
**ST Shenzhen (China) Assy & Test line upgrade
for Automotive grade EEPROM products in SO8N**

Automotive grade EEPROM products in SO8N are widely used in high volume at all automotive customers and in all automotive applications. To maintain high level of service and to support high volume production on the long-term, ST has decided to switch Assembly & Test from High Density (HD) strip test line to **Super High Density (SHD)** strip test line. Both lines are installed in ST Shenzhen (China). SHD strip test line already produces very high-volume of EEPROM SO8N products for industrial market since year 2012.

What is the change?

Assembly & Test of Automotive EEPROM in SO8N package at ST Shenzhen (China) are upgraded from High Density (HD) strip test line to **Super High Density (SHD) strip test line**.

SHD Assembly line runs with higher parallelism and same assembly flow as current HD line. As continuous improvement, a step of plasma cleaning has been introduced between die attach and wire bonding.

A rationalization of the leadframe dimensions has been done.

SHD strip test line runs with higher parallelism and same test flow and test sequence as current HD line. SHD strip test line runs with same test equipment as current HD line.

See appendix B for more details on assembly and test flow.

Why?

The strategy of the STMicroelectronics Memory division is to support our customers on product and service quality on a long-term basis. In line with this commitment, this change will secure long term availability and automotive SO8N capacity while improving product manufacturing quality.

When?

Shipments will start from **Week 01 / 2023**.

Production of Automotive EEPROM SO8N on current HD strip test line will continue until end of June 2023 giving the time to ramp-up gradually the SHD line.

From June 2023, Automotive EEPROM SO8N products will be produced only on SHD line.

How will the change be qualified?

This change has been qualified using the standard STMicroelectronics Corporate Procedures for Quality and Reliability.

Qualification report RERMMY2005 for Assembly is forecasted for Week 12 / 2022.

Qualification report TERMMY2005 for Test (I2C/SPI) is forecasted for Week 14 / 2022.

Updated report for Microwire products is forecasted for Week 26 / 2022

What is the impact of the change?

- **Form:** visual on package top side / backside
- **Fit:** no change
- **Function:** no change

How can the change be seen?

- **BOX LABEL MARKING**

On the BOX LABEL MARKING, the difference is visible inside the **Finished Good Part Number** where the “**Assembly and Test & Finishing plants**” identifier is “**H**” for products **assembled & tested on SHD line**, this digit being “**G**” for current products assembled & tested on HD line.

STMicroelectronics

Manufactured under patents or patents pending

Country Of Origin: China

Pb-free 2nd Level Interconnect

MSL: 1 NOT MOISTURE SENSITIVE

PBT: 260 °C Category: e4 ECOPACK2/ROHS

TYPE: **M24C02-DRMN3TP/K**
 M24C02DRMN3TPKHA

Total Qty: 2500


Assembly and Test & Finishing plant:

- “H” for SHD line
- “G” for HD line

Trace Codes GKYWWLLL

Marking 24C02RT

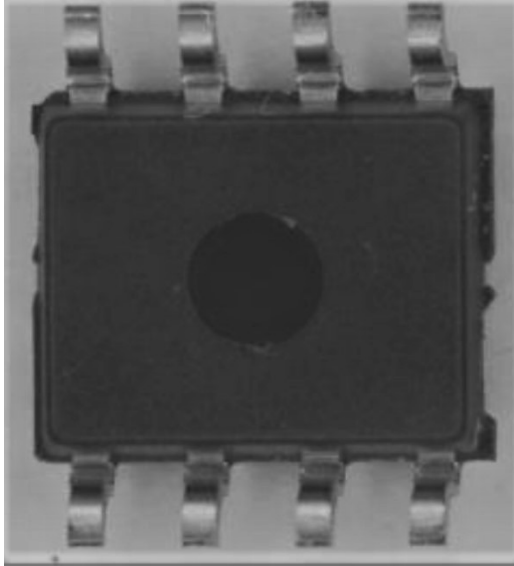
Bulk ID X0X00XXX0000



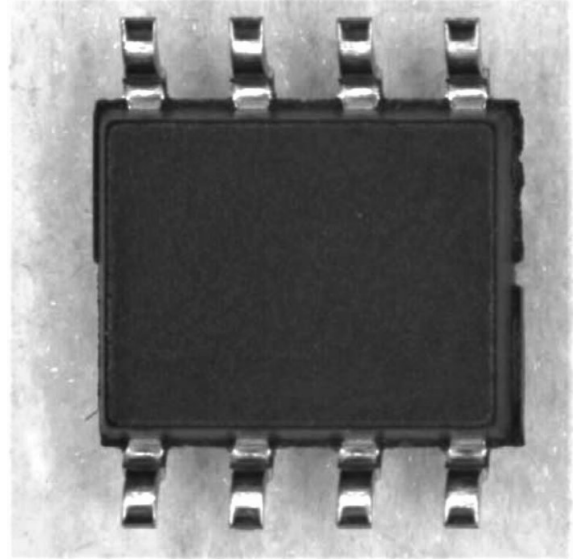
Please provide the bulk ID for any inquiry

- **PACKAGE VISUAL**

A visual difference can be observed at bottom side: the **package of the SHD line** is showing a **dot at the center** while no dot at bottom side on the package of the HD line:



Package of SHD line



Package of HD line

Bottom side views

Marking readability improvement:



Package of SHD line



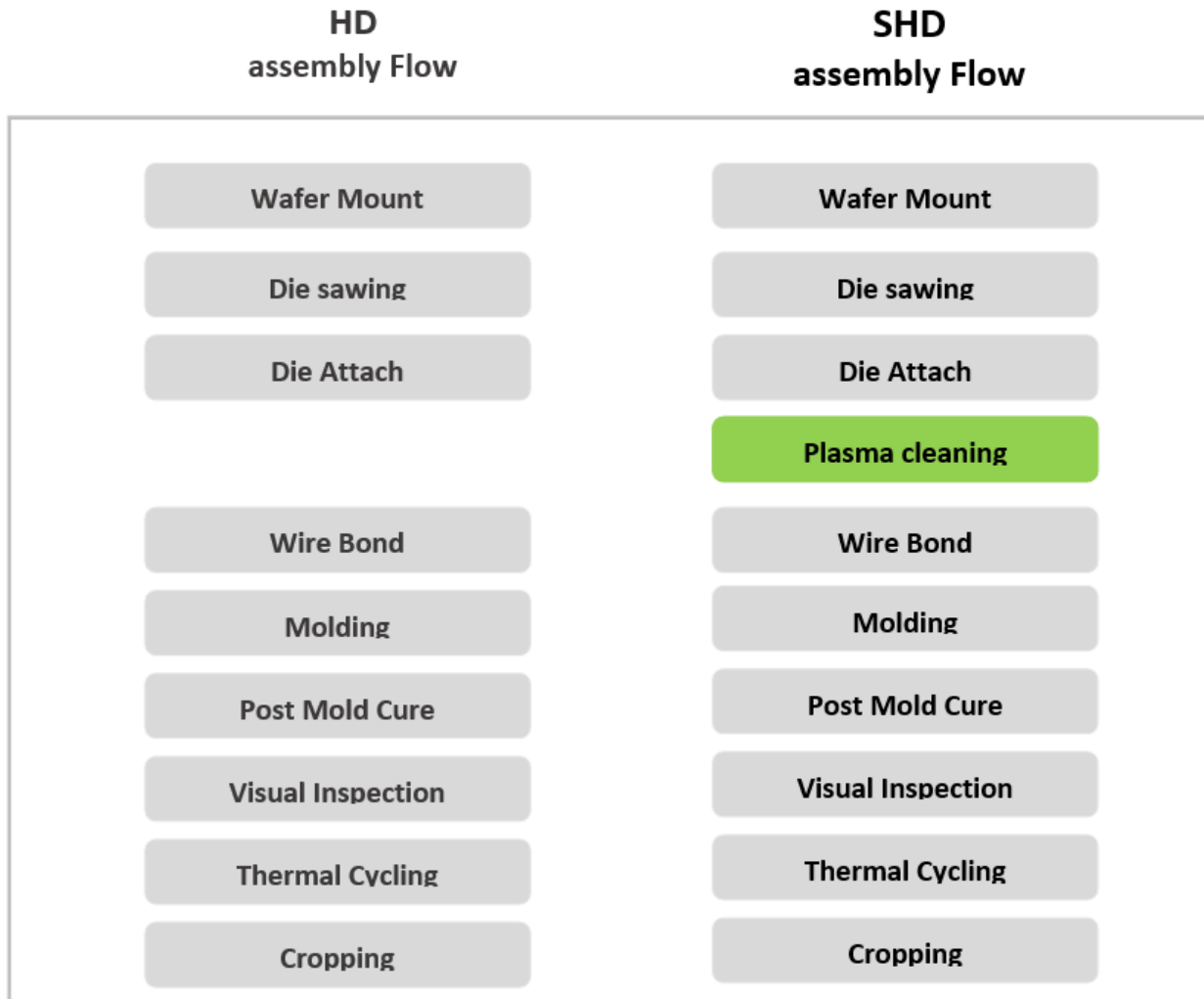
Package of HD line

Top side views

Appendix A- Product Change Information

Product family / Commercial products:	Automotive EEPROM products in SO8N
Customer(s):	All
Type of change:	Upgrade Assembly & Test line
Reason for the change:	Upgrade to SHD line
Description of the change:	ST Shenzhen (China) Assembly & Test lines switch from high density (HD) to super high density (SHD).
Forecast date of the change: (Notification to customer)	Week 09 / 2022
Forecast date of <u>Qualification samples</u> availability for customer(s):	Week 12 / 16 / 26 as per defined in appendix C
<u>Qualification Report</u> availability:	RERMMY2005 for Assembly: Week 12 / 2022 TERMMY2005 for Test: Week 14 / 2022
Marking to identify the changed product:	No change on top marking
Description of the qualification program:	Standard ST Microelectronics Corporate Procedures for Quality and Reliability
Estimated date of first shipment:	Week 01 / 2023

Appendix B: HD / SHD flows comparison:



Assembly flow comparison

Strip	HD Test line	SHD Test line
Size	32 x 8	36 x 12
Unit Qty / strip	256	432
Tester	Magnum-sv	Magnum-sv
Handler	MCT-tri-temp MCT SH5000	MCT-tri-temp MCT SH5000
Test parallelism	128	144

Test flow comparison

Appendix C: concerned Commercial Part Numbers:

Commercial product	Samples availability
M24C16-DRMN3TP/K M24C32-DRMN3TP/K M24C64-DRMN3TP/K M93C66-RMN3TP/K M93C86-RMN3TP/K M95080DRMN3T/KM3 M95080-DRMN3TP/K M95160DRMN3T/KM3 M95160-DRMN3TP/K M95320DRMN3T/KM3 M95320-DRMN3TP/K M95640DRMN3T/KM3 M95640-DRMN3TP/K M93C66RMN3TP/KM3 M95128DRMN3T/KM3 M95128-DRMN3TP/K M95256DRMN3T/KM3 M95256-DRMN3TP/K M24512-DRMN3TP/K M95512DRMN3T/KM3 M95512-DRMN3TP/K M95M01-DWMN3TP/K M24128-DRMN3TP/K	Week 12 / 2022
M24C04-DRMN3TP/K M24C02-DRMN3TP/K M24C08-DRMN3TP/K M95M02-DWMN3TP/K M24M01-DWMN3TP/K M24256-DRMN3TP/K M95020-DRMN3TP/K M93C76-RMN3TP/K M93C56-RMN3TP/K M93C46-RMN3TP/K M24M02-DWMN3TP/K	Week 16 / 2022
M95040-DRMN3TP/K	Week 26 / 2022

Document Revision History		
Date	Rev.	Description of the Revision
Feb. 08, 2022	1.00	Christian POLI - First draft creation

Source Documents & Reference Documents		
Source document Title	Rev.:	Date: