Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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85-0444 **Design Cover Sheet** **9/23/2011**

ACS709 Demo Board **Page 1 of 1**

Originator: Shawn Upton

		Design Rev ->		OI	A	B	C								
Doc	Size	Format	Name, Description	Sub-Document Revision											
000-TOP	A	pdf	Top Level Instructions	1	1	1	1								
000-REV	A	pdf	Revision Control	1	2	3	4								
000-OPT	A	pdf	Build Options	1	1	3	4								
000-TST	A	pdf	Test and Verification	1	1	1	1								
000-ASY	A	pdf	Assembly Instructions	1	1	3	4								
			Basic Board Assembly, no sensor												
001-BOM	A	pdf	Bill of Materials	1	1	1	4								
001-SCH	A	pdf	Schematic	1	1	1	4								
001-BLD	-	zip	Purchasing BOM				4								
001-FAB	-	zip	gerber files, FAB drawing				2								
001-ZIP	-	-	Gerber Files, FAB, RFQ	1	2	2	OBS								
			ASEK709LLF-35BB-T												
100-BOM	A	pdf	Bill of Materials	1	1	3	4								
			ASEK709LLF-20BB-T												
101-BOM	A	pdf	Bill of Materials	1	1	3	4								

Originator: Shawn Upton

1. RoHS Compliance Required?
   YES
   All components and assembly practices must be RoHS Compliant.
   All assemblies from this TED pack 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:
   No.

3. Are there optional ways to build this TED pack?
   Yes.
   Please see -OPT Build Options Page.

4. As multiple boards exist under this TED pack number, there is
   no -000 assembly.
   When ordering, the complete 9 digit TED number must be used.

5. 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.

6. 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.

7. 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.

8. All parts ordering shall be done in accordance to specification ENG 07-0002 Revision 4.
   Please see 85-04444-001-BOM, see information at bottom.

9. PCB RFQ, PCB Fabrication Drawing, and PCB gerber files are included in the appropriately named zip file (one zip file per board).

10. The -001 PCB does not have to be assembled prior to installation of the Allegro device. All devices may be installed at the same time.
    The -001 PCB is documented seperately for documentation purposes only.

11. The -001 assembly may be assembled just by itself, and the Allegro device installed at a later date.

12. The -000-ASY Assembly Instructions are to be used for all builds.

Revision OI to Revision A Changes:

1. On Rev OI, the two 3.5mm x 1.63mm slots were not thro-hole plated. This is changed to thro-hole plated.
2. No other changes.

How to convert Rev OI to Rev A:

1. No changes required; Rev OI ok for usage. It is not possible convert Rev OI to Rev A.

Revision A to Revision B Changes:

1. Labeling changed from "ACS7xx etc" to "ASEK7xx etc".
2. This labeling impacted the ASY, as well as the 10x-BOM's.
3. No functional change.

How to convert Rev A to Rev B:

1. Change labels as indicated in ASY.

Revision B to Revision C Changes:

1. Allegro devices mislabeled: the "B" should be "BB".
2. R13 from 301 to 634 ohm
3. R14 from 523 to 1kohm.
4. R15 from 432 to 825ohm.
5. No functional changes.

How to convert Rev A to Rev B:

1. No changes required.

Originator: Shawn Upton

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) each of these:	Description:
1	85-0444-001	85-0444-001	Demo board minus part
2	ASEK709LLF-35BB-T	85-0444-100	ASEK709LLF-35BB-T Demo
3	85-0444-100	85-0444-100	ASEK709LLF-35BB-T Demo
4	ASEK709LLF-20BB-T	85-0444-101	ASEK709LLF-20BB-T Demo
5	85-0444-101	85-0444-101	ASEK709LLF-20BB-T Demo

Notes:
1. The -001 PCB does not have to be assembled prior to installation of the Allegro device. All devices may be installed at the same time. The -001 PCB is documented seperately for documentation purposes only.
2. The -001-ASY Assembly Instructions are to be used for all builds.

This page left blank at this time.

1. RoHS Compliance Required?
   YES
   All components and assembly practices must be RoHS Compliant.

2. Unless otherwise noted below:
   Install surface mount components first.
   Then throughhole parts.

3. The -001 PCB does not have to be assembled prior to installation of the Allegro device. All devices may be installed at the same time.
   The -001 PCB is documented seperately for documentation purposes only.

4. These Assembly Instructions are to be used for all builds.

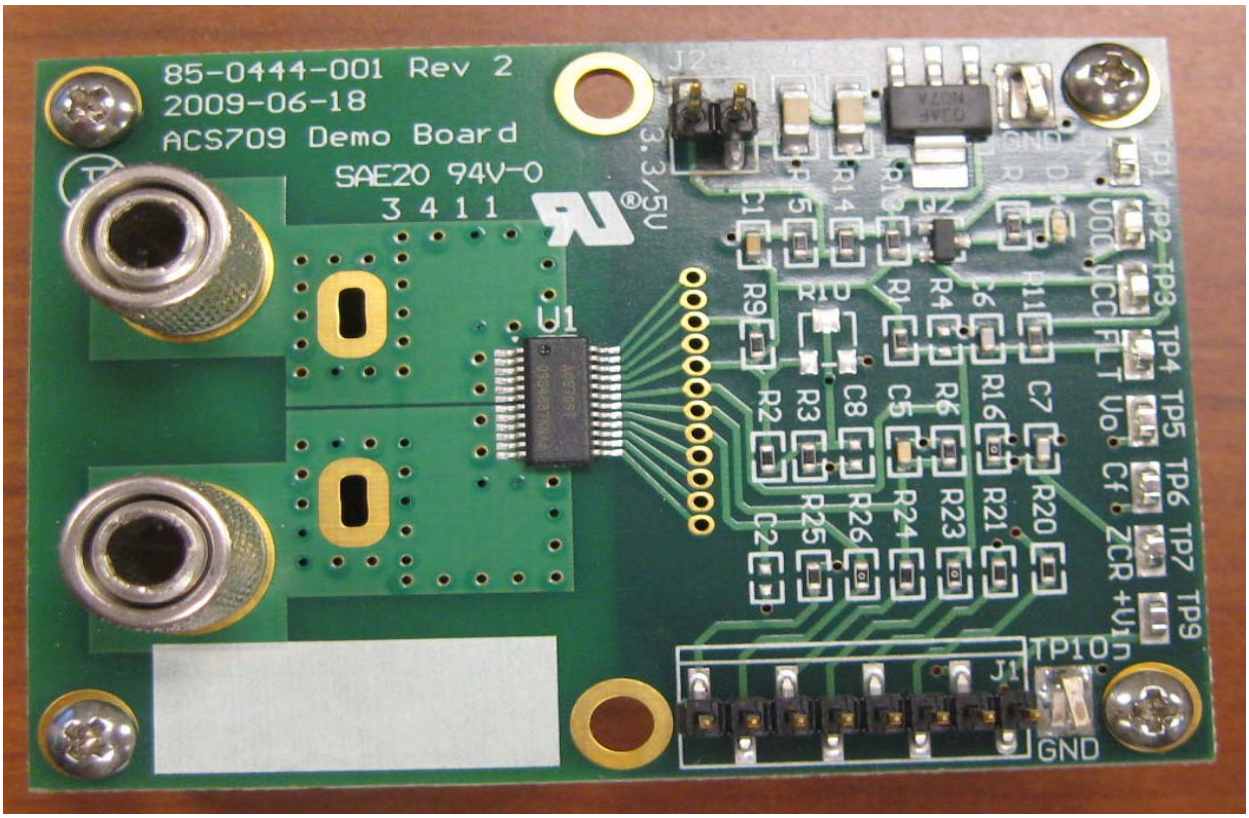
Labeling:

1. For -001 Assemblies: no labeling is required.

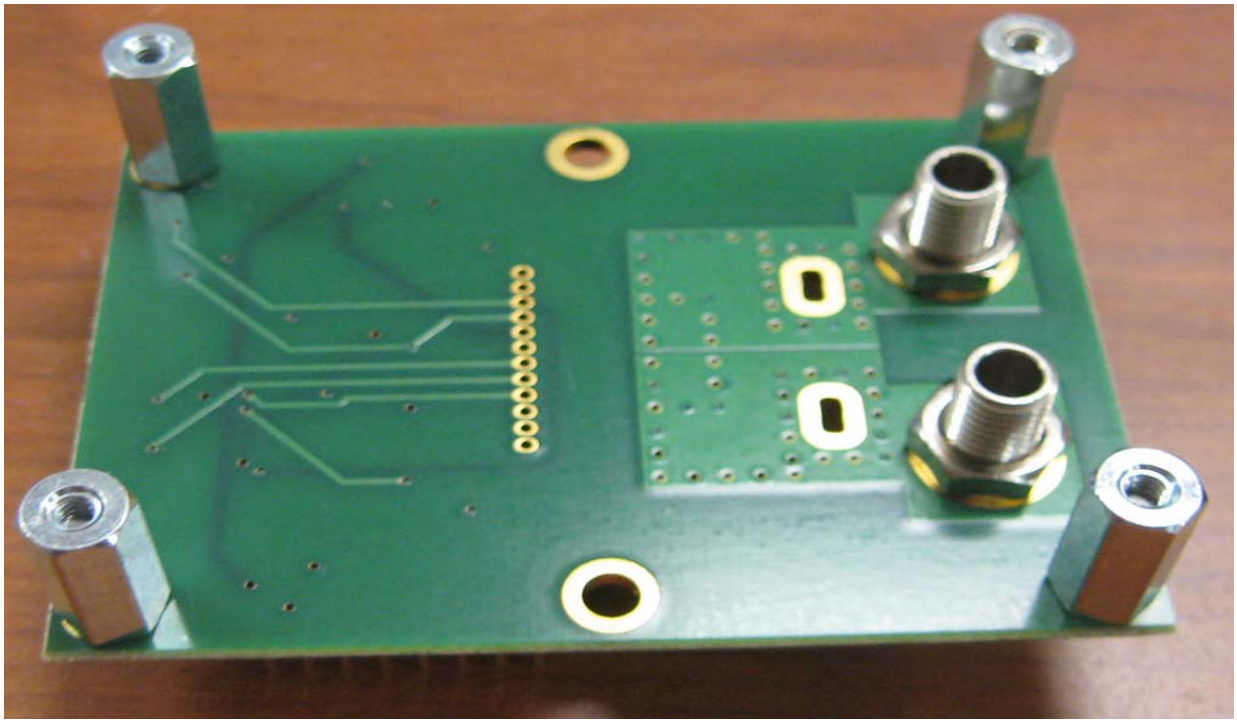
2. For non-001 Assemblies:
   Print a label with the P/N from below, and affix to the top-side silkscreen box.

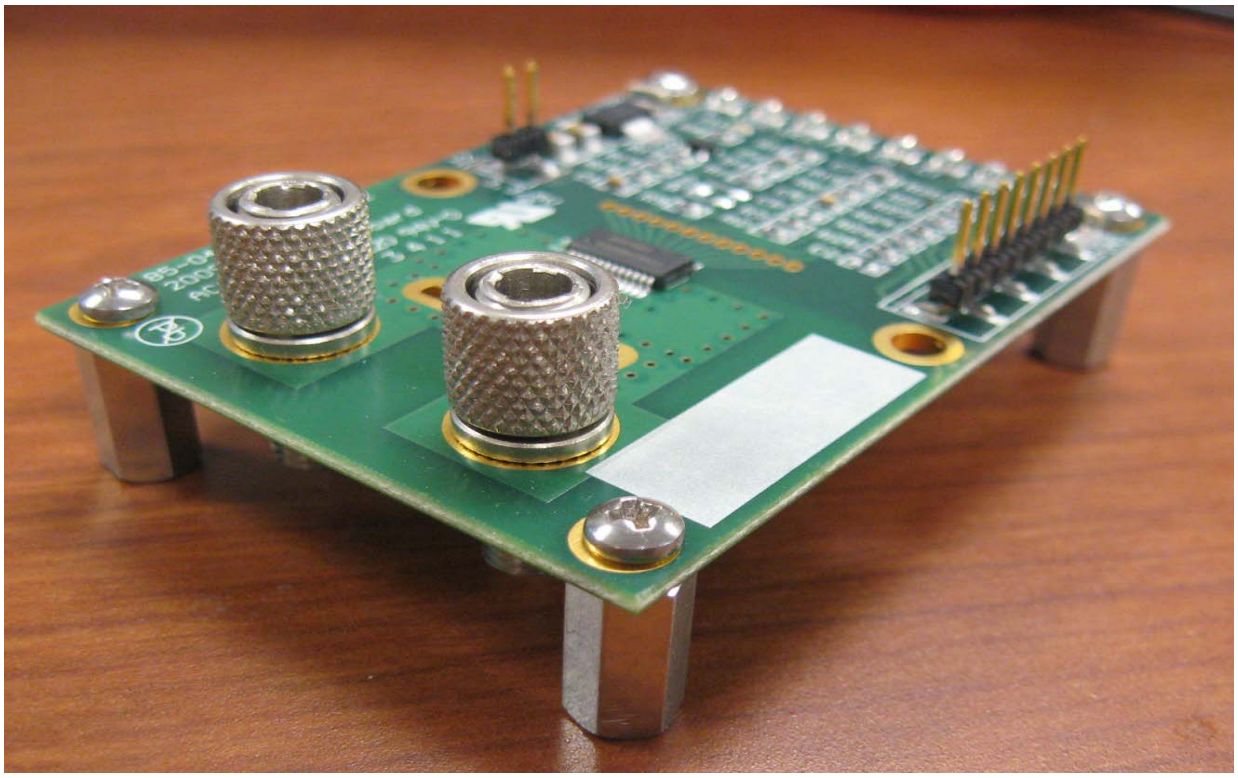
TED Number:	Label	Description
85-0444-100	ASEK709LLF-35BB-T	ASEK709LLF-35BB-T Demo
85-0444-101	ASEK709LLF-20BB-T	ASEK709LLF-20BB-T Demo

Photo's:



Photo's, continued:





ACS709 Demo Board **Bill of Materials** **Rev 4**
85-0444-001-BOM **Page 1 of 3** **9/23/2011**
Originator: Shawn Upton

ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	2	6	AVX	06035A102JAT2A	capacitor, 0603, mono, C0G, 50V, 1nF	C6, C7
2	1	6	AVX	06035C103KAT2A	capacitor, 0603, mono, X7R, 50V, 10nF	C5
3	1	6	AVX	06035C104K4T2A	capacitor, 0603, mono, X7R, 50V, 100nF	C1
4	2	6	AVX	1206YD106KAT2A	capacitor, 1206, monolythic, 16V, X5R, 10uF	C3, C4
5	2				Do Not Install	C2, C8
6	1	6	Panasonic	ERJ-3EKF3010V	resistor, 0603, 100mW, thick film, 1%, 301ohm	R8
7	1	6	Panasonic	ERJ-3EKF6340V	resistor, 0603, 100mW, thick film, 1%, 634ohm	R13
8	1	6	Panasonic	ERJ-3EKF8250V	resistor, 0603, 100mW, thick film, 1%, 825ohm	R15
9	5	6	Panasonic	ERJ-3EKF1001V	resistor, 0603, 100mW, thick film, 1%, 1.00kohm	R14, R20, R21, R24, R25
10	3	6	Panasonic	ERJ-3EKF1002V	resistor, 0603, 100mW, thick film, 1%, 10.0kohm	R6, R9, R11
11	1	6	Panasonic	ERJ-3EKF1783V	resistor, 0603, 100mW, thick film, 1%, 178kohm	R3
12	2	6	Panasonic	ERJ-3EKF3323V	resistor, 0603, 100mW, thick film, 1%, 332kohm	R1, R2
13	3	6	Panasonic	ERJ-3GEY0R00V	jumper, 0603, zero ohm jumper	R16, R23, R26
14	1				Do Not Install	R4
15	1				Do Not Install	R10
16	1	6	Panasonic	LNJ214R8ARA	LED, 0603, red	D1
17	1	6	Diodes Inc	BSS84TA	transistor, sot-23, PFET, BSS84	Q2
18	1	6	Fairchild	LM317AEMP	IC, SOT-223, voltage regulator	U2
19	1	10				U1
20	1	6	Molex	68301-1055	connector, SMT, 2 pin, straight header, gold	J2
21	1	6	Molex	68301-1013	connector, SMT, 8 pin, straight header, gold	J1
22	2	6	Emerson	111-2223-001	connector, thro, banana jack (5 way binding post)	J3, J4
23	1	6	Sullins	SSC02SYAN	jumper, 2 pin shunt, gold plating	
24	2	6	Keystone Elec	5016	testpoint, SMT, larger	TP8, TP10
25	8	6	Keystone Elec	5015	testpoint, SMT, small	TP1 - TP7, TP9
26	4	6	Keystone	1944	standoff, metal, hex threaded, male-female, 4-40 x 0.5inch	
27	4	6			nut, metal, zinc plated, hex, 4-40	
28	1	10			PCB, as from 85-0444-001 Rev 2 gerber files	PCB

This BOM requires all components to be RoHS compliant; if parts substitution occurs, parts must be RoHS compliant.
All components must have RoHS certificates sent to Allegro for record keeping.

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.
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
If a line item has multiple part numbers, and the substitution code is 10, then only use parts as listed. 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)

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
2. Any susbstitution allowed, as long as mechanically and electrically identical
3. Any substitution, as long as mechanically, electrically and visually identical.
4. Any substitution allowed, as long as mechanically and visually identical and electrically similar
5. Any substitution allowed, as long as mechanically and visually similar and electrically identical
6. Any substitution allowed, as long as mechanically, electrically and visually similar
10. No substitution allowed.

"Identical" is to be interpreted as "meeting the same specifications" with no deviation from the stated specifications.
"Similar" is to be interpreted as "meeting or exceeding the stated specifications, in regards to electrical and/or mechanical parameters (see Substitution code).
"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 colo
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.

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 and external dimensions must be the same
-unless otherwise stated, height must be the same.

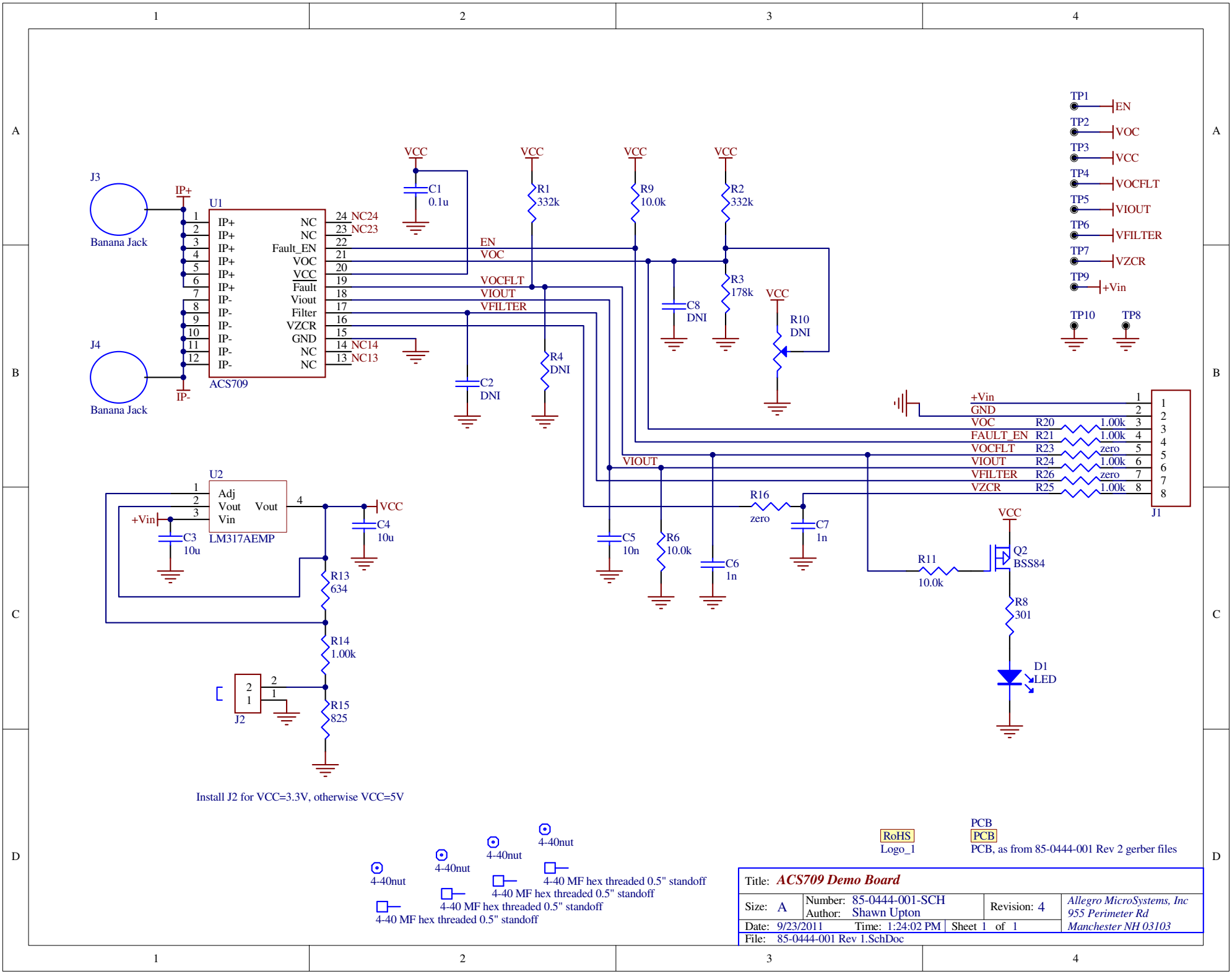
Resistors:
-tempco must same or go down
-tolerance must be same or go down
-unless otherwise stated, resistance value must be identical
Note: when going from 5% to 1%, use nearest value size
-power dissapation must be same or greater
-unless otherwise stated, package size must be the same
-unless otherwise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

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 0-85C will be sufficent.
If package information is not given, please check the description for package type.

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


J3
Banana Jack
J4
Banana Jack
IP+
IP-
U1
ACS709
IP+
IP-
NC
Fault_EN
VOC
VCC
Fault
Viout
Filter
VZCR
GND
NC
NC_NC24
NC_NC23
NC_NC14
NC_NC13
C1
0.1u
C2
DNI
C8
DNI
R1
332k
R2
332k
R3
178k
R4
DNI
R9
10.0k
R10
DNI
EN
VOC
VOCFLT
VIOUT
VFILTER
VCC
TP1
EN
TP2
VOC
TP3
VCC
TP4
VOCFLT
TP5
VIOUT
TP6
VFILTER
TP7
VZCR
TP9
+Vin
TP10
TP8
J1
+Vin
GND
VOC
FAULT_EN
VOCFLT
VIOUT
VFILTER
VZCR
R20 1.00k
R21 1.00k
R23 zero
R24 1.00k
R26 zero
R25 1.00k
U2
LM317AEMP
Adj
Vout
Vin
C3
10u
C4
10u
R13
634
R14
1.00k
R15
825
J2
C5
10n
R6
10.0k
C6
1n
R16
zero
C7
1n
R11
10.0k
Q2
BSS84
R8
301
D1
LED
Install J2 for VCC=3.3V, otherwise VCC=5V
4-40nut
4-40 MF hex threaded 0.5" standoff
RoHS
Logo_1
PCB
PCB, as from 85-0444-001 Rev 2 gerber files
Title: ACS709 Demo Board
Size: A
Number: 85-0444-001-SCH
Author: Shawn Upton
Revision: 4
Date: 9/23/2011
Time: 1:24:02 PM
Sheet 1 of 1
File: 85-0444-001 Rev 1.SchDoc
Allegro MicroSystems, Inc
955 Perimeter Rd
Manchester NH 03103

ACS709 Demo Board | **ASEK709LLF-35B-T** | **Rev 4**
85-0444-100-BOM | **Bill of Materials** | **9/23/2011**
Originator: Shawn Upton | **Page 1 of 1**

ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	85-0444-001	Bare Board Assembly, no sensor	
2	1	10	Allegro	ACS709LLF-35BB-T	current sensor	U1

This BOM requires all components to be RoHS compliant; if parts substitution occurs, parts must be RoHS compliant.
All components must have RoHS certificates sent to Allegro for record keeping.

ACS709 Demo Board | **ASEK709LLF-20B-T** | **Rev 4**
85-0444-101-BOM | **Bill of Materials** | **9/23/2011**
Originator: Shawn Upton | **Page 1 of 1**

ITEM	QTY	S	Manufacturer	P/N	DESCRIPTION	REF
1	1	10	Allegro	85-0444-001	Bare Board Assembly, no sensor	
2	1	10	Allegro	ACS709LLF-20BB-T	current sensor	U1

This BOM requires all components to be RoHS compliant; if parts substitution occurs, parts must be RoHS compliant.
All components must have RoHS certificates sent to Allegro for record keeping.