



## Final Product/Process Change Notification

Document #:FPCN22647XAC

Issue Date:21 Apr 2020

|   |  |                                 |
|---|--|---------------------------------|
| <b>Title of Change:</b>   | Mold Compound Change attributed to an End of Life of Samsung SDI EMC for products in TO3PF & TO3P Package.   |                                 |
| <b>Proposed First Ship date:</b>  | 28 Jul 2020 or earlier if approved by customer   |                                 |
| <b>Contact Information:</b>   | Contact your local ON Semiconductor Sales Office or <a href="mailto:masitah.aznam@onsemi.com">masitah.aznam@onsemi.com</a> , <a href="mailto:Khairil.FK@onsemi.com">Khairil.FK@onsemi.com</a> , <a href="mailto:David.Zhu@onsemi.com">David.Zhu@onsemi.com</a> , <a href="mailto:Raja.Roziah.Rahmat@onsemi.com">Raja.Roziah.Rahmat@onsemi.com</a> , <a href="mailto:Bokyun.Seo@onsemi.com">Bokyun.Seo@onsemi.com</a> |                                 |
| <b>PCN Samples Contact:</b>   | Contact your local ON Semiconductor Sales Office or <a href="mailto:PCN.samples@onsemi.com">PCN.samples@onsemi.com</a><br>Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.<br>Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.                     |                                 |
| <b>Additional Reliability Data:</b>   | Contact your local ON Semiconductor Sales Office or <a href="mailto:Lalan.Ortega@onsemi.com">Lalan.Ortega@onsemi.com</a>   |                                 |
| <b>Type of Notification:</b>  | This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change.<br>ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a>   |                                 |
| <b>Marking of Parts/ Traceability of Change:</b>  | Marking of parts no change and traceability of change with Product date code.  |                                 |
| <b>Change Category:</b>   | Assembly Change  |                                 |
| <b>Change Sub-Category(s):</b>  | Material Change  |                                 |
| <b>Sites Affected:</b>  |  |                                 |
| <b>ON Semiconductor Sites</b>   | <b>External Foundry/Subcon Sites</b>   |                                 |
| None  | SP Semi, Korea   |                                 |
| <b>Description and Purpose:</b>   |  |                                 |
| ON Semiconductor wishes to inform our customers of a change in mold compounds used for the devices listed in this PCN, following from the IPCN22467 series released earlier.    |  |                                 |
| This change is a result of an End of Life notification received from Samsung for several of their SDI Mold Compounds.   |  |                                 |
| At the expiration of this PCN, the impacted products will use the new mold compound or the existing mold compound until all inventories are consumed.                           |  |                                 |
|   | <b>Before Change Description</b>   | <b>After Change Description</b> |
| <b>Mold Compound (TO3PF-3 Package)</b>  | ST-7100HF, Supplier: Samsung SDI   | KTMC-3097GR                     |
| <b>Mold Compound (TO3PF-2 Package)</b>  | ST-7100HF, Supplier: Samsung SDI   | KTMC-3097GR                     |
| <b>Mold Compound (TO3P-3 Package)</b>   | SI-7200DX2, Supplier: Samsung SDI  | KTMC-1030NFE                    |
| All other aspects of the impacted products will remain unchanged. There is no form, fit, or function change, maintaining the same product marking of all the affected products. |  |                                 |

**Reliability Data Summary:**QV DEVICE NAME: FFAF60UA60DNRMS : U55909PACKAGE : TO3PF

| Test  | Specification                  | Condition   | Interval | Results |
|-------|--------------------------------|---|----------|---------|
| HTRB  | JESD22-A108                    | TA = 150°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231   |
| HTSL  | JESD22-A103                    | TA = 150°C for 1008 hours                                   | 1008 hrs | 0/231   |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C, On/off = 5 min                    | 6000Cyc  | 0/231   |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231   |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231   |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90    |
| UHASt | JESD22-A118B                   | Temp= +130°C, RH=85% , p = 18.8 psig, unbiased              | 96hrs    | 0/231   |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/30    |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6     |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45    |
| PD    |                                | Per Case Outline  |          | 0/30    |

QV DEVICE NAME: FGAF40N60SMDRMS : U60540PACKAGE : TO3PF

| Test  | Specification                  | Condition   | Interval | Results |
|-------|--------------------------------|---|----------|---------|
| HTRB  | JESD22-A108                    | TA = 175°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231   |
| HTGB  | JESD22-A108                    | TA = 175°C for 1008 hours, 100% rated Vgs                   | 1008 hrs | 0/231   |
| HTSL  | JESD22-A103                    | Ta = 150°C for 1008 hours                                   | 1008 hrs | 0/231   |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C max, On/Off=5 min                  | 6000Cyc  | 0/231   |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231   |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231   |
| UHASt | JESD22-A118B                   | Temp= +130°C, RH=85% , p = 18.8 psig, unbiased              | 96hrs    | 0/231   |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90    |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6     |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45    |
| PD    |                                | Per Case Outline  |          | 0/45    |



QV DEVICE NAME: NJW1302G

RMS : U55928

PACKAGE : TO3P

| Test  | Specification                  | Condition   | Interval | Results |
|-------|--------------------------------|---|----------|---------|
| HTRB  | JESD22-A108                    | TA = 150°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231   |
| HTSL  | JESD22-A103                    | TA = 150°C for 1008 hours                                   | 1008 hrs | 0/231   |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C, On/off = 5 min                    | 6000Cyc  | 0/231   |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231   |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231   |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90    |
| UHAST | JESD22-A118B                   | Temp= +130°C, RH=85% , p = 18.8 psig, unbiased              | 96hrs    | 0/231   |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/30    |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6     |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45    |
| PD    |                                | Per Case Outline  |          | 0/45    |

**Electrical Characteristics Summary:**

Electrical characteristics are not impacted.

**List of Affected Parts:**

**Note:** Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal**.

| Part Number  | Qualification Vehicle |
|--------------|-----------------------|
| FGAF40N60SMD | FGAF40N60SMD          |
| FGAF20S65AQ  | FGAF40N60SMD          |
| FGAF30S65AQ  | FGAF40N60SMD          |
| SGF5N150UFTU | FGAF40N60SMD          |
| FGAF20N60SMD | FGAF40N60SMD          |
| FGAF40S65AQ  | FGAF40N60SMD          |
| NJW1302G     | NJW1302G              |
| NJW3281G     | NJW1302G              |
| NJW0281G     | NJW1302G              |
| NJW0302G     | NJW1302G              |



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|                |              |
|----------------|--------------|
| NJW21193G      | NJW1302G     |
| NJW21194G      | NJW1302G     |
| NJW44H11G      | NJW1302G     |
| FFAF60UA60DN   | FFAF60UA60DN |
| NGTB40N65IHRTG | NJW1302G     |
| FFAF30UA60S    | FFAF60UA60DN |

Japanese translation of the notification starts here.  
通知の日本語訳はここから始まります。

*Note: The Japanese version is for reference only. In case of any differences between the English and Japanese version, the English version shall control.*

注：日本語版は参照用です。英語版と日本語版の違いがある場合は、英語版が優先されます。



## 最終製品 / プロセス変更通知

文書番号# : FPCN22647XAC

発行日 : 21 Apr 2020

| 変更件名:                        | TO3PF および TO3P パッケージ製品における Samsung SDI 製 EMC の生産終了に伴うモールドコンパウンドの変更  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
|------------------------------|---|--------------|--|--------|--------|------------------------------|----------------------------------|-------------|------------------------------|----------------------------------|-------------|-----------------------------|-----------------------------------|--------------|
| 初回出荷予定日:                     | 28 Jun 2020 またはお客様からの承認が得られた場合はそれ以前。  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 連絡先情報                        | 現地のオン・セミコンダクター営業所または <a href="mailto:masitah.aznam@onsemi.com">masitah.aznam@onsemi.com</a> , <a href="mailto:Khairil.FK@onsemi.com">Khairil.FK@onsemi.com</a> , <a href="mailto:David.Zhu@onsemi.com">David.Zhu@onsemi.com</a> , <a href="mailto:Raja.Roziah.Rahmat@onsemi.com">Raja.Roziah.Rahmat@onsemi.com</a> , <a href="mailto:Bokyun.Seo@onsemi.com">Bokyun.Seo@onsemi.com</a> にお問い合わせください。  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| サンプル:                        | 現地のオン・セミコンダクター営業所または <a href="mailto:PCN.Samples@onsemi.com">PCN.Samples@onsemi.com</a> にお問い合わせください。<br>サンプルは、この変更の初回通知、初回 PCN の日付から 30 日以内に要求してください。<br>サンプル納入時は、依頼日、数量、特別梱包材/ラベル条件によって異なります。  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 追加の信頼性データ:                   | お客さまの地域のオン・セミコンダクター営業所または <a href="mailto:Lalan.Ortega@onsemi.com">Lalan.Ortega@onsemi.com</a> にお問い合わせください。   |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 通知種別:                        | これは、お客様宛の最終製品 / プロセス変更通知 (FPCN) です。FPCN は、変更実施の 90 日前に発行されます。<br>オン・セミコンダクターは、この通知の送付から 30 日以内に書面による問い合わせがない限り、この変更が承諾されたものとみなします。お問い合わせは、 <a href="mailto:PCN.Support@onsemi.com">PCN.Support@onsemi.com</a> 宛てにお願いします。  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 変更部品の識別:                     | マーキングおよび製品日付コードに変更はありません。   |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 変更カテゴリ:                      | アセンブリの変更  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 変更サブカテゴリ:                    | 材料の変更   |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 影響を受ける拠点:                    |   |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| オン・セミコンダクター拠点:               | 外部製造工場 / 下請業者拠点:  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 無し                           | SP Semi, Korea  |              |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| 説明および目的:                     | <p>オン・セミコンダクターは、以前リリースした IPCN22467 シリーズに続けて、本 PCN に記載された製品に対して使用するモールドコンパウンドの変更をお客様にお知らせいたします。</p> <p>この変更は、SDI モールドコンパウンドのいくつかについて Samsung から受けた生産終了の通知によるものです。</p> <p>この PCN の期限が切れると、対象製品では新たなモールドコンパウンドを使用するか、すべての在庫を消費するまで既存のモールドコンパウンドを使用します。</p> <table border="1"> <thead> <tr> <th></th> <th>変更前の表記</th> <th>変更後の表記</th> </tr> </thead> <tbody> <tr> <td>モールドコンパウンド (TO3PF-3 Package)</td> <td>ST-7100HF, Supplier: Samsung SDI</td> <td>KTMC-3097GR</td> </tr> <tr> <td>モールドコンパウンド (TO3PF-2 Package)</td> <td>ST-7100HF, Supplier: Samsung SDI</td> <td>KTMC-3097GR</td> </tr> <tr> <td>モールドコンパウンド (TO3P-3 Package)</td> <td>SI-7200DX2, Supplier: Samsung SDI</td> <td>KTMC-1030NFE</td> </tr> </tbody> </table> <p>対象となる製品の他の特徴には変更はありません。形状、適合性、または機能の変更はなく、影響を受けるすべての製品において製品のマーキングは変わりません。</p> |              |  | 変更前の表記 | 変更後の表記 | モールドコンパウンド (TO3PF-3 Package) | ST-7100HF, Supplier: Samsung SDI | KTMC-3097GR | モールドコンパウンド (TO3PF-2 Package) | ST-7100HF, Supplier: Samsung SDI | KTMC-3097GR | モールドコンパウンド (TO3P-3 Package) | SI-7200DX2, Supplier: Samsung SDI | KTMC-1030NFE |
|                              | 変更前の表記  | 変更後の表記       |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| モールドコンパウンド (TO3PF-3 Package) | ST-7100HF, Supplier: Samsung SDI  | KTMC-3097GR  |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| モールドコンパウンド (TO3PF-2 Package) | ST-7100HF, Supplier: Samsung SDI  | KTMC-3097GR  |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |
| モールドコンパウンド (TO3P-3 Package)  | SI-7200DX2, Supplier: Samsung SDI   | KTMC-1030NFE |  |        |        |                              |                                  |             |                              |                                  |             |                             |                                   |              |



## 信頼性データの要約:

デバイス名: FFAF60UA60DNRMS : U55909パッケージ: TO3PF

| テスト   | 仕様                             | 条件  | 間隔       | 結果    |
|-------|--------------------------------|---|----------|-------|
| HTRB  | JESD22-A108                    | TA = 150°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231 |
| HTSL  | JESD22-A103                    | TA = 150°C for 1008 hours                                   | 1008 hrs | 0/231 |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C, On/off = 5 min                    | 6000Cyc  | 0/231 |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231 |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231 |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90  |
| UHASt | JESD22-A118B                   | Temp= +130°C, RH=85% , p = 18.8 psig, unbiased              | 96hrs    | 0/231 |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/30  |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6   |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45  |
| PD    |                                | Per Case Outline  |          | 0/30  |

デバイス名: FGAF40N60SMDRMS : U60540パッケージ: TO3PF

| テスト   | 仕様                             | 条件  | 間隔       | 結果    |
|-------|--------------------------------|---|----------|-------|
| HTRB  | JESD22-A108                    | TA = 175°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231 |
| HTGB  | JESD22-A108                    | TA = 175°C for 1008 hours, 100% rated Vgs                   | 1008 hrs | 0/231 |
| HTSL  | JESD22-A103                    | Ta = 150°C for 1008 hours                                   | 1008 hrs | 0/231 |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C max, On/Off=5 min                  | 6000Cyc  | 0/231 |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231 |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231 |
| UHASt | JESD22-A118B                   | Temp= +130°C, RH=85% , p = 18.8 psig, unbiased              | 96hrs    | 0/231 |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90  |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6   |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45  |
| PD    |                                | Per Case Outline  |          | 0/45  |



デバイス名: NJW1302G

RMS : U55928

パッケージ: TO3P

| テスト   | 仕様                             | 条件  | 間隔       | 結果    |
|-------|--------------------------------|---|----------|-------|
| HTRB  | JESD22-A108                    | TA = 150°C for 1008 hours, 100% rated                       | 1008 hrs | 0/231 |
| HTSL  | JESD22-A103                    | TA = 150°C for 1008 hours                                   | 1008 hrs | 0/231 |
| IOL   | MIL STD750, M 1037<br>AEC Q101 | Ta=+25°C, delta Tj=100°C, On/off = 5 min                    | 6000Cyc  | 0/231 |
| TC    | JESD22-A104                    | Temp = -55°C to +150°C; for 1000 cycles                     | 1000 cyc | 0/231 |
| H3TRB | JESD22-A101                    | Temp = 85C, RH=85%, bias = 80% of rated V or 100V max       | 1008 hrs | 0/231 |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/90  |
| UHASt | JESD22-A118B                   | Temp= +130°C, RH=85%, p = 18.8 psig, unbiased               | 96hrs    | 0/231 |
| RSH   | JESD22-B106                    | 265 °C Immersion and 10s                                    | 10s      | 0/30  |
| DPA   | AEC-Q101-004 Section 4         | Destructive Physical Analysis<br>Post TC, H3TRB, HTRB, HTGB |          | 0/6   |
| SD    | J STD 002B                     | Ta=245°C 5 sec dwell  | 5s       | 0/45  |
| PD    |                                | Per Case Outline  |          | 0/45  |

## 電気的特性の要約:

電気的特性は影響を受けません。

## 影響を受ける部品の一覧:

注: 部品一覧には標準部品番号 (既製品) のみが記載されています。本 PCN の影響を受けるカスタム部品番号は、PCN メールで提供される顧客個別の付録、または PCN カスタマイズポータルに記載されています。

| 部品番号         | 認定試験用ピークル    |
|--------------|--------------|
| FFAF60UA60DN | FFAF60UA60DN |
| FFAF30UA60S  | FFAF60UA60DN |
| FGAF40N60SMD | FGAF40N60SMD |
| FGAF20S65AQ  | FGAF40N60SMD |
| FGAF30S65AQ  | FGAF40N60SMD |
| SGF5N150UFTU | FGAF40N60SMD |
| FGAF20N60SMD | FGAF40N60SMD |
| FGAF40S65AQ  | FGAF40N60SMD |
| NJW1302G     | NJW1302G     |
| NJW3281G     | NJW1302G     |





## 最終製品 / プロセス変更通知

文書番号# : FPCN22647XAC

発行日 : 21 Apr 2020

|                |          |
|----------------|----------|
| NJW0281G       | NJW1302G |
| NJW0302G       | NJW1302G |
| NJW21193G      | NJW1302G |
| NJW21194G      | NJW1302G |
| NJW44H11G      | NJW1302G |
| NGTB40N65IHRTG | NJW1302G |



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**Appendix A: Changed Products**

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| Product        | Customer Part Number | Qualification Vehicle | New Part Number | Replacement Supplier |
|----------------|----------------------|-----------------------|-----------------|----------------------|
| SJW1302G       | 100-025-064          | NJW1302G              |                 |                      |
| SJW3281G       | 100-025-063          | NJW1302G              |                 |                      |
| FGAF40N60SMD   |                      | FGAF40N60SMD          |                 |                      |
| FGAF20N60SMD   |                      | FGAF40N60SMD          |                 |                      |
| FGAF40S65AQ    |                      | FGAF40N60SMD          |                 |                      |
| NJW1302G       |                      | NJW1302G              |                 |                      |
| NJW3281G       |                      | NJW1302G              |                 |                      |
| NJW0281G       |                      | NJW1302G              |                 |                      |
| NJW0302G       |                      | NJW1302G              |                 |                      |
| NJW21194G      |                      | NJW1302G              |                 |                      |
| NJW44H11G      |                      | NJW1302G              |                 |                      |
| FFAF60UA60DN   |                      | FFAF60UA60DN          |                 |                      |
| NGTB40N65IHRTG |                      | NJW1302G              |                 |                      |
| NJW21193G      |                      | NJW1302G              |                 |                      |