


<b>PCN Number:</b>	20230124001.1		<b>PCN Date:</b>	January 24, 2023	
<b>Title:</b>	AFE44S30 Design Change and Datasheet Updates				
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services		
<b>Proposed 1<sup>st</sup> Ship Date:</b>	April 24, 2023	<b>Sample requests accepted until:</b>	Feb 24, 2023*		
<b>*Sample requests received after February 24, 2023 will not be supported.</b>					
<b>Change Type:</b>					
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Assembly Materials
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>	Wafer Fab Process
		<input type="checkbox"/>	Part number change		
<b>PCN Details</b>					
<b>Description of Change:</b>					
<p>This notification is to inform of a design change to the AFE44S30 devices. The LED DC Cancellation re-convergence threshold will change from fixed to programmable to reduce the occurrence of glitches when this feature is enabled. The design ID will also change from 0x2C to 0x5C</p> <p>Affected devices are listed in the Product Affected section of this document.</p> <p>The datasheet number will be changing:</p>					
	<b>Current</b>		<b>New</b>		
	<b>Device Family</b>	<b>Datasheet Number</b>	<b>Datasheet Number</b>		
	AFE44S30	SBASA975B	SBAS975C		
<p>The product datasheet(s) is also updated as seen in the change revision history below:</p>					
			<b>AFE44S30</b> <small>SBAS975C – DECEMBER 2019 – REVISED NOVEMBER 2021</small>		

<b>Changes from Revision B (August 2021) to Revision C (November 2021)</b>	<b>Page</b>
• Changed <a href="#">Table 7-29</a> .....	56
• Changed text "+/-0.5 uA" to "a programmed threshold level".....	56
• Added the <i>Re-convergence Threshold setting for LED DC Cancellation</i> section.....	63
• Changed the <i>Decimation Mode</i> section.....	69
• Added <i>Combinational Threshold Detect Mode</i> section.....	71
• Added new registers: 40 (dec), 28 (Hex).....	81
• Changed register: 128 (dec), 80 (Hex).....	81
• Added register: 129 (dec), 81 (Hex).....	81
• Added register: 136 (dec), 88 (Hex).....	81
• Changed register: 150 (dec), 96 (Hex).....	81
• Changed register: 153 (dec), 99 (Hex).....	81
• Changed register: 157 (dec), 9D (Hex).....	81
• Added register: 169(dec), A9 (Hex).....	81
• Added register: 170 (dec), AA (Hex).....	81
• Changed register 180 (dec), B4 (Hex).....	81
• Deleted text "Also note that readout of registers in Page 1 is not supported during the Active phase of the PRF cycle.".....	89
• Changed bit 0 Description in <a href="#">Table 7-55</a> .....	91
• Added <i>Register 28h (address = 28h)</i> .....	98
• Changed <i>Register 80h (address = 80h)</i> .....	108
• Added <i>Register 81h (address = 81h)</i> .....	109
• Changed <i>Register 88h (address = 88h)</i> .....	110
• Changed <i>Register 96h (address = 96h)</i> .....	118
• Changed <i>Register 99h (address = 99h)</i> .....	120
• Changed <i>Register 9Dh (address = 9Dh)</i> .....	122
• Changed <i>Register A1h (address = A1h)</i> .....	124
• Changed <i>Register A5h (address = A5h)</i> .....	126
• Added <i>Register A9h (address = A9h)</i> .....	128
• Added <i>Register AAh (address = AAh)</i> .....	129
• Changed <i>Register B4h (address = B4h)</i> .....	130
• Deleted item 12 from the <i>Important Guidelines</i> section.....	136

The document is not available on the TI website. Please contact Fee-Nee Yap at [feenee@ti.com](mailto:feenee@ti.com) for a copy of the datasheet.

**Reason for Change:**

Improved device operation

**Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):**

None

**Product Affected: Design Change and datasheet updates**

AFE44S30YZR	AFE44S30YZT
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**Qualification Report**

**Approved July 18, 2022**

**Qualification Results**

**Data Displayed as: Number of lots / Total sample size / Total failed**

Type	Test Name / Condition	Duration	Qual Device: <u>AFE44S30</u> <u>YZR</u>	QBS Product Reference: <u>AFE4420Y</u> <u>ZR</u>	QBS Product Reference: <u>AFE4420Y</u> <u>ZR</u>	QBS Process Reference: <u>CD3700A0Y</u> <u>KHR</u>	QBS Process Reference: <u>CD3700A0Y</u> <u>KHR</u>	QBS Process Reference: <u>PCD3258A00D</u> <u>YFPR</u> <u>(DM6/JCAP)</u>	QBS Package Reference: <u>LM3566Y</u> <u>FFR</u>
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	1/30/0	1/30/0	-	3/90/0	-	3/90/0
CDM	ESD - CDM	1000 V	-	-	-	2/6/0	1/3/0	1/3/0	-
CDM	ESD - CDM	1500 V	-	-	1/3/0	-	-	-	3/9/0
HBM	ESD - HBM	1500 V	-	1/3/0	1/3/0	-	-	-	-
HBM	ESD - HBM	2500 V	-	-	-	2/6/0	1/3/0	1/3/0	3/9/0
LU	Latch-up	(per JESD78)	-	-	1/6/0	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	-	2/154/0	4/180/0	-	-
HTOL	Life Test, 150C	500 Hours	-	1/77/0	1/77/0	-	-	-	-
HTSL	High Temp Storage Bake 150C	1000 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	-	-	-	-	-	3/164/0
UHAST	Unbiased HAST 130C/85% RH	96 Hours	-	-	-	1/77/0	1/77/0	-	2/231/0
HAST	Biased HAST, 130C/85% RH	96 Hours	-	-	-	1/77/0	1/77/0	-	3/231/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	-	-	-	-	3/231/0
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	1/77/0	1/77/0	-	-
PD	Physical Dimensions	(per mechanical drawing)	-	-	-	1/30/0	1/20/0	-	-
SBS	Bump-shear	36 bumps / min 5 units per lot	-	-	-	1/30/0	1/5/0	-	-
SD	Pb Free Surface Mount Solderability	Pb Free/Solder-	-	-	-	-	1/22/0	-	-

- QBS: Qual By Similarity
- Qual Device AFE44S30YZR is qualified at LEVEL1-260C

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable

- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours

- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours

- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

**Green/Pb-free Status:**

Qualified Pb-Free(SMT) and Green

For questions regarding this notice, e-mails can be sent to the contact shown below, or you can contact your local Field Sales Representative.

Location	E-Mail
WW PCN Team	<a href="mailto:PCN_ww_admin_team@list.ti.com">PCN_ww_admin_team@list.ti.com</a>

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