

PCN Number: SM030817 Chgnot.doc rev 13 1/14

Product/Process Change Notification (PCN)

Customer: Digi-Key

Date: 3/8/2017

Customer Part # and/or Lot# affected: A6850KLTR-T

Originator: Scott Mitti

Phone: 508-85	54-5627
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Duration of Change:	Permanent X Temporary (explain)
Summary description of change: Part Change:	Process Change: X Other:

- 1. Allegro currently manufactures the A6850KLTR-T on the 6" wafer fab ABCD4 technology line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA. The 6" wafer fab line will be closing. Allegro will change manufacturing to the 8" ABCD4 technology wafer fab line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA
- 2. The A6850KLTR-T will have an additional final test location: Allegro MicroSystems (Thailand) Co., Ltd. (AMTC).

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

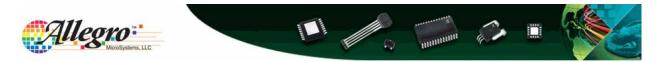
- 1. Allegro currently manufactures the A6850KLTR-T on the 6" wafer fab ABCD4 technology line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA. The 6" wafer fab line will be closing.
- 2. The A6850KLTR-T final test location is Allegro MicroSystems, Inc, Manila, Philippines.

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

- 1. The A6850KLTR-T will transition to the 8 inch wafer fab ABCD4 technology line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA..
- 2. The A6850KLTR-T will have an additional final test location: Allegro MicroSystems (Thailand) Co., Ltd. (AMTC).

Allegro will be expanding its manufacturing capabilities with the addition of a new, whollyowned 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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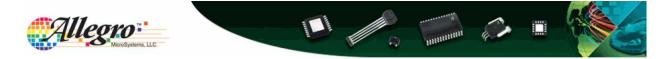
a PPAP update	requi	ired?		Yes		No X
reliability testi (If Yes, refer to a	0	-		Yes X		No (explai
Reliability Qualification	KO MicroSystems ation R	• c				
Device: 6850 (6852) Assy Lot #: 1627034 Aumber of Leads: 8 Sab Location: PSL Reason for Qualification Dual Channel Switch	KAAA <u>n:</u> 6850			ackage: L (SOIC) ssembly Location: Carsem ead Finish: 100% Sn racking Number: 3541 he 8" version of the PSL's 6" au	tomoti	ve 6850AFA.
			Reliability Q	ualification Results		
		6850 - (6852), STR#3541			-	
6850 - (6852), STR#3	541					Requirements
6850 - (6852), STR#3 Stress Test	541 Abv.	Test #	Test Method	Test Conditions	S.S.	Requirements Comments
			Test Method JESD22-A113 / J-STD-020	Test Conditions 85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC)		
Stress Test Preconditioning	Abv.	#	JESD22-A113 /	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC,	S.S.	Comments
Stress Test Preconditioning HAST	Abv. PC	# A1	JESD22-A113 / J-STD-020	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH,	S.S. 231	Comments 0 Rejects
Stress Test Preconditioning HAST	Abv. PC HAST	# A1 A2	JESD22-A113 / J-STD-020 JESD22-A110	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG,	S.S. 231 77	Comments 0 Rejects 0 Rejects
Stress Test Preconditioning HAST Autoclave Temperature Cycle High Temperature	Abv. PC HAST AC	# A1 A2 A3	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C,	S.S. 231 77 77	Comments 0 Rejects 0 Rejects 0 Rejects 0 Rejects
Stress Test Preconditioning HAST Autoclave	Abv. PC HAST AC TC	# A1 A2 A3 A4	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102 JESD22-A104	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C, 0, 500, 1000 Cycles 150°C,	s.s. 231 77 77 77 77	Comments 0 Rejects 0 Rejects 0 Rejects 0 Rejects 0 Rejects
Stress Test Preconditioning HAST Autoclave Temperature Cycle High Temperature Operating Life	Abv. PC HAST AC TC HTOL	# A1 A2 A3 A4 B1	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102 JESD22-A104 JESD22-A108 AEC-Q100-008	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C, 0, 500, 1000 Cycles 150°C, 0, 1000 hrs	S.S. 231 77 77 77 77 800	Comments 0 Rejects
Stress Test Preconditioning HAST Autoclave Temperature Cycle High Temperature Operating Life Early Life Failure Rate	Abv. PC HAST AC TC HTOL ELFR	# A1 A2 A3 A4 B1 B2	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102 JESD22-A104 JESD22-A108 AEC-Q100-008 / JESD22-A108 Mil-Std-883	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C, 0, 500, 1000 Cycles 150°C, 0, 1000 hrs 150°C, 0, 48 hrs Temp conditions and sample size are	S.S. 231 77 77 77 77 800 defined	Comments 0 Rejects
Stress Test Preconditioning HAST Autoclave Temperature Cycle High Temperature Operating Life Early Life Failure Rate Wire Bond Pull Electrostatic Discharge	Abv. PC HAST AC TC HTOL ELFR WBP	# A1 A2 A3 A4 B1 B2 C2	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102 JESD22-A104 JESD22-A108 AEC-Q100-008 / JESD22-A108 Mil-Std-883 Method 2011	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C, 0, 500, 1000 Cycles 150°C, 0, 1000 hrs 150°C, 0, 48 hrs Temp conditions and sample size are in the test method. (after TC) Test Conditions, Sampling Size are de	S.S. 231 77 77 77 77 800 defined	Comments 0 Rejects
Stress Test Preconditioning HAST Autoclave Temperature Cycle High Temperature Operating Life Early Life Failure Rate Wire Bond Pull Electrostatic Discharge Human Body Model Electrostatic Discharge	Abv. PC HAST AC TC HTOL ELFR WBP HBM	# A1 A2 A3 A4 B1 B2 C2 E2	JESD22-A113 / J-STD-020 JESD22-A110 JESD22-A102 JESD22-A104 JESD22-A108 AEC-Q100-008 / JESD22-A108 Mil-Std-883 Method 2011 AEC-Q100-002	85°C/60% RH, 168 hrs, Peak Reflow=260°C; MSL2, (HAST, AC, TC) 130°C, 2 ATM, 85% RH, 0, 96 hrs 121°C, 100% RH, 15 PSIG, 0, 96 hrs -65°C to +175°C, 0, 500, 1000 Cycles 150°C, 0, 1000 hrs 150°C, 0, 48 hrs Temp conditions and sample size are in the test method. (after TC) Test Conditions, Sampling Size are de the Test Method Test Conditions, Sampling Size are de	S.S. 231 77 77 77 77 800 defined	Comments 0 Rejects 0 Rejects

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

Approved by:

<u>Bob Domens</u> Bob Demers Product Safety and Reliability Allegro MicroSystems, LLC

Allegro MicroSystems, LLC



Expected completion date for internal qualification: Complete						
Expected PPAP availability date: N/A						
Target implementation date: February 2018						
Estimated date of first shipment: March 2018						
Expected sample availability date: Available Upon Request						
Yes Date Required: Customer Approval Required:						
No 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.

Title:

Customer comments/Conditions of Acceptance:

Approved by:	Date:
cc: Allegro Sales/Marketing/Qualit	ty