

PRODUCT / PROCESS CHANGE NOTIFICATION

1. PCN basic data

| | | |
|----------------------|---|---|
| 1.1 Company |  | STMicroelectronics International N.V |
| 1.2 PCN No. | | ADG/20/11988 |
| 1.3 Title of PCN | | SPC560Bxx (FB64): Activation of TSMC as Additional Diffusion Plant (Following PCI ADG/19/11411) |
| 1.4 Product Category | | see list |
| 1.5 Issue date | | 2020-02-06 |

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 | | Luca RODESCHINI |
| 2.1.2 Marketing Manager | | Selica RUSSI |
| 2.1.3 Quality Manager | | Alberto MERVIC |

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: Wafer fabrication | TSMC Subcontractor recipient (Taiwan) |

4. Description of change

| | Old | New |
|---|-------------------------------------|---|
| 4.1 Description | ST Crolles (France) Diffusion plant | ST Crolles (France) Diffusion plant TSMC (Taiwan) Additional Diffusion Plant |
| 4.2 Anticipated Impact on form,fit, function, quality, reliability or processability? | No Impact | |

5. Reason / motivation for change

| | |
|----------------------|--|
| 5.1 Motivation | Dual sourcing strategy. Following PCI ADG/19/11411 dated March 2019 |
| 5.2 Customer Benefit | CAPACITY INCREASE |

6. Marking of parts / traceability of change

| | |
|-----------------|-------------------------------|
| 6.1 Description | Dedicated Finished Good Codes |
|-----------------|-------------------------------|

7. Timing / schedule

| | |
|-------------------------------------|--------------|
| 7.1 Date of qualification results | 2020-01-31 |
| 7.2 Intended start of delivery | 2020-10-01 |
| 7.3 Qualification sample available? | Upon Request |

8. Qualification / Validation

| | | | |
|--|----------------------------|------------|------------|
| 8.1 Description | 11988 Qualification.zip | | |
| 8.2 Qualification report and qualification results | Available (see attachment) | Issue Date | 2020-02-06 |

9. Attachments (additional documentations)

11988 Public product.pdf
11988 Qualification.zip
11988 Details.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 |
| | SPC560B54L3C6E0X | |
| | SPC560B54L5B6E0Y | |
| | SPC560B60L5B6E0Y | |
| | SPC560B64L5C6E0X | |
| | SPC560B64L7C6E0X | |

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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 : SPC560Bxx (FB64): Activation of TSMC as Additional Diffusion Plant (Following PCI ADG/19/11411)

PCN Reference : ADG/20/11988

Subject : Public Products List

Dear Customer,

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

| | | |
|------------------|------------------|------------------|
| SPC560B64L5C6E0X | SPC560B54L5C6E0X | SPC560B54L5B6E0Y |
| SPC560B54L3C6E0X | SPC560B54L3B4E0X | SPC560B60L3B6E0X |
| SPC560B64L7C6E0X | SPC560B60L7B6E0X | SPC560B60L3C6E0X |
| SPC560B64L7B6E0X | SPC560B60L5B6E0Y | SPC560B64L3B6E0X |
| SPC560B60L5C6E0X | SPC560B60L5B6E0X | |



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PRODUCT/PROCESS CHANGE NOTIFICATION

| SUBJECT | SPC560Bxx (FB64) CONTI: Activation of TSMC as Additional Diffusion Plant (following PCI ADG/19/11411) | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--|--|---------------------|--------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|
| IMPACTED PRODUCTS | <p>ST silicon line FB64 assembled in different packages:</p> <table border="1"> <thead> <tr> <th>PACKAGE DESCRIPTION</th><th>COMMERCIAL PRODUCT</th></tr> </thead> <tbody> <tr> <td rowspan="7">LQFP 100 14x14x1.4</td><td>SPC560B54L3B4E0X</td></tr> <tr><td>SPC560B54L3C6E0X</td></tr> <tr><td>SPC560B60L3B6E0X</td></tr> <tr><td>SPC560B60L3C6E0X</td></tr> <tr><td>SPC560B60L3C6E0Y</td></tr> <tr><td>SPC560B64L3B6E0X</td></tr> <tr><td>SPC560G50L3B6E0X</td></tr> <tr> <td rowspan="8">LQFP 144 20X20X1.4</td><td>SPC560B54L5B4E0X</td></tr> <tr><td>SPC560B54L5B6E0X</td></tr> <tr><td>SPC560B54L5B6E0Y</td></tr> <tr><td>SPC560B54L5C6E0X</td></tr> <tr><td>SPC560B60L5B6E0X</td></tr> <tr><td>SPC560B60L5B6E0Y</td></tr> <tr><td>SPC560B60L5C6E0X</td></tr> <tr><td>SPC560B64L5C6E0X</td></tr> <tr> <td rowspan="3">LQFP 176 24x24x1.4</td><td>SPC560B60L7B6E0X</td></tr> <tr><td>SPC560B64L7B6E0X</td></tr> <tr><td>SPC560B64L7C6E0X</td></tr> </tbody> </table> | | PACKAGE DESCRIPTION | COMMERCIAL PRODUCT | LQFP 100 14x14x1.4 | SPC560B54L3B4E0X | SPC560B54L3C6E0X | SPC560B60L3B6E0X | SPC560B60L3C6E0X | SPC560B60L3C6E0Y | SPC560B64L3B6E0X | SPC560G50L3B6E0X | LQFP 144 20X20X1.4 | SPC560B54L5B4E0X | SPC560B54L5B6E0X | SPC560B54L5B6E0Y | SPC560B54L5C6E0X | SPC560B60L5B6E0X | SPC560B60L5B6E0Y | SPC560B60L5C6E0X | SPC560B64L5C6E0X | LQFP 176 24x24x1.4 | SPC560B60L7B6E0X | SPC560B64L7B6E0X | SPC560B64L7C6E0X |
| PACKAGE DESCRIPTION | COMMERCIAL PRODUCT | | | | | | | | | | | | | | | | | | | | | | | | |
| LQFP 100 14x14x1.4 | SPC560B54L3B4E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B54L3C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L3B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L3C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L3C6E0Y | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B64L3B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560G50L3B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| LQFP 144 20X20X1.4 | SPC560B54L5B4E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B54L5B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B54L5B6E0Y | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B54L5C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L5B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L5B6E0Y | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B60L5C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B64L5C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| LQFP 176 24x24x1.4 | SPC560B60L7B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B64L7B6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| | SPC560B64L7C6E0X | | | | | | | | | | | | | | | | | | | | | | | | |
| MANUFACT. STEP | Silicon Diffusion (Front End) | | | | | | | | | | | | | | | | | | | | | | | | |
| INVOLVED PLANT | TSMC (recipient Plant – ST Subcontractor) Fab14A 300mm located in Tainan (Taiwan) - Automotive qualified and certified IATF16949 | | | | | | | | | | | | | | | | | | | | | | | | |

| CHANGE REASON | Expansion of current silicon diffusion capacity (volumes increase) and flexible/secure production asset – dual sourcing strategy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|---|---|---------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|----|----|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|----|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|-----|---------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|------|---------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|------|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|---------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|---------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|----|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| CHANGE DESCRIPTION | Activation of TSMC Fab14A as additional or alternative source for CMOS-M10 technology microcontrollers, following related product qualification according to automotive standards (AEC-Q100 – Q006) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRACEABILITY | New dedicated Finished Good code (Internal Part Number) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VALIDATION | <p>According to AEC-Q100 qualification plan for Integrated Circuits and ZVEI Guideline (change description: SEM-PW-13 Move of all or part of wafer fab to a different location/site/subcontractor):</p> <table border="1" data-bbox="456 971 1387 1457"> <thead> <tr> <th>Line evaluation (can be evaluated by data or audit on site check)</th> <th colspan="16">AEC-Q100 Revision H</th> </tr> </thead> <tbody> <tr> <td>THB</td> <td colspan="15">Temperature Humidity Bias or biased HAST</td> <td></td> </tr> <tr> <td>A2</td> <td>A3</td> <td>A4</td> <td>AC</td> <td colspan="13">Autoclave or Unbiased HAST</td> <td></td> </tr> <tr> <td>TC</td> <td colspan="15">Temperature Cycling</td> <td></td> </tr> <tr> <td>A4</td> <td>A5</td> <td>PTC</td> <td colspan="13">Power Temperature Cycling</td> <td></td> </tr> <tr> <td>HTOL</td> <td colspan="15">High Temperature Operating Life</td> <td></td> </tr> <tr> <td>B1</td> <td>B2</td> <td>ELFR</td> <td colspan="13">Early Life Failure Rate</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>EDR</td> <td colspan="13">NVM Endurance, Data Retention, and Operational Life</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>WBS</td> <td colspan="13">Wire Bond Shear</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>WBP</td> <td colspan="13">Wire Bond Pull</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>EM</td> <td colspan="13">Electromigration</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D1</td> <td>D2</td> <td colspan="13">Time Depending Dielectric Breakdown</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D3</td> <td colspan="13">Hot Carrier Injection</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>HCI</td> <td colspan="13"></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D4</td> <td colspan="13">Negative Bias Temperature Instability</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>NETI</td> <td colspan="13"></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>SM</td> <td colspan="13">Stress Migration</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>D5</td> <td>E2</td> <td colspan="13">Electronic Discharge Human Body Model</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>E3</td> <td colspan="13">Electronic Discharge Charged Device Model</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>E4</td> <td>E5</td> <td colspan="13">Latch up</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>E5</td> <td colspan="13">Electrical Distribution</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>ED</td> <td colspan="13">Hermetic Package Test</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>MECH</td> <td colspan="13"></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>DS</td> <td colspan="13">Die Shear</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td colspan="16">Parameter Analysis: Comparison of current with changed device characterization, electrical distribution</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td colspan="16">For Cu Wire Products: Consider AEC-Q006</td> <td></td> </tr> </tbody> </table> | Line evaluation (can be evaluated by data or audit on site check) | AEC-Q100 Revision H | | | | | | | | | | | | | | | | THB | Temperature Humidity Bias or biased HAST | | | | | | | | | | | | | | | | A2 | A3 | A4 | AC | Autoclave or Unbiased HAST | | | | | | | | | | | | | | TC | Temperature Cycling | | | | | | | | | | | | | | | | A4 | A5 | PTC | Power Temperature Cycling | | | | | | | | | | | | | | HTOL | High Temperature Operating Life | | | | | | | | | | | | | | | | B1 | B2 | ELFR | Early Life Failure Rate | | | | | | | | | | | | | | | | | EDR | NVM Endurance, Data Retention, and Operational Life | | | | | | | | | | | | | | | | | WBS | Wire Bond Shear | | | | | | | | | | | | | | | | | WBP | Wire Bond Pull | | | | | | | | | | | | | | | | | EM | Electromigration | | | | | | | | | | | | | | | | | D1 | D2 | Time Depending Dielectric Breakdown | | | | | | | | | | | | | | | | | D3 | Hot Carrier Injection | | | | | | | | | | | | | | | | | HCI | | | | | | | | | | | | | | | | | | D4 | Negative Bias Temperature Instability | | | | | | | | | | | | | | | | | NETI | | | | | | | | | | | | | | | | | | SM | Stress Migration | | | | | | | | | | | | | | | | | D5 | E2 | Electronic Discharge Human Body Model | | | | | | | | | | | | | | | | | E3 | Electronic Discharge Charged Device Model | | | | | | | | | | | | | | | | | E4 | E5 | Latch up | | | | | | | | | | | | | | | | | E5 | Electrical Distribution | | | | | | | | | | | | | | | | | ED | Hermetic Package Test | | | | | | | | | | | | | | | | | MECH | | | | | | | | | | | | | | | | | | DS | Die Shear | | | | | | | | | | | | | | | | | Parameter Analysis: Comparison of current with changed device characterization, electrical distribution | | | | | | | | | | | | | | | | | | | | For Cu Wire Products: Consider AEC-Q006 | | | | | | | | | | | | | | | | |
| Line evaluation (can be evaluated by data or audit on site check) | AEC-Q100 Revision H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| THB | Temperature Humidity Bias or biased HAST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A2 | A3 | A4 | AC | Autoclave or Unbiased HAST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TC | Temperature Cycling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A4 | A5 | PTC | Power Temperature Cycling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HTOL | High Temperature Operating Life | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B1 | B2 | ELFR | Early Life Failure Rate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | EDR | NVM Endurance, Data Retention, and Operational Life | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | WBS | Wire Bond Shear | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | WBP | Wire Bond Pull | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | EM | Electromigration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | D1 | D2 | Time Depending Dielectric Breakdown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | D3 | Hot Carrier Injection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | HCI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | D4 | Negative Bias Temperature Instability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | NETI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | SM | Stress Migration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | D5 | E2 | Electronic Discharge Human Body Model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | E3 | Electronic Discharge Charged Device Model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | E4 | E5 | Latch up | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | E5 | Electrical Distribution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | ED | Hermetic Package Test | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | MECH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | DS | Die Shear | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | Parameter Analysis: Comparison of current with changed device characterization, electrical distribution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | For Cu Wire Products: Consider AEC-Q006 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CURRENT PRODUCTS | <p>Current product (silicon line FB64) will be transferred (all packages) to TSMC Fab14A Taiwan. ST Crolles 300mm diffusion line will remain active as alternate solution.</p> <p>Together with the above activity, opportunity is taken to rationalize products portfolio, by terminating some impacted devices (PTN – Product termination Notice in progress), as per below table:</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| PACKAGE DESCRIPTION | COMMERCIAL PRODUCT | PTN | REPLACEMENT |
|-----------------------|--|-----|------------------|
| LQFP 100 14x14x1.4 | SPC560B54L3B4E0X | NO | |
| | SPC560B54L3C6E0X | NO | |
| | SPC560B60L3B6E0X | NO | |
| | SPC560B60L3C6E0X | NO | |
| | SPC560B60L3C6E0Y | YES | SPC560B60L3C6E0X |
| | SPC560B64L3B6E0X | NO | |
| | SPC560G50L3B6E0X | NO | |
| LQFP 144 20X20X1.4 | SPC560B54L5B4E0X | NO | |
| | SPC560B54L5B6E0X | YES | SPC560B54L5C6E0X |
| | SPC560B54L5B6E0Y | NO | |
| | SPC560B54L5C6E0X | NO | |
| | SPC560B60L5B6E0X | NO | |
| | SPC560B60L5B6E0Y | NO | |
| | SPC560B60L5C6E0X | NO | |
| LQFP 176 24x24x1.4 | SPC560B60L7B6E0X | NO | |
| | SPC560B64L7B6E0X | NO | |
| | SPC560B64L7C6E0X | NO | |
| REPORTS | Validation procedure and results are reported in the attached Reliability Report (AEC-Q100) and Electrical Validation Report. AEC-Q006 reliability trials are in progress and will be provided by March 2020 | | |