


**PRODUCT / PROCESS CHANGE NOTIFICATION**

**1. PCN basic data**

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	AMS/22/13247	
1.3 Title of PCN	Additional tester for Test & Finishing in UTAC Thailand for LD39100xx AG series	
1.4 Product Category	See product list	
1.5 Issue date	2022-02-08	

**2. PCN Team**

<b>2.1 Contact supplier</b>	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
<b>2.2 Change responsibility</b>	
2.2.1 Product Manager	Marcello SAN BIAGIO
2.1.2 Marketing Manager	Salvatore DI VINCENZO
2.1.3 Quality Manager	Giuseppe LISI

**3. Change**

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Equipment (EWS-FT)	New tester, or prober option or major HW changes (ex: computer), brand or model (Unknown type)	UTAC Thailand (subcon)

**4. Description of change**

	Old	New
4.1 Description	Testing platform : - Cohu ASL1K	Testing platform : - Cohu ASL1K - Teradyne Eagle ETS364
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No impact in terms of Form, Fit, Function, Reliability or Processability	

**5. Reason / motivation for change**

5.1 Motivation	Following Divisional Commitments towards a continuous improvement philosophy a New ETS364 Testing Platform will be utilised for LD39100xx AG series. The change takes advantage of what already qualified on the same Testing Platform for the similar LD49100xx AG series. The double testing platforms option allows a bigger testing capacity of the IC thanks to the consequent adding from single to parallel testing, that it is translated in a better Service to our Customers.
5.2 Customer Benefit	CAPACITY INCREASE

**6. Marking of parts / traceability of change**

6.1 Description	Trace Code in the Standard shipping Inner box label
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**7. Timing / schedule**

7.1 Date of qualification results	2021-12-13
7.2 Intended start of delivery	2022-02-02
7.3 Qualification sample available?	Upon Request

**8. Qualification / Validation**

8.1 Description	13247 PCN_LD39100_UTAC_FT_additional_testing_platform_Report.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2022-02-08

9. Attachments (additional documentations)		
13247 Public product.pdf 13247 PCN_LD39100_UTAC_FT_additional_testing_platform_Report.pdf		

10. Affected parts		
10. 1 Current		10.2 New (if applicable)
10.1.1 Customer Part No	10.1.2 Supplier Part No	10.1.2 Supplier Part No
	LD39100PU12RY	
	LD39100PU18RY	
	LD39100PU25RY	
	LD39100PU33RY	
	LD39100PURY	

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# LD39100 UTAC FT additional testing platform ETS364x4

General Purpose Analog & RF Division

AMG Analog



Rev.	DATE	DESCRIPTION	AUTHORS	APPROVER
1.0	13/Dec/2021	FT Report	T. Greco	A. Ferrigno

# Overview

- Scope: ETS364x4 qualification with AMR and DPAT @FT on LD39100 product lines
- Conclusions: the result met criteria for all step
- Diffusion Lot # and Wafer ID: 5026X5T1
- Assy Lot #: 1A23103

# FT validation process

- **Goal:** Basing on the demand for increased FT production capacity and quality improvement, we qualified the new tester ETS364 x 4 site (Teradyne Eagle) for device LD39100, with AMR (Absolute Maximum Ratings) tests and DPAT (Dynamic Part Average Testing) routine for outliers' detection on selected critical parameters for quality
- **Additional Information:** The test flow using ETS364 x 4 site is already qualified on the derivative product LD49100. For the above, the qualification is based on the correlation data on a single Testing lot.
- **Test Vehicle:** U1N3 product line (LD39100PU33RY CP option)  
Data reported in the Electrical Distribution are based on 3.3V fixed voltage options; they are representative by familiarity for all the other voltage options in the LD39100 series.
- **Method**
  - 1<sup>st</sup> step: testing whole trial on ETS364x4 FT@AMB and FT@COLD
  - 2<sup>nd</sup> step: testing on ASL1K @AMB and @COLD goods from ETS364x4
  - 3<sup>rd</sup> step: testing on ASL1K @AMB and @COLD rejects from ETS364x4

# ETS364x4 vs. ASL1K Comparison results

1° test on  
ETS364x4



Retest of  
100% good  
and rejects on  
ASL1k

	Part Type	1A23103				
	Test Program	U1N301				
	Lot ID	5026X5T1				
	Lot Final Yield	98.89%		99.08%		
	Tester Type	ETS364x4		ASL1k		
	Handler ID	RASCO1K				
	Qty In	26728		26728		
HW Bin	Bin name	Total Count	Fail Rate	Total Count	Fail Rate	Delta
6	DPAT	36	0.13%	N/A*	N/A*	0.13%
8	AMR (Absolute Max Rating)	18	0.05%	N/A*	N/A*	0.05%

\*In ASL1k no DPAT and AMR

- Average and cpk alignment for all parameters are inside normal variation

# Electrical Distribution summary results

**ETS364**

FT @ AMB					Datasheet Values			
Parameter	Unit	Median	Deviation	Cpk	Min	Typ	Max	Unit
VOUT	V	3.32	0.01	2.71	-2		2	%
Static line regulation	mV	0.66	0.02	n/a		0.01		%/V
Static load regulation	mV	5.26	0.23	n/a		0.002		%/mA
Dropout voltage	V	0.165	0.00202	38.78		0.2	0.4	V
IQ OFF mode	uA	0.0169	0.0082	40.15		0.001	1	uA
IQ @ 1A load	uA	183.980	5.454	7.09			300	uA
Enable pin input current	nA	2.131	0.204	160.08		0.1	100	nA
PG	V	0.097	0.003	29.25			0.4	V

FT@COLD					Datasheet Values			
Name	Unit	Median	Deviation	Cpk	Min	Typ	Max	Unit
VOUT	V	3.30689	0.005676	5.47	-3		3	%
Static line regulation	mV	0.453	0.2032	n/a		0.01		%/V
Static load regulation	mV	4.34	0.234	n/a		0.001		%/mA
Dropout voltage	V	0.133	0.00229	38.86		0.2	0.4	V
IQ OFF mode	uA	0.017	0.01	32.77		0.001	1	uA
IQ @ 1A load	uA	167.72	5.452	8.09			300	uA
Enable pin input current	nA	2.148	0.197	165.57		0.1	100	nA
PG	V	0.078	0.0059	18.19			0.4	V

**ASL1K**

FT @ AMB					Datasheet Values			
Parameter	Unit	Median	Deviation	Cpk	Min	Typ	Max	Unit
VOUT	V	3.31	0.01	3.04	-2		2	%
Static line regulation	mV	0.63	0.20	n/a		0.01		%/V
Static load regulation	mV	3.06	0.81	n/a		0.002		%/mA
Dropout voltage	V	0.165	0.0023	33.48		0.2	0.4	mV
IQ OFF mode	uA	0.0853	0.0012	260.60		0.001	1	uA
IQ @ 1A load	uA	184.770	5.428	7.08			300	uA
Enable pin input current	nA	27.680	3.319	7.26		0.1	100	nA
PG	V	0.109	0.002	48.50			0.4	V

FT@COLD					Datasheet Values			
Name	Unit	Median	Deviation	Cpk	Min	Typ	Max	Unit
VOUT	V	3.3	0.0056	5.95	-3		3	%
Static line regulation	mV			n/a		0.01		%/V
Static load regulation	mV	2.25	0.283	n/a		0.001		%/mA
Dropout voltage	V	0.132	0.0021	42.54		0.2	0.4	mV
IQ OFF mode	uA	0.089	0.012	25.31		0.001	1	uA
IQ @ 1A load	uA	173.84	5.7	7.38			300	uA
Enable pin input current	nA	23.95	5.43	4.67		0.1	100	nA
PG	V	0.078	0.000735	146.03			0.4	V



# Conclusion

- Test program on ETS364x4 has robustness items versus Test program on ASL1K, doesn't show weakness items
- The correlation on the two different testers met all the criteria.



## Public Products List

Public Products are off the shelf products. They are not dedicated to specific customers, they are available through ST Sales team, or Distributors, and visible on ST.com

**PCN Title** : Additional tester for Test & Finishing in UTAC Thailand for LD39100xx AG series

**PCN Reference** : AMS/22/13247

**Subject** : Public Products List

Dear Customer,

Please find below the Standard Public Products List impacted by the change.

LD39100PU12RY	LD39100PU25RY	LD39100PURY
LD39100PU33RY	LD39100PU18RY	



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