



PCN Number: SM081318

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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 Temporary (explain)

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

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

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

Yes

No (explain)



Reliability Qualification Results

Device: 4935 (949351) Package: JP (eQFP)
Assy Lot #: 1744132MBAA Assembly Location: Carsem
Number of Leads: 48 Lead Finish: 100% Sn
Fab Location: UMC Tracking Number: 4171

Reason for Qualification: 4935 (949351) - Automotive 3-phase MOSFET Driver

Reliability Qualification Results						
4935 (949351), STR#4171					Requirements	
Stress Test	Abv.	Test #	Test Method	Test Conditions	S.S.	Results
Preconditioning	PC	A1	JESD22-A113/ J-STD-020	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL= 2, (HAST, UHAST, TC, HTOL)	308	0 Rejects
HAST	HAST	A2	JESD22-A110	130°C, 2 ATM, 85% RH, 0, 96 hrs	77	0 Rejects
Un Biased HAST	UHAST	A3	JESD22-A118	130°C/85% RH, 2 ATM, 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
High Temperature Operating Life	HTOL	B1	JESD22-A108	Ta = 150°C, 0, 1000 hrs	77	0 Rejects
Early Life Failure Rate	ELFR	B2	AEC-Q100-008 / JESD22-A108	Ta = 150°C, 0, 48 hrs	800	0 Rejects
Wire Bond Pull	WBP	C2	800021	Temp conditions and sample size are defined in the test method. (after TC)		0 Rejects
Heat Resistance to Solder	HRS	C3A	JESD22-B106	85°C/85%RH for 48 hrs; 5 devices		Perform Dip & Look, No Cracks or other abnormalities, conforms to individual spec.
Electrostatic Discharge Human Body Model	HBM	E2	AEC-Q100-002	Test Conditions, Sampling Size are defined in the Test Method		Classification 2, HBM = 2.5kV
Electrostatic Discharge Charged Device Model	CDM	E3	AEC-Q100-011	Test Conditions, Sampling Size are defined in the Test Method		Classification = C6, > 1kV
Latch-Up	LU	E4	AEC Q100-004	Test Conditions, Sampling Size are defined in the Test Method		Class II, Level A
Electrical Distributions	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* PRC-0001671 specification and AEC-Q100.

Approved by:

Robert Demers

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

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