
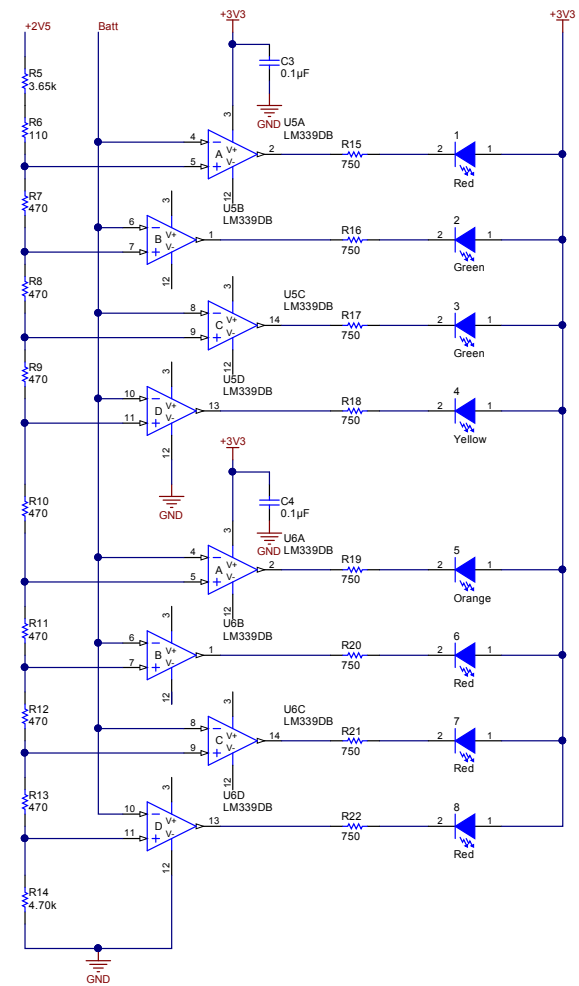
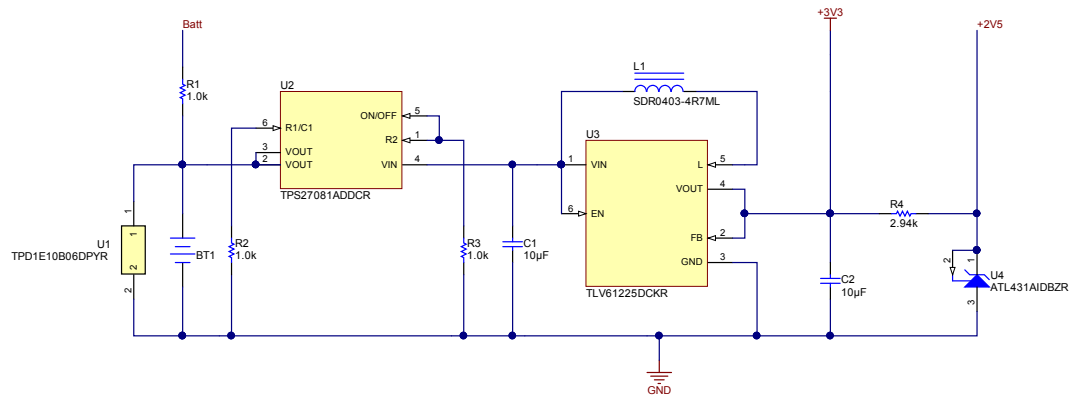
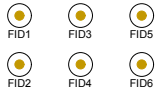


1	2	3	4	5	6										
<div>Place Block Diagram here (if appropriate) or delete this text box. If using a block diagram from another tool, save the picture as a .bmp file. Then, use menu Place Drawing Tools Graphic to insert the .png/.svg/.bmp file on the schematic.</div>															
<div><div>Revision History</div><table><tr><td>Rev</td><td>ECN #</td><td>Approved Date</td><td>Approved by</td><td>Notes</td></tr><tr><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td></tr></table></div>						Rev	ECN #	Approved Date	Approved by	Notes	N/A	N/A	N/A	N/A	N/A
Rev	ECN #	Approved Date	Approved by	Notes											
N/A	N/A	N/A	N/A	N/A											
<div><div><div>Orderable: N/A</div><div>Designed for: Public Release</div><div>Mod. Date: 5/27/2015</div></div><div><div>TID #:</div><div>TIDA-00670</div><div>Project Title: AA Battery Voltage Indicator</div></div><div><div>Number: TIDA-00670</div><div>Rev: E1</div><div>Sheet Title:</div><div>Assembly Variant: [No Variations]</div><div>Sheet: 1 of 3</div></div><div><div>Drawn By:</div><div>File: TIDA-00670_CoverSheet.SchDoc</div><div>Size: B</div></div><div><div>Engineer: Michael Schultis</div><div>Contact: e2e.ti.com/support/power_management/etc_power</div></div></div> <div><div>Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your applic.</div><div><div> TEXAS INSTRUMENTS</div><div>http://www.ti.com</div><div>© Texas Instruments 2015</div></div></div>															
1	2	3	4	5	6										





PCB Number: TIDA-00670
PCB Rev: E1

PCB
LOGO
Texas Instruments

PCB
LOGO
Pb-Free Symbol

You should delete the nylon screws/standoffs and/or the bump-ons as needed for your design (or substitute other parts from Hardware.IntLib). Bump-ons are cheaper, but provide less clearance.

Deleting anything else from this page may result in your EVM submission being rejected (until you add them back).

Update the Label Text in the Label Table as needed for each Assembly Variant.

You can delete this note too.

Label Table	
Variant	Label Text
001	ChangeMe!
002	ChangeMe!

ZZ1
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

A

B

C

D

A

B

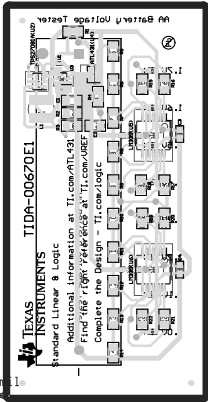
C

D

This document can handle board shapes up to 7.9in x 10in, although our panel vendors top out at 7in x 10in.
To re-size the board shape, do the following:
Select lines on MI Board Outline and delete (easy in single layer mode...shift+s)
Draw a rectangle using lines (example will be for a 4 x 6 board
Enter Place Line mode (keyboard pl)
keyboard jo to jump to origin, hit enter
keyboard jl to jump to location, set x to 6000, hit enter twice
keyboard jl to jump to location, set x to 6000 and y to 4000, hit enter twice
keyboard jl to jump to location, set x to 0 and y to 4000, hit enter twice
keyboard jo to jump to origin, hit enter
Hit ESC twice to exit place line mode
Select lines on MI Board Outline
Menu DesignBoard ShapeDefine from Selected Objects (keyboard dsd)
To define a Keep-Out that mirrors the board outline:
Menu DesignBoard ShapeCreate Primitives From Board Shape (keyboard dsp)
Set the Keep-Out Layer as the layer, set width as preferred
Ensure Route Tool Outline is selected, hit enter

If you re-size the board, don't forget to move the drill table strings on the Drill Drawing Layer...they should be just to the right of your board shape

Z21 ■ These assemblies are ESD sensitive, ESD precautions shall be observed.
Z22 ■ These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.
Z23 ■ These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.



COMPONENTS MARKED 'DNP' SHOULD NOT BE ORDERED. TO ORDER, REMOVE 'DNP' FROM PART NUMBER.
ASSEMBLY VARIANT: [No Variations]

ADDITIONAL COMMENTS: BOARD TOP/BOE	13	BOARD #S: 300A-00670E1	DATE: 01/11/2011	SUN 3:28:16 PM	DESIGNED BY: MICHAEL SCHULTIS
LAYER NAME = TOP OVERLAY	DESIGNED BY: MICHAEL SCHULTIS	TID #: 05300A-00670E1	# DIT		
PLOT NAME: TID00670E1	COMPOSITE PLOT	GENERATED: 9/22/2010 4:25:45 PM	TEXAS INSTRUMENTS		

Texas Instruments (TI) and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. TI and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. TI and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Layer	Name	Material	Thickness	Constant	Board Layer Stack
1	Top Overlay				
2	Top Solder	Solder Resist	0.40mil	3.5	
3	Top Layer	Copper	1.40mil		
4	Dielectric1	FR-4	59.20mil	4.8	
5	Bottom Layer	Copper	1.40mil		
6	Bottom Solder	Solder Resist	0.40mil	3.5	
7	Bottom Overlay				

DESIGN INFORMATION	
MIN. TRACK WIDTH:	8_MIL
MIN. CLEARANCE:	0.2 mm
MIN. VIA PAD SIZE:	24_MIL
MINIMUM ANNULAR RING 0.05mm (2MIL) EXTERNAL	
PER IPC-D-275 CLASS 2 LEVEL C	
REGISTRATION TOLERANCES: METAL +/- 5_MIL, HOLES +/- 3_MIL	
MATERIAL:	
<input type="checkbox"/> FR-408	<input checked="" type="checkbox"/> FR-4 High Tg <input type="checkbox"/> OTHER
THICKNESS: <input checked="" type="checkbox"/> 62 MIL (1.6mm) +/-10%	<input type="checkbox"/> OTHER
TOLERANCE:	<input checked="" type="checkbox"/> ANSI IPC-6012 TYPE 3 CLASS 2
	<input type="checkbox"/> OTHER +/-
BOW & TWIST:	<input checked="" type="checkbox"/> ANSI IPC-6012 TYPE 3 CLASS 2
	<input type="checkbox"/> OTHER +/-
DRILLING:	
REFERENCE:	<input checked="" type="checkbox"/> AS SHOWN <input checked="" type="checkbox"/> NC_DRILL FILES
PTH MIN COPPER THICKNESS:	<input checked="" type="checkbox"/> 1MIL <input type="checkbox"/> OTHER
BOARD FINISH:	
SILKSCREEN:	<input checked="" type="checkbox"/> TOP <input checked="" type="checkbox"/> BOTTOM
SILKSCREEN COLOR:	<input checked="" type="checkbox"/> WHITE <input type="checkbox"/> OTHER
SOLDER RESIST COLOR:	<input checked="" type="checkbox"/> GREEN <input type="checkbox"/> BLUE <input type="checkbox"/> OTHER
SURFACE FINISH:	<input checked="" type="checkbox"/> IMMERSION GOLD (ENG) <input type="checkbox"/> ENERPIG
	<input type="checkbox"/> IMM. TIN/SILVER OR EQUIV <input type="checkbox"/> OTHER
ARRAY/PANEL:	<input type="checkbox"/> CUT AND TRIM PER MECH LAYER 1
	<input type="checkbox"/> N.C. ROUTE <input checked="" type="checkbox"/> V. SCORE
CERTIFICATION: MATERIALS AND WORKMANSHIP FOR ALL PCBs TO MEET OR EXCEED THE REQUIREMENTS OF:	
<input checked="" type="checkbox"/> ANSI IPC-A-600F CLASS ->	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3
<input checked="" type="checkbox"/> UL 94V-0	<input checked="" type="checkbox"/> RoHS <input type="checkbox"/> OTHER PER ORDER
ADDITIONAL REQUIREMENTS:	
MICROSECTION:	<input type="checkbox"/> YES
BARE BOARD ELEC. TEST:	<input type="checkbox"/> NONE <input checked="" type="checkbox"/> REQUIRED <input type="checkbox"/> PER ORDER
MANUFACTURER'S UL:	<input type="checkbox"/> RAIL <input type="checkbox"/> METAL <input checked="" type="checkbox"/> SILK



PROJECT TITLE: AA Battery Voltage Indicator	
DESIGNED FOR: Public Release	
FILE NAME: TIDA-00670_TID.PcbDoc	
ENGINEER: Michael Schultis	LAYOUT BY: Michael Schultis
SCALE: 1.00	
ALTIM DESIGNER VERSION: 14.3.18.45973	

Comment	Description	Designator	Footprint	LibRef	Quantity
Printed Circuit Board	Printed Circuit Board	PCB1		PCB	1
LS L29K-G1J2-1-Z	LED, Red, SMD	1, 6, 7, 8	LS L29K_Red	LS L29K-G1J2-1-Z	4
LG L29K-G2J1-24-Z	LED, Green, SMD	2, 3	LG L29K_GREEN	LG L29K-G2J1-24-Z	2
LY L29K-H1K2-26-Z	LED, Yellow, SMD	4	LY L29K_Yellow	LY L29K-H1K2-26-Z	1
LO L29K-J2L1-24-Z	LED, Orange, SMD	5	LO L29K_Orange	LO L29K-J2L1-24-Z	1
1015	AA Battery Holder, Through-hole mount	BT1	Keystone_1015	1015	1
C2012X5R0J106M	CAP, CERM, 10 μ F, 6.3 V, +/- 20%, X5R, 0805	C1, C2	0805_HV	C2012X5R0J106M	2
GRM188R70J104KA01D	CAP, CERM, 0.1 μ F, 6.3 V, +/- 10%, X7R, 0603	C3, C4	0603	GRM188R70J104KA01D	2
Fiducial	Fiducial mark. There is nothing to buy or mount.	FID1, FID2, FID3, FID4, FID5, FID6	Fiducial10-20	Fiducial	6
SDR0403-4R7ML	Inductor, Drum Core, Ferrite, 4.7 μ H, 1.7 A, 0.094 ohm, SMD	L1	SDR0403	SDR0403-4R7ML	1
ERJ-6GEYJ102V	RES, 1.0 k, 5%, 0.125 W, 0805	R1, R2, R3	0805_HV	ERJ-6GEYJ102V	3
ERJ-6ENF2941V	RES, 2.94 k, 1%, 0.125 W, 0805	R4	0805_HV	ERJ-6ENF2941V	1
RR1220P-3651-D-M	RES, 3.65 k, 0.5%, 0.1 W, 0805	R5	0805_HV	RR1220P-3651-D-M	1
RR1220P-111-D	RES, 110, 0.5%, 0.1 W, 0805	R6	0805_HV	RR1220P-111-D	1
RR1220P-471-D	RES, 470, 0.5%, 0.1 W, 0805	R7, R8, R9, R10, R11, R12, R13	0805_HV	RR1220P-471-D	7
RR1220P-472-D	RES, 4.70 k, 0.5%, 0.1 W, 0805	R14	0805_HV	RR1220P-472-D	1
ERJ-6GEYJ751V	RES, 750, 5%, 0.125 W, 0805	R15, R16, R17, R18, R19, R20, R21, R22	0805_HV	ERJ-6GEYJ751V	8
TPD1E10B06DPYR	ESD in 0402 Package with 10 pF Capacitance and 6 V Breakdown, 1 Channel, -40 to +125 degC, 2-pin X2SON (DPY), Green (RoHS & no Sb/Br)	U1	DPY0002A	TPD1E10B06DPYR	1
TPS27081ADDCR	1.2V - 8V, 3A PFET High Side Load Switch with Level Shift & Adjustable Slew Rate Control, DDC0006A	U2	DDC0006A_N	TPS27081ADDCR	1
TLV61225DCKR	SINGLE CELL HIGH EFFICIENT STEP-UP CONVERTER, DCK0006A	U3	DCK0006A_N	TLV61225DCKR	1
ATL431AIDBZR	2.5V Low Iq Adjustable Precision Shunt Regulator, DBZ0003A	U4	DBZ0003A_N	ATL431AIDBZR	1
LM339DB	Quad Comparator, DB0014A	U5, U6	DB0014A_N	LM339DB	2