

## PRODUCT / PROCESS CHANGE NOTIFICATION

### 1. PCN basic data

|                      |   |   |
|----------------------|---|---|
| 1.1 Company          |  | STMicroelectronics International N.V  |
| 1.2 PCN No.          |   | ADG/18/11272  |
| 1.3 Title of PCN     |   | MDmesh™ DM2 Power MOSFET Top Metal change from AISi to AlCu+Barrier - Ang Mo Kio (Singapore) - AUTOMOTIVE |
| 1.4 Product Category |   | Power MOSFET  |
| 1.5 Issue date       |   | 2018-12-19  |

### 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     | Maurizio GIUDICE         |
| 2.1.2 Marketing Manager   | Paolo PETRALI            |
| 2.1.3 Quality Manager     | Vincenzo MILITANO        |

### 3. Change

| 3.1 Category        | 3.2 Type of change   | 3.3 Manufacturing Location |
|---------------------|--|----------------------------|
| Wafer Fab (Process) | Metallization : change in metal layers type/nature, composition or final thickness | Ang Mo Kio (Singapore)     |

### 4. Description of change

|   | Old  | New  |
|---|--|--|
| 4.1 Description   | MDmesh™ DM2 Power MOSFET Transistors Top Metal composition is AISi | MDmesh™ DM2 Power MOSFET Transistors Top Metal composition will be AlCu+Ti/TiN barrier |
| 4.2 Anticipated Impact on form,fit, function, quality, reliability or processability? | no impact  |  |

### 5. Reason / motivation for change

|                      |                         |
|----------------------|-------------------------|
| 5.1 Motivation       | Reliability Improvement |
| 5.2 Customer Benefit | QUALITY IMPROVEMENT     |

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

|                 |                            |
|-----------------|----------------------------|
| 6.1 Description | by FG code and Q.A. number |
|-----------------|----------------------------|

### 7. Timing / schedule

|                                     |              |
|-------------------------------------|--------------|
| 7.1 Date of qualification results   | 2018-12-13   |
| 7.2 Intended start of delivery      | 2019-06-16   |
| 7.3 Qualification sample available? | Upon Request |

### 8. Qualification / Validation

|  |                            |                       |
|--|----------------------------|-----------------------|
| 8.1 Description                                    | 11272 Rel25-18.pdf         |                       |
| 8.2 Qualification report and qualification results | Available (see attachment) | Issue Date 2018-12-19 |

### 9. Attachments (additional documentations)

11272 Public product.pdf

11272 MDmesh&#8482; DM2 Power MOSFET Top Metal change from AISi to AlCu+Barrier - Ang Mo Kio - AUT.pdf

11272 Rel25-18.pdf

11272 AlCu + Barrier vs AISi.pdf

**10. Affected parts**

| <b>10. 1 Current</b>           |                                | <b>10.2 New (if applicable)</b> |
|--------------------------------|--------------------------------|---------------------------------|
| <b>10.1.1 Customer Part No</b> | <b>10.1.2 Supplier Part No</b> | <b>10.1.2 Supplier Part No</b>  |
|                                | STB34N50DM2AG                  |                                 |
|                                | STB37N60DM2AG                  |                                 |
|                                | STB45N40DM2AG                  |                                 |
|                                | STB45N50DM2AG                  |                                 |
|                                | STB45N60DM2AG                  |                                 |
|                                | STP45N40DM2AG                  |                                 |
|                                | STP45N60DM2AG                  |                                 |
|                                | STW37N60DM2AG                  |                                 |
|                                | STW45N60DM2AG                  |                                 |
|                                | STW50N65DM2AG                  |                                 |
|                                | STW58N60DM2AG                  |                                 |
|                                | STW58N65DM2AG                  |                                 |
|                                | STW65N65DM2AG                  |                                 |
|                                | STW72N60DM2AG                  |                                 |

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Automotive Discrete Group (ADG)  
Power Transistor Division  
HV Business Unit  
**Process Change Notification**

**MDmesh™ DM2 Power MOSFET Top Metal change from AlSi to AlCu+Barrier - Ang Mo Kio AUTOMOTIVE**

Dear Customer,

Following the continuous improvement of our service and in order to improve MDmesh™ DM2 Technology, for selected Power MOSFET Transistors manufactured in ST's Ang Mo Kio (Singapore) FAB, we are going to change the front top metal from AlSi to AlCu+Ti/TiN barrier.

This new process has been developed first on new MDmesh™ DM6 technology and now we are going to apply it also on MDmesh™ DM2.

MDmesh™ DM2 Technology manufactured in Ang Mo Kio (Singapore) FAB, guarantees the same quality and electrical characteristics as per current production.

The involved products series and affected packages are listed in the table below:

| Product Family           | Technology  | Part Number               |
|--------------------------|-------------|---------------------------|
| Power MOSFET Transistors | MDmesh™ DM2 | See involved product list |

Any other Product related to the above series, even if not expressly included or partially mentioned in the attached table, is affected by this change.

**Qualification program and results availability:**

The reliability test report is provided in attachment to this document.

**Samples availability:**

Samples of the test vehicle devices will be available on request starting from week 49-2018. Any other sample request will be processed and scheduled by Power Transistor Division upon request.

| Product Family           | Package  | Test Vehicle   |
|--------------------------|--|--|
| Power MOSFET Transistors | D <sup>2</sup> PAK<br>TO-247<br>TO-247 long leads<br>TO-247 long leads | STB45N60DM2AG<br>STW65N65DM2AG<br>STWA50N65DM2AG<br>STWA65N65DM2AG |

**Change implementation schedule:**

The production start and first shipments will be implemented after week 24 of 2019, after customer agreement.

**Marking and traceability:**

Unless otherwise stated by customer specific requirement, traceability of MDmesh™ DM2, manufactured in ST's Ang Mo Kio (Singapore) FAB with AlCu+Ti/TiN barrier, will be ensured by internal code (Finished Good) and Q.A. number.

Yours faithfully,



## 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 :** MDmesh™ DM2 Power MOSFET Top Metal change from AlSi to AlCu+Barrier - Ang Mo Kio (Singapore) -

AUTOMOTIVE

**PCN Reference :** ADG/18/11272

**Subject :** Public Products List

Dear Customer,

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

|               |               |               |
|---------------|---------------|---------------|
| STW58N65DM2AG | STW58N60DM2AG | STP45N40DM2AG |
| STB45N50DM2AG | STW72N60DM2AG | STB45N60DM2AG |
| STB34N50DM2AG | STB37N60DM2AG | STW50N65DM2AG |
| STW65N65DM2AG | STB45N40DM2AG | STW45N60DM2AG |
| STW37N60DM2AG | STP45N60DM2AG |               |



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