ON Semiconductor®

Final Product/Process Change Notification

Document #:FPCN22647XBA
Issue Date:20 Aug 2020

Title of Change:	Mold compound change due to End of Life of Samsung SDI EMC - product at SP Semi, Korea
Proposed First Ship date:	27 Nov 2020 or earlier if approved by customer
Contact Information:	Contact your local ON Semiconductor Sales Office or MohdHezri.AbuBakar@onsemi.com
PCN Samples Contact:	Contact your local ON Semiconductor Sales Office or <PCN.samples@onsemi.com>. 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. Samples delivery timing will be subject to request date, sample quantity and special customer packing/label requirements.
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or Lalan.Ortega@onsemi.com
Type of Notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. 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 PCN.Support@onsemi.com
Marking of Parts/ Traceability of Change:	Affected products will be identified with date code.
Change Category:	Assembly Change
Change Sub-Category(s):	Material Change

Sites Affected:

ON Semiconductor Sites	**External Foundry/Subcon Sites**
None	SP Semi, Korea

Description and Purpose:

ON Semiconductor would like to inform its customers of a change in the mold compound for the devices listed in this FPCN. This change is a Result of an end of life notification received for Samsung SDI EMC. The replacement mold compound is being decided.

	Before Change Description	After Change Description
Mold Compound	ST7100HK	KTMC-3097GX
Mold Compound	ST7100HF	KTMC-3097GR
Mold Compound	SI-7200DX2	KTMC1050GFB
Mold Compound	SL-7300HXM	KTMC-5400SM (I)

There is no product marking change as a result of this change.

Reliability Data Summary:

QV DEVICE NAME: NDFP03N150CG
RMS: J55830, J60026
PACKAGE: TO-220F

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 150°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	8572 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 25
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HAST	96 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

QV DEVICE NAME: WPH4003-1E
RMS: S55738, S64345
PACKAGE: TO-3P

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 137°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5.0 min	6000 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30

SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 10
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HAST	96 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

QV DEVICE NAME: NDTL03N150CG
RMS: S64378, S64475
PACKAGE: TO-3P

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 142°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5.0 min	6000 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
H3TRB	JEDS22 A101	Ta = 85°C, 85% RH, V=80% rated V	1008 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 15
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following H3TRB	1008 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

QV DEVICE NAME: 2SK4177-DL-1E
RMS: S64991, O66849
PACKAGE: D2PAK

Test	Specification	Condition	Interval	Results
HTRB	JESD22-A108	Ta = 137°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	8572 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
H3TRB	JEDS22 A101	Ta = 85°C, 85% RH, V=80% rated V	1008 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
PC	J-STD-020 JESD-A113	MSL 1 @245 °C		0 / 320
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
SAT	JESD22-A104, Appendix 6 J-STD-035	Post Precon		22 / 22
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following H3TRB	1008 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

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
WPH4003-1E	WPH4003-1E
NDTL03N150CG	NDTL03N150CG
2SK3746-1E	NDTL03N150CG
2SK4177-DL-1E	2SK4177-DL-1E
2SJ652-1E	NDFP03N150CG

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.

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最終製品 / プロセス変更通知

文書番号# : FPCN22647XBA
発行日: 20 Aug 2020

変更件名:	Samsung SDI 製モールド コンパウンドの生産終了に伴うモールド コンパウンドの変更– SP Semi（韓国）の製品
初回出荷予定日:	27 Nov 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 MohdHezri.AbuBakar@onsemi.com 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 <PCN.Samples@onsemi.com> にお問い合わせください。 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。 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 Lalan.Ortega@onsemi.com 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。 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、<PCN.Support@onsemi.com> 宛てにお願いします。
変更部品の識別:	影響を受ける製品は日付コードで識別されます。

変更カテゴリ: 組立の変更

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 (韓国)

説明および目的:

オン・セミコンダクターは、本 FPCN に記載された製品に対するモールド コンパウンドの変更をお客様にお知らせいたします。この変更は、Samsung SDI EMC における生産終了の通知によるものです。代替モールド コンパウンドは決定されています。

	変更前の表記	**変更後の表記**
モールド コンパウンド	ST7100HK	KTMC-3097GX
モールド コンパウンド	ST7100HF	KTMC-3097GR
モールド コンパウンド	SI-7200DX2	KTMC1050GFB
モールド コンパウンド	SL-7300HXM	KTMC-5400SM (I)

今回の変更に伴う製品マーキングの変更はありません。

信頼性データの要約:

デバイス名: NDFP03N150CG
RMS: J55830, J60026
パッケージ: TO-220F

テスト	仕様	条件	間隔	結果
HTRB	JESD22-A108	Ta = 150°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	8572 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 25
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HAST	96 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

デバイス名: WPH4003-1E
RMS: S55738, S64345
パッケージ: TO-3P

テスト	仕様	条件	間隔	結果
HTRB	JESD22-A108	Ta = 137°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5.0 min	6000 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
HAST	JESD22-A110	130°C, 85% RH, 18.8psig, bias	96 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15

PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 10
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HAST	96 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

デバイス名: NDTL03N150CG
RMS: S64378, S64475
パッケージ: TO-3P

テスト	仕様	条件	間隔	結果
HTRB	JESD22-A108	Ta = 142°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 5.0 min	6000 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
H3TRB	JEDS22 A101	Ta = 85°C, 85% RH, V=80% rated V	1008 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
SAT	JESD22-A104, Appendix 6 J-STD-035		0 hr	0 / 15
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following H3TRB	1008 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

デバイス名: 2SK4177-DL-1E
RMS: S64991, O66849
パッケージ: D2PAK

テスト	仕様	条件	間隔	結果
HTRB	JESD22-A108	Ta = 137°C, 80% max rated V	1008 hrs	0 / 80
HTGB	JESD22-A108	Ta = 150°C, 100% max rated Vgss	1008 hrs	0 / 80
HTSL	JESD22-A103	Ta = 150°C	1008 hrs	0 / 80
IOL	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 3.5 min	8572 cyc	0 / 80
TC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc	0 / 80
H3TRB	JEDS22 A101	Ta = 85°C, 85% RH, V=80% rated V	1008 hrs	0 / 80
AC	JESD22-A102	121°C, 100% RH, 15.5psig, unbiased	96 hrs	0 / 80
PC	J-STD-020 JESD-A113	MSL 1 @245 °C		0 / 320
RSH	JESD22- B106	Ta = 265C, 10 sec		0 / 30
SD	JSTD002	Ta = 245C, 10 sec		0 / 15
SAT	JESD22-A104, Appendix 6 J-STD-035	Post Precon		22 / 22
PD	JESD22-B100	Per POD / Case Outline, Verify physical dimensions to specifications	0 hr	0 / 30
DPA	AEC Q101-004 Section 4	Following TC	1000 cyc	0 / 2
DPA	AEC Q101-004 Section 4	Following HTRB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following HTGB	1008 hrs	0 / 2
DPA	AEC Q101-004 Section 4	Following H3TRB	1008 hrs	0 / 2
ED	Electrical Distribution / Characterization	Tri Temperature, Per 48A	0 hr	0 / 30
TR	JESD-24-3, 24-4, 24-6 as appropriate	per device specification, pre & post process change	0 hr	0 / 10

電気的特性の要約:

電気的特性に影響はありません。

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	認定試験用ビークル
WPH4003-1E	WPH4003-1E
NDTL03N150CG	NDTL03N150CG
2SK3746-1E	NDTL03N150CG
2SK4177-DL-1E	2SK4177-DL-1E
2SJ652-1E	NDFP03N150CG