# A5976LP Demo Board APEK

VDD — C10 0.1uF

VDD — U3
- 5 GND VDD
- GP0 1
- GP1 3
- GP2 4
- GP3 6
- 2

Slower SW1    Faster SW2

R9 2k    R8 2k

VDD R7 2k

Large Change

Small Change    SW3

INT_STEP

EXT_STEP

VDD — C11 0.1uF

VDD    VDD
5    10
RNET1
1 2 3 4 5 6 7 8 9

R10 5k

CN1
1 2 3 4 5 6 7 8 9 10

SWB1
1 2 3 4 5 6 7

STEP 19
DIR 3
nENABLE 26
nSLEEP 27
nRESET 17
MS2 12
MS1 13
DECAY 16

VDD — U2
- OUT    IN
- GND    GND
- GND    GND
- N/C    N/C

C9 10uF    C8 0.1uF

JMP1
2 / 1

C4 0.22uF    C1 0.22uF    C2 33uF    C3 33uF

VBB    J1

VCP

C5 0.22uF    CP1
C6 0.22uF    CP2
VREG

VDD — C7 0.1uF

10 20 24 23 22 28 15
VDD VREG CP2 CP1 VCP VBB1 VBB2

U1

STEP
DIR
nENABLE    OUT1A 4
nSLEEP    OUT1B 25
nRESET    OUT2B 18
MS2    OUT2A 11
MS1    SENSE1 1
DECAY    SENSE2 14
REF    nFAULT 2
RC1
RC2
PFD

AGND PGND TAB
7 21 29

VDD

R6 2.49k

VREF

C12 0.1uF    P1 10k

R4 30k    C14 1000pF    RC2

R5 30k    C13 1000pF    RC1

PFD    C15 0.1uF    P2 10k    VDD

nFAULT    SENSE2    SENSE1

R2 0.2    R1 0.2

R3 2k    VDD    LED1

OUT1A 1
OUT1B 2
OUT2B 3
OUT2A 4
J2

8
6
9
5

W1    W2

Allegro Logo

APEK,BOARD,DEMO,A5976LP

85-0757-000-BOM      Rev. 1
All Devices MUST be ROHS Compliant
Page 1 of 1
Bill of Materials      6/22/2015

| Item | Quantity | Designator | value | Description | PartType | Footprint |
|---|---|---|---|---|---|---|
| 1 | 4 | C1, C4, C5, C6 | 0.22uF | 50V Capacitor | Murata GCM21BR71H224KA37L; Digikey 490-4970-1-ND | 0805 |
| 2 | 2 | C2, C3 | 33uF | 50V Capacitor | Chemi-Con HHXB500ARA330MF80G; Digikey 565-4189-1-ND | UCC F80 Cap |
| 3 | 5 | C7, C10, C11, C12, C15 | 0.1uF | 16V Capacitor | Murata GRM219R71C104KA01D; Digikey 490-1683-1-ND | 0805 |
| 4 | 1 | C8 | 0.1uF | 50V Capacitor | TDK C2012X7R1H104K085AA; Digikey 445-7534-1-ND | 0805 |
| 5 | 1 | C9 | 10uF | 25V Capacitor | Murata GRM21BR61E106KA73L; Digikey 490-5523-1-ND | 0805 |
| 6 | 2 | C13, C14 | 1000pF | 50V Capacitor | TDK FK28X7R1H102K; Digikey 445-5246-1-ND | 0.2" Cap |
| 7 | 12 Pins | CN1, JMP1 | | 10-Pin Male Header (Cut from 50-Pin Strip), Cut pins from 50-pin strip. | Samtec TSW-150-07-T-S; Digikey SAM1035-50-ND | 2-pos. shunt, 10pinUSBConn |
| 8 | 4 | CP1, CP2, VCP, VREG | | Mini Test Point | Keystone 5000; Digikey 5000K-ND | Mini Test Point |
| 9 | 22 | DIR, EXT_STEP, INT_STEP, MS1, MS2, nENABLE, nFAULT, nRESET, nSLEEP, OUT1A, OUT1B, OUT2A, OUT2B, PFD, RC1, RC2, SENSE1, SENSE2, DECAY, STEP, VBB, VREF | | Large Test Point | Keystone Electronics 5010; Digikey 5010K-ND | PAD 57 125 TP HB |
| 10 | 4 | | | Bumpon Foot | 3M SJ-5303 (CLEAR); Digikey SJ5303-7-ND | Bumpon Foot |
| 11 | 1 | J1 | | 2-Pin Screw Down Connector | On Shore Technology ED120/2DS; Digikey ED1609-ND | 2-pin screw down connector2 |
| 12 | 1 | J2 | | 4-Pin Screw Down Terminal Block | On Shore ED120/4DS; Digikey ED2227-ND | 4-pin screw down connector |
| 13 | 1 | LED1 | | | Lite-On LTST-C150CKT; Digikey 160-1167-1-ND | 1206 LED |
| 14 | 2 | P1, P2 | 10k | 1/2W Potentiometer | Bourns 3299W-103LF; Digikey 3299W-103LF-ND | Through-hole Trimpot |
| 15 | | | | pcb | 85-0757-001 Rev.1 | |
| 16 | 8 Pins | QR4, QR5, QC13, QC14 | | Sockets for through-hole components | Mill-Max 310-43-164-41-001000; Digikey ED6264-ND | |
| 17 | 2 | R1, R2 | 0.2 | 2W Resistor | TT Electronics LRC-LR2512LF-01-R200F; Digikey 989-1065-1-ND | 2512 (6432 Metric) - duplicate |
| 18 | 4 | R3, R7, R8, R9 | 2k | 1/8W Resistor | Panasonic ERJ-6GEYJ202V; Digikey P2.0KACT-ND | 0805 |
| 19 | 2 | R4, R5 | 30k | 1/4W Resistor | Yageo MFR-25FBF-30K1; Digikey 30.1KXBK-ND | AXIAL-0.3 |
| 20 | 1 | R6 | 2.49k | 1/8W Resistor | Rohm MCR10EZPF2491; Digikey RHM2.49KCRCT-ND | 0805 |
| 21 | 1 | R10 | 5k | 1/8W Resistor | Panasonic ERJ-6ENF4991V; Digikey P4.99KCCT-ND | 0805 |
| 22 | 1 | RNET1 | | 8 Bussed 2.2k resistors | Panasonic EXB-A10P222J; Digikey U7222CT-ND | EXBA Resistor Network |
| 23 | 2 | SW1, SW2 | | Surface-mount momentary switch | C&K Components KSC201GLFS; Digikey 401-1755-1-ND | KSC201GLFS |
| 24 | 1 | SW3 | | Dual SPDT Switch | Grayhill 76STC02T; Digikey 76STC02T-ND | 76STC02T |
| 25 | 1 | SWB1 | | 7-Position Through-hole Switch | CTS 208-7; Digikey CT2087-ND | CTS 208-7 Switch |
| 26 | 1 | U1 | | Microstepping DMOS Driver with Translator | A5976LP | 28LP |
| 27 | 1 | U2 | 5V | Linear Voltage Regulator | National LM2936HVMA-5.0/NOPB; Digikey LM2936HVMA-5.0/NOPB-ND | LM2936HVMA |
| 28 | 1 | U3 | | 8-Bit Flash Microcontroller (MUST BE PROGRAMMED BEFORE INSTALLATION) | Microchip PIC10F206T-I/OT; Digikey PIC10F206T-I/OTCT-ND | SOT23-6 |
| 29 | 2 | W1, W2 | | 22 Gauge Buss Wire (300mils above pcb) | | Scope Ground |
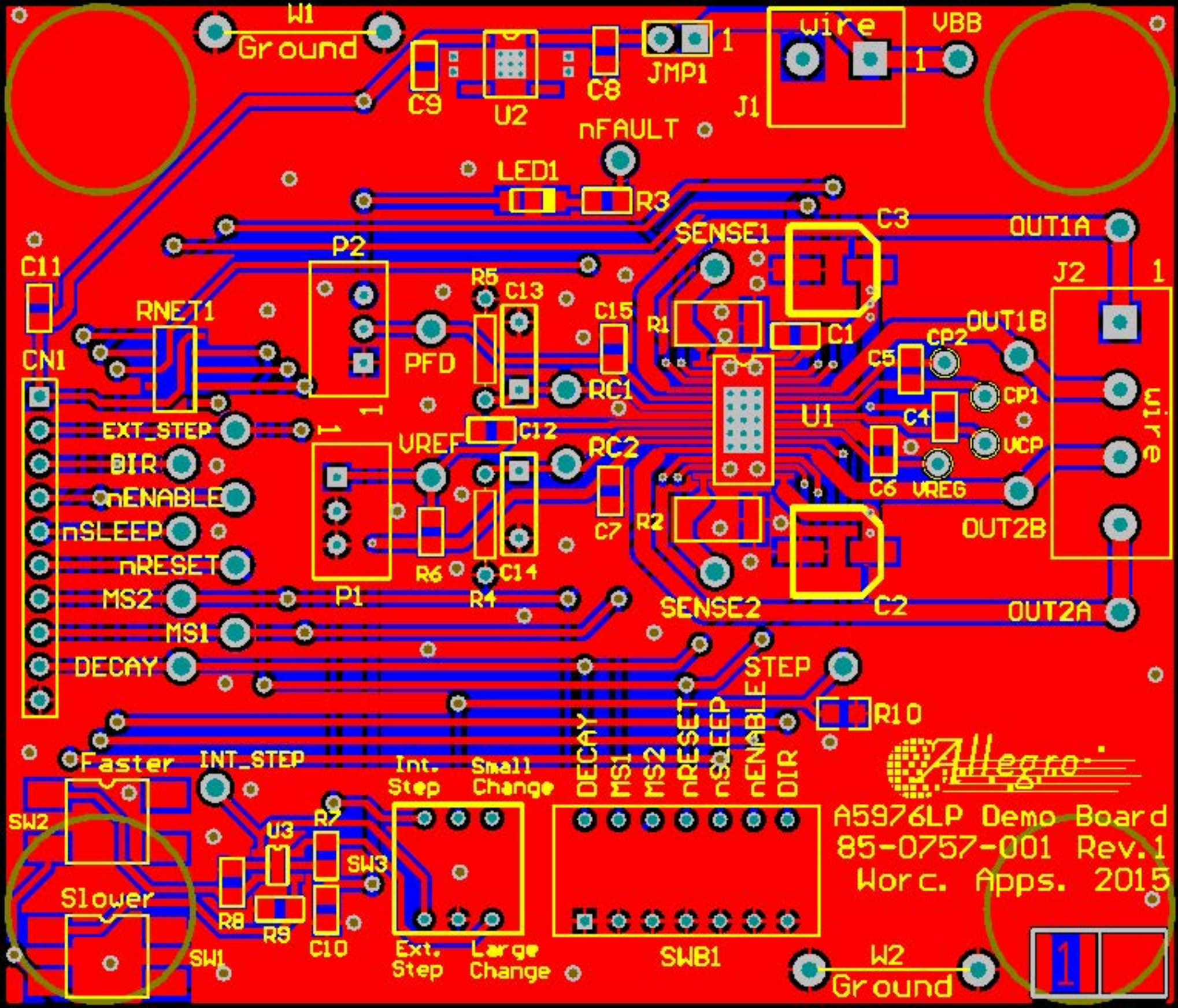
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85-0757-001 Rev.1
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