85-0404 **Design Cover Sheet** **6/29/2009**

ACS711 Demo Board **Page 1 of 1**

Originator: Douglas Sappet

			Design Rev ->	OI	A	B									
Doc	Size	Frmt	Name, Description	Sub-Document Revision											
000-REV	A	pdf	Revision Control	1	2	3									
000-TOP	A	pdf	Top Level Instructions	1	1	1									
000-OPT	A	pdf	Build Options	1	1	2									
000-ASY	A	pdf	Construction Notes	1	1	1									
000-TST	A	pdf	Test and Verification	1	1	2									
			Base Board Assembly												
001-BOM	A	pdf	Bill of Materials	1	2	3									
001-SCH	A	pdf	Schematic	1	2	2									
001-ZIP	-	zip	Fabrication Files	1	2	2									
			ASEK711SLC-15A-T												
002-BOM	A	pdf	Bill of Materials	1	1	1									
			ASEK711SLC-30A-T												
003-BOM	A	pdf	Bill of Materials	1	1	1									
			ASEK711KLC-12AB-T												
004-BOM	A	pdf	Bill of Materials	-	-	1									
			ASEK711KLC-25AB-T												
005-BOM	A	pdf	Bill of Materials	-	-	1									

REV OI to A changes:

1.) Changed silkscreen text from 5V to Vcc
2.) Added Red LED indicator for FAULT
3.) Removed inductor L1

How to convert REV OI to REV A:

1.) REV OI can NOT be updated or converted to REV A.
2.) Create a new REV A assembly as per this TED pack.

REV A to B changes:

1.) Added -004 and -005 options for two new devices.

How to convert REV A to REV B:

1.) REV A is identical to REV B with the exception of support for two new device types with options -004 and -005 .
2.) There is no need for conversion from REV A to REV B

Originator: Douglas Sappet

1. RoHS Compliance Required?
   Yes.
   All components and assembly practices must be RoHS Compliant
   Certificates of RoHS compliance must be sent to Allegro for record keeping

2. Other TED Packs and/or outside Specifictions required for build:
   none required

3. Are there optional ways to build this TED pack? Yes
   Please read 85-0404-000-OPT for build options

4. Pages with the descriptor "-ASY" are expected to be followed by the assembly person / assembly house. These are the Constrution Notes / Assembly Notes pages, and are used to convey building instructions.

5. The notes on the -TST pages are expected to be followed by Allegro; product shall not be sold to customers until the steps on the -TST pages are completed. These are test and verification steps, and are used to test assembly(s) prior to usage and/or selling.
   They are not "calibration" procedures as used on production equipment.

6. All photos provided are for reference only; slight variations may result from component second sourcing or later design changes. Photos are intended to convey roughly what completed assembly should look like.

7. As multiple boards exist under this TED pack number (85-0404), there is no -000 assembly.

8. All assemblies are constructed using the -000-ASY page.

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There are several different assemblies listed under this TED pack.
Build according to Request Number / Option Number / Description / TBD,
as explained below:

#	Request:	Build (1) of this:	Allegro P/N	Label on Board
1	85-0404-002	85-0404-002	ACS711SLC-15A-T	ASEK711SLC-15A-T
2	85-0404-003	85-0404-003	ACS711SLC-30A-T	ASEK711SLC-30A-T
2	85-0404-004	85-0404-004	ACS711KLC-12AB-T	ASEK711KLC-12AB-T
2	85-0404-005	85-0404-005	ACS711KLC-25AB-T	ASEK711KLC-25AB-T

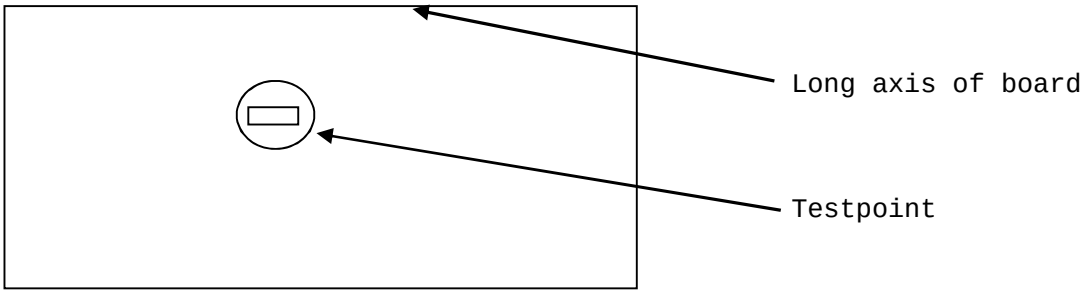
Note:
1. All boards must be labeled after construction (see -000-ASY)
2. Basically, the Allegro sensor that is installed onto the board has the "ACS" prefix changed to "ASEK", no other changes; and this p/n is what is applied to the board.

Notes for all 85-0404 assemblies:

1. Any sticker applied by the assembly house shall be installed on the backside of the pcb, onto the supplied silkscreen area.
   This sticker (if applied) may be larger, and applied elsewhere; but it must not obscure the 85-0404-001 p/n.
   This sticker shall not interfere with the installation of the banana jacks or standoffs.

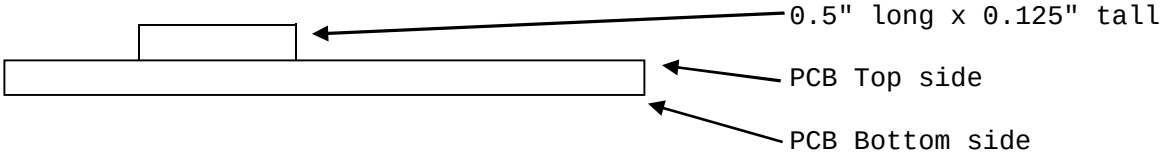
2. Install all surface mount components first.

3. Install all through hole parts second.
   Testpoint loops shall be installed in this orientation:

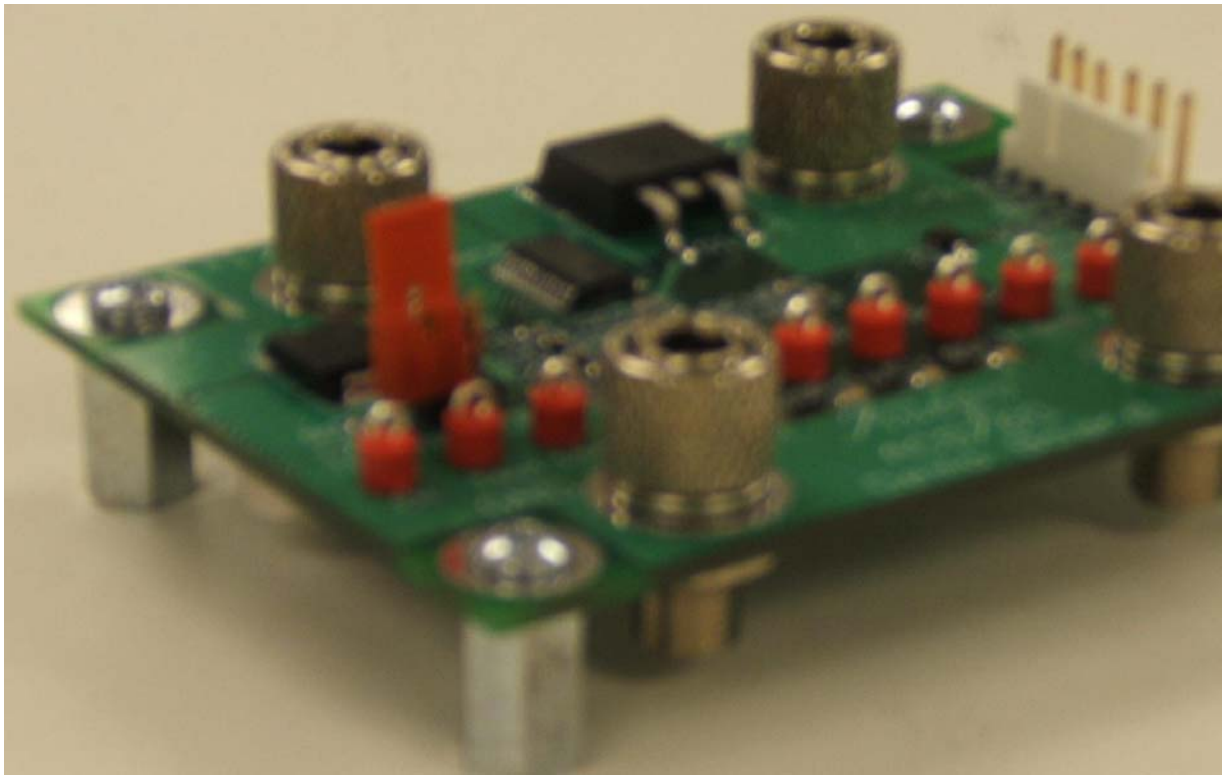


   Note: loop is parallel to the long axis of the board.

4. Installation of RJ:
   Use 22g buss wire, 0.5 inch body, with 0.25 inch leads bent 90 degree.
   Install 0.125 inch above PCB (not critical).
   Solder and trim.



5. Install standoffs and banana jacks last.
   If possible, tighten hardware to these specifications:
   #4, #5, #6 metal hardware: tighten to 1-2 inch pounds torque.
   1/4-32 metal hardware: tighten to 3-5 inch pounds.



   Note: this is not a photo of the actual board!
   This photo is supplied only for banana jack and standoff installation.

Notes for 85-0404-001 through 85-0404-099 Boards:

1. There is no need to assemble the -001 assembly prior to the -001/2/etc assemblies. At build time, all parts may be installed at once.
   The -001 assembly is broken into a separate part number for ease of documentation, not as an indication of how to assemble.

2. All 85-0404 assemblies require a sticker to be applied post-construction.
   This sticker shall be applied by whomever constructs the boards.
   This sticker shall be the part number as stated by either this document or by the -000-OPT.

3. This sticker shall be applied onto the top side silkscreen.

4. See next section for labeling instructions.

5. **All components and assembly practices must be RoHS Compliant**
   Certificates of RoHS compliance must be sent to Allegro for record keeping

85-0404-001 through 85-0404-099 Labeling:

1. If an 85-0404-001 assembly is made, for future finishing into a

finished assembly, board labeling is not required.

2. Label assemblies as outlined on -000-OPT.
   Basically, the Allegro sensor that is installed onto the board has the "ACS" prefix changed to to "ASEK", no other changes; and this p/n is what is applied to the board.

All assemblies must be tested and verified for proper operation prior to shipping to customers.

Item	QTY	Manufacturer	P/N	Description	Designator
1	2	AVX	1206YD106KAT2A	capacitor, 1206, mono, X5R, 16V, 10uF	C1, C2
2	4	Johnson Components	111-2223-001	banana jack	JB1, JB2, JB3, JB4
3	1	Molex	22-11-2062	CONN HEADER 6POS .100 VERT GOLD	J1
4	1			0.0 Ohm resistor, use 22G buss wire	RJ
5	1	AVX	06035C104K4T2A	capacitor, 0603, mono, X7R, 50V, 0.1uF	C3
6	1			Do Not Install	C4
7	1	Panasonic	ERJ-3EKF3010V	resistor, 0603, 63mW, thick film, 1%, 301ohm	R4
8	2	Panasonic	ERJ-3EKF1002V	resistor, 0603, 63mW, thick film, 1%, 10.0kohm	R2, R3
9	1	Panasonic	ERJ-3GEY0R00V	jumper, 0603, zero ohm jumper	R1
10	1	Lite-On	LTST-C150CKT	LED, 1206, red or red clear, 2V or 2.1V	D1
11	1	Fairchild	BSS84	transistor, sot-23, PFET, BSS84	Q1
12	1	National Semi	LP2980AIM5-3.3/NOPB	IC, SOT-23-5, regulator, 3.3V, 0.5%	U2
13	5	Keystone	5005	testpoint, thro, compact, for 62mil PCB, black	TP1, TP2, TP3, TP4, TP5
14	4	Keystone Electronics	1450C	standoff, male/male, zinc metal plated, 4-40, 0.5 inch long, hex shaped	standoffs
15	4	Building Fasteners	PMS 440 0050 PH	screw, zinc metal plated, 4-40, 0.5 inch, Philips	screws

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This BOM generated in conformance with ENG 07-0002 Revision 4

BOM Explanation

Item: each distinct component has a "line item" (but may span multiple lines). When questions arise to a component parameter/designation/etc, please, refer to line item number first when inquiring.

QTY: the quantity of items to be ordered per finished assembly. Note: higher level documents may call this BOM multiple times

S: BOM Substitution Instructions. See below

Manufacturer: Recommended (or required) Manufacturer for the part(s). Note: multiple manufacturers may be listed per line item.
Note: if no manufacturer part number is given, the the item is considered generic enough that that any manufacturer should work. Ie, 1N4001 in

a DO-41
P/N: The manufacturers part number. Note: if multiple manufacturers are listed, this P/N will correspond only to the manufacturer to the immediate left of the P/N
Note: Manufacturer part number may be incomplete; if not enough information is given, see below.
Description: this is a generic description of the part. Package size, part type, minimum/maximum requirements are listed.
Note: this is generic and may not exactly reflect the suggested/required part. For example, "capacitor, 25V" while the manufacturer P/N is actually 50V. The capacitor is required to a minimum of 25V rated (important only if second sourcing)
In general, this field will list the critical parameters of the component if the Substitution code is not 10.
Ref: This is the list of component designators.
If "see construction notes" is listed, the construction notes must be used to determine component location (not marked on board etc)
Note: surface mount components may have a designator listed but not marked on PCB silkscreen; if so then refer to -CPG (or similar) drawing for location and/or the pick and place file (as found in the gerber files)
If a line item has multiple part numbers, they are not to be interpreted as any order of preference
Mixing is allowed (for example, if 2 manufacturers are listed, and qty is 5, then 2 parts may be from vendor A and 3 parts from vendor B) regardless of code, unless otherwise noted.

BOM Substitution Notes:
The third column nomenclature is to be used for second sourcing components as follows:
1. Any substitution allowed, as long as mechanically identical (non-electrical items only) (visually different ok)
2. Any susbstitution allowed, as long as mechanically similar (non-electrical items only) (visually different ok)
3. Any substitution, as long as mechanically and visually identical (non-electrical items only)
4. Any substitution allowed, as long as mechanically and visually similar (non-electrical items only)
5. Any substitution allowed, as long as mechanically and visually identical and electrically similar
6. Any substitution allowed, as long as mechanically, electrically and visually similar
7. Reserved for future usage.
8. Reserved for future usage
9. Substitution not recommended, but allowed if mechanically, electrically and visually similar. Only substitute if no alternative.
10. No substitution allowed.

"Identical" is to be interpreted as "meeting the same specifications" with no deviation from the specifications.
If no manufacturer is given, then do not deviate from stated specifications in the Description field.
If a manufacturer is given, do not deviate from the specifications from the manufacturer--the Description field is for reference only then.
In general, "Identical" codes will list specific manufacturer and manufacturer part numbers
"Similar" is to be interpreted as "meeting or exceeding the stated specifications, in regards to electrical and/or mechanical parameters (see Substitution code).
If no manufacturer is given, then do not deviate from stated specifications in the Description field--but use "Similar" substituting guidelines
If a manufacturer is given, the Description field lists the critical parameters that must be met (or exceeded).
In general, "Similar" codes will have all critical parameters listed, and subsituting outside parameters as listed is ok
"Similar" as applied to visual means different colors may be used, unless otherwise noted. For example, an item with Substitution code 6 can typically be any color.
However, if the description states "red" and the substitution code is 4, 6 or similar, then a red item must be used--but it may be any shade of red.
For example, if a capacitor is to be "identical", it must have the same voltage and tempco etc ratings as stated in the description.
If a capacitor is to be similar, the voltage rating may be higher, the tempco lower, etc.
Unless if the Substitution code is 10, "identical" parts may be sourced from different manufacturers and may have slight differences in appearance.
These subtle differences are ok.

Substituting for "Similar" parts:
Capacitors:

-tempco must be same or go down. Alternately, go up in this order: Z5U, X5R, X7R, NP0, C0G
-tolerance must be same or go down
-voltage rating must be same or go up
-unless otherwise stated, capacitance value must be identical
-unless otherwise stated, lead spacing must be same; external dimensions must be the same or smaller
-unless otherwise stated, capacitor type must be identical (tantalum, mono, etc)

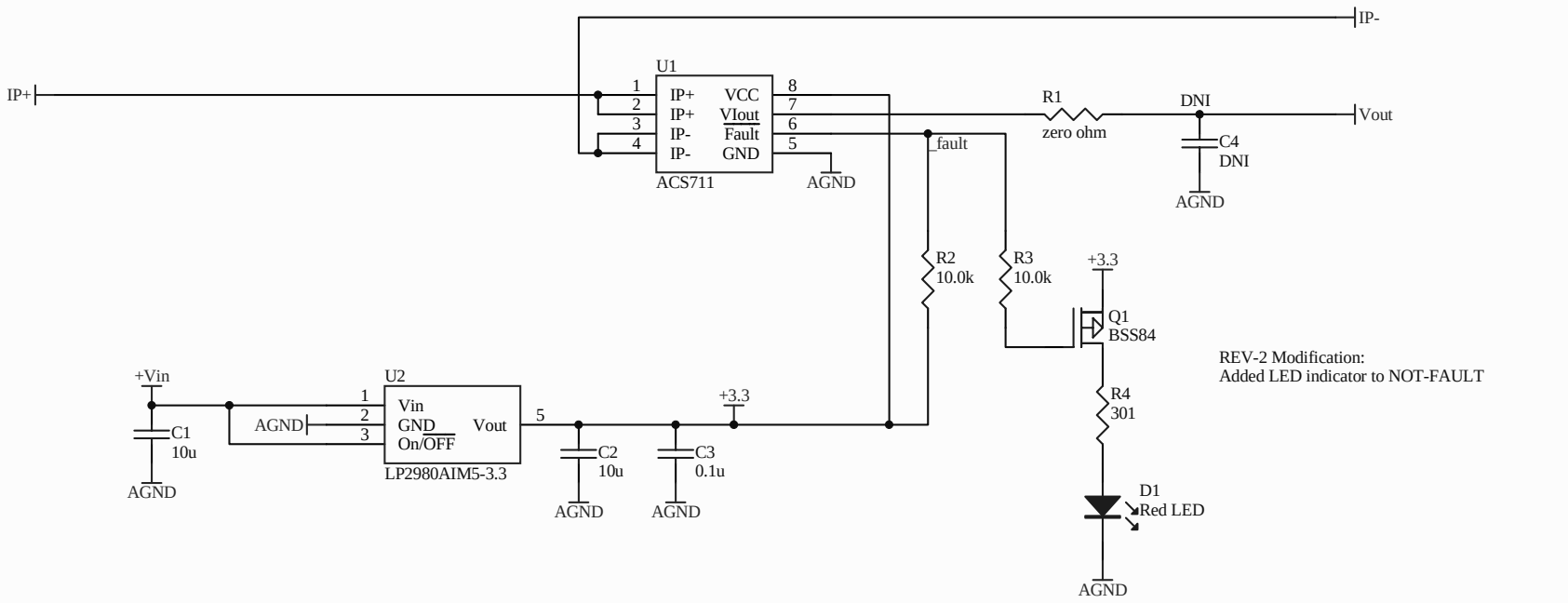
Resistors:
-tempco must same or go down
-tolerance must be same or go down
-unless otherwise stated, resistance value must be identical
Note: when going from 5% to 1%, use nearest value size
-power dissapation must be same or greater
-unless otherwise stated, package size must be the same
-unless otherwise stated, coloring and marking can vary
-unless otherwise stated, resistor type must be identical (wire wound, metal film, etc)

Diodes and Transistors:
-unless otherwise stated, package size must be the same

IC's, Connectors, and all other parts::
-unless otherwise stated, package size must be the same (DIP16, SOIC-8, etc)

Manufacturer Part Number Discrepencies
Every attempt will be made to provide a workable part number. However, prefixes and suffixes can vary over time.
If second sourcing from a different manufacturer, make sure that the requirements as noted under the Description column are met.
In general, if temperature option(s) are not noted, parts specified to work from 0-50C (or greater) will be sufficent.
If package information is not given, please check the manufacturer datasheet for package type. \

Any and all descrepencies should be reported to Allegro MicroSystems for correction and updates.



Title	***ACS711 Demo Board***		
Size: A	Number: 85-0404-001-SCH	Revision: 2	*Allegro MicroSystems, Inc*
Date: 3/26/2009	Time: 2:33:48 PM	Sheet 1 of 1	*955 Perimeter Rd*
File: 85-0404 Rev 2.SchDoc			*Manchester NH 03103*

ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	ACS711SLC-15A-T	IC, current sensor	U1
2	1	10	Allegro	85-0404-001		
3	1	6			label (see 85-0404-000-ASY)	

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ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	ACS711SLC-30A-T	IC, current sensor	U1
2	1	10	Allegro	85-0404-001		
3	1	6			label (see 85-0404-000-ASY)	

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ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	ACS711KLC-12AB-T	IC, current sensor	U1
2	1	10	Allegro	85-0404-001		
3	1	6			label (see 85-0404-000-ASY)	

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ACS711 Demo Board | **ASEK711KLC-25AB-T** | **Rev 1**

85-0404-005-BOM | **Bill of Materials** | **6/29/2009**

Originator: Douglas Sappet | **Page 1 of 1**

ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	ACS711KLC-25AB-T	IC, current sensor	U1
2	1	10	Allegro	85-0404-001		
3	1	6			label (see 85-0404-000-ASY)	

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