


PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

1.1 Company		STMicroelectronics International N.V
1.2 PCN No.	AMS/19/11334	
1.3 Title of PCN	Transfer of the Assembly and Test & Finishing from ST Bouskoura to ST Shenzhen for Automotive Grade products assembled in SO16 packages	
1.4 Product Category	Logic products in Automotive grade version in SO16 package	
1.5 Issue date	2019-03-19	

2. PCN Team

2.1 Contact supplier	
2.1.1 Name	ROBERTSON HEATHER
2.1.2 Phone	+1 8475853058
2.1.3 Email	heather.robertson@st.com
2.2 Change responsibility	
2.2.1 Product Manager	Lorenzo NASO
2.1.2 Marketing Manager	Marcello SAN BIAGIO
2.1.3 Quality Manager	Jean-Marc BUGNARD

3. Change

3.1 Category	3.2 Type of change	3.3 Manufacturing Location
Transfer	Line transfer for a full process or process brick (process step, control plan, recipes) from one site to another site: Assembly site (SOP 2617)	ST Shenzhen

4. Description of change

	Old	New
4.1 Description	Assembly and Test & Finishing : ST Bouskoura	Assembly and Test & Finishing : ST Shenzhen
4.2 Anticipated Impact on form,fit, function, quality, reliability or processability?	No impact	

5. Reason / motivation for change

5.1 Motivation	Capacity rationalization to improve delivery service.
5.2 Customer Benefit	SERVICE IMPROVEMENT

6. Marking of parts / traceability of change

6.1 Description	- New finished good codes - Label on the package : Assembly plant code will be changed from CZ (Bouskoura) to GK (Shenzhen)
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7. Timing / schedule

7.1 Date of qualification results	2019-01-24
7.2 Intended start of delivery	2019-09-15
7.3 Qualification sample available?	Upon Request

8. Qualification / Validation

8.1 Description	11334 New_Reliability_Report_SO16SHZ auto.pdf		
8.2 Qualification report and qualification results	Available (see attachment)	Issue Date	2019-03-19

9. Attachments (additional documentations)		
11334 Public product.pdf 11334 New_Reliability_Report_SO16SHZ auto.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
	HCF4010YM013TR	
	HCF4021YM013TR	
	HCF4051YM013TR	
	HCF4060YM013TR	
	HCF4094YM013TR	
	M74HC4060YRM13TR	
	M74HC4094YRM13TR	
	M74HC4851YRM13TR	
	M74HC4852YRM13TR	
	M74HC595YRM13TR	

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**PRODUCT/PROCESS
CHANGE NOTIFICATION**

PCN AMS/19/11334

Analog, MEMS and Sensor Group

**Transfer of the Assembly and Test & Finishing from
ST Bouskoura to ST Shenzhen for Automotive Grade
products assembled in SO16 packages**

WHAT:

Progressing on the activities related to SO16 Automotive manufacturing processes, ST is glad to announce the transfer of the production (assembly and test) of our Logic products from ST Bouskoura to ST Shenzhen.

	Current material	New material	Comment
Plant	ST Bouskoura (Morocco)	ST Shenzhen (China)	
Glue	ABLESTICK 8601-S25	ABLESTICK 8601-S25	No change
Molding compound	Sumitomo G700K	Sumitomo G630AY	Similar performance
Wire	Copper 1 mil	Copper 1 mil	No change
Leadframe / plating	Copper / NiPdAgAu	Copper / NiPdAgAu	No change
Leadframe dimension	85x85mils 94x125mils	94x150mils	
MSL	1	3	As prevention versus lead discoloration risk
Tester	ASL1K	ASL1K	No change

For the complete list of the part numbers affected by the change, please refer to the attached Products list.

Samples of test vehicles are available upon request.

WHY:

Capacity rationalization to secure deliveries in the future.

HOW:

The change that covers Signal conditioning products, is already qualified through attached report which is an extension of standard product qualification to automotive grade qualification. Here below you'll find the details of qualification plan.

Qualification program and results:

The qualification program consists mainly of comparative electrical characterization and reliability tests. Please refer to reliability report for all the details.

WHEN:

Production in ST Shenzhen for AMS automotive products will start after customer acceptance.

Marking and traceability:

Unless otherwise stated by customer specific requirement, the traceability of the parts assembled with the new material set will be ensured by marking on package and on label as per below description:

Manufactured under patents or patents pending

STMicroelectronics

Assembled in: COUNTRY

PbFree Second level interconnect

MSL: X Bag sealed date: XX XXX XXXX

PBT: XXX°C Category: ECOPACK/Rohs

TYPE Commercial product

 Finished good

Total Qty: XXXX

Trace codes PPYWWLLL WX TF

 PPYWWLLL WX TF

 PPYWWLLL WX TF

Marking MARKING

Bulk Id Number

Bar code

Please provide the bulk Id for any inquiry

PP and TF
code will
change
from CZ to
GK

MSL: Moisture sensitivity level as per Jedec J-std-020C

PBT: Peak body temperature (maximum temperature for reflow soldering)

ECOPACK: present if leadfree component

TYPE: product name

Trace codes: PP: assembly plant code

Y: last digit of the year of assembly

WW: Week of assembly

LL1: lot number

WX: Diffusion plant code

TF : Test&finishing plant code

Bulk ID number: 1: Product level (T for tested product)

Y: last digit of the year

P: Plant code

WW: Week of labeling

LOT: Sequential number for lot

BOXX: Sequential number for box

The changes here reported will not affect the electrical, dimensional and thermal parameters keeping unchanged all information reported on the relevant datasheets.

There is as well no change in the packing process or in the standard delivery quantities.

Reliability Evaluation Report

Automotive grade qualification

SO16 ST Shenzhen

General Information		Locations	
Product Line	T.V.1:P10B01	Wafer fab	ST AMK6 Singapore
	T.V.2: R85201		
	T.V.3.Z460		
Product Description	Hex Buffer/Converters Non Inverting	Assembly plant	ST Shenzhen
	Analog Mux With Current Injection Effect		
	14 Stage Binary Counter / Oscillator		
P/N	T.V.1: HCF4010YM013TR,	Reliability Lab	Catania Reliability LAB SHZ Reliability Lab
	T.V.2: M74HC4852YRM13TR,		
	T.V.3: M74HC4060YRM13TR		
Product Group	AMS		
Product division	General Purpose Analog		
Package	SO16		
Silicon Process technology	TV1:CMOSMG		
	TV2:HCMOS4T		
	T.V3. NHSFII		

Note: This report is a summary of the reliability trials performed in good faith by STMicroelectronics in order to evaluate the potential reliability risks during the product life using a set of defined test methods.

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1 APPLICABLE AND REFERENCE DOCUMENTS

Document reference	Short description
AEC-Q100	Stress test qualification for automotive grade integrated circuits
AEC-Q101	Stress test qualification for automotive grade discrete semiconductors
JESD47	Stress-Test-Driven Qualification of Integrated Circuits
0061692	Reliability tests and criteria for qualifications

2 GLOSSARY

DUT	Device Under Test
PCB	Printed Circuit Board
SS	Sample Size

3 RELIABILITY EVALUATION OVERVIEW

3.1 Objectives

To perform the automotive qualification for the SO16 produced in ST Shenzhen, based on the AECQ100 specification.

3.2 Conclusion

Qualification Plan requirements have been fulfilled without exception. It is stressed that reliability tests have shown that the devices behave correctly against environmental tests (no failure). Moreover, the stability of electrical parameters during the accelerated tests demonstrates the ruggedness of the products and safe operation, which is consequently expected during their lifetime.

Reliability agreement for qualification.

4 DEVICE CHARACTERISTICS

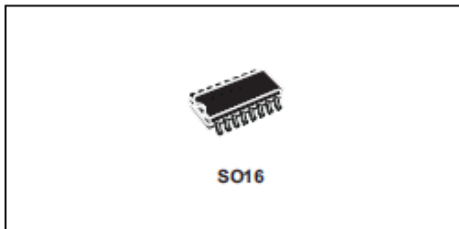
4.1 Device description



HCF4010

Hex buffer/converter (non-inverting)

Datasheet - production data



Applications

- Automotive
- Industrial
- Computer
- Consumer

Description

The HCF4010 device is a monolithic integrated circuit fabricated in MOS (metal oxide semiconductor) technology available in an SO16 package.

It is a non-inverting hex buffer/converter and can be used as a CMOS to TTL logic level converter, as a current "sink" or "source" driver, or as a multiplexer (1 to 6).

It is the preferred replacement of the HCF4050B in buffer applications.

Features

- Propagation delay time
 - $t_{PD} = 50$ ns (typ.) at $V_{DD} = 10$ V, $C_L = 50$ pF
- High to low level logic conversion
- Multiplexer: 1 to 6 or 6 to 1
- High "sink" and "source" current capability
- Quiescent current specified up to 20 V
- 5 V, 10 V and 15 V parametric ratings
- Input leakage current
- $I_I = 100$ nA (max.) at $V_{DD} = 18$ V, $T_A = 25$ °C
100% tested for quiescent current
- ESD performance
 - CDM: 1 kV
 - HBM: 1 kV
 - MM: 150 V

Table 1. Device summary

Order code	Temperature range	Package	Packing	Marking
HCF4010M013TR	–55 °C to +125 °C	SO16	Tape and reel	HCF4010
HCF4010YM013TR ⁽¹⁾	–40 °C to +125 °C	SO16 (automotive grade)		HCF4010Y

1. Qualification and characterization according to AEC Q100 and Q003 or equivalent, advanced screening according to AEC Q001 and Q002 or equivalent.



M74HC4852

Dual 4:1 channel analog MUX/DEMUX with injection current protection

Datasheet – production data

Features

- Low power dissipation
 - $I_{CC} = 2 \mu A$ (max.) at $T_A = 25^\circ C$
- Injection current protection: $V_{Aout} < 1 mV$ at $V_{CC} = 5 V$, $I_{IN} = 1 mA$, $R_S = 3.9 k\Omega$
- "ON" resistance at $T_A = 25^\circ C$
 - 215Ω typ. ($V_{CC} = 3.0 V$)
 - 160Ω typ. ($V_{CC} = 4.5 V$)
 - 150Ω typ. ($V_{CC} = 6 V$)
- Fast switching: $t_{pd} = 8.6 ns$ (typ.) at $T_A = 25^\circ C$, $V_{CC} = 4.5 V$
- Wide operating supply voltage range
 - $V_{CC} = 2 V$ to $6 V$
- High noise immunity: $V_{NIH} = V_{NIL} = 28\% V_{CC}$ (min.)
- Pin and function compatible with series 4052, 4852
- Latch-up performance exceeds 500 mA
 - (JESD 17)
- ESD performance
 - HBM: 2000 V
 - MM: 200 V
 - CDM: 1000 V

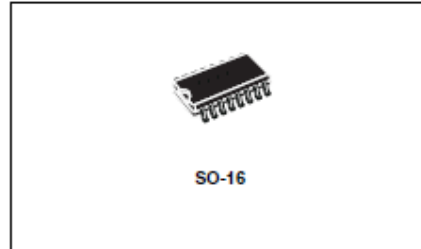
Applications

- Automotive
- Computer
- Consumer
- Industrial

Table 1. Device summary

Order code	Temperature range	Package	Packaging	Marking
M74HC4852RM13TR	-55/+125 °C	SO16	Tape and reel	74HC4852
M74HC4852YRM13TR ⁽¹⁾	-40/+125 °C	SO16 (automotive grade)	Tape and reel	74HC4852Y

1. Qualification and characterization according to AEC Q100 and Q003 or equivalent, advanced screening according to AEC Q001 and Q002 or equivalent.



Description

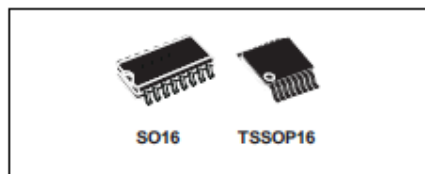
The M74HC4852 device is a dual four-channel analog multiplexer/demultiplexer manufactured with silicon gate C²MOS technology.

It features injection current effect control which makes the device particularly suited for use in automotive applications where voltages in excess of normal logic voltage are common. The injection current effect control allows signals at disabled input channels to exceed the supply voltage range or go down to ground without affecting the signal of the enabled analog channel.

This eliminates the need for external diode-resistor networks typically used to keep the analog channel signals within the supply voltage range.

14-stage binary counter/oscillator

Datasheet - production data



Applications

- Automotive
- Industrial
- Computer
- Consumer

Description

The M74HC4060 device is a high speed CMOS 14-stage binary counter/oscillator fabricated with silicon gate C²MOS technology.

The oscillator configuration allows design of either RC or crystal oscillator circuits. A high level on the CLEAR accomplishes the reset function, i.e. all counter outputs are made low and the oscillator is disabled.

A negative transition on the clock input increments the counter. Ten kinds of divided output are provided; 4 to 10 and 12 to 14 stage inclusive. The maximum division available at Q12 is 1/16384 of the oscillator frequency.

The \overline{Q} input and the CLEAR input are equipped with protection circuits against static discharge and transient excess voltage.

Features

- High speed:
 $f_{\max} = 65 \text{ MHz (typ.) at } V_{CC} = 6 \text{ V}$
- Low power dissipation:
 $I_{CC} = 4 \text{ A (max.) at } T_A = 25^\circ\text{C}$
- High noise immunity:
 $V_{NIH} = V_{NIL} = 28\% V_{CC} \text{ (min.)}$
- Symmetrical output impedance:
 $|I_{OH}| = |I_{OL}| = 4 \text{ mA (min.)}$
- Balanced propagation delays: $T_{PLH} \equiv T_{PHL}$
- Wide operating voltage range:
 $V_{CC} \text{ (opr.)} = 2 \text{ V to } 6 \text{ V}$
- Pin and function compatible with 74 series 4060
- ESD performance
 - HBM: 2 kV
 - MM: 200 V
 - CDM: 1 kV

Table 1. Device summary

Order code	Temperature range	Package	Packing	Marking
M74HC4060RM13TR	-55 °C to +125 °C	SO16	Tape and reel	74HC4060
M74HC4060YRM13TR ⁽¹⁾	-40 °C to +125 °C	SO16 (automotive version)		74HC4060Y
M74HC4060TTR	-55 °C to +125 °C	TSSOP16		HC4060
M74HC4060YTTR ⁽¹⁾	-40 °C to +125 °C	TSSOP16 (automotive version)		HC4060Y

1. Qualification and characterization according to AEC Q100 and Q003 or equivalent, advanced screening according to AEC Q001 and Q002.

4.2 Construction note

	HCF4010YM013TR	M74HC4852YRM13TR	M74HC4060YRM13TR
Wafer/Die fab. information			
Wafer fab manufacturing location	ST AMK6 Singapore	ST AMK6 Singapore	ST AMK6 Singapore
Technology	CMOS metal gate	HCMOS4	High speed CMOS
Process family	CMOS	Bicmos4	CMOS
Die finishing back side	Lapped Silicon	Lapped Silicon	Lapped Silicon
Die size	1294x1088 μm^2	1300x1212 μm^2	2284x1794 μm^2
Bond pad metallization layers	AlSi	AlSiCu	AlSi
Passivation type	P-VAPOX (Si glass)	PSG + NITRIDE	P-VAPOX(SiO ₂) / NITRIDE
Wafer Testing (EWS) information			
Electrical testing manufacturing location	ST Singapore	ST Singapore	ST Singapore
Tester	ASL1K	ASL1K	ASL1K
Assembly information			
Assembly site	ST Shenzhen	ST Shenzhen	ST Shenzhen
Package description	SO16	SO16	SO16
Molding compound	Sumitomo EME-G630AY	Sumitomo EME-G630AY	Sumitomo EME-G630AY
Frame material	Cu	Cu	Cu
Die attach process	Glue	Glue	Glue
Die attach material	ABLESTICK 8601S-25	ABLESTICK 8601S-25	ABLESTICK 8601S-25
Die pad size	94x150	94x150	94x150
Wire bonding process	Wire	Wire	Wire
Wires bonding materials/diameters	Cu 1 mil	Cu 1 mil	Cu 1 mil
Lead finishing process	Preplated	Preplated	Preplated
Lead finishing/bump solder material	NiPdAgAu	NiPdAgAu	NiPdAgAu
Final testing information			
Testing location	ST Shenzhen	ST Shenzhen	ST Shenzhen
Tester	ASL1K	ASL1K	ASL1K

5 TESTS RESULTS SUMMARY

5.1 Test vehicle

Lot #	Techno/package	Product Line	Comments
1	CMOS MG/SO16	P10B	
2	HCMOS4/SO16	R852	
3	HSPEED CMOS/SO16	Z460	

Detailed results in below chapter will refer to P/N and Lot #.

5.2 Test plan and results summary

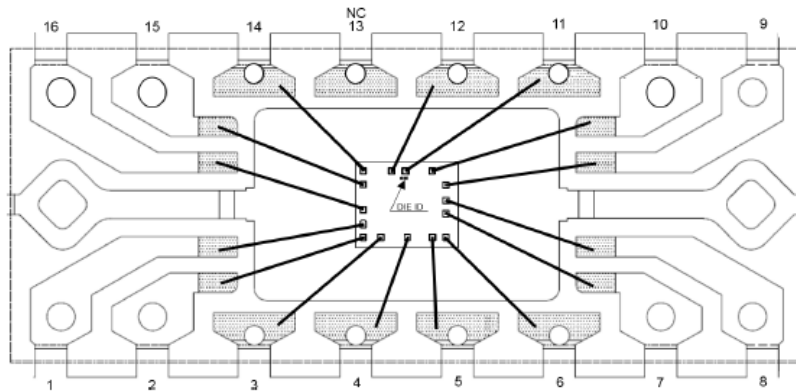
Test	PC	Std ref.	Conditions	SS	Steps	Failure/SS			Note
						Lot 1 P10B	Lot 2 R852	Lot 3 Z460	
Die Oriented Tests									
HTOL	N	JESD22 A-108	Ta= 125°C TV1 Vbias=+22V; TV2&TV3 Vbias=+7V		168 H	0/77	0/77	0/77	(1)
					500 H	0/77	0/77	0/77	(1)
					1000 H	0/77	0/77	0/77	(1)
HTSL	N	JESD22 A-103	Ta = 150°C		168 H	0/45	0/45	0/45	(1)
					500h	0/45	0/45	0/45	(1)
					1000 H	0/45	0/45	0/45	(1)
PC		JESD22 A-113	Drying 24 H @ 125°C Store 40h @Ta=60°C Rh60% Oven Reflow @ Tpeak=260°C 3 times		Final	PASS	PASS	PASS	
AC	Y	JESD22 A-102	Pa=2Atm / Ta=121°C		96 H	0/77	0/77	0/77	
TC	Y	JESD22 A-104	Ta = -65°C to 150°C		100 cy	0/77	0/77	0/77	(1)
					500 cy	0/77	0/77	0/77	(1)
					1000 cy	0/77	0/77	0/77	(1)
THB	Y	JESD22 A-101	Ta = 85°C, RH = 85%, BIAS 30V		168 H	0/77	0/77	0/77	(1)
					500 H	0/77	0/77	0/77	(1)
					1000 H	0/77	0/77	0/77	(1)
ESD	N		CDM	3	1 kV			PASS	

Note (1): Measurement performed before and after stress, at HOT & ambient temperature (cold also for HTOL)

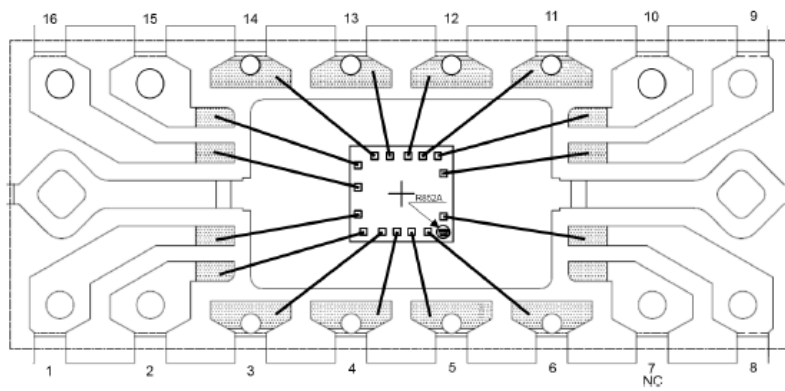
6 ANNEXES

6.1.1 Bonding diagram

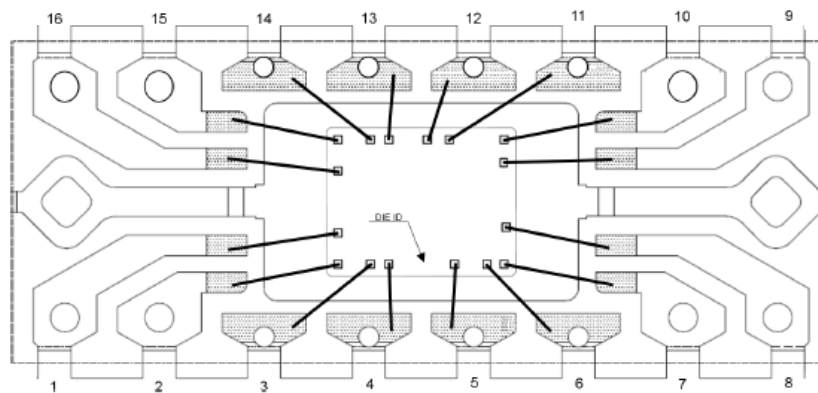
P10B



R852



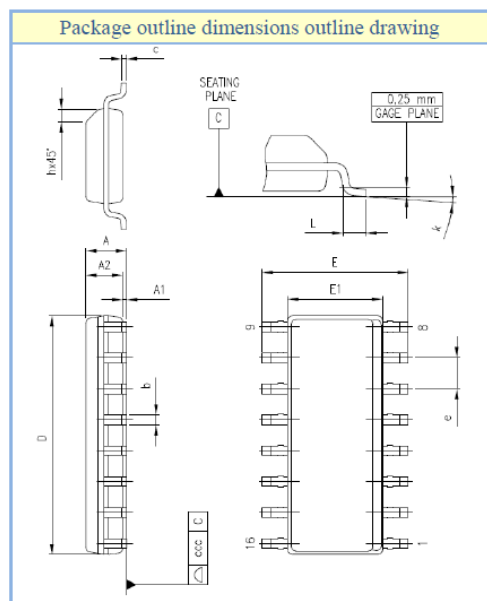
Z460



6.1.2 Package outline

P10B

Parameters	Dimensions				
	Unit.1	Unit.2	Unit.3	Unit.4	Unit.5
A	1.674	1.717	1.726	1.670	1.691
A1	0.167	0.193	0.225	0.159	0.187
A2	1.499	1.502	1.506	1.498	1.510
b	0.408	0.410	0.409	0.415	0.412
c	0.192	0.198	0.203	0.198	0.205
D	9.869	9.845	9.834	9.845	9.838
E	5.944	5.951	5.956	5.948	5.949
E1	3.891	3.899	3.895	3.895	3.897
e	1.274	1.273	1.273	1.274	1.272
h	0.441	0.451	0.442	0.448	0.450
L	0.622	0.622	0.623	0.615	0.628
k	5.535	5.540	5.426	5.069	6.025
ccc	0.028	0.026	0.024	0.035	0.029
Marking depth	12	15	24	28	19
Marking width	110	105	111	104	106



6.1.3 Bonding strength (WBS/WBP)

Pull test summary

Unit / TV	P10B	R852	Z460
1	11.48	12.78	12.78
2	12.28	12.67	12.67
3	10.72	13.50	13.50
4	9.00	13.46	13.46
5	12.57	13.31	13.31
6	14.23	18.30	18.30
7	12.71	15.03	15.03
8	11.27	14.46	14.46
9	12.23	18.14	14.14
10	8.39	18.08	14.08
11	11.59	13.70	13.70
12	10.04	14.02	14.02
13	12.06	17.88	17.88
14	14.72	12.45	12.45
15	11.96	14.20	14.20
16	10.69	10.85	13.85
17	10.97	12.38	12.38
18	12.39	13.58	13.58
19	13.93	13.80	13.80
20	12.14	14.71	14.71
21	12.32	12.95	12.95
22	12.88	13.30	13.30
23	13.78	14.14	14.14
24	9.95	12.75	12.75
25	13.08	14.89	14.89
26	12.39	16.78	16.78
27	11.74	14.40	14.40
28	13.08	14.89	14.89
29	12.39	16.78	16.78
30	11.74	14.40	14.40
31	13.82	13.10	13.10
32	11.24	16.73	16.73
33	10.27	17.62	17.62
mean	11.9	14.5	14.4
stddev	1.42	1.91	1.57
Cpk	1.87	1.84	2.20

Shear test summary

Unit / TV	P10B	R852	Z460
1	35.48	35.85	35.85
2	36.46	34.81	34.81
3	36.03	35.33	35.33
4	34.47	35.33	35.33
5	36.47	35.79	35.79
6	35.53	38.65	38.65
7	35.87	38.49	38.49
8	36.48	36.6	36.6
9	34.68	37.22	37.22
10	34.48	34.41	34.41
11	38.72	37.88	37.88
12	35.36	36.76	36.76
13	34.28	39.92	39.92
14	33.07	41.28	41.28
15	38.03	35.76	35.76
16	35.6	39.94	39.94
17	35.85	37.72	37.72
18	35.48	36.16	36.16
19	37.01	38.4	38.4
20	36.84	36.9	36.9
21	33.61	33.24	33.24
22	33.37	35.54	35.54
23	34.54	35.06	35.06
24	36.13	36.21	36.21
25	37.71	36.8	36.8
26	34.21	33.66	33.66
27	35.19	35.54	35.54
28	37.71	36.8	36.8
29	34.21	33.66	33.66
30	35.19	35.54	35.54
31	34.02	34.72	34.72
32	34.27	34.93	34.93
33	36.86	39.11	39.11
mean	35.6	36.5	36.5
stddev	1.38	1.90	1.90
Cpk	3.69	2.85	2.85

6.1.4 Solderability

P10B: results conform

Refer to spec: 0018688

Samples size: 40pcs

Parameters	Criteria Score0	Criteria Score1	Criteria Score2	This Report	Comment
	Out of spec.	Not applicable	Within spec		
Dry air: 150 °C, 8h SnAgCu solder at 245 °C; 5"	<95% coverage	Not applicable	>95% coverage And no visible defects	2	
Dry air: 150 °C, 8h SnPb solder at 220 °C; 5"	<95% coverage	Not applicable	>95% coverage And no visible defects	2	
Wet storage ageing(85 °C/85%RH, 8h) SnAgCu solder at 220 °C; 5"	<95% coverage	Not applicable	>95% coverage And no visible defects	2	
Wet storage ageing(85 °C/85%RH, 8h) SnPb solder at 220 °C; 5"	<95% coverage	Not applicable	>95% coverage And no visible defects	2	

After solderability test pictures

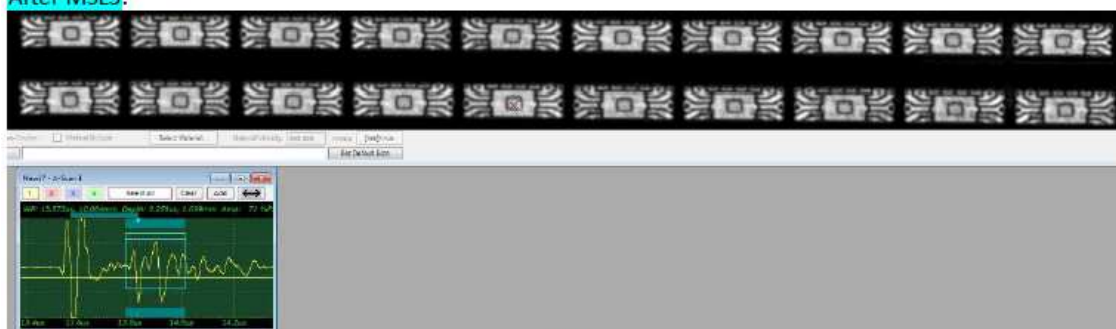


6.1.5 Scanning acoustic microscopy

Test vehicle P10B

Device	Lot	Trial	Qty	SAM result		
				Die	Lead	T-scan
SKQ7*P10BASW	GK8341KA01	T0	20	0/20	0/20	0/20
		MSL3	20	0/20	0/20	0/20
		TC100	20	0/20	0/20	0/20
		TC500	20	0/20	0/20	0/20
		TC1000	20	0/20	0/20	0/20

After MSL3:



DIE



LEAD

1.1 Tests Description

Test name	Description	Purpose
Die Oriented		
HTOL Higt Temperature Operating Life HTB High Temperature Bias	The device is stressed in static or dynamic configuration, approaching the operative max. absolute ratings in terms of junction temperature and bias condition.	To determine the effects of bias conditions and temperature on solid state devices over time. It simulates the devices' operating condition in an accelerated way. The typical failure modes are related to, silicon degradation, wire-bonds degradation, oxide faults.
Package Oriented		
PC Preconditioning	The device is submitted to a typical temperature profile used for surface mounting devices, after a controlled of moisture absorption.	As stand-alone test: to investigate the moisture sensitivity level. 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.
AC Auto Clave (Pressure Pot)	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.
TC Temperature Cycling	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, molding compound delamination, wire-bonds failure, die-attach layer degradation.
THB Temperature Humidity Bias	The device is biased in static configuration minimizing its internal power dissipation, and stored at controlled conditions of ambient temperature and relative humidity.	To evaluate the package moisture resistance with electrical field applied, both electrolytic and galvanic corrosion are put in evidence.
Other		
ESD Electro Static Discharge	The device is submitted to a high voltage peak on all his pins simulating ESD stress according to different simulation models. CBM: Charged Device Model HBM: Human Body Model MM: Machine Model	To classify the device according to his susceptibility to damage or degradation by exposure to electrostatic discharge.



Public Products List

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PCN Title : Transfer of the Assembly and Test & Finishing from

ST Bouskoura to ST Shenzhen for Automotive Grade products assembled in SO16 packages

PCN Reference : AMS/19/11334

Subject : Public Products List

Dear Customer,

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

HCF4060YM013TR	M74HC4094YRM13TR	HCF4010YM013TR
M74HC4060YRM13TR	M74HC595YRM13TR	HCF4094YM013TR
HCF4051YM013TR	HCF4021YM013TR	M74HC4851YRM13TR
M74HC4852YRM13TR		



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