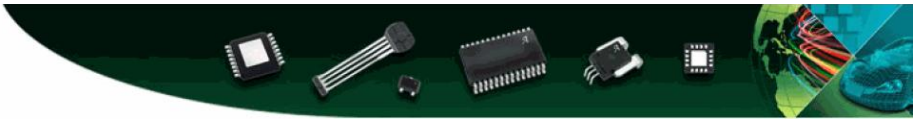


PCN Number: 04242017
Chgnot.doc rev 13 1/14

Product/Process Change Notification (PCN)

Customer: **Digi-Key** **Date: 05-04-2017**

Customer Part #: A3946KLPTR-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: [ ]

Allegro currently manufactures the A3946KLPTR-T at wafer fab, Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 6" ABCD3 technology. The 6" wafer line is closing. Allegro will be changing wafer fab manufacturing to the 8" ABCD3 technology wafer line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA.

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

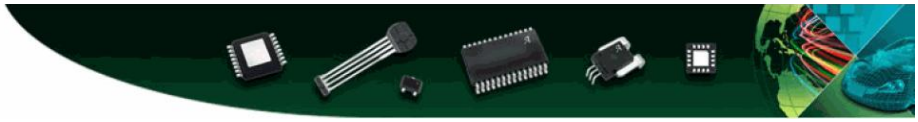
Wafer fab for the device (s) listed is currently out of Polar Semiconductor LLC (PSL), Bloomington, MN, USA, utilizing 6" ABCD3 technology.

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

Allegro will be changing wafer fab manufacturing to the 8" ABCD3 technology wafer line at Polar Semiconductor LLC (PSL), Bloomington, MN, USA.

Is a PPAP update required? Yes [ ] No [X]

Is reliability testing required? (If Yes, refer to attached plan) Yes [X] No (explain) [ ]



Reliability Qualification Results

Device: **3946 (939461)**
Assy Lot #: **1642725UAAA**
Fab Location: **PSL**
Package: **LP (TSSOP)**

Number of Leads: **16**
Assembly Location: **Unisem**
Tracking Number: **3726**
Lead Finish: **100% Sn**

Reason For Qualification: ***3946 (939461) - Half-Bridge Power MOSFET Controller***

Reliability Qualification Results

3946 (939461), STR#3726					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; MSL2, (HAST, AC, TC)	231	0 Rejects
HAST	HAST	A2	JESD22-A110	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; Ppk>1.67
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#3813)	HBM	E2	AEC-Q100-002 / JS-001-2014	Test Conditions, Sampling Size are defined in the Test Method		Classification 2, HBM =2.0 kV
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	JESD78	Test Conditions, Sampling Size are defined in the Test Method		Class II, Level B
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* 900019 specification and AEC-Q100.

Approved by:

Bob Demers
Product Safety and Reliability
Allegro MicroSystems, LLC.

Expected completion date for internal qualification: Complete

Expected Data availability date: Provided in this PCN

Target implementation date: March 2018

Estimated date of first shipment: April 2018

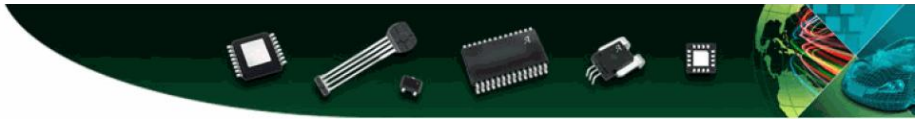
Expected sample availability date: Upon request

Customer Approval Required:

Yes [ ] **Date Required:**

No [X] **Notification Only**

Please note: It is our intention to inform our customer of changes as early as possible. 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