ON Semiconductor®

Product Bulletin

Document #:PB23692Z
Issue Date:26 Nov 2020

Title of Change:	AR0143AT Outgoing Defect Specification (ODS) Update
Effective date:	26 Nov 2020
Contact information:	Contact your local ON Semiconductor Sales Office or Sonya.Yip@onsemi.com
Type of notification:	This Product Bulletin is for notification purposes only. ON Semiconductor will proceed with implementation of this change upon publication of this Product Bulletin.
Change Category:	Documentation Change
Change Sub-Category(s):	Datasheet/Product Doc change

Sites Affected:

ON Semiconductor Sites	**External Foundry/Subcon Sites**
None	None

Description and Purpose:

Include Row/Column defects and Row/Column FPN defects specification in the AR0143AT RGB Outgoing Defect Specification Rev2.

Below are the Description of the changes in Rev2.

- Update Table1. Defect Specification

Rev 1:

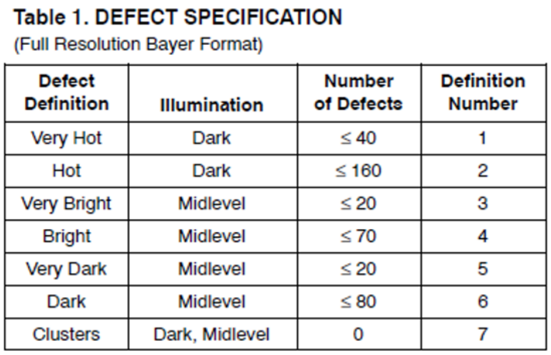


Table 1. DEFECT SPECIFICATION
(Full Resolution Bayer Format)

Defect Definition	Illumination	Number of Defects	Definition Number
Very Hot	Dark	≤ 40	1
Hot	Dark	≤ 160	2
Very Bright	Midlevel	≤ 20	3
Bright	Midlevel	≤ 70	4
Very Dark	Midlevel	≤ 20	5
Dark	Midlevel	≤ 80	6
Clusters	Dark, Midlevel	0	7

Rev 2:

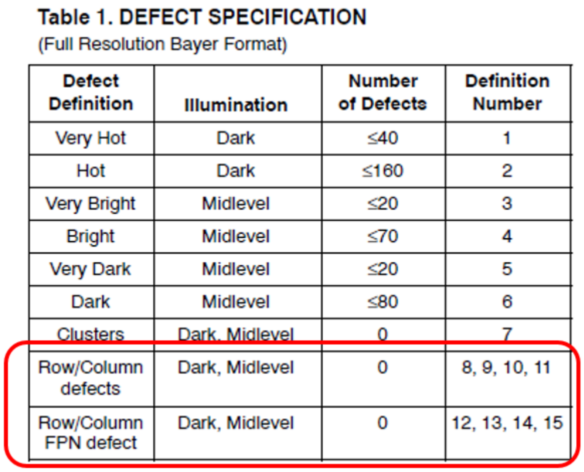
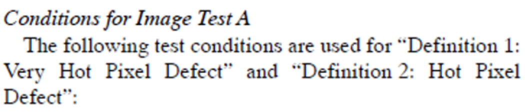


Table 1. DEFECT SPECIFICATION
(Full Resolution Bayer Format)

Defect Definition	Illumination	Number of Defects	Definition Number
Very Hot	Dark	≤40	1
Hot	Dark	≤160	2
Very Bright	Midlevel	≤20	3
Bright	Midlevel	≤70	4
Very Dark	Midlevel	≤20	5
Dark	Midlevel	≤80	6
Clusters	Dark, Midlevel	0	7
Row/Column defects	Dark, Midlevel	0	8, 9, 10, 11
Row/Column FPN defect	Dark, Midlevel	0	12, 13, 14, 15

- Update Image Test Conditions

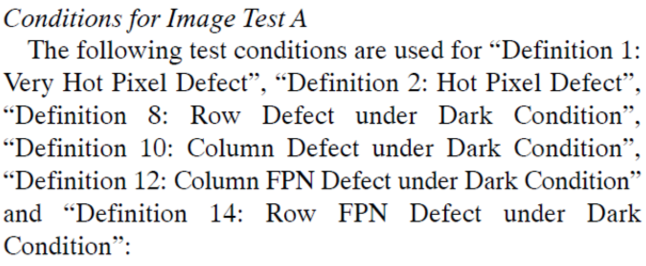
Rev 1:



Conditions for Image Test A

The following test conditions are used for "Definition 1: Very Hot Pixel Defect" and "Definition 2: Hot Pixel Defect":

Rev 2:

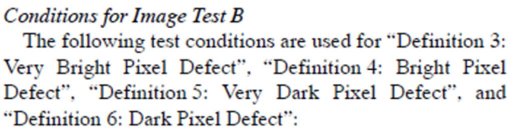


Conditions for Image Test A

The following test conditions are used for "Definition 1: Very Hot Pixel Defect", "Definition 2: Hot Pixel Defect", "Definition 8: Row Defect under Dark Condition", "Definition 10: Column Defect under Dark Condition", "Definition 12: Column FPN Defect under Dark Condition" and "Definition 14: Row FPN Defect under Dark Condition":

- Update Image Test Conditions

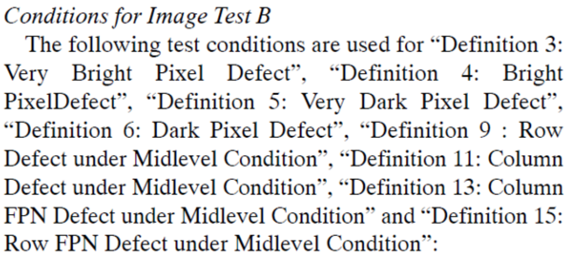
Rev 1:



Conditions for Image Test B

The following test conditions are used for “Definition 3: Very Bright Pixel Defect”, “Definition 4: Bright Pixel Defect”, “Definition 5: Very Dark Pixel Defect”, and “Definition 6: Dark Pixel Defect”:

Rev 2:

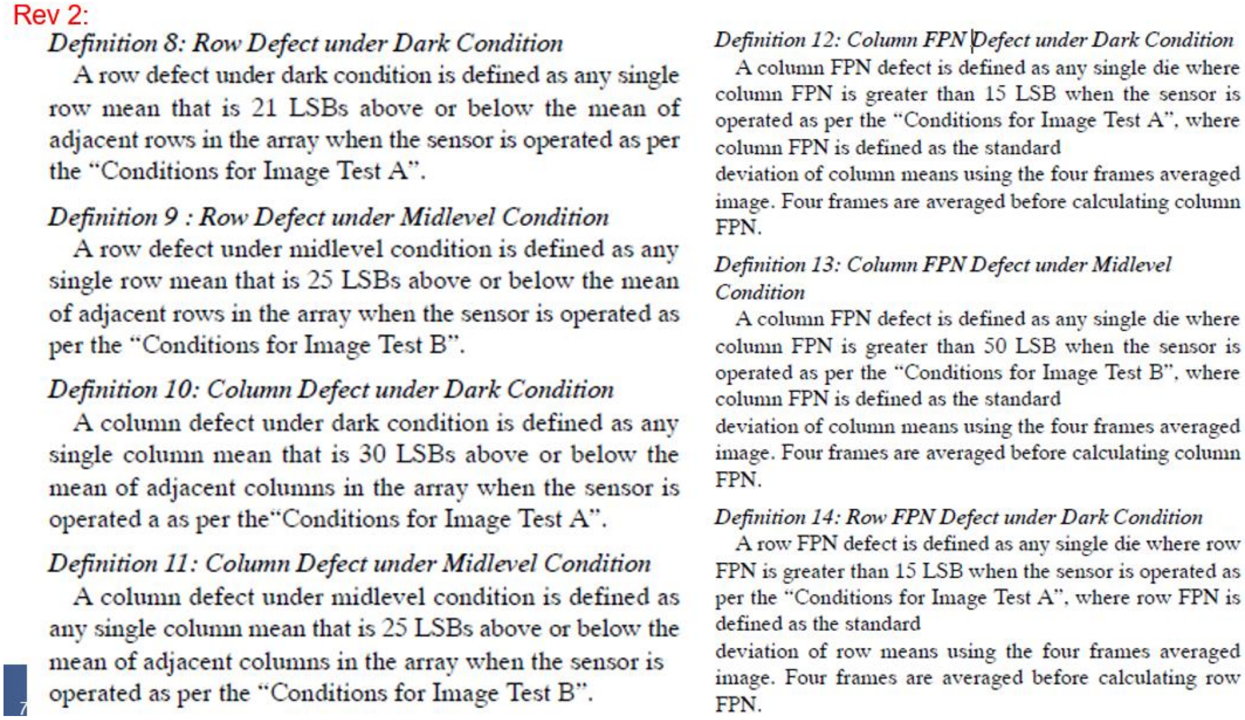


Conditions for Image Test B

The following test conditions are used for “Definition 3: Very Bright Pixel Defect”, “Definition 4: Bright PixelDefect”, “Definition 5: Very Dark Pixel Defect”, “Definition 6: Dark Pixel Defect”, “Definition 9 : Row Defect under Midlevel Condition”, “Definition 11: Column Defect under Midlevel Condition”, “Definition 13: Column FPN Defect under Midlevel Condition” and “Definition 15: Row FPN Defect under Midlevel Condition”:

- Increase Defect Definitions in Bayer Format: from definition 8 to definition 15.

Rev 2:



Definition 8: Row Defect under Dark Condition

A row defect under dark condition is defined as any single row mean that is 21 LSBs above or below the mean of adjacent rows in the array when the sensor is operated as per the “Conditions for Image Test A”.

Definition 9 : Row Defect under Midlevel Condition

A row defect under midlevel condition is defined as any single row mean that is 25 LSBs above or below the mean of adjacent rows in the array when the sensor is operated as per the “Conditions for Image Test B”.

Definition 10: Column Defect under Dark Condition

A column defect under dark condition is defined as any single column mean that is 30 LSBs above or below the mean of adjacent columns in the array when the sensor is operated a as per the“Conditions for Image Test A”.

Definition 11: Column Defect under Midlevel Condition

A column defect under midlevel condition is defined as any single column mean that is 25 LSBs above or below the mean of adjacent columns in the array when the sensor is operated as per the “Conditions for Image Test B”.

Definition 12: Column FPN Defect under Dark Condition

A column FPN defect is defined as any single die where column FPN is greater than 15 LSB when the sensor is operated as per the “Conditions for Image Test A”, where column FPN is defined as the standard

deviation of column means using the four frames averaged image. Four frames are averaged before calculating column FPN.

Definition 13: Column FPN Defect under Midlevel Condition

A column FPN defect is defined as any single die where column FPN is greater than 50 LSB when the sensor is operated as per the “Conditions for Image Test B”, where column FPN is defined as the standard

deviation of column means using the four frames averaged image. Four frames are averaged before calculating column FPN.

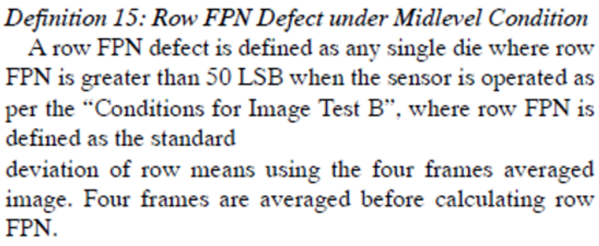
Definition 14: Row FPN Defect under Dark Condition

A row FPN defect is defined as any single die where row FPN is greater than 15 LSB when the sensor is operated as per the “Conditions for Image Test A”, where row FPN is defined as the standard

deviation of row means using the four frames averaged image. Four frames are averaged before calculating row FPN.

- Increase Defect Definitions in Bayer Format: from definition 8 to definition 15.

Rev 2:



Definition 15: Row FPN Defect under Midlevel Condition

A row FPN defect is defined as any single die where row FPN is greater than 50 LSB when the sensor is operated as per the “Conditions for Image Test B”, where row FPN is defined as the standard

deviation of row means using the four frames averaged image. Four frames are averaged before calculating row FPN.

List of Affected Standard 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**.*

AR0143ATSC00XUEA0-DPBR	AR0143ATSC00XUEA0-DRBR	AR0143ATSC00XUEA0-TPBR
AR0143ATSC00XUEA1-DPBR	AR0143ATSC00XUEA0-TRBR	AR0143ATSC00XUEA1-DRBR
AR0143ATSC00XUEA1-TPBR	AR0143ATSC00XUEA1-TRBR	

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.

ON Semiconductor®

製品速報

文書番号：PB23692Z
発行日：26 Nov 2020

変更件名：	AR0143AT の出荷欠陥仕様 (ODS) の更新
発効日：	26 Nov 2020
連絡先情報：	現地のオン・セミコンダクター営業所または Sonya.Yip@onsemi.com にお問い合わせください。
通知種別：	本製品速報は通知目的のみのものです。オン・セミコンダクターは本製品速報の発行により本変更を実行します。
変更カテゴリ：	文書変更
変更サブカテゴリ：	データシート/製品資料の変更

影響を受ける拠点：

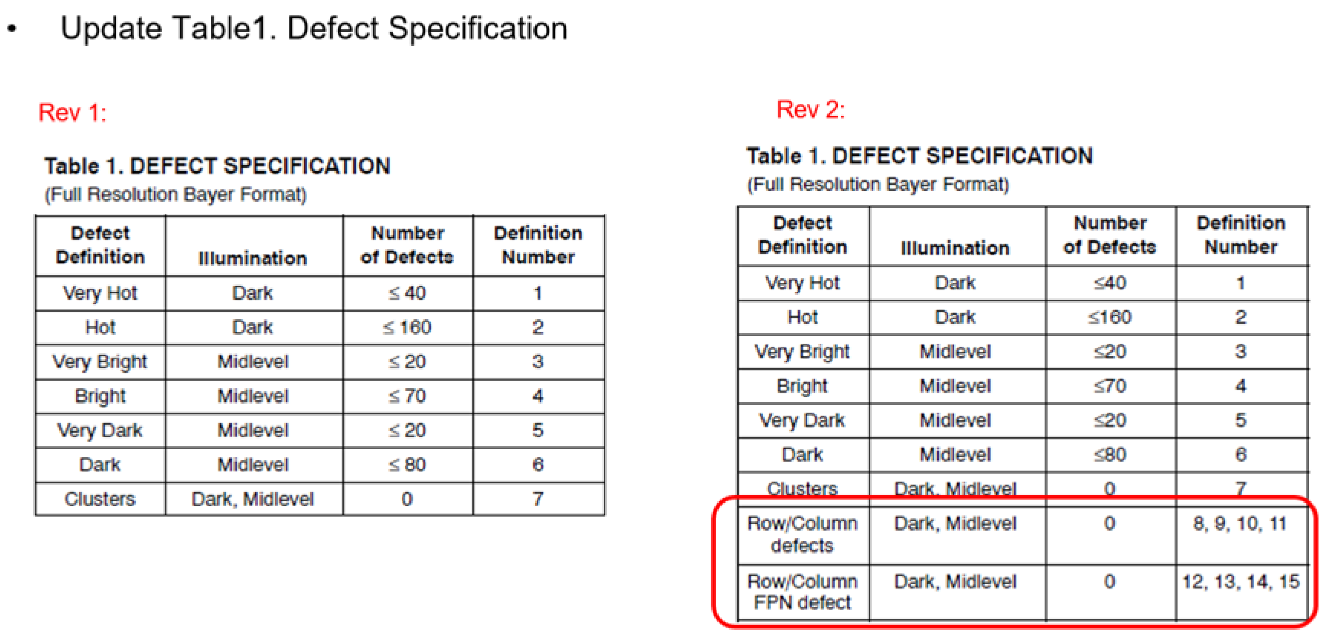
オン・セミコンダクター拠点：	**外部製造工場 / 下請業者拠点**
なし	なし

説明および目的：

AR0143AT RGB 出荷欠陥仕様 Rev2 に行／列欠陥および行／列 FPN 欠陥仕様を含めること。

以下は、Rev2 における変更点の説明です。

表 1 欠陥仕様を更新



- Update Table1. Defect Specification

Rev 1:

Table 1. DEFECT SPECIFICATION
(Full Resolution Bayer Format)

Defect Definition	Illumination	Number of Defects	Definition Number
Very Hot	Dark	≤ 40	1
Hot	Dark	≤ 160	2
Very Bright	Midlevel	≤ 20	3
Bright	Midlevel	≤ 70	4
Very Dark	Midlevel	≤ 20	5
Dark	Midlevel	≤ 80	6
Clusters	Dark, Midlevel	0	7

Rev 2:

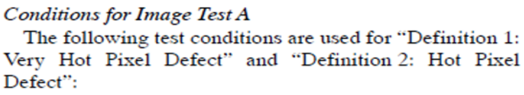
Table 1. DEFECT SPECIFICATION
(Full Resolution Bayer Format)

Defect Definition	Illumination	Number of Defects	Definition Number
Very Hot	Dark	≤40	1
Hot	Dark	≤160	2
Very Bright	Midlevel	≤20	3
Bright	Midlevel	≤70	4
Very Dark	Midlevel	≤20	5
Dark	Midlevel	≤80	6
Clusters	Dark, Midlevel	0	7
Row/Column defects	Dark, Midlevel	0	8, 9, 10, 11
Row/Column FPN defect	Dark, Midlevel	0	12, 13, 14, 15

画像テスト条件を更新

- Update Image Test Conditions

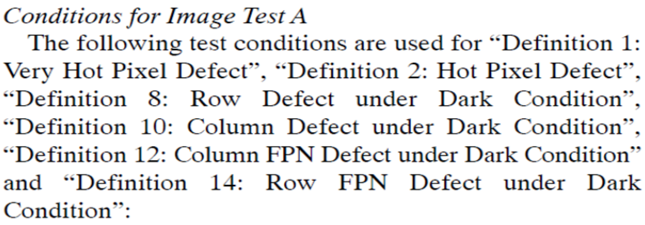
Rev 1:



Conditions for Image Test A

The following test conditions are used for "Definition 1: Very Hot Pixel Defect" and "Definition 2: Hot Pixel Defect":

Rev 2:

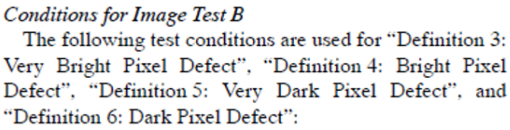


Conditions for Image Test A

The following test conditions are used for "Definition 1: Very Hot Pixel Defect", "Definition 2: Hot Pixel Defect", "Definition 8: Row Defect under Dark Condition", "Definition 10: Column Defect under Dark Condition", "Definition 12: Column FPN Defect under Dark Condition" and "Definition 14: Row FPN Defect under Dark Condition":

- Update Image Test Conditions

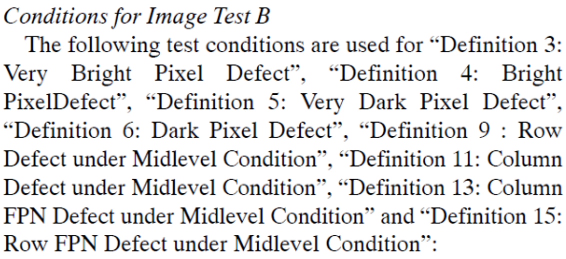
Rev 1:



Conditions for Image Test B

The following test conditions are used for "Definition 3: Very Bright Pixel Defect", "Definition 4: Bright Pixel Defect", "Definition 5: Very Dark Pixel Defect", and "Definition 6: Dark Pixel Defect":

Rev 2:



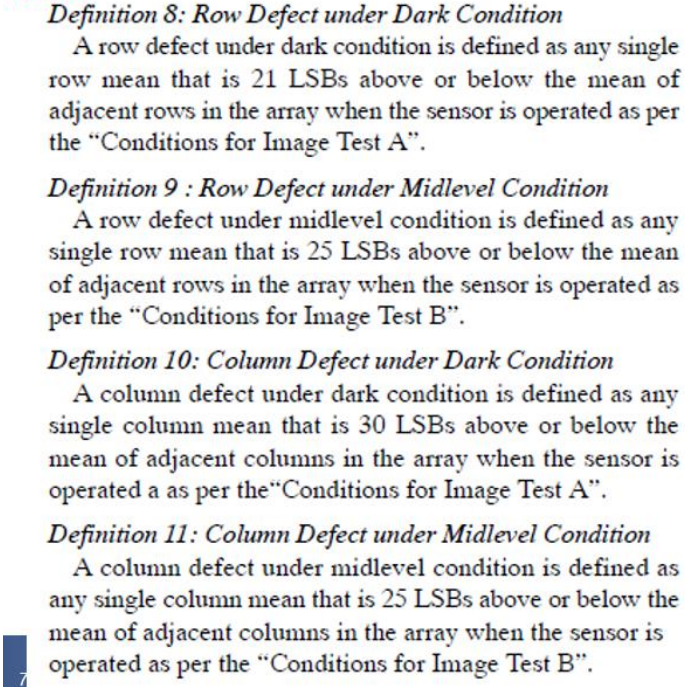
Conditions for Image Test B

The following test conditions are used for "Definition 3: Very Bright Pixel Defect", "Definition 4: Bright PixelDefect", "Definition 5: Very Dark Pixel Defect", "Definition 6: Dark Pixel Defect", "Definition 9 : Row Defect under Midlevel Condition", "Definition 11: Column Defect under Midlevel Condition", "Definition 13: Column FPN Defect under Midlevel Condition" and "Definition 15: Row FPN Defect under Midlevel Condition":

ベイヤーフォーマットにおける欠陥定義を定義 8 から定義 15 に増やす

- Increase Defect Definitions in Bayer Format: from definition 8 to definition 15.

Rev 2:



Definition 8: Row Defect under Dark Condition

A row defect under dark condition is defined as any single row mean that is 21 LSBs above or below the mean of adjacent rows in the array when the sensor is operated as per the "Conditions for Image Test A".

Definition 9 : Row Defect under Midlevel Condition

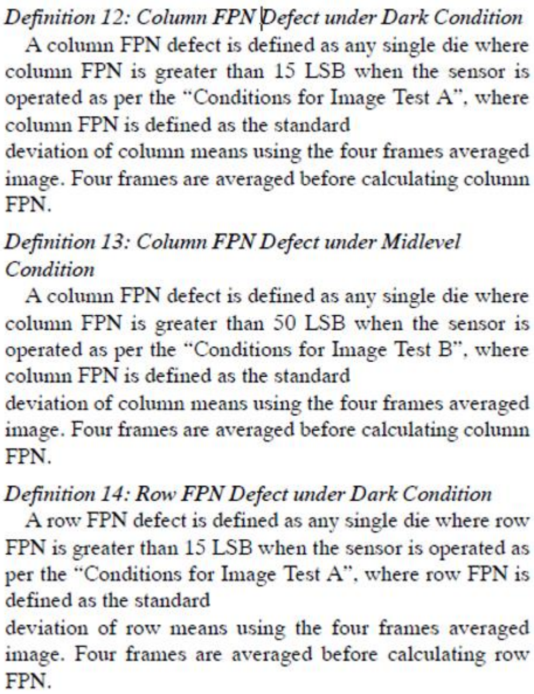
A row defect under midlevel condition is defined as any single row mean that is 25 LSBs above or below the mean of adjacent rows in the array when the sensor is operated as per the "Conditions for Image Test B".

Definition 10: Column Defect under Dark Condition

A column defect under dark condition is defined as any single column mean that is 30 LSBs above or below the mean of adjacent columns in the array when the sensor is operated a as per the"Conditions for Image Test A".

Definition 11: Column Defect under Midlevel Condition

A column defect under midlevel condition is defined as any single column mean that is 25 LSBs above or below the mean of adjacent columns in the array when the sensor is operated as per the "Conditions for Image Test B".



Definition 12: Column FPN Defect under Dark Condition

A column FPN defect is defined as any single die where column FPN is greater than 15 LSB when the sensor is operated as per the "Conditions for Image Test A", where column FPN is defined as the standard deviation of column means using the four frames averaged image. Four frames are averaged before calculating column FPN.

Definition 13: Column FPN Defect under Midlevel Condition

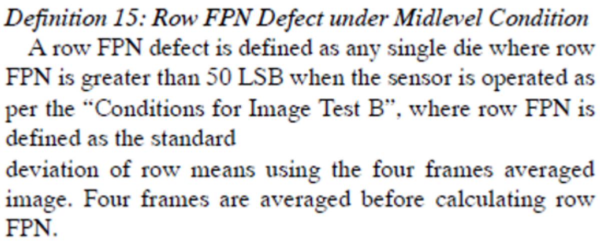
A column FPN defect is defined as any single die where column FPN is greater than 50 LSB when the sensor is operated as per the "Conditions for Image Test B", where column FPN is defined as the standard deviation of column means using the four frames averaged image. Four frames are averaged before calculating column FPN.

Definition 14: Row FPN Defect under Dark Condition

A row FPN defect is defined as any single die where row FPN is greater than 15 LSB when the sensor is operated as per the "Conditions for Image Test A", where row FPN is defined as the standard deviation of row means using the four frames averaged image. Four frames are averaged before calculating row FPN.

- Increase Defect Definitions in Bayer Format: from definition 8 to definition 15.

Rev 2:



Definition 15: Row FPN Defect under Midlevel Condition

A row FPN defect is defined as any single die where row FPN is greater than 50 LSB when the sensor is operated as per the "Conditions for Image Test B", where row FPN is defined as the standard deviation of row means using the four frames averaged image. Four frames are averaged before calculating row FPN.

影響を受ける部品の一覧:

注: 標準の部品番号(既製品)のみが部品一覧に記載されます。 本 PCN に影響を受けるカスタム 部品は、PCN メールの顧客の特定の PCN の付属文書、または PCN カスタマイズポータルに記載されています。

AR0143ATSC00XUEA0-DPBR	AR0143ATSC00XUEA0-DRBR	AR0143ATSC00XUEA0-TPBR
AR0143ATSC00XUEA1-DPBR	AR0143ATSC00XUEA0-TRBR	AR0143ATSC00XUEA1-DRBR
AR0143ATSC00XUEA1-TPBR	AR0143ATSC00XUEA1-TRBR	