



Cypress Semiconductor Corporation, 198 Champion Court, San Jose, CA 95134. Tel: (408) 943-2600

PRODUCT CHANGE NOTIFICATION

PCN: PCN201501

Date: April 07, 2020

Subject: Qualification of Tera Probe, Inc. Japan as an Additional Wafer Sort Site for Flash NOR GL01GS and GL512S Products

To: FUTURE ELECTRONICS
FUTURE ELE
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Description of Change:

Cypress announces the qualification of Tera Probe, Inc., Japan (Kyushu Operation Center, 1580-1 Yunoura, Ashikita-machi, Ashikita-gun, Kumamoto) as an additional wafer-level test (sort) site for NOR Flash GL01GS and GL512S products. These products are currently being tested on the Verigy V5400 test platform at Test 25 in Austin, Texas and are now qualified on the Advantest 5830 test platform at Tera Probe, Inc. There are no changes to the test coverage and methodology.

This qualification will allow Cypress to leverage Tera Probe's manufacturing expertise with quality focus. This in turn also provides the means for Cypress to continue to meet its customers' IC testing needs as well as delivery commitments in dynamic, changing market conditions. Tera Probe, Inc. is certified on several international quality standards: IATF16949, ISO 9001, ISO 14001 and OHSAS 18001. Tera Probe's certificates can be viewed on their corporate web site: <http://www.teraprobe.com/english/corporate/iso.html>

Cypress qualification is in compliance with JEDEC and AEC standards. To help expedite the implementation of this site, please share any additional customer specific qualification and test requirements at the earliest.

Benefit of Change:

Cypress will have the added capability to meet varying market demand, and to ensure consistent and reliable delivery performance to customers. Immediate adoption of Tera Probe material will also help secure material and minimize supply interruption in the future.

Part Numbers Affected: 120

See the attached 'Affected Parts List' file for a list of all part numbers affected by this change.

Qualification Status:

This wafer sort site has been qualified through a series of tests documented in the Qualification Test Plan summarized in the table below. These qualification reports can be found as attachments to this PCN or by visiting www.cypress.com and typing the QTP number in the keyword search window.

| QTP Number | Qualification |
|------------|--|
| 191702 | Sort Site Addition of Tera Probe Advantest T5830 65nm Technology, XMC S29GL01GS 1Gb NOR Flash Memory |
| 194709 | Sort Site Addition of Tera Probe Advantest T5830 65nm Technology, XMC S29GL512S 512Mb NOR Flash Memory |

Sample Status:

Qualification samples are not built ahead of time for all part numbers affected by this change. Please refer to the affected parts list file for a list of affected part numbers with their associated sample ordering part numbers. If you require qualification samples, please contact your sales representative as soon as possible, but within 60 days of the date of this PCN. Estimated lead time for qualified samples is 2 – 4 weeks from order entry.

Approximate Implementation Date:

For Automotive PPAP part numbers this change will be effective upon customer approval.

Anticipated Impact:

No impact is expected to form, fit, function, datasheet parameters, package composition or package pin-out.

Method of Identification:

Cypress maintains traceability of product to wafer level, including wafer fabrication location, through the date code marked on the package.

Response Required:

Please share any additional qualification and test requirements if needed.

For additional information regarding this change, contact your local sales representative or contact the PCN Administrator at pcn_adm@cypress.com.

Sincerely,

Cypress PCN Administration

Cypress Semiconductor 65nm Technology GL512S SORT Site Qualification Report

QTP# 194709 **
January, 2020

| | |
|---|-------------------------------|
| SORT Site Addition of Tera Probe Advantest T5830 | |
| 65nm Technology, XMC | |
| S29GL512S | 512Mb NOR Flash Memory |

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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Reviewed By:
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Approved By:
David Hoffman
Reliability Director

PACKAGE/PRODUCT QUALIFICATION HISTORY

| QTP Number | Description of Qualification Purpose | Date |
|-------------------|--|-----------------|
| 194709 | 65nm MirrorBit technology XMC fab GL512S SORT site Addition of Tera Probe Advantest T5830 | January 2020 |

| MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION | |
|---|---------------------------------|
| Package Designation: | TS056 |
| Package Outline, Type, or Name: | TSOP 56 Lead |
| Mold Compound Name/Manufacturer: | HITACHI CEL9200HF10U 6.3G |
| Mold Compound Flammability Rating: | V-0 / UL94 |
| Mold Compound Alpha Emission Rate: | <0.1 |
| Oxygen Rating Index: >28% | Yes |
| Lead Frame Designation: | N/A |
| Lead Frame Material: | Copper Alloy |
| Substrate Material: | 56 LEAD TSOP FRAME 2 X 2.50 DIA |
| Lead Finish, Composition / Thickness: | N/A |
| Die Backside Preparation Method/Metallization: | Backgrind |
| Die Separation Method: | Wafer Saw |
| Die Attach Supplier: | Henkel |
| Die Attach Material: | DA PASTE ABLESTIK 8340 |
| Bond Diagram Designation | F09-98290B-40786 |
| Wire Bond Method: | Thermosonic |
| Package Cross Section Yes/No: | No |
| Assembly Process Flow: | F02-001.3 |
| Name/Location of Assembly (prime) facility: | Cypress BKK |
| MSL LEVEL | MSL3 |
| REFLOW PROFILE | 260 C |

| ELECTRICAL TEST / FINISH DESCRIPTION | |
|---|-----------------------|
| Test Location: | Cypress BKK, Thailand |

Note: Please contact a Cypress Representative for other package availability.

Reliability Test Data

QTP #: 194709

| <i>Device</i> | <i>Assy Lot #</i> | <i>Fab Lot #</i> | <i>Assy Loc</i> | <i>Duration</i> | <i>Samp</i> | <i>Rej</i> | <i>Failure Mechanism</i> |
|----------------------------|-------------------|------------------|-----------------|-----------------|-------------|------------|--------------------------|
| SORT and Class Test | Yield | | | | | | |
| S29GL512S | GK61720 | LDP6172 | BKK | | | | Equivalent |
| QA | | | | | | | |
| S29GL512S | GK61720 | LDP6172 | BKK | | 3462 | 0 | |



Document History Page

Document Title: QTP#194709 65NM TECHNOLOGY GL512S SORT SITE QUALIFICATION REPORT
Document Number: 002-29540

| Rev. | ECN No. | Orig. of Change | Description of Change |
|------|---------|-----------------|-----------------------|
| ** | 6784177 | SUZH | Initial spec Release |

Cypress Semiconductor 65nm Technology GL01GS SORT Site Qualification Report

QTP# 191702 **
January, 2020

| | |
|---|-----------------------------|
| SORT Site Addition of Tera Probe Advantest T5830 | |
| 65nm Technology, XMC | |
| S29GL01GS | 1Gb NOR Flash Memory |

FOR ANY QUESTIONS ON THIS REPORT, PLEASE CONTACT
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Approved By:
David Hoffman
Reliability Director



PACKAGE/PRODUCT QUALIFICATION HISTORY

| QTP Number | Description of Qualification Purpose | Date |
|-------------------|--|----------------|
| 191702 | 65nm MirrorBit technology XMC fab GL01GS SORT site Addition of Tera Probe Advantest T5830 | Jan.22 2020 |

| MAJOR PACKAGE INFORMATION USED IN THIS QUALIFICATION | |
|---|---------------------------------|
| Package Designation: | TS056 |
| Package Outline, Type, or Name: | TSOP 56 Lead |
| Mold Compound Name/Manufacturer: | HITACHI CEL9200HF10U 6.3G |
| Mold Compound Flammability Rating: | V-0 / UL94 |
| Mold Compound Alpha Emission Rate: | <0.1 |
| Oxygen Rating Index: >28% | Yes |
| Lead Frame Designation: | N/A |
| Lead Frame Material: | Copper Alloy |
| Substrate Material: | 56 LEAD TSOP FRAME 2 X 2.50 DIA |
| Lead Finish, Composition / Thickness: | N/A |
| Die Backside Preparation Method/Metallization: | Backgrind |
| Die Separation Method: | Wafer Saw |
| Die Attach Supplier: | Henkel |
| Die Attach Material: | DA PASTE ABLESTIK 8340 |
| Bond Diagram Designation | F09-98661B-40694 |
| Wire Bond Method: | Thermosonic |
| Package Cross Section Yes/No: | No |
| Assembly Process Flow: | F02-001.3 |
| Name/Location of Assembly (prime) facility: | Cypress BKK |
| MSL LEVEL | MSL3 |
| REFLOW PROFILE | 260 C |

| ELECTRICAL TEST / FINISH DESCRIPTION | |
|---|-----------------------|
| Test Location: | Cypress BKK, Thailand |

Note: Please contact a Cypress Representative for other package availability.



Reliability Test Data

QTP #: 191702

| <i>Device</i> | <i>Assy Lot #</i> | <i>Fab Lot #</i> | <i>Assy Loc</i> | <i>Duration</i> | <i>Samp</i> | <i>Rej</i> | <i>Failure Mechanism</i> |
|---|-------------------|------------------|-----------------|-----------------|-------------|------------|--------------------------|
| <i>SORT and Class Test Yield</i> | | | | | | | |
| S29GL01GS | GJ32460 | LDP5751 | BKK | | | | Equivalent |
| S29GL01GS | GJ34150 | LDR9401 | BKK | | | | Equivalent |
| S29GL01GS | GJ38360 | LDR2371 | BKK | | | | Equivalent |
| <i>QA</i> | | | | | | | |
| S29GL01GS | GJ32460 | LDP5751 | BKK | | 537 | 0 | |
| S29GL01GS | GJ34150 | LDR9401 | BKK | | 539 | 0 | |
| S29GL01GS | GJ38360 | LDR2371 | BKK | | 541 | 0 | |
| <i>Characterization</i> | | | | | | | |
| S29GL01GS | 5877040 | LDW3821 | BKK | | | | Equivalent |
| S29GL01GS | 5877040 | LDW3961 | BKK | | | | Equivalent |



Document History Page

Document Title: QTP#191702 65NM TECHNOLOGY GL01GS SORT SITE QUALIFICATION REPORT
Document Number: 002-29538

| Rev. | ECN No. | Orig. of Change | Description of Change |
|------|---------|-----------------|-----------------------|
| ** | 6783917 | SUZH | Initial spec Release |

| Marketing Part Number | Sample Part Number | Sample Availability |
|-----------------------|-----------------------|---------------------|
| 51-02204V01-A | S29GL01GS10DHA020-008 | WW1520 |
| 51-28571Z01-A | S29GL01GS10DHA020-008 | WW1520 |
| 51-22113Z01-A | S29GL512S10TFA010-008 | WW1520 |
| 51-32240Z01-A | S29GL512S11TFB010-008 | WW1520 |
| 99326-E1270 | S29GL512S10DHA020-008 | WW1520 |
| 99326-E1270-A | S29GL512S10DHA020-008 | WW1520 |
| 99326-1241 | S29GL512S11DHA020-008 | WW1520 |
| 99326-E1241 | S29GL512S11DHA020-008 | WW1520 |
| 8 611 200 914 | S29GL01GS10DHA020-008 | WW1520 |
| 8 611 200 948 | S29GL01GS10DHA020-008 | WW1520 |
| 8909003587 | S29GL01GS11DHB010-008 | WW1520 |
| 8 611 200 160 | S29GL01GS11TFA020-008 | WW1520 |
| 8 611 200 915 | S29GL512S10DHA020-008 | WW1520 |
| 8 611 200 891 | S29GL512S10DHA020-008 | WW1520 |
| 8 611 200 989 | S29GL512S11DHB020-008 | WW1520 |
| 8 611 200 975 | S29GL512S11TFA020-008 | WW1520 |
| 8611200160 | S29GL01GS11TFA020-008 | WW1520 |
| 8611200171 | S29GL01GS11TFB020-008 | WW1520 |
| 051GL01GS11DHV020 | S29GL01GS11DHB020-008 | WW1520 |
| 051GL512S10TFI010 | S29GL512S10TFA010-008 | WW1520 |
| A2C01206600 A | S29GL01GS11FHB020-008 | WW1520 |
| A2C03281500 | S29GL01GS11FHB020-008 | WW1520 |
| A2C00641800 A | S29GL512S11DHB020-008 | WW1520 |
| A2C00713500 A | S29GL512S11FHB020-008 | WW1520 |
| A2C02695700 A | S29GL512S11FHB020-008 | WW1520 |
| A2C03362500 A | S29GL512S11TFB020-008 | WW1520 |
| A2C03362500 | S29GL512S11TFB020-008 | WW1520 |
| 28633886 A | S29GL01GS11DHB020-008 | WW1520 |
| 28326167 A | S29GL512S10DHA020-008 | WW1520 |
| 28328261 A | S29GL512S10TFA020-008 | WW1520 |
| 28633887 A | S29GL512S11DHB020-008 | WW1520 |
| 10324-04890 | S29GL01GS11TFB020-008 | WW1520 |
| 949588-0080 | S29GL01GS11TFB020-008 | WW1520 |
| 949588-1750 | S29GL512S11DHB010-008 | WW1520 |
| 462791-0870 | S29GL512S11TFAV10-008 | WW1520 |
| 949588-0470 | S29GL512S11TFB010-008 | WW1520 |
| 10324-02440 | S29GL512S11TFB020-008 | WW1520 |
| 811600-78030870 | S29GL01GS10TFA010-008 | WW1520 |
| 811600-79240870 | S29GL01GS11TFB010-008 | WW1520 |
| 811600-69370870 | S29GL512S10TFA010-008 | WW1520 |
| 811600-79250870 | S29GL512S11TFB010-008 | WW1520 |
| TN949588-0080 | S29GL01GS11TFB020-008 | WW1520 |
| 00003302768 | S29GL01GS10DHA020-008 | WW1520 |
| 00002444259 | S29GL01GS10DHA020-008 | WW1520 |
| 00003302776 | S29GL512S10DHA020-008 | WW1520 |
| 00002331896 | S29GL512S10DHA020-008 | WW1520 |
| 793.560-00 | S29GL512S11DHB020-008 | WW1520 |
| GE410199-1 | S29GL512S11DHB010-008 | WW1520 |
| GE410199 1 | S29GL512S11DHB010-008 | WW1520 |
| E3203009375 | S29GL512S11DHB010-008 | WW1520 |

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|-------------------------|-----------------------|--------|
| EAN64171801 | S29GL01GS10DHA020-008 | WW1520 |
| S99GL512S0100 P | S29GL512S11DHB020-008 | WW1520 |
| S99GL512S0190 P | S29GL512S10TFA020-008 | WW1520 |
| E3203006919 | S29GL512S11DHB010-008 | WW1520 |
| 0791075319RFU00 | S29GL01GS11TFB020-008 | WW1520 |
| 0791077399RQA00 | S29GL512S11TFB010-008 | WW1520 |
| 170-0121-000 | S29GL512S11DHA020-008 | WW1520 |
| 170-0157-000 | S29GL512S11GHB020-008 | WW1520 |
| 170-0157-000 D | S29GL512S11GHB020-008 | WW1520 |
| 2325090 | S29GL01GS11DHA020-008 | WW1520 |
| P770038DF5C000 | S29GL01GS11DHA020-008 | WW1520 |
| P770038D-F5C000 | S29GL01GS11DHA020-008 | WW1520 |
| P770020CF5C000 | S29GL01GS11DHB020-008 | WW1520 |
| P770020C-F5C000 | S29GL01GS11DHB020-008 | WW1520 |
| P770116DF0C000 | S29GL512S11DHB020-008 | WW1520 |
| P770023CF0C000 | S29GL512S11DHA020-008 | WW1520 |
| K770024CF0C000 | S29GL512S11DHAV20-008 | WW1520 |
| P770028F0C000 | S29GL512S11TFA020-008 | WW1520 |
| P770028CF0C000 | S29GL512S11TFA020-008 | WW1520 |
| 7GA6Y0216F0 | S29GL01GS11TFB010-008 | WW1520 |
| S29GL01GS11TFB010YZK000 | S29GL01GS11TFB010-008 | WW1520 |
| S29GL01GS11TFB010YZK001 | S29GL01GS11TFB010-008 | WW1520 |
| S29GL512S11TFB010YZK000 | S29GL512S11TFB010-008 | WW1520 |
| S29GL512S11TFB010YZK001 | S29GL512S11TFB010-008 | WW1520 |
| S29GL01GS10DHA013 | S29GL01GS10DHA010-008 | WW1520 |
| S29GL01GS10DHA020 | S29GL01GS10DHA020-008 | WW1520 |
| S29GL01GS10DHA023 | S29GL01GS10DHA020-008 | WW1520 |
| S29GL01GS10TFA010 | S29GL01GS10TFA010-008 | WW1520 |
| S29GL01GS10TFA020 | S29GL01GS10TFA020-008 | WW1520 |
| S29GL01GS10TFA023 | S29GL01GS10TFA020-008 | WW1520 |
| S29GL01GS11DHA020 | S29GL01GS11DHA020-008 | WW1520 |
| S29GL01GS11DHA023 | S29GL01GS11DHA020-008 | WW1520 |
| S29GL01GS11DHAV20 | S29GL01GS11DHAV20-008 | WW1520 |
| S29GL01GS11DHAV23 | S29GL01GS11DHAV20-008 | WW1520 |
| S29GL01GS11DHB010 | S29GL01GS11DHB010-008 | WW1520 |
| S29GL01GS11DHB013 | S29GL01GS11DHB010-008 | WW1520 |
| S29GL01GS11DHB020 | S29GL01GS11DHB020-008 | WW1520 |
| S29GL01GS11DHB023 | S29GL01GS11DHB020-008 | WW1520 |
| S29GL01GS11FHB020 | S29GL01GS11FHB020-008 | WW1520 |
| S29GL01GS11FHB023 | S29GL01GS11FHB020-008 | WW1520 |
| S29GL01GS11TFA010 | S29GL01GS11TFA010-008 | WW1520 |
| S29GL01GS11TFB010 | S29GL01GS11TFB010-008 | WW1520 |
| S29GL01GS11TFB020 | S29GL01GS11TFB020-008 | WW1520 |
| S29GL01GS11TFB023 | S29GL01GS11TFB020-008 | WW1520 |
| S29GL512S10DHA010 | S29GL512S10DHA010-008 | WW1520 |
| S29GL512S10DHA020 | S29GL512S10DHA020-008 | WW1520 |
| S29GL512S10DHA023 | S29GL512S10DHA020-008 | WW1520 |
| S29GL512S10TFA010 | S29GL512S10TFA010-008 | WW1520 |
| S29GL512S10TFA020 | S29GL512S10TFA020-008 | WW1520 |
| S29GL512S11DHA010 | S29GL512S11DHA010-008 | WW1520 |
| S29GL512S11DHA013 | S29GL512S11DHA010-008 | WW1520 |

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|-------------------|------------------------|--------|
| S29GL512S11DHA020 | S29GL512S11DHA020-008 | WW1520 |
| S29GL512S11DHA023 | S29GL512S11DHA020-008 | WW1520 |
| S29GL512S11DHAV10 | S29GL512S11DHAV10-008 | WW1520 |
| S29GL512S11DHAV23 | S29GL512S11DHAV20-008 | WW1520 |
| S29GL512S11DHB010 | S29GL512S11DHB010-008 | WW1520 |
| S29GL512S11DHB013 | S29GL512S11DHB010-008 | WW1520 |
| S29GL512S11DHB020 | S29GL512S11DHB020-008 | WW1520 |
| S29GL512S11DHB023 | S29GL512S11DHB020-008 | WW1520 |
| S29GL512S11FHB020 | S29GL512S11FHB020-008 | WW1520 |
| S29GL512S11FHB023 | S29GL512S11FHB020-008 | WW1520 |
| S29GL512S11GHB020 | S29GL512S11GHB020-008 | WW1520 |
| S29GL512S11TFA020 | S29GL512S11TFA020-008 | WW1520 |
| S29GL512S11TFAV10 | S29GL512S11TFAV10-008 | WW1520 |
| S29GL512S11TFB010 | S29GL512S11TFB010-008 | WW1520 |
| S29GL512S11TFB020 | S29GL512S11TFB020-008 | WW1520 |
| S29GL512S11TFB023 | S29GL512S11TFB020-008 | WW1520 |
| S29GL512S12DHBV10 | S29GL512S12DHBV10-008 | WW1520 |
| S29GL512S12TFBV10 | S29GL512S12TFBV10-008 | WW1520 |
| S29GL512S12TFBV20 | S29GL512S12TFBV20--008 | WW1520 |