

| | | | Design Rev -> | OI | A | B | C | D | E | F | G | | | | | |
|----------------|------|--------|-------------------|-----------------------|---|---|---|-----|---|---|-----|--|--|--|--|--|
| Doc | Size | Format | Name, Description | Sub-Document Revision | | | | | | | | | | | | |
| | | | ASEK710LLA-12CB-T | | | | | | | | | | | | | |
| 018-BOM | - | - | Bill of Materials | | | | 1 | 2 | 2 | 8 | OBS | | | | | |
| | | | ASEK710LLA-25CB-T | | | | | | | | | | | | | |
| 019-BOM | - | - | Bill of Materials | | | | 1 | 1 | 1 | 8 | OBS | | | | | |
| | | | ASEK710ELA-12CB-T | | | | | | | | | | | | | |
| 020-BOM | - | - | Bill of Materials | | | | | 1 | 1 | 8 | OBS | | | | | |
| | | | ASEK710ELA-25CB-T | | | | | | | | | | | | | |
| 021-BOM | - | - | Bill of Materials | | | | | 1 | 1 | 8 | OBS | | | | | |
| | | | ASEK710KLA-12CB-T | | | | | | | | | | | | | |
| 022-BOM | - | - | Bill of Materials | | | | | 1 | 1 | 8 | OBS | | | | | |
| | | | AC7EK10KLA-25CB-T | | | | | | | | | | | | | |
| 023-BOM | - | - | Bill of Materials | | | | | 1 | 1 | 8 | OBS | | | | | |
| | | | ASEK710KLA-12CB-T | | | | | | | | | | | | | |
| 024-BOM | A | pdf | Bill of Materials | | | | | | | | 9 | | | | | |
| | | | ASEK710KLA-25CB-T | | | | | | | | | | | | | |
| 025-BOM | A | pdf | Bill of Materials | | | | | | | | 9 | | | | | |
| | | | ASEK710KLA-6BB-T | | | | | | | | | | | | | |
| 026-BOM | A | pdf | Bill of Materials | | | | | | | | 9 | | | | | |
| | | | Socket Board | | | | | | | | | | | | | |
| 100-BOM | A | pdf | Bill of Materials | 1 | 3 | 4 | 5 | 5 | 6 | 6 | 9 | | | | | |
| 100-SCH | A | pdf | Schematic | 1 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | | | | | |
| 100-BD1 | - | - | Board Outline | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-SS1 | - | - | Top Silkscreen | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-SS2 | - | - | Bottom Silkscreen | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-SM1 | - | - | Top Soldermask | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-SM2 | - | - | Bottom Soldermask | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-CU1 | - | - | Top Layer | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-CU2 | - | - | Mid 1 Layer | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-CU3 | - | - | Mid 2 Layer | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-CU4 | - | - | Bottom Layer | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-GD1 | - | - | Drill Drawing | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-GG1 | - | - | Drill Guide | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-GG2 | - | - | Hole Guide | 1 | 3 | 4 | 5 | OBS | | | | | | | | |
| 100-ZIP | - | zip | Gerber Files | 1 | 3 | 4 | 5 | 5 | 5 | 5 | 5 | | | | | |

Rev OI to Rev A Changes:

Both -001 and -100 PCB's:

1. +5.0V net changed to "VCC".
2. Pin 16 of 1710 changed from VRAT to FAULT_EN.
3. R1 (332k PU on pin 13) changed from connected to VRAT to VCC.
4. R2 (178k PU on pin 15) changed from connected to VRAT to VCC.
5. R10 (from VRAT to GND) changed from connected to VRAT to VCC.
6. TP1 changed from VRAT to FAULT_EN.
7. U2 changed from LP2980 to LM317.
The basic function of this block is the same: to provide either 5.0V or 3.3V.
However, VCC pin of the part is now powered also by this regulator.
8. R13 to 301 ohm, R14 to 523 ohm, R14 to 432 ohm. This is part of the above change.
9. U1 (Allegro ACS710) now powered by VCC instead of +5.0V.
+5.0V was user supplied via J1 (filtered through L2).
10. Q4, R12, C7 TP9, L1 deleted.
11. Added C7 as a DNI'd capacitor on the VZCR node.
12. Added R16 on VZCR, to form potential lowpass filter on VZCR.
13. Build options changed, as the unipolar ("U") and bipolar ("B") ACS710 devices added. Build options changed from -002 through -005 to -010 through -017 as a result.
The old -002 through -005 build options listed only for reference; do not build these build options.

How to convert Rev OI to Rev A:

1. It is not possible to convert Rev OI to Rev A.
2. Create new assemblies according to this TED pack.

Rev A to Rev B changes:

Both -001 and -100 PCB's:

1. Removed all Reset circuitry:
D2, R9, Q3, Q1, R7, R22, TP10.
2. Changed J1 from 10 pin Molex to 8 pin Molex
3. Changed C7 from DNI to 1nF.
4. Installed RJ on -001 PCB's (-100 already installed).
5. Added TP9 to Vin.
6. TP1 label from "FLT" to "EN".
7. Moved D1 and "FLT" label around.
8. Spread apart testpoints for better labeling.
9. Added J1 to -001 PCB (-100 already installed).
10. No other changes.
11. This impacts all schematics and PCB prints.
12. This only changed -001-BOM and -100-BOM; other BOM's unchanged.

How to convert Rev A to Rev B:

1. It is not possible to convert Rev OI to Rev A.
2. Create new assemblies according to this TED pack.

Rev B to Rev C Changes:

1. R2 from 178k to 332k on both 85-0350-001 and -100.
2. R3 from 332k to 178k on both 85-0350-001 and -100.
3. Topside silkscreen change on both boards.
This was for the labeling changes.
4. Labeling changes: Board Label is spelled out in both the OPT and ASY pages.
5. Added ACS710ELA-B12C-T and ACS710LLA-U25C-T
6. Added R9 10k pullup resistor on Fault_Enable.
6. No other changes.

How to convert Rev B to Rev C:

1. It is not possible to convert Rev B to Rev C.
Construct new assemblies according to this TED pack.

Rev C to Rev D Changes:

1. OPT page listed parts not available. Items 6-13 were removed.
2. OPT page has new options, 16-19 added.
3. This caused the creation of the -020 through -023 items.
4. OPT page item 14 had typo fixed ("ELA" should have been "LLA").
5. The -018-BOM had a typo fixed ("ELA" should have been "LLA").
6. No functional changes to boards.
7. The sub-assemblies changed to follow suit.
8. PCB Prints removed, as they are no longer required for TED packs.

How to convert Rev C to Rev D:

1. It is not possible to convert Rev B to Rev C.
Construct new assemblies according to this TED pack.

Rev D to Rev E Changes:

1. BOM's, SCH's listed LED's as "red", but BOM p/n gives a green LED'.
BOM p/n changed to a red LED p/n.
2. Note: green or red does not matter for this.
3. No other changes, no functional changes.

How to convert Rev D to Rev E:

1. No changes necessary.

Rev E to Rev F Changes:

1. "ACS" labeling changed to "ASEK" labeling.
2. No functional changes.

How to convert Rev E to Rev F:

1. No changes necessary.

Rev F to Rev G Changes:

1. BOM items 7, 10 and 11: parts changed from 5% to 1% in description; no part number change.
2. BOM items 8 and 9: errant part number fixed; no change in part values.
3. Removed assemblies -018 to -023. Parts no longer sold.
4. Added new assemblies -024, -025 and -026. These are the current devices being sold.

How to convert Rev F to Rev G:

1. No changes necessary.

Originator: Shawn Upton

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 Specifications required for build:

none required

3. Are there optional ways to build this TED pack? Yes

Please read 85-0350-000-OPT for build options

4. Pages with the descriptor "-ASY" are expected to be followed by the assembly person / assembly house. These are the Construction 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 (85-0350), there is no -000 assembly.

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

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) of this: | Allegro P/N | Label on Board |
|---|-----------------|--------------------|-----------------|----------------|
| 1 | ACS710ELC-12C-T | 85-0350-002 | ACS710ELC-12C-T | N/A |
| 2 | ACS710ELC-25C-T | 85-0350-003 | ACS710ELC-25C-T | N/A |
| 3 | ACS710LLC-12C-T | 85-0350-004 | ACS710LLC-12C-T | N/A |
| 4 | ACS710LLC-25C-T | 85-0350-005 | ACS710LLC-25C-T | N/A |

Options 1 through 4 are obsolete and cannot be ordered!
They are listed only for reference.

| | | | | |
|---|--------------|-------------|------------------|-----|
| 5 | ASEK710 Demo | 85-0350-100 | Socketed version | N/A |
| | Socket Board | | | |

Options 6 through 19 are obsolete and cannot be ordered!
They are listed only for reference.

| | | | | |
|----|-------------|-------------|------------------|-------------------|
| 6 | 85-0350-010 | 85-0350-010 | ACS710ELC-12CU-T | ASEK710ELC-12CU-T |
| 7 | 85-0350-011 | 85-0350-011 | ACS710ELC-12CB-T | ASEK710ELC-12CB-T |
| 8 | 85-0350-012 | 85-0350-012 | ACS710ELC-25CU-T | ASEK710ELC-25CU-T |
| 9 | 85-0350-013 | 85-0350-013 | ACS710ELC-25CB-T | ASEK710ELC-25CB-T |
| 10 | 85-0350-014 | 85-0350-014 | ACS710LLC-12CU-T | ASEK710LLC-12CU-T |
| 11 | 85-0350-015 | 85-0350-015 | ACS710LLC-12CB-T | ASEK710LLC-12CB-T |
| 12 | 85-0350-016 | 85-0350-016 | ACS710LLC-25CU-T | ASEK710LLC-25CU-T |
| 13 | 85-0350-017 | 85-0350-017 | ACS710LLC-25CB-T | ASEK710LLC-25CB-T |

| | | | | |
|----|-------------|-------------|------------------|-------------------|
| 14 | 85-0350-018 | 85-0350-018 | ACS710LLA-12CB-T | ASEK710LLA-12CB-T |
| 15 | 85-0350-019 | 85-0350-019 | ACS710LLA-25CB-T | ASEK710LLA-25CB-T |
| 16 | 85-0350-020 | 85-0350-020 | ACS710ELA-12CB-T | ASEK710ELA-12CB-T |
| 17 | 85-0350-021 | 85-0350-021 | ACS710ELA-25CB-T | ASEK710ELA-25CB-T |
| 18 | 85-0350-022 | 85-0350-022 | ACS710KLA-25CB-T | ASEK710KLA-25CB-T |
| 19 | 85-0350-023 | 85-0350-023 | ACS710KLA-25CB-T | ASEK710KLA-25CB-T |

| # | Request: | Build (1) of this: | Allegro P/N | Label on Board |
|----|-------------|--------------------|------------------|-------------------|
| 20 | 85-0350-024 | 85-0350-024 | ACS710KLA-12CB-T | ASEK710KLA-12CB-T |
| 21 | 85-0350-025 | 85-0350-025 | ACS710KLA-25CB-T | ASEK710KLA-25CB-T |
| 22 | 85-0350-026 | 85-0350-026 | ACS710KLA-6BB-T | ASEK710KLA-6BB-T |

Note:

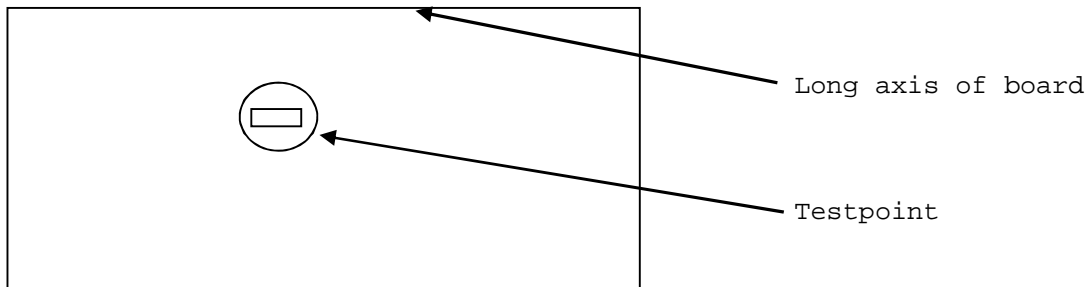
1. All (other than -100) boards must be labeled after construction (see -000-ASY)
2. Basically, the Allegro sensor that is installed onto the board has the "ACS" prefix changed to "ASEK", no other changes; and this p/n is what is applied to the board.

Notes for all 85-0350 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 85-0350-001 p/n. This sticker shall not interfere with the installation of the banana jacks or standoffs.
2. Install all surface mount components first.

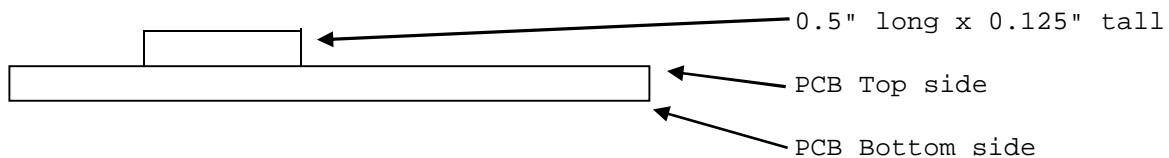
Please note: the Allegro part (for U1) may be installed at the same time as all other parts!
It is listed seperately for ease of documentation.

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

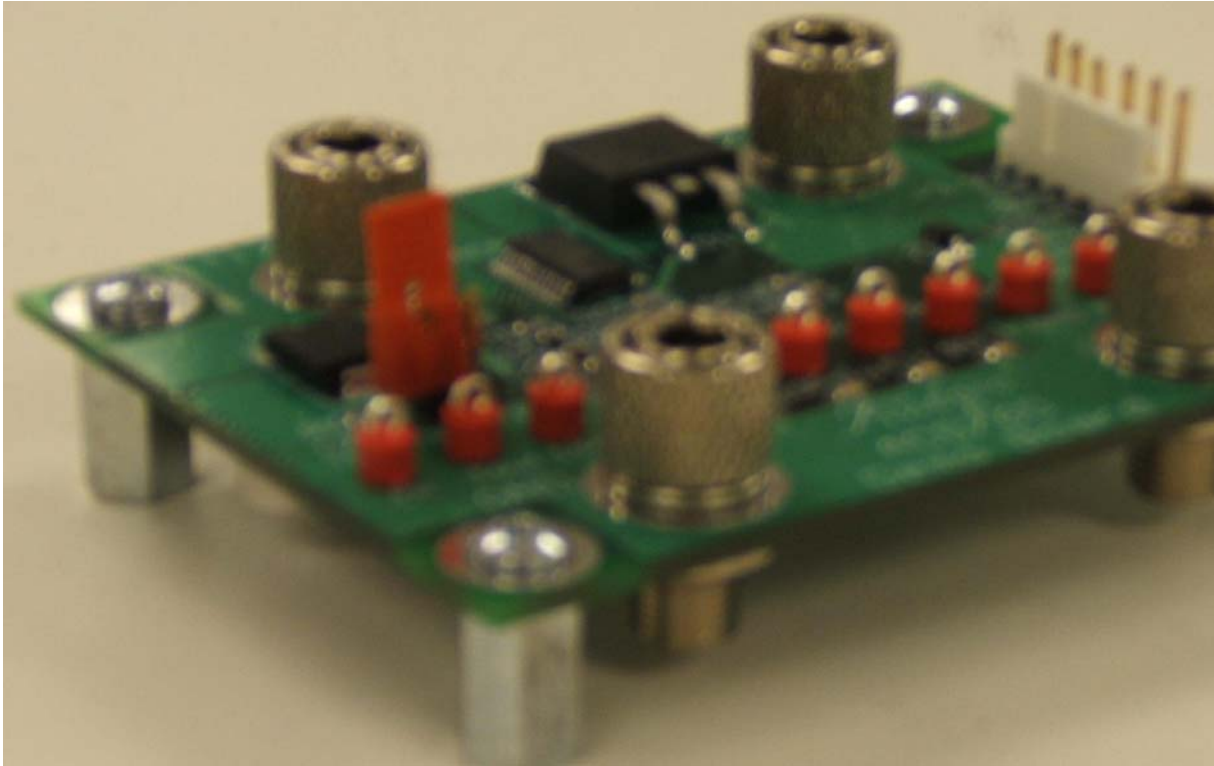


Note: loop is parallel to the long axis of the board.

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 85-0350-001 through 85-0350-099 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 85-0350 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, as seen to the left of U1 and the right of the "ASEK710-" silkscreen text. This box is 0.25 inches tall x 0.5 inches long. The sticker shall not be larger than the silkscreen box; but may be smaller.
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

85-0350-001 through 85-0350-099 Labeling:

1. All labels shall be placed to the right of the "ASEK710" silkscreen label and to the right of the U1 device, in the silkscreen box provided.
2. If an 85-0350-001 assembly is made, for future finishing into a finished assembly, board labeling is not required.
3. Label assemblies as outlined on below.

| Board | Allegro device | Label as: |
|-------------|------------------|-------------------|
| 85-0350-024 | ACS710KLA-12CB-T | ASEK710KLA-12CB-T |
| 85-0350-025 | ACS710KLA-25CB-T | ASEK710KLA-25CB-T |
| 85-0350-026 | ACS710KLA-6BB-T | ASEK710KLA-6BB-T |

85-0350-100 Labeling:

1. Boards do not require topside labeling.

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

| ITEM | QTY | S | Manufacturer | P/N | DESCRIPTION | REF |
|------|-----|---|----------------------|----------------|----------------------------------------------------------------------------|------------------------|
| 1 | 1 | 6 | Panasonic | ECJ-1VB1E103K | capacitor, monolythic, 0603, X5R, 10nF, 16V | C5 |
| 2 | 1 | 6 | Panasonic | ECJ-1VB1C104K | capacitor, monolythic, 0603, X5R, 0.1uF, 16V | C1 |
| 3 | 2 | 6 | Panasonic | ECJ-HVB1C106M | capacitor, monolythic, 1206, X5R, 10uF, 16V | C3, C4 |
| 4 | 1 | 6 | Panasonic | ECJ-1VC1H102J | capacitor, monolythic, 0603, X5R, 1nF, 16V | C7 |
| 5 | 0 | | | | Do Not Install | C2, C6, C8 |
| 6 | 3 | 6 | Panasonic | ERJ-3GEY0R00V | resistor, metal film, 0603, 5%, zero ohm | R16, R23, R26 |
| 7 | 2 | 6 | Panasonic | ERJ-3EKF3010V | resistor, metal film, 0603, 1%, 301 ohm | R8, R13 |
| 8 | 1 | 6 | Panasonic | ERJ-3EKF4320V | resistor, metal film, 0603, 1%, 432 ohm | R15 |
| 9 | 1 | 6 | Panasonic | ERJ-3EKF5230V | resistor, metal film, 0603, 1%, 523 ohm | R14 |
| 10 | 4 | 6 | Panasonic | ERJ-3EKF1001V | resistor, metal film, 0603, 1%, 1k ohm | R20, R21, R24, R25 |
| 11 | 3 | 6 | Panasonic | ERJ-3EKF1002V | resistor, metal film, 0603, 1%, 10k ohm | R6, R9, R11 |
| 12 | 1 | 6 | Panasonic | ERJ-3EKF1783V | resistor, metal film, 0603, 1%, 178k ohm | R3 |
| 13 | 2 | 6 | Panasonic | ERJ-3EKF3323V | resistor, metal film, 0603, 1%, 332k ohm | R1, R2 |
| 14 | 0 | | | | Do Not Install | R4, R5 |
| 15 | 1 | 6 | | | jumper (bend to 0.5" and install 0.125" above PCB) | RJ |
| 16 | 0 | | | | Do Not Install | R10 |
| 17 | 1 | 6 | Murata | BLM18BB471SN1D | inductor, 0603 | L2 |
| 18 | 1 | 6 | Panasonic | LNJ214R8ARA | LED, 0603 (1608), red, 2V or 2.1V | D1 |
| 19 | 1 | 6 | Zetex | ZXM61P02FTA | mosfet, PFET, SOT-23 | Q2 |
| 20 | 1 | 9 | National Semi | LM317AEMP | IC, voltage regulator, adjustable, SOT-223 | U2 |
| 21 | 2 | 6 | Johnson Components | 111-2223-001 | connector, banana plug | IP+, IP- |
| 22 | 1 | 6 | Molex | 22-11-2082 | connector, straight friction lock header, 8 pin | J1 |
| 23 | 9 | 6 | Keystone Electronics | 5005K | testpoint, 0.063 inch diameter, red | TP1 - TP9 |
| 24 | 4 | 6 | | | screw, zinc metal plated, 4-40, 0.5 inch, Philips | See Construction Notes |
| 25 | 4 | 6 | Keystone Electronics | 1450C | standoff, male/male, zinc metal plated, 4-40, 0.5 inch long, hex shaped | See Construction Notes |
| 26 | 1 | 6 | AMP | 9-146277-0-02 | connector, 2 pin male, 100mil spaced, 25mil square post | J2 |
| | | | | | Note: P/N given may be more than 2 pins; cut to size | |
| 27 | 1 | 6 | 3M | 929950-00 | 2 pin shunt connector | J2 |

| | | | | | |
|----|---|----|--|---------------------------------------------|--|
| 28 | 1 | 10 | | pcb, as from 85-0350-001 Rev 5 gerber files | |
| | | | | | |

All components and assembly practices must be RoHS Compliant
 Certificates of RoHS compliance must be sent to Allegro for record keeping
 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 substitution 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 substituting 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 dissipation 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)

ACS710 Demo Board
85-0350-001-BOM
Originator: Shawn Upton

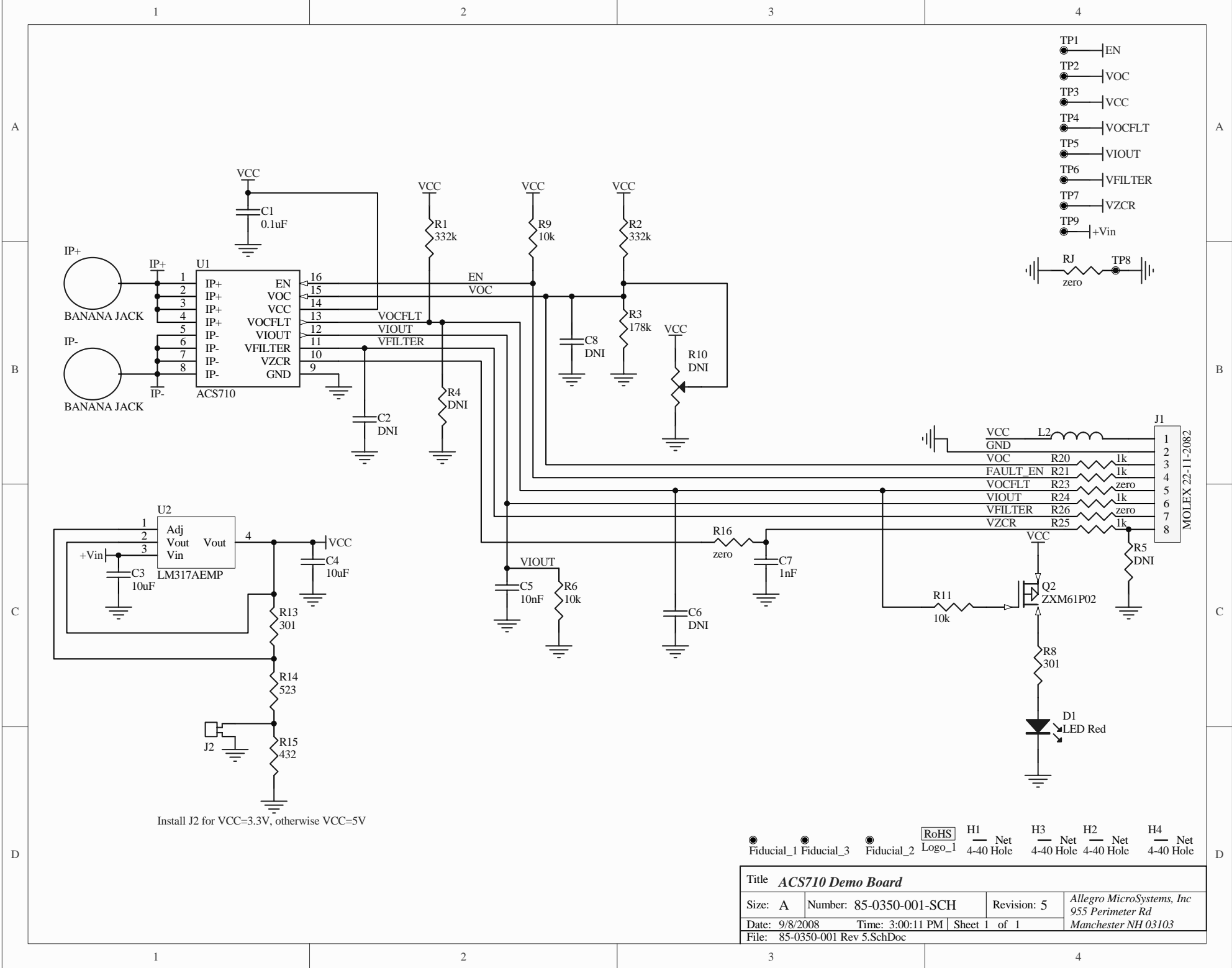
Basic Board
Bill of Materials
Page 4 of 4

Rev 9
11/1/2010

Manufacturer Part Number Discrepancies

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 sufficient. If package information is not given, please check the manufacturer datasheet for package type.

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



Install J2 for VCC=3.3V, otherwise VCC=5V

Fiducial_1
 Fiducial_3
 Fiducial_2
 RoHS
 H1 Net 4-40 Hole
 H3 Net 4-40 Hole
 H2 Net 4-40 Hole
 H4 Net 4-40 Hole

| | | | |
|--------------------------------|-------------------------|--------------|----------------------------------------------------------------------|
| Title ACS710 Demo Board | | | |
| Size: A | Number: 85-0350-001-SCH | Revision: 5 | Allegro MicroSystems, Inc 955 Perimeter Rd Manchester NH 03103 |
| Date: 9/8/2008 | Time: 3:00:11 PM | Sheet 1 of 1 | |
| File: 85-0350-001 Rev 5.SchDoc | | | |

ACS710 Demo Board
85-0350-024-BOM
Originator: Shawn Upton

ASEK710KLC-12CB-T
Bill of Materials
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Rev 9
11/1/2010

| ITEM | QTY | S | Manufacturer | P/N | DESCRIPTION | REF |
|------|-----|----|--------------|------------------|-----------------------------|-----|
| 1 | 1 | 10 | Allegro | ACS710KLA-12CB-T | IC, current sensor | U1 |
| 2 | 1 | 10 | Allegro | 85-0350-001 | | |
| 3 | 1 | 6 | | | label (see 85-0350-000-ASY) | |
| | | | | | | |
| | | | | | | |

All components and assembly practices must be RoHS Compliant
Certificates of RoHS compliance must be sent to Allegro for record keeping
This BOM generated in conformance with ENG 07-0002 Revision 4

ACS710 Demo Board
85-0350-025-BOM
Originator: Shawn Upton

ASEK710KLA-25CB-T
Bill of Materials
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Rev 9
11/1/2010

| ITEM | QTY | S | Manufacturer | P/N | DESCRIPTION | REF |
|------|-----|----|--------------|------------------|-----------------------------|-----|
| 1 | 1 | 10 | Allegro | ACS710KLA-25CB-T | IC, current sensor | U1 |
| 2 | 1 | 10 | Allegro | 85-0350-001 | | |
| 3 | 1 | 6 | | | label (see 85-0350-000-ASY) | |
| | | | | | | |
| | | | | | | |

All components and assembly practices must be RoHS Compliant
Certificates of RoHS compliance must be sent to Allegro for record keeping
This BOM generated in conformance with ENG 07-0002 Revision 4

ACS710 Demo Board
85-0350-026-BOM
Originator: Shawn Upton

ASEK710KLA-6BB-T
Bill of Materials
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Rev 9
11/1/2010

| ITEM | QTY | S | Manufacturer | P/N | DESCRIPTION | REF |
|------|-----|----|--------------|-----------------|-----------------------------|-----|
| 1 | 1 | 10 | Allegro | ACS710KLA-6BB-T | IC, current sensor | U1 |
| 2 | 1 | 10 | Allegro | 85-0350-001 | | |
| 3 | 1 | 6 | | | label (see 85-0350-000-ASY) | |
| | | | | | | |
| | | | | | | |

All components and assembly practices must be RoHS Compliant
Certificates of RoHS compliance must be sent to Allegro for record keeping
This BOM generated in conformance with ENG 07-0002 Revision 4

| ITEM | QTY | S | Manufacturer | P/N | DESCRIPTION | REF |
|------|-----|---|----------------------|----------------|----------------------------------------------------------------------------|------------------------|
| 1 | 1 | 6 | Panasonic | ECJ-1VB1E103K | capacitor, monolythic, 0603, X5R, 10nF, 16V | C5 |
| 2 | 1 | 6 | Panasonic | ECJ-1VB1C104K | capacitor, monolythic, 0603, X5R, 0.1uF, 16V | C1 |
| 3 | 2 | 6 | Panasonic | ECJ-HVB1C106M | capacitor, monolythic, 1206, X5R, 10uF, 16V | C3, C4 |
| 4 | 1 | 6 | Panasonic | ECJ-1VC1H102J | capacitor, monolythic, 0603, X5R, 1nF, 16V | C7 |
| 5 | 0 | | | | Do Not Install | C2, C6, C8 |
| 6 | 3 | 6 | Panasonic | ERJ-3GEY0R00V | resistor, metal film, 0603, 5%, zero ohm | R16, R23, R26 |
| 7 | 2 | 6 | Panasonic | ERJ-3EKF3010V | resistor, metal film, 0603, 1%, 301 ohm | R8, R13 |
| 8 | 1 | 6 | Panasonic | ERJ-3EKF4320V | resistor, metal film, 0603, 1%, 432 ohm | R15 |
| 9 | 1 | 6 | Panasonic | ERJ-3EKF5230V | resistor, metal film, 0603, 1%, 523 ohm | R14 |
| 10 | 4 | 6 | Panasonic | ERJ-3EKF1001V | resistor, metal film, 0603, 1%, 1k ohm | R20, R21, R24, R25 |
| 11 | 3 | 6 | Panasonic | ERJ-3EKF1002V | resistor, metal film, 0603, 1%, 10k ohm | R6, R9, R11 |
| 12 | 1 | 6 | Panasonic | ERJ-3EKF1783V | resistor, metal film, 0603, 1%, 178k ohm | R3 |
| 13 | 2 | 6 | Panasonic | ERJ-3EKF3323V | resistor, metal film, 0603, 1%, 332k ohm | R1, R2 |
| 14 | 0 | | | | Do Not Install | R4, R5 |
| 15 | 1 | 6 | | | jumper (bend to 0.5" and install 0.125" above PCB) | RJ |
| 16 | 0 | | | | Do Not Install | R10 |
| 17 | 2 | 6 | Murata | BLM18BB471SN1D | inductor, 0603 | L1, L2 |
| 18 | 1 | 6 | Panasonic | LNJ214R8ARA | LED, 0603 (1608), red, 2V or 2.1V | D1 |
| 19 | 2 | 6 | Zetex | ZXM61P02FTA | mosfet, PFET, SOT-23 | Q2, Q4 |
| 20 | 1 | 9 | National Semi | LM317AEMP | IC, voltage regulator, adjustable, SOT-223 | U2 |
| 21 | 2 | 6 | Johnson Components | 111-2223-001 | connector, banana plug | IP+, IP- |
| 22 | 1 | 6 | Molex | 22-11-2082 | connector, straight friction lock header, 8 pin | J1 |
| 23 | 9 | 6 | Keystone Electronics | 5005K | testpoint, 0.063 inch diameter, red | TP1 - TP9 |
| 24 | 4 | 6 | | | screw, zinc metal plated, 4-40, 0.5 inch, Philips | See Construction Notes |
| 25 | 4 | 6 | Keystone Electronics | 1450C | standoff, male/male, zinc metal plated, 4-40, 0.5 inch long, hex shaped | See Construction Notes |
| 26 | 1 | 6 | AMP | 9-146277-0-02 | connector, 2 pin male, 100mil spaced, 25mil square post | J2 |
| | | | | | Note: P/N given may be more than 2 pins; cut to size | |
| 27 | 1 | 6 | 3M | 929950-00 | 2 pin shunt connector | J2 |

| | | | | | | |
|----|---|----|----------|-----------------|---------------------------------------------|----|
| 28 | 1 | 10 | Loranger | 04337 281 X281E | socket, ZIF, SOIC-16 wide, kelvin contacts | U1 |
| 29 | 1 | 10 | | | pcb, as from 85-0350-100 Rev 5 gerber files | |

RoHS compliance not required

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 substitution 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 substituting 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 dissipation 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

ACS710 Demo Board

85-0350-100-BOM

Originator: Shawn Upton

Socket Board

Bill of Materials

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IC's, Connectors, and all other parts::

-unless otherwise stated, package size must be the same (DIP16, SOIC-8, etc)

Manufacturer Part Number Discrepancies

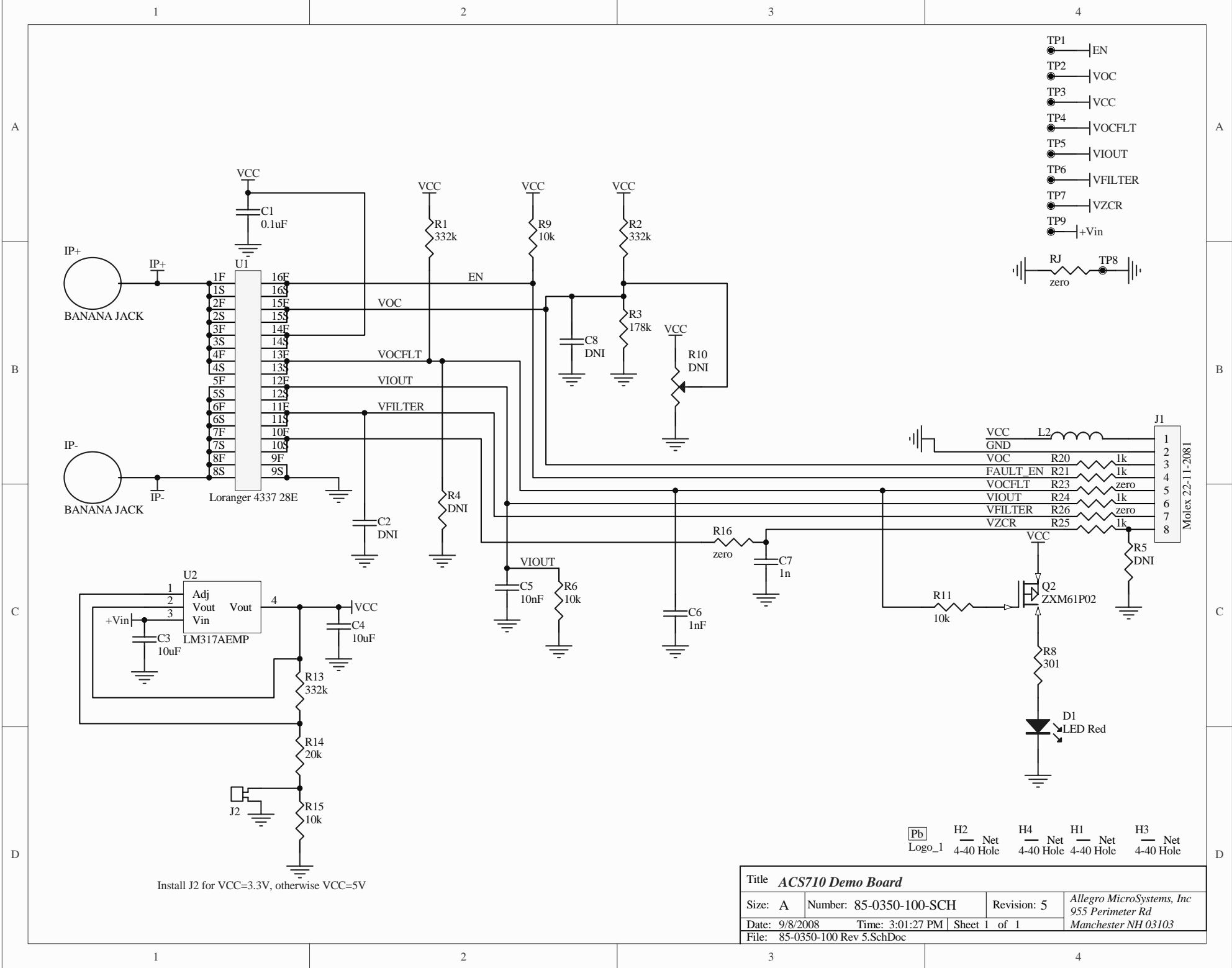
Every attempt will be made to provide a workable part number. However, prefixes and suffixes can vary over time.

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 sufficient.

If package information is not given, please check the manufacturer datasheet for package type.

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



- TP1 — EN
- TP2 — VOC
- TP3 — VCC
- TP4 — VOCFLT
- TP5 — VIOUT
- TP6 — VFILTER
- TP7 — VZCR
- TP9 — +Vin
- RJ — zero

Install J2 for VCC=3.3V, otherwise VCC=5V

| | | | |
|--------------------------------|-------------------------|--------------|-----------------------------------------------|
| Title ACS710 Demo Board | | | |
| Size: A | Number: 85-0350-100-SCH | Revision: 5 | Allegro MicroSystems, Inc 955 Perimeter Rd |
| Date: 9/8/2008 | Time: 3:01:27 PM | Sheet 1 of 1 | Manchester NH 03103 |
| File: 85-0350-100 Rev 5.SchDoc | | | |

[Pb] H2 Net H4 Net H1 Net H3 Net
Logo_1 4-40 Hole 4-40 Hole 4-40 Hole 4-40 Hole