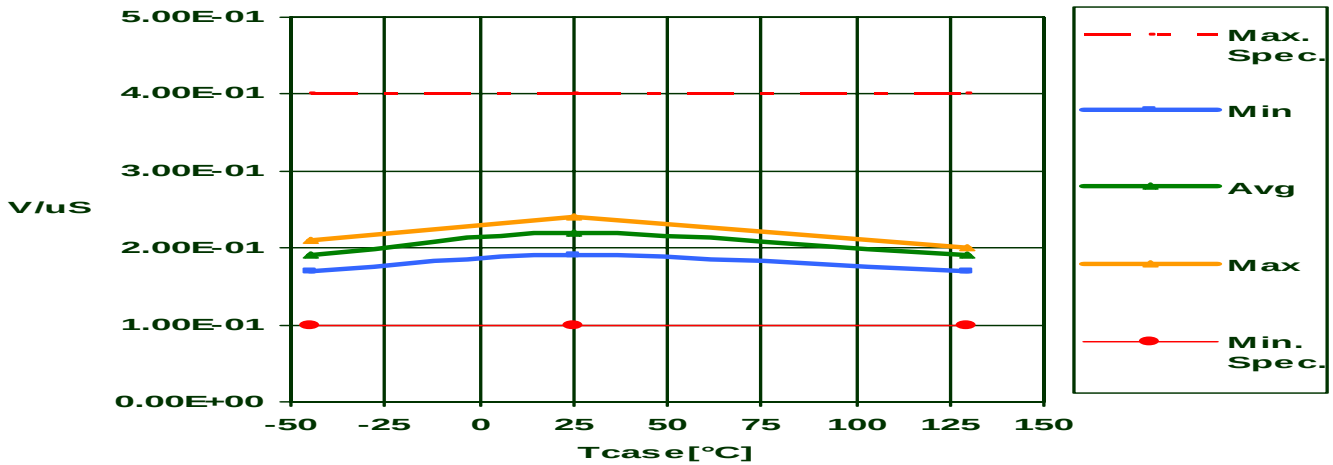
Slew rate on HSD – 8”AGR



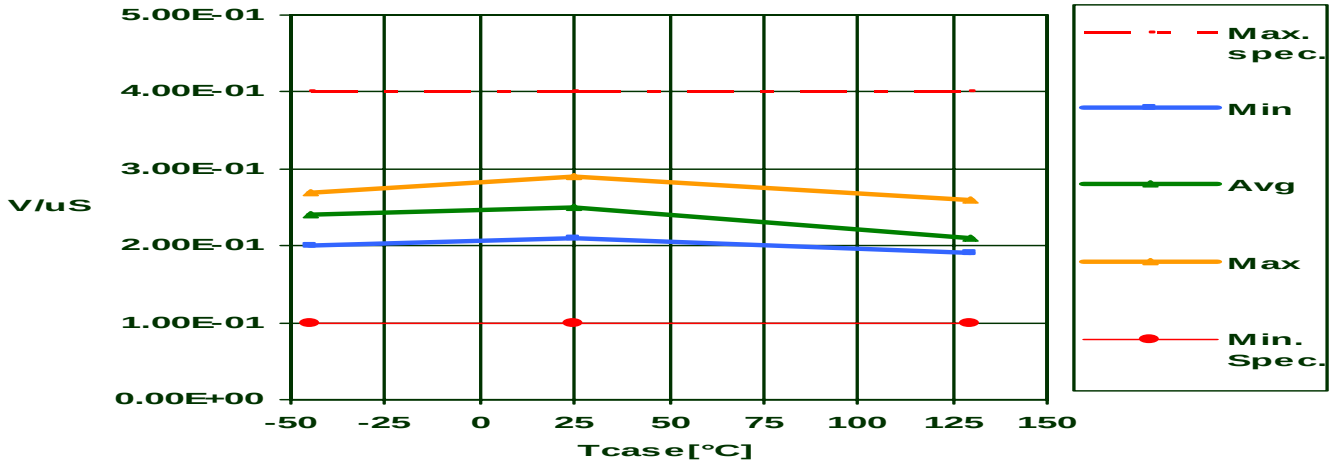
Slew rate off HSD – 6”AMK



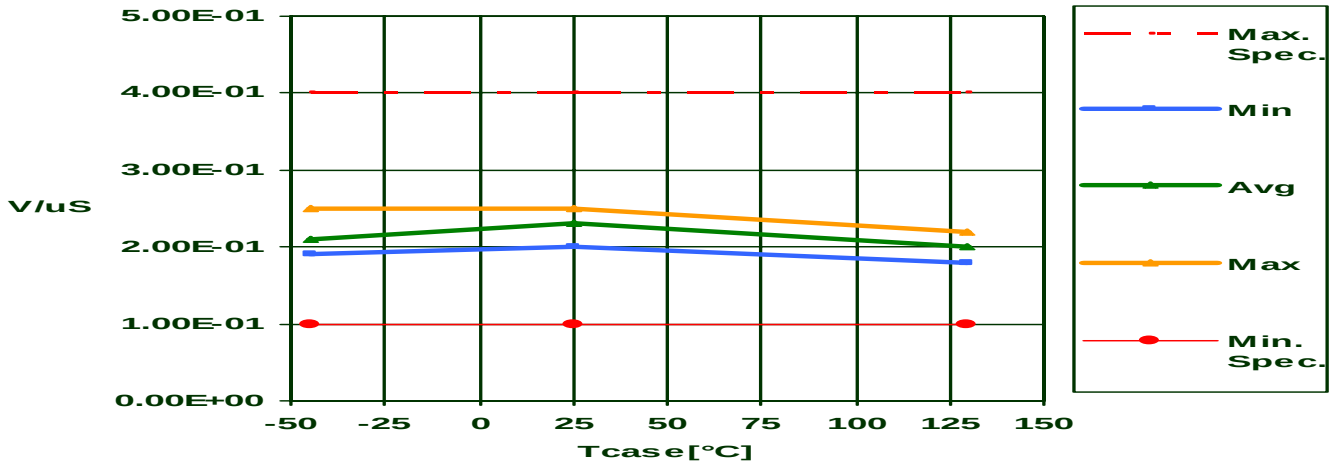
Slew rate off HSD – 8”AGR



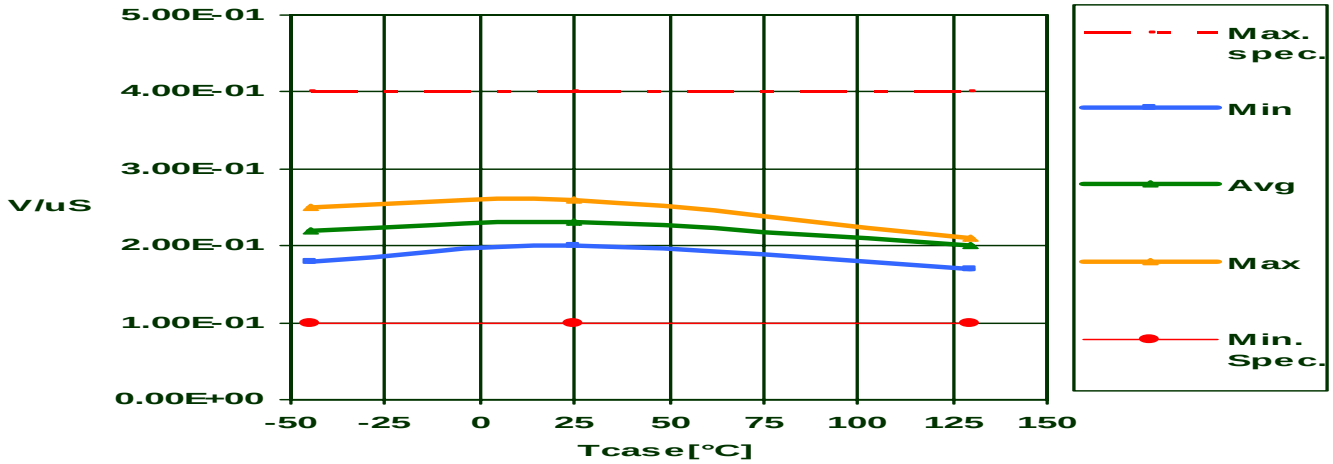
Slew rate on LSD – 6”AMK



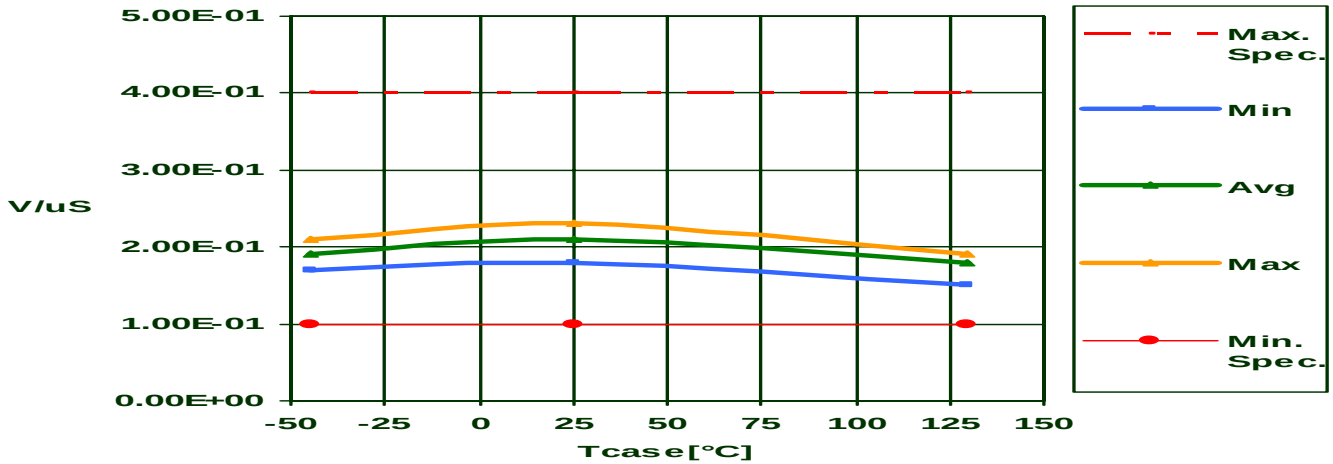
Slew rate on LSD – 8”AGR



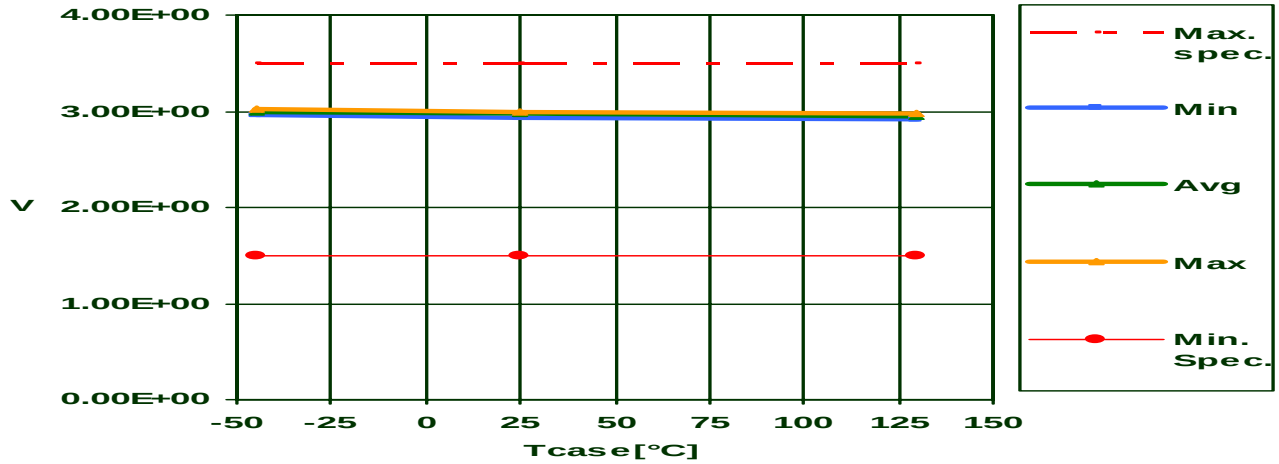
Slew rate off LSD – 6”AMK



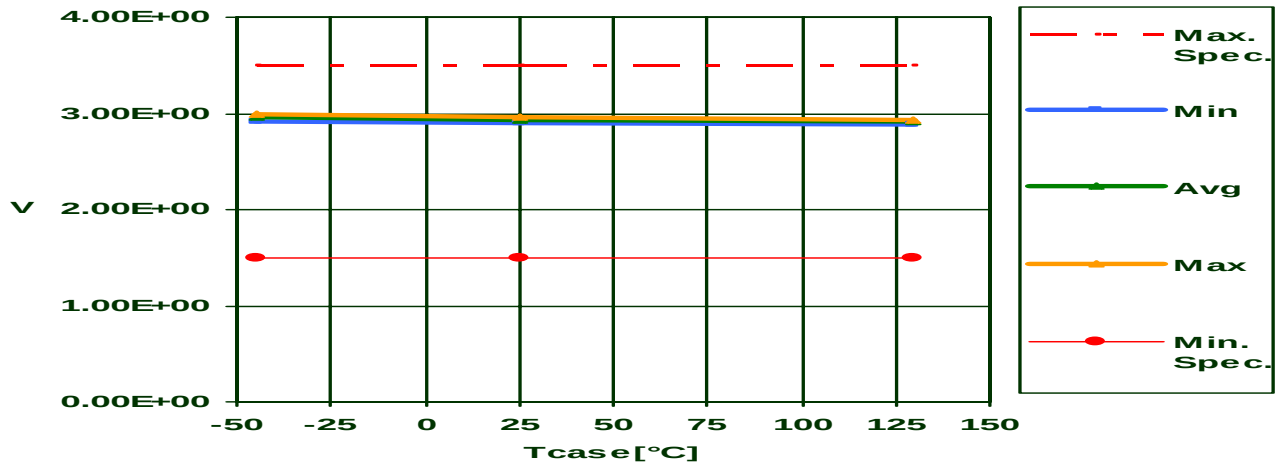
Slew rate off LSD – 8”AGR



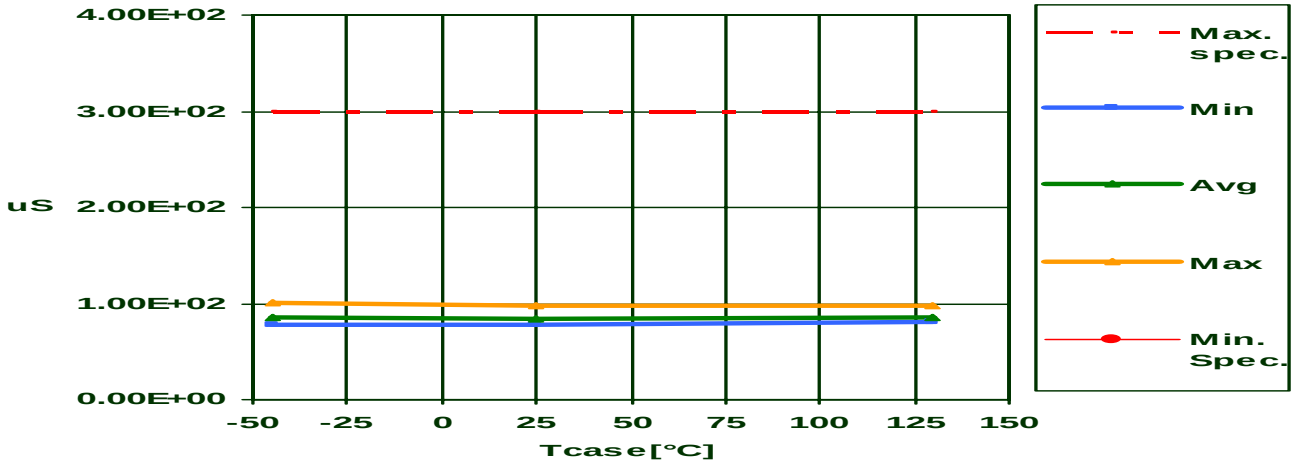
Typical VinH threshold DI,CLK,PWM1,PWM2,CSN – 6”AMK



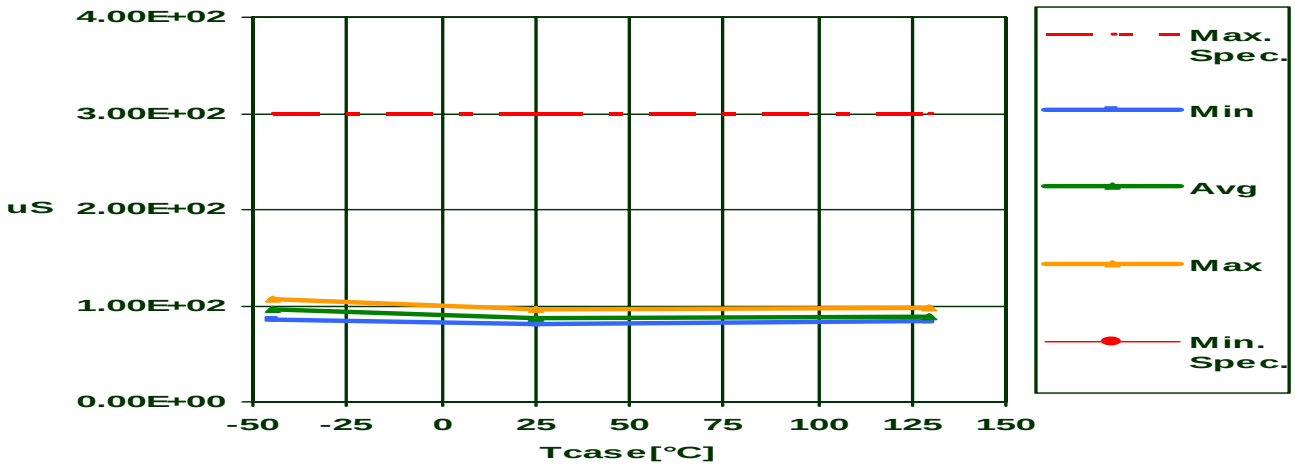
Typical VinH threshold DI,CLK,PWM1,PWM2,CSN – 8”AGR



t SET delay time H/LSD -- 6”AMK



t SET delay time H/LSD – 8”AGR



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