



PCN Number: SEP16  
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**Product/Process Change Notification (PCN)**

**Customer:** Newark

**Date:** 9/26/2016

**Customer Part # and/or Lot# affected:** A3930KJPTR-T

**Originator:** J.Hurley

**Phone:** 508-854-5491

**Duration of Change:**

Permanent  Temporary (explain)

**Summary description of change:** Part Change:  Process Change:  Other:

1. Allegro currently manufactures the A3930KJPTR-T at wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 6" ABCD4 technology.
2. The above listed device will have an additional final test location: Allegro MicroSystems (Thailand) Co., Ltd. (AMTC).

**What is the part or process changing from (provide details)?**

1. Allegro currently manufactures the A3930KJPTR-T at wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 6" ABCD4 technology.
2. In addition to the current Allegro MicroSystems, LLC test facility location in Worcester MA, a second test facility referred to as Allegro MicroSystems (Thailand) Co., Ltd. (AMTC) located in Saraburi, Thailand will be added as a primary site.

**What is the part or process changing to (describe the anticipated impact of this change on form, fit and/or function)?**

1. The A3930KJPTR-T will transition to an 8 inch device a wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA utilizing the same ABCD4 technology.
2. Allegro will be expanding its manufacturing capabilities with the addition of a new, wholly-owned integrated circuit test facility located in Saraburi, Thailand. The same make and model test equipment will be utilized and test site transfer buy off data will be on file for each device before production begins.

**Note:** Validation of equivalence within a specific application is at the discretion of the Customer



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Is a PPAP update required?

Yes

No

Is reliability testing required?  
(If Yes, refer to attached plan)

Yes

No (explain)



High-Performance Semiconductors

**Reliability Qualification Results**

Device: **3930, 3931, (7831, 7832)**  
 Assy Lot #: **1540265MAAA, 1625235MAAA**  
 Number of Leads: **48**  
 Fab Location: **PSL**

Package: **JP (QFP)**  
 Assembly Location: **Carsem**  
 Lead Finish: **100% Sn**  
 Tracking Number: **3162, 3224**

Reason For Qualification: **3930, 3931, (7831, 7832) - Automotive 3-Phase BLDC Controller and MOSFET Driver**

Reliability Qualification Results						
3930, 3931, (7831, 7832) STR#3162, 3224						Requirements
Stress Test	Abv.	Test #	Test Method	Test Conditions	S.S.	Results
Preconditioning	PC	A1	JESD22-A113 / J-STD-020	Ta = 85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC)	231	0 Rejects
HAST	HAST	A2	JESD22-A110	Ta=130°C, 2 ATM, 85% RH, 0, 96 hrs	77	0 Rejects
Autoclave	AC	A3	JESD22-A102	Ta=121°C, 100% RH, 15 PSIG, 0, 96 hrs	77	0 Rejects
Temperature Cycle	TC	A4	JESD22-A104	Ta = -65°C to +175°C, 0, 500, 1000 Cycles	77	0 Rejects
Wire Bond Pull	WBP	C2	Mil-Std-883 Method 2011	Temp conditions and sample size are defined in the test method. (after TC)		0 Rejects; Cpk>1.67
Solderability	SD	C3	JESD22-B102	Meniscograph	10	0 rejects; > 95% Lead Coverage
High Temperature Operating Life	HTOL	B1	JESD22-A108	Ta = 125°C, 0, 1000 hrs	77	0 Rejects
Early Life Failure Rate	ELFR	B2	AEC-Q100-008 / JESD22-A108	Ta=125°C, 0, 48 hrs	800	0 Rejects
Electrostatic Discharge Human Body Model (STR#3495)	HBM	E2	AEC-Q100-002 / JS-001-2014	Test Conditions, Sampling Size are defined in the Test Method		Classification 1C, HBM = 1.5kV
Electrostatic Discharge Charged Device Model (STR#3495)	CDM	E3	AEC-Q100-011	Test Conditions, Sampling Size are defined in the Test Method		Classification = C6, > 1kV
Latch-Up	LU	E4	JESD78	Test Conditions, Sampling Size are defined in the Test Method		Class II, Level A
Electrical Distributions (includes data from STR#3495)	ED	E5	AEC Q100-009	Tri-Temp Electrical Distributions - 30 pcs.		0 Rejects; Cpk>1.67

This device qualification is considered to be passing all environmental stress evaluations per the Allegro MicroSystems, LLC 900019 specification and AEC-Q100.



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**Expected completion date for internal qualification:** Complete

**Expected PPAP availability date:** See attached

**Target implementation date:** June 2017

**Estimated date of first shipment:** July 2017

**Expected sample availability date:** Available Upon Request

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**Customer Approval Required:** Yes  **Date Required:**  
No  **Notification Only**

**Please note:** It is our intention to inform our customer of changes as early as possible. Under Allegro's procedure for product/process change notification, Allegro strives, based on its technical judgment, to provide notification of significant changes that may affect form, fit or function. However, as Allegro cannot ensure evaluation of product/process changes for each and every application; the customer retains responsibility to validate the impact of a change on its application suitability. If samples are needed for validation of a change, requests may be made via the contact information provided herein. Please contact your Account Manager or local Sales contact for any questions. We would kindly request your consideration so we can meet our target date for implementation. Unless both parties agree to extend the implementation date, this change will be implemented as scheduled.

Customer comments/Conditions of Acceptance:

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_ Title: \_\_\_\_\_  
cc: Allegro Sales/Marketing/Quality