

PCN Number: SM081318 Chgnot.doc rev 13 1/14

Product/Process Change Notification (PCN)

Customer: Digi-Key

Date: 08/31/2018

Customer Part # affected: A4935KJPTR-T

Originator: R. Fennelly

Phone: 508-853-5000

Duration of Change:	Permanent X Temporary (explain)
Summary description of change: Part Change	Process Change: X Other:
1 Allegro currently manufactures the ΛA	035KIPTR T at wafer fab. Polar Semiconductor

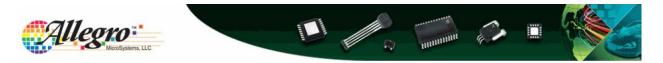
- 1. Allegro currently manufactures the A4935KJPTR-T at wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 8" ABCD4 technology. Allegro will be changing wafer fab manufacturing to the 8" ABCD4 technology wafer line at United Microelectronics Corporation (UMC), Hsinshu, Taiwan.
- 2. The Final Test Site is currently Allegro MicroSystems Thailand Company (AMTC). Allegro will add a second source Final Test Site as Allegro MicroSystems, Philippines Inc (AMPI).

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

- 3. Allegro currently manufactures the A4935KJPTR-T at wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 8" ABCD4 technology.
- 4. The Final Test Site is currently Allegro MicroSystems Thailand Company (AMTC).

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

- 1. Allegro will be changing the A4935KJPTR-T wafer fab manufacturing to the 8" ABCD4 technology wafer line at United Microelectronics Corporation (UMC), Hsinshu, Taiwan.
- 2. Allegro will add a second source Final Test Site as Allegro MicroSystems, Philippines Inc (AMPI).
- **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 Х Is reliability testing required? Yes No (explain) Х (If Yes, refer to attached plan) **Reliability Qualification Results** Device: 4935 (949351) Package: JP (eQFP) Assy Lot #: 1744132MBAA Assembly Location: Carsem Lead Finish: 100% Sn Number of Leads: 48 Fab Location: UMC Tracking Number: 4171 Reason for Qualification: 4935 (949351) - Automotive 3-phase MOSFET Driver **Reliability Qualification Results** 4935 (949351), STR#4171 Requirements Test Stress Test Abv. Test Method **Test Conditions** s.s. Results 85°C/60% RH, 168 hrs, Peak JESD22-A113/ Reflow=260°C; MSL= 2, (HAST, UHAST, TC, HTOL) Pre conditioning PC A1 308 0 Rejects J-STD-020 130°C, 2 ATM, 85% RH, HAST HAST A2 JESD22-A110 77 0 Rejects 0, 96 hrs 130°C/85% RH, 2 ATM, Un Biased HAST UHAST A3 JESD22-A118 77 0 Rejects 0, 96 hrs Ta = -65°C to +175°C, 0, 500, 1000 Cycles Tem perature Cycle тс **A4** JESD22-A104 77 0 Rejects Ta = 150°C, **High Temperature** нтог 77 **B1** JESD22-A108 0 Rejects Operating Life 0, 1000 hrs Ta = 150°C, AEC-0100-008 Early Life Failure Rate ELFR **B**2 800 0 Rejects / JESD22-A108 0, 48 hrs Temp conditions and sample size ar Wire Bond Pul WBP C2 800021 0 Rejects defined in the test method. (after TC) Perform Dip & Look, No 85°C/85%RH for 48 hrs: 5 Cracks or other Heat Resistance to Solder HRS СЗА JESD22-B106 abnomalities, conforms to devices individual spec. Electrostatic Discharge Test Conditions, Sampling Size are defined in the Test Method Classification 2. HBM AEC-0100-002 F2 Hum an Body Model HBM = 2.5kV Electrostatic Discharge Test Conditions, Sampling Size are Classification = CDM E3 AEC-Q100-011 Charged Device Model defined in the Test Method C6, > 1kV Test Conditions, Sampling Size are Class II, Level Latch-Up LU E4 AEC Q100-004 defined in the Test Method А 0 Rejects; AEC Q100-009 **Tri-Temp Electrical Distributions** Electrical Distributions ED E5 30 pcs Cpk>1.67 This device qualification is considered to be passing all environmental stress evaluations per the Allegro MicroSystems, LLC PRC-0001671 specification and AEC-Q100. Approved by: Robert Demer Robert Demers Sr. Product Safety and Reliability Allegro MicroSystems, LLC Allegro MicroSystems, LLC Proprietary



Expected completion date for internal qualification: Complete

Expected PPAP availability date: N/A

Target implementation date: September 2019

Estimated date of first shipment: October 2019

Expected sample availability date: Available Upon Request

			Date Required:
Customer Approval Required		v	Notification Only
	INO	x	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: cc: Allegro Sales/Marketing/Quality Title: