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3	Voltage Settings SUNSTAR传感与控制 <a href="http://www.sensor-ic.com/">http://www.sensor-ic.com/</a> TEL:0755-83376549 FAX:0755-83376182 E-MAIL:szsss20@163.com
4	MCU-Sensor Interface
5	USB Interface Circuitry

**Revisions**

Rev	Description	Date
A	Original Design	4-15-09
B	Correction to Q3 pin 3, SCL_High to SDA_High. Reconnect Q4 pin 2 and Pin3. Also, replaced 6 and 30 pin Header Connector with having shorter pin high.	6-8-09
C	Replaced connector J4	7-30-09

		<b>RASG - Proximity</b> 2100 E. Elliot Rd Tempe, AZ 85284	
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Designer: B. Osolinach/C.Teegarden		Drawing Title: <b>KITMPR121EVM</b>	
Drawn by: S. Mejia		Page Title: <b>Title Page</b>	
Approved: B. Osolinach		Size B	Document Number SCH-25890 PDF: SPF-25890
Date: Thursday, July 30, 2009		Rev C	Sheet 1 of 5

1. Unless Otherwise Specified:

All resistors are in ohms, most are 1%, 1/10 Watt, Otherwise are 5%, 1/8 Watt  
All capacitors are in uF, some are 10% or 20%  
All voltages are DC  
All polarized capacitors are tantalum


2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

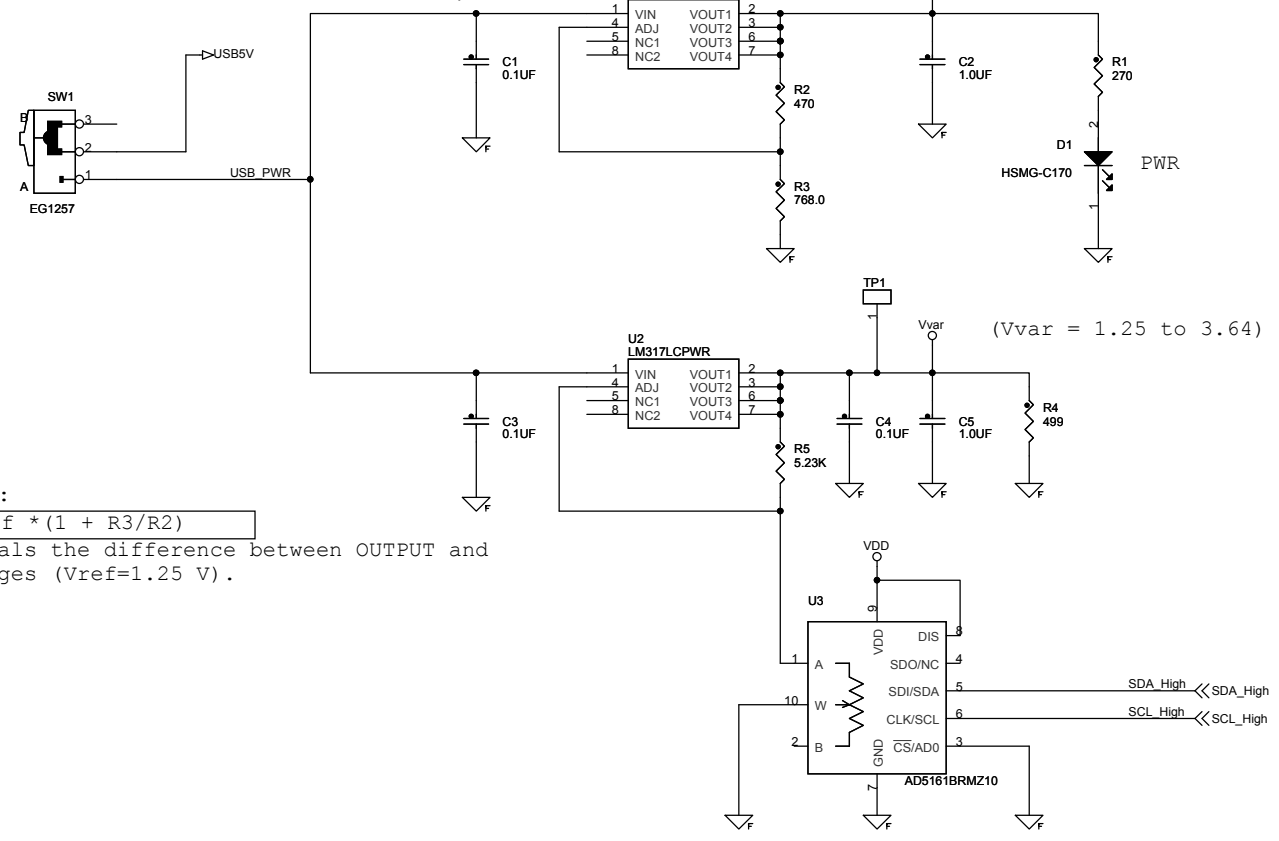
3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:

\_B Denotes - Active-Low Signal  
<> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

		
Drawing Title: <b>KITMPR121EVM</b>		
Page Title: <b>NOTES</b>		
Size B	Document Number SCH-25890 PDF: SPF-25890	Rev C
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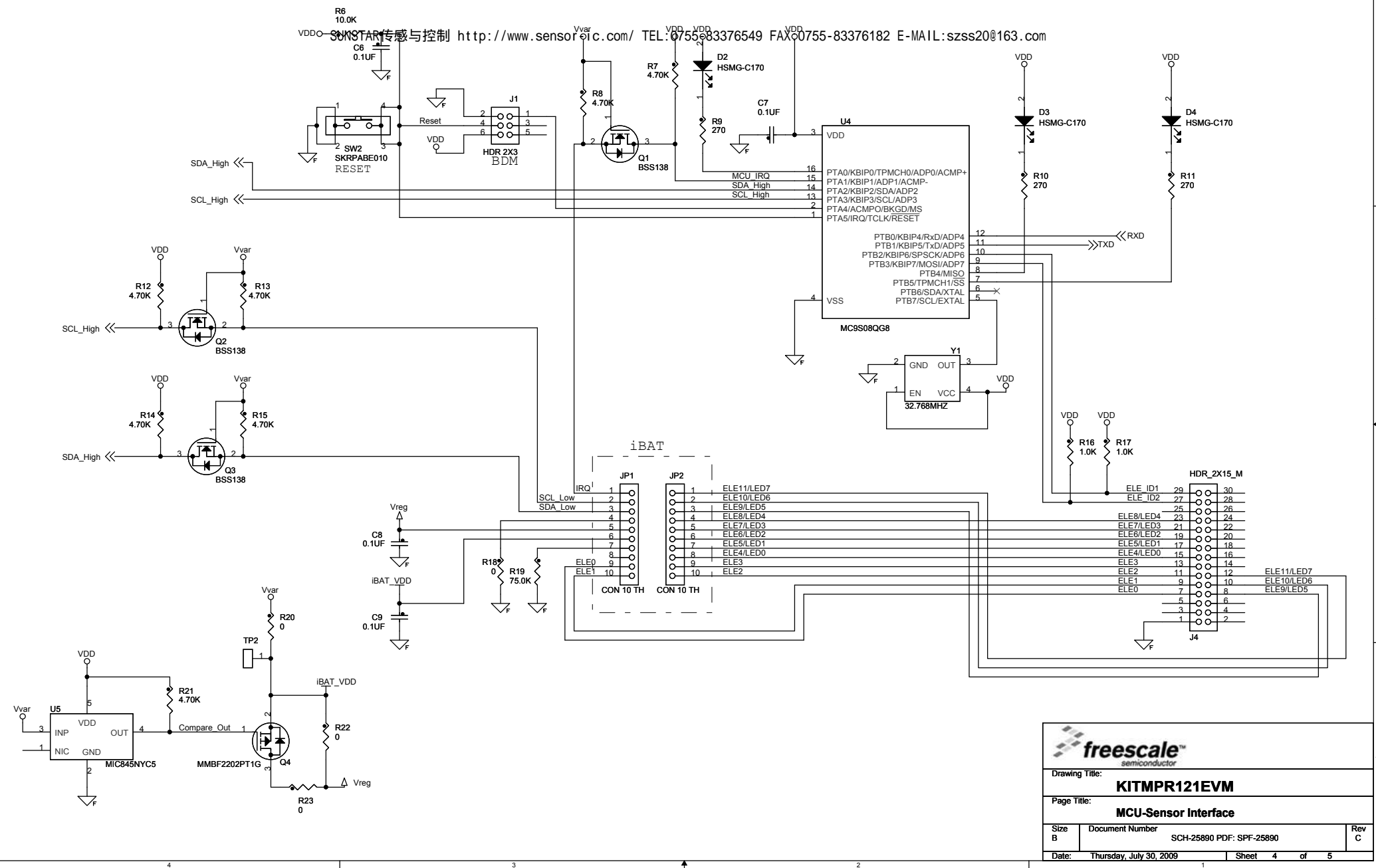


EXAMPLE EQUATION:

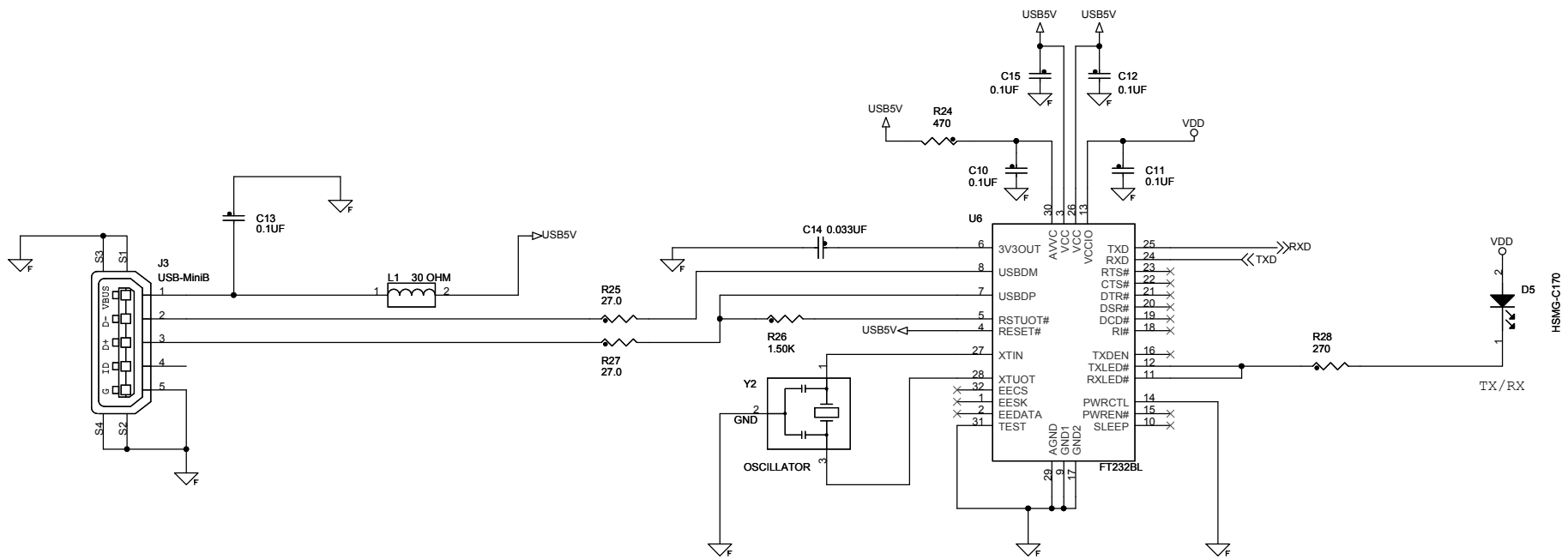
$$VDD = Vref * (1 + R3/R2)$$


Where: Vref equals the difference between OUTPUT and ADJUSTMENT voltages (Vref=1.25 V).

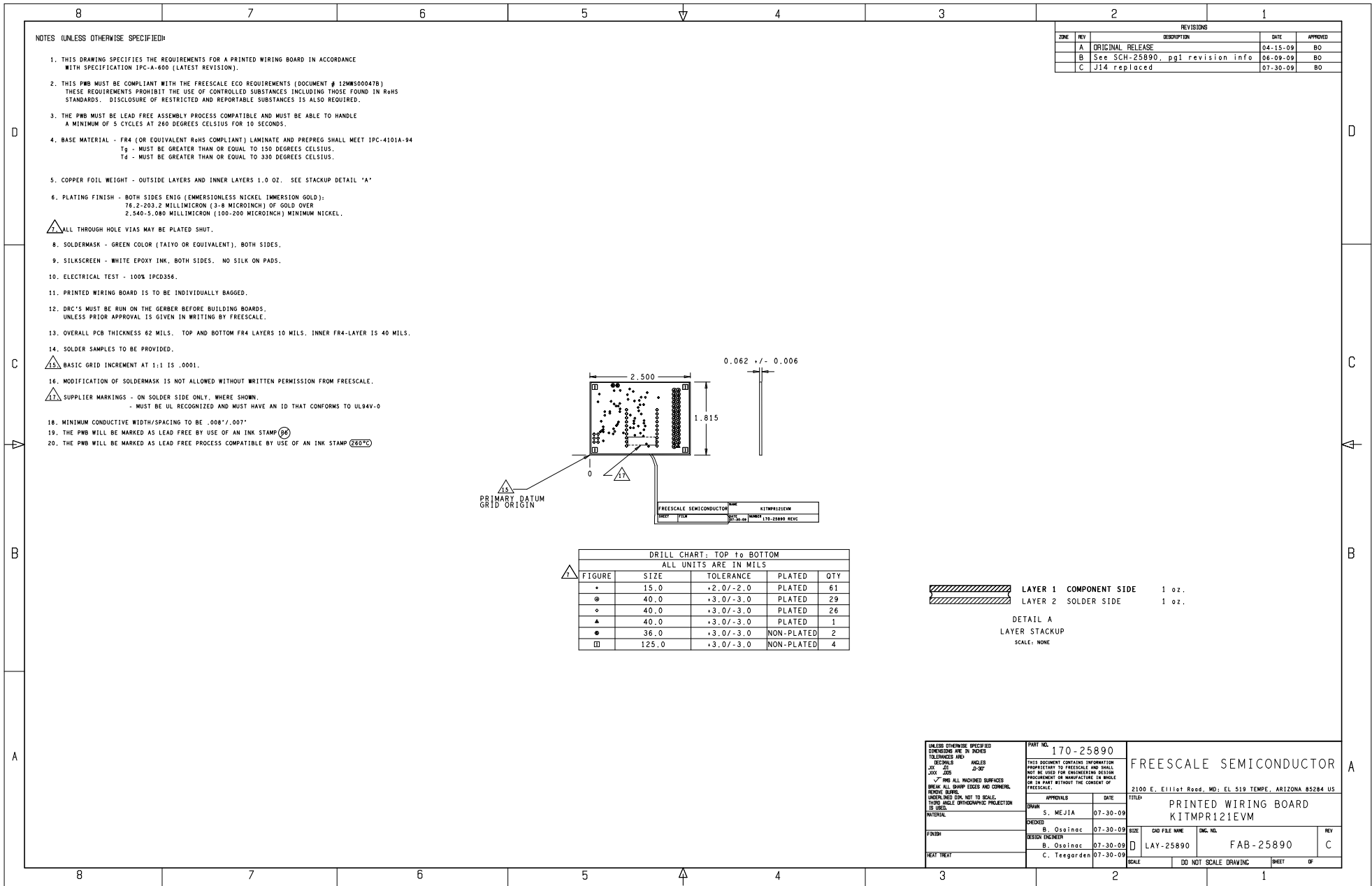
Drawing Title: <b>KITMPR121EVM</b>		
Page Title: <b>Voltage Settings</b>		
Size B	Document Number SCH-25890 PDF: SPF-25890	Rev C
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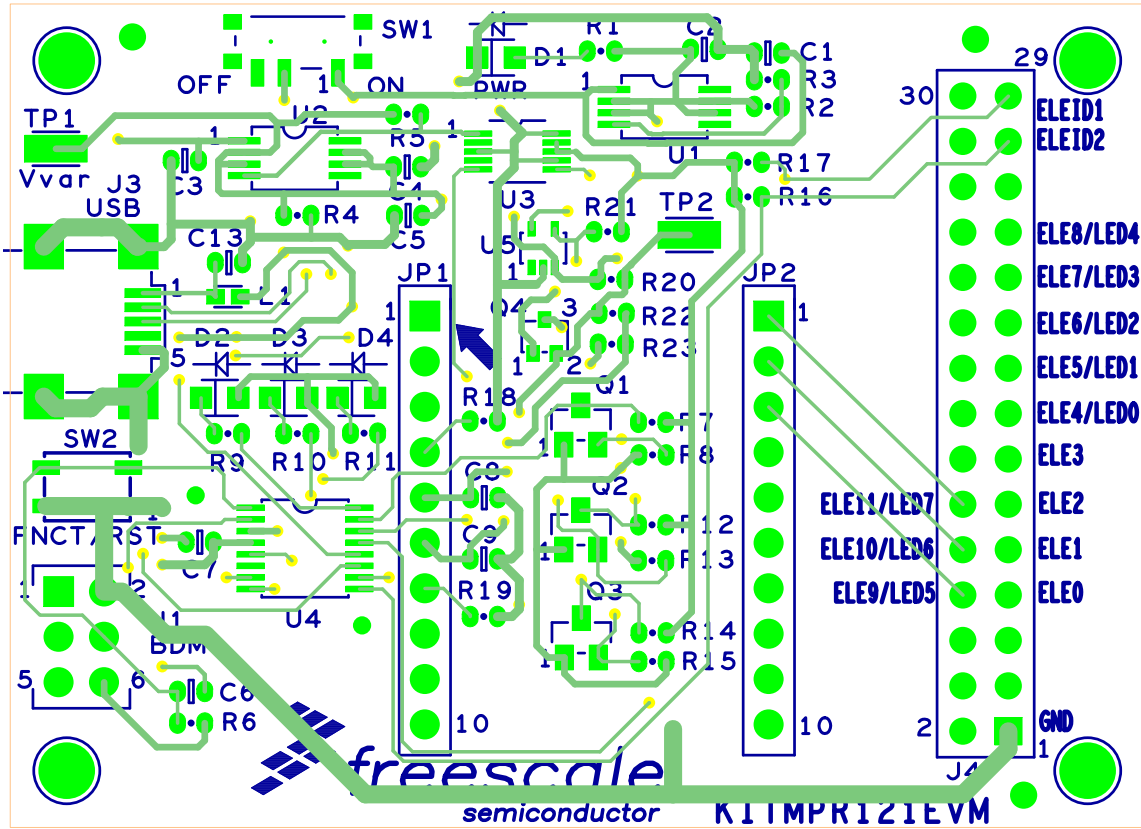


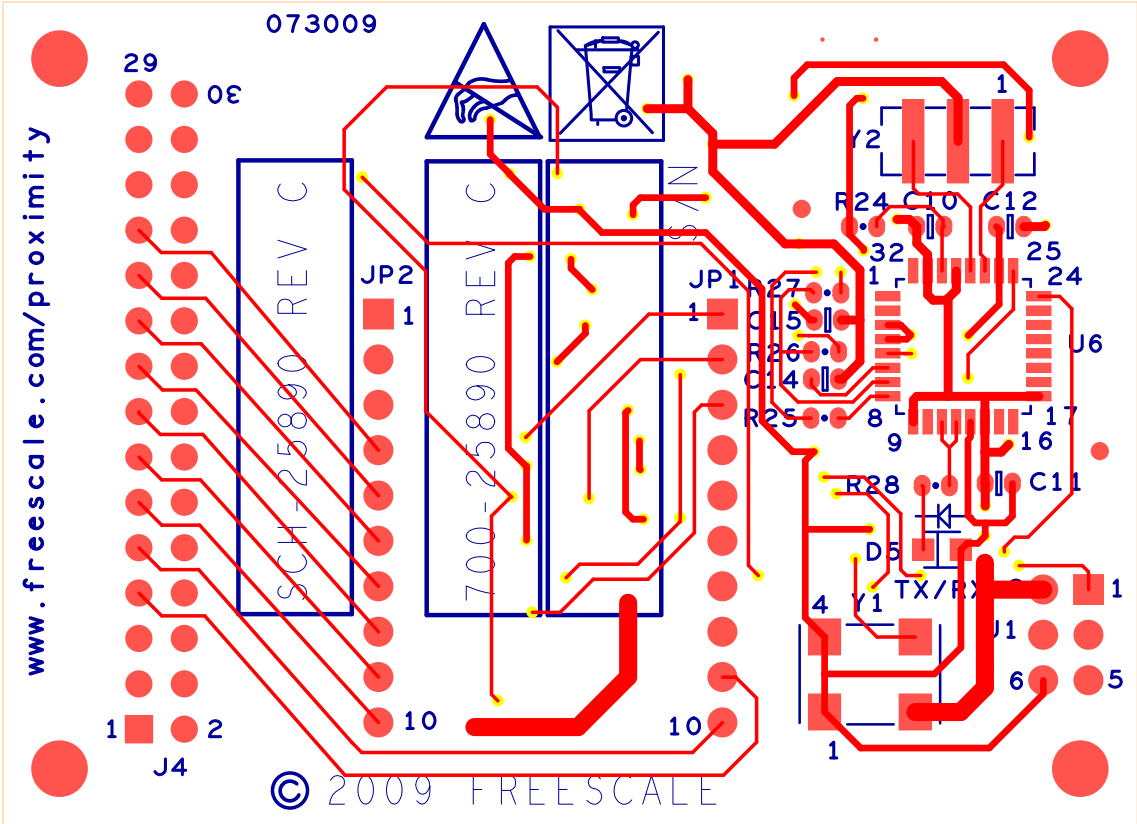
Drawing Title: <b>KITMPR121EVM</b>	
Page Title: <b>MCU-Sensor Interface</b>	
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 <b>freescale™</b> semiconductor		
Drawing Title:		
<b>KITMPR121EVM</b>		
Page Title:		
<b>USB Interface Circuitry</b>		
Size	Document Number	Rev
B	SCH-25890 PDF: SPF-25890	C
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**Revisions**

Rev	Description	Date
A	Original Design	4-15-09
B	updated text pg3	6-12-09

		<b>RASG - Proximity</b> 2100 E. Elliot Rd Tempe, AZ 85284	
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Designer: B. Osoinach		Drawing Title: <b>MPR121 DAUGHTER BOARD</b>	
Drawn by: S. Mejia		Page Title: <b>TITLE PAGE</b>	
Approved: B. Osoinach		Size B	Document Number SCH-76723 PDF: SPF-76723
Date: Friday, June 12, 2009		Sheet 1	of 3

1. Unless Otherwise Specified:

All resistors are in ohms, most are 1%, 1/10 Watt, Otherwise are 5%, 1/8 Watt  
All capacitors are in uF, some are 10% or 20%  
All voltages are DC  
All polarized capacitors are tantalum


2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

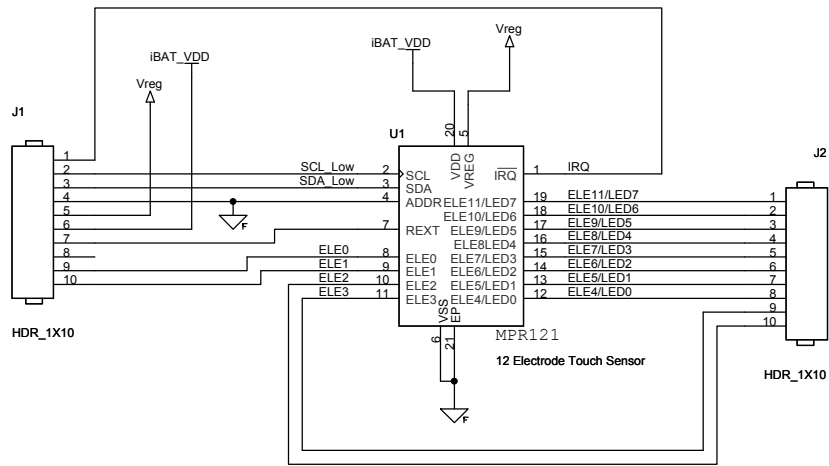
3. Device type number is for reference only. The number varies with the manufacturer.

4. Special signal usage:

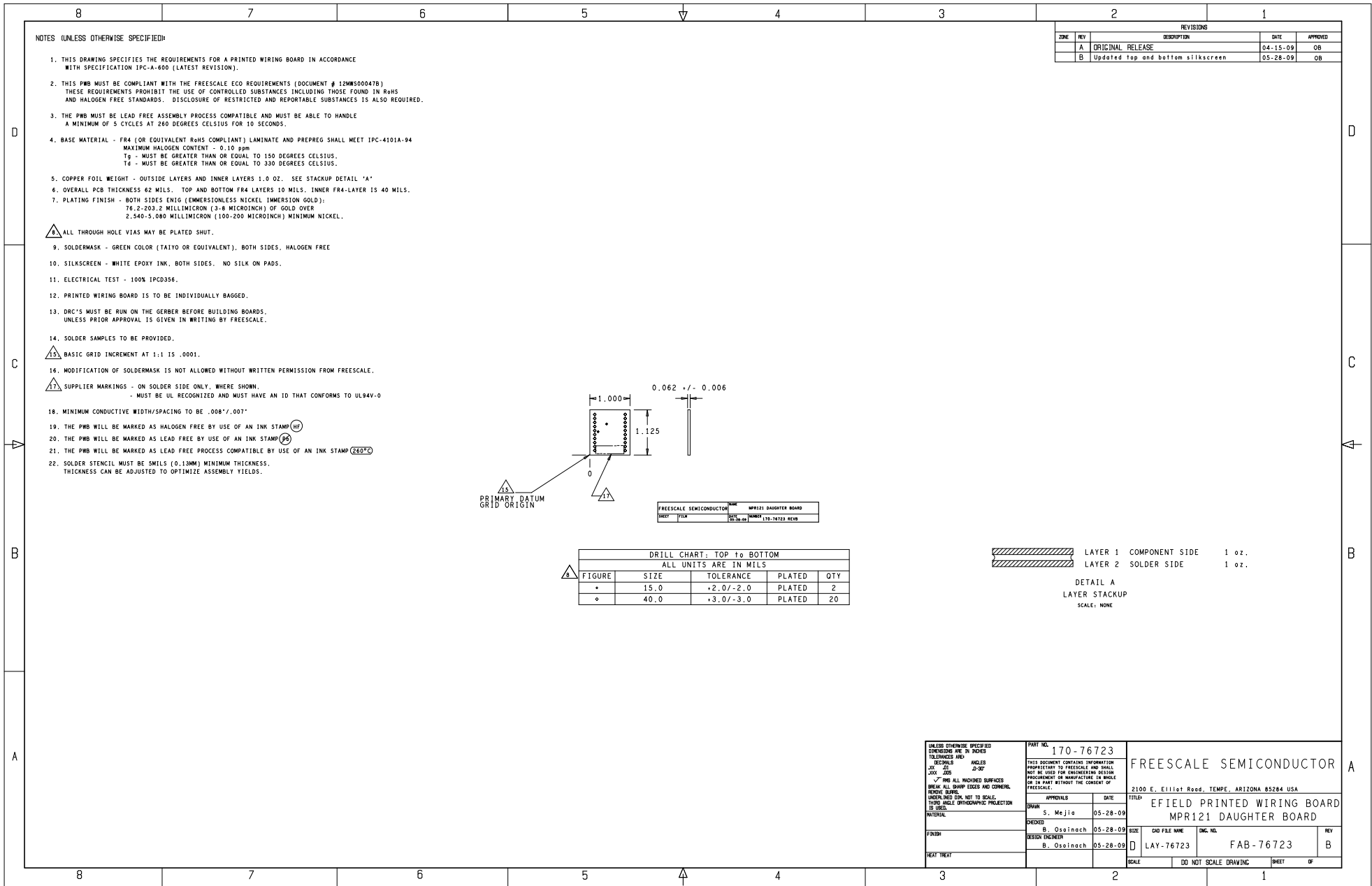
\_B Denotes - Active-Low Signal  
<> or [] Denotes - Vectored Signals

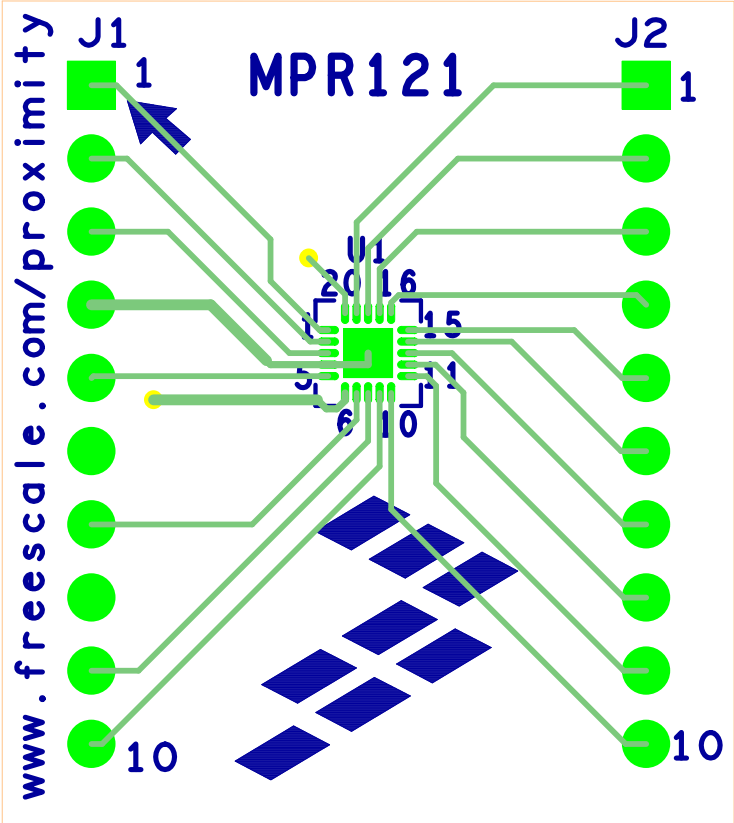
5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

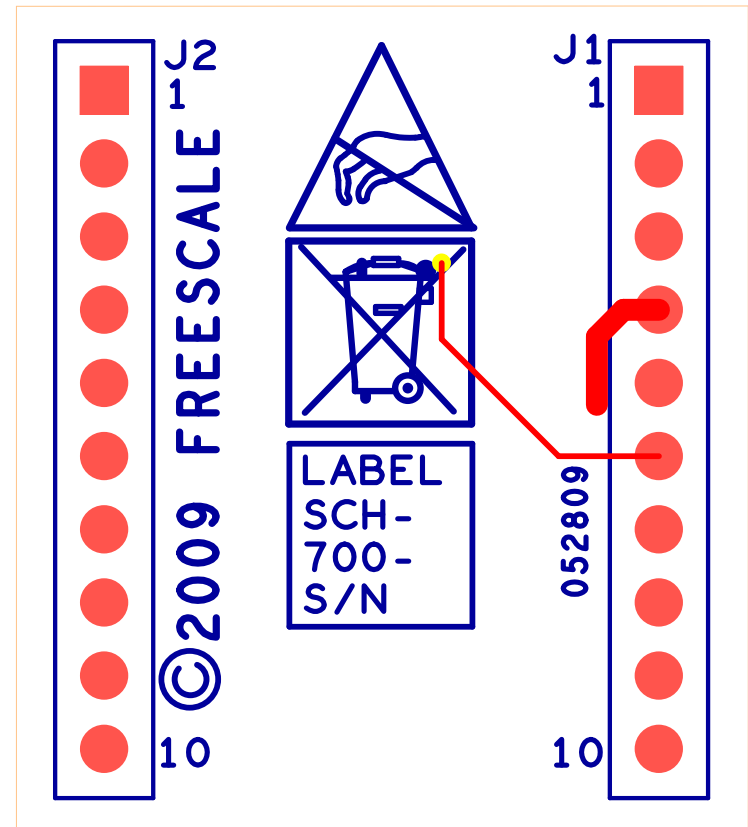
			
Drawing Title: <b>MPR121 DAUGHTER BOARD</b>			
Page Title: <b>NOTES</b>			
Size B	Document Number SCH-76723 PDF: SPF-76723	Rev B	
Date: Friday, June 12, 2009	Sheet 2 of 3		



Drawing Title: <b>MPR121 DAUGHTER BOARD</b>	
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**Revisions**

Rev	Description	Date
1	Original Design	6-9-09

		<b>RASG - Proximity</b> 2100 E. Elliot Rd Tempe, AZ 85284	
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Designer: B. Osoinach		Drawing Title: <b>PROXIMITY-IBAT</b>	
Drawn by: S. Mejia		Page Title: <b>TITLE PAGE</b>	
Approved: B. Osoinach		Size B	Document Number SCH-76753 PDF: SPF-76753
Date: Thursday, June 11, 2009		Sheet 1 of 3	Rev A

1. Unless Otherwise Specified:

All resistors are in ohms, most are 1%, 1/10 Watt, Otherwise are 5%, 1/8 Watt  
All capacitors are in uF, some are 10% or 20%  
All voltages are DC  
All polarized capacitors are tantalum


2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

3. Device type number is for reference only. The number varies with the manufacturer.

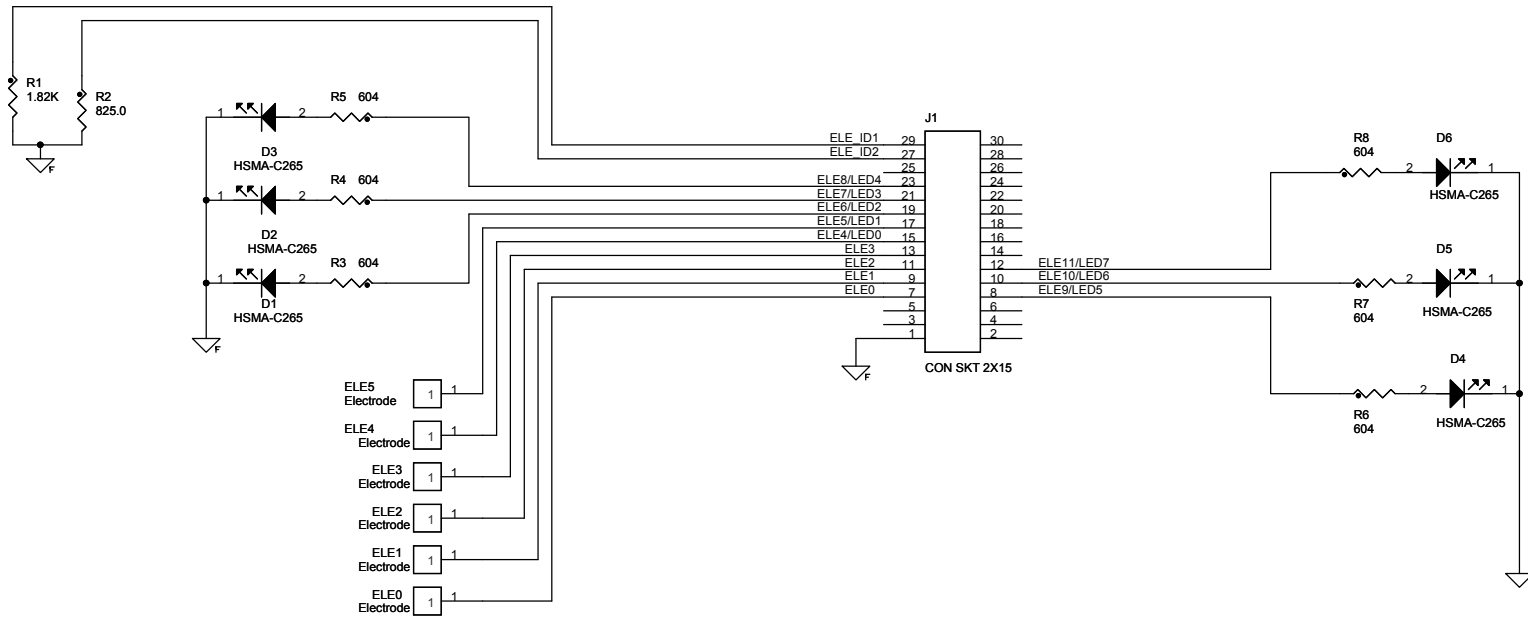
4. Special signal usage:

\_B Denotes - Active-Low Signal  
<> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

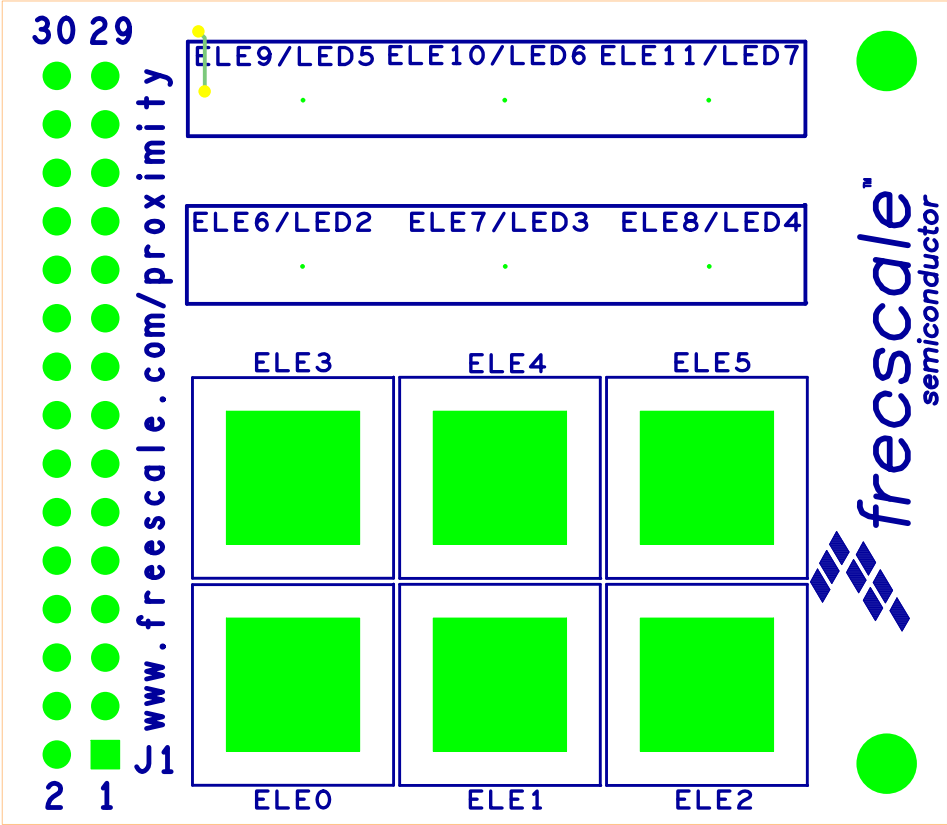
		
Drawing Title: <b>PROXIMITY-IBAT</b>		
Page Title: <b>NOTES</b>		
Size B	Document Number SCH-76753 PDF: SPF-76753	Rev A
Date: Tuesday, June 09, 2009	Sheet 2 of 3	1

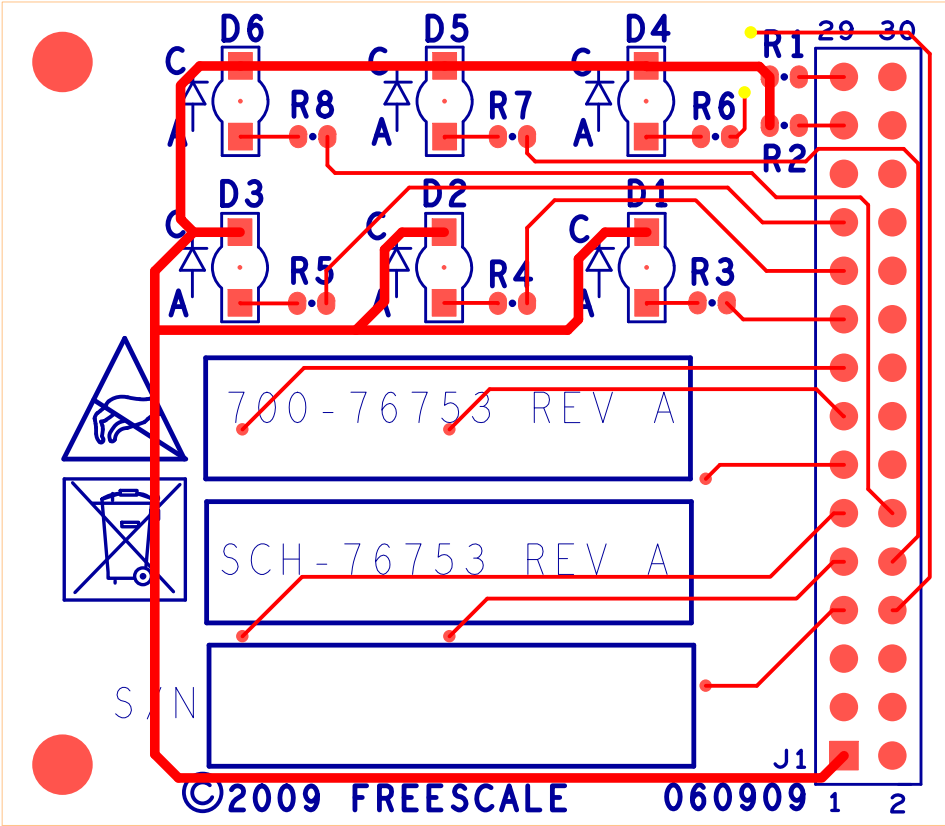




Drawing Title: <b>PROXIMITY-IBAT</b>	
Page Title: <b>6 LED 6 ELECTRODE</b>	
Size B	Document Number SCH-76753 PDF: SPF-76753
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**Revisions**

2	Notes
3	12 ELECTRODES SUNSTAR传感与控制 <a href="http://www.sensor-ic.com/">http://www.sensor-ic.com/</a> TEL:0755-83376549 FAX:0755-83376182 E-MAIL:szsss20@163.com

Rev	Description	Date
1	Original Design	06-09-09

		<b>RASG - Proximity</b> 2100 E. Elliot Rd Tempe, AZ 85284	
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Designer: B. Osinach		Drawing Title: <b>PROXIMITY-IBAT</b>	
Drawn by: S. Mejia		Page Title: <b>TITLE PAGE</b>	
Approved: B. Osinach		Size B	Document Number SCH-76724 PDF: SPF-76724
Date: Thursday, June 11, 2009		Sheet 1 of 3	Rev A

1. Unless Otherwise Specified:

All resistors are in ohms, most are 1%, 1/10 Watt, Otherwise are 5%, 1/8 Watt  
All capacitors are in uF, some are 10% or 20%  
All voltages are DC  
All polarized capacitors are tantalum


2. Interrupted lines coded with the same letter or letter combinations are electrically connected.

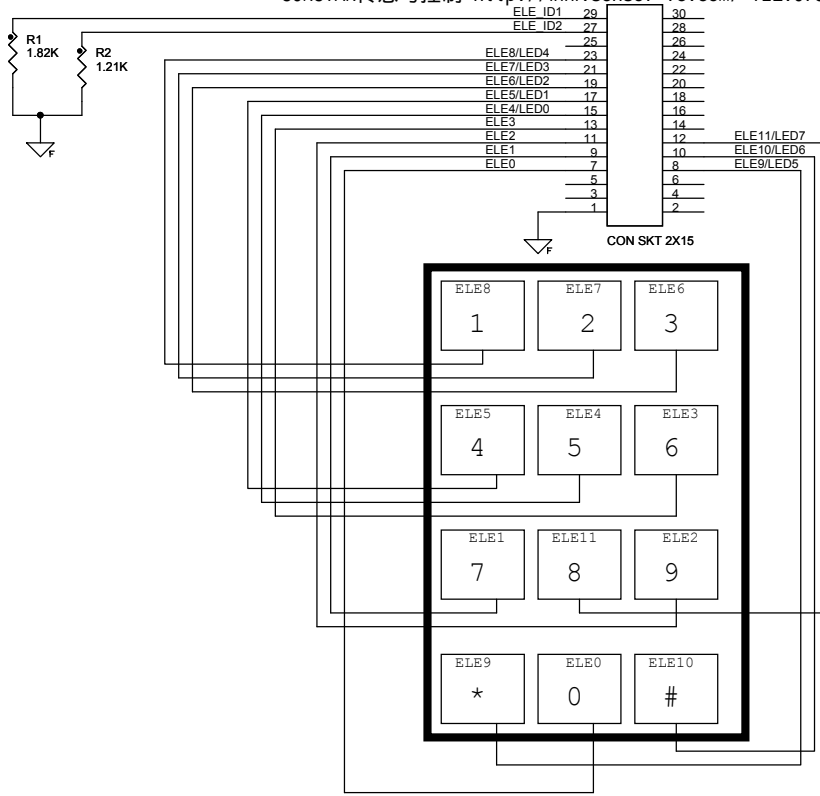
3. Device type number is for reference only. The number varies with the manufacturer.


4. Special signal usage:

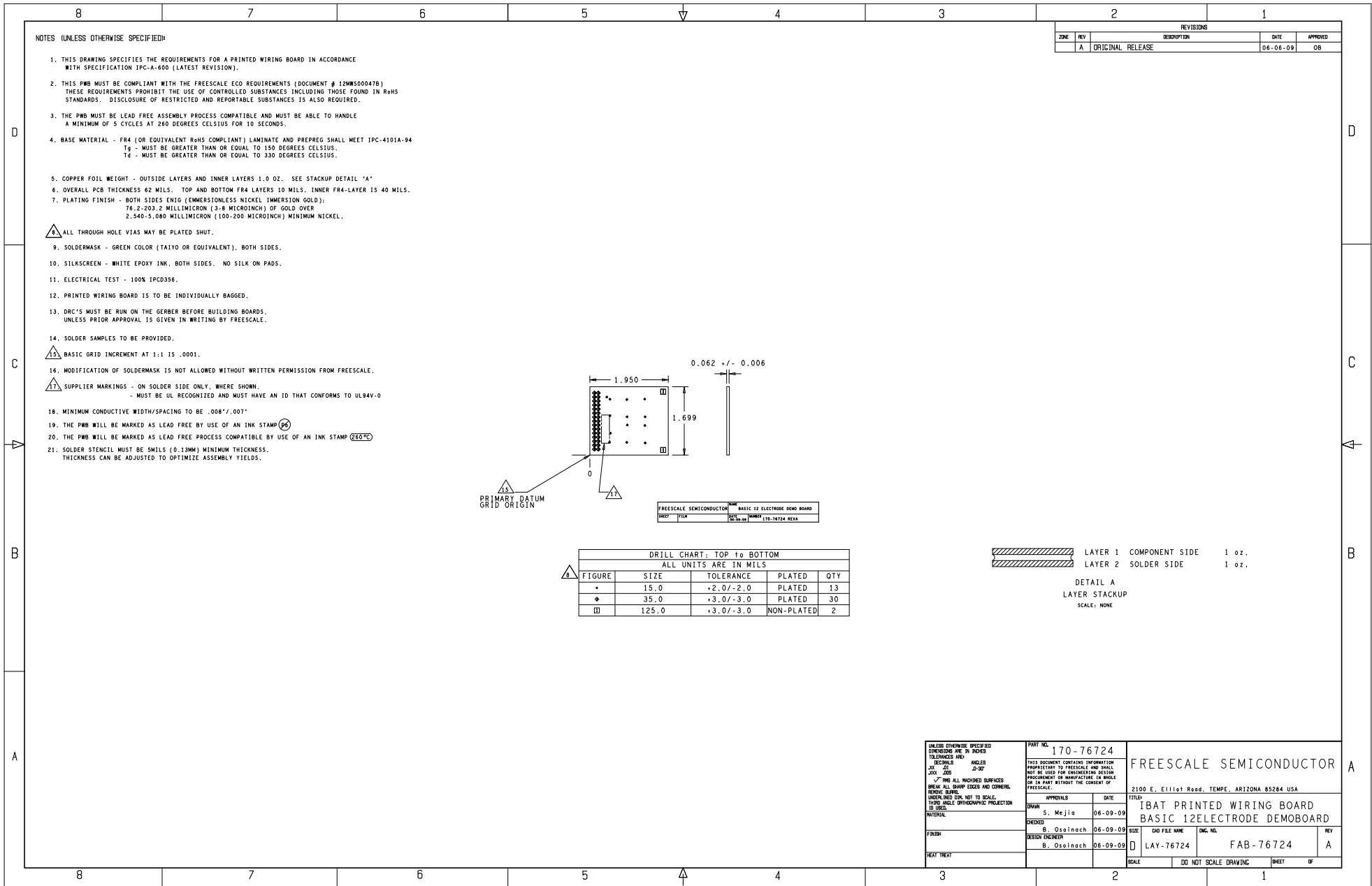
\_B Denotes - Active-Low Signal  
<> or [] Denotes - Vectored Signals

5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

		
Drawing Title: <b>PROXIMITY-IBAT</b>		
Page Title: <b>NOTES</b>		
Size B	Document Number SCH-76724 PDF: SPF-76724	Rev A
Date: Wednesday, June 10, 2009	Sheet 2 of 3	1



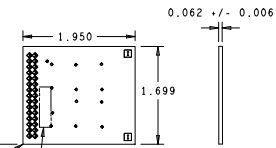
			
Drawing Title:			
<b>PROXIMITY-IBAT</b>			
Page Title:			
<b>12 ELECTRODES</b>			
Size	Document Number		Rev
B	SCH-76724 PDF: SPF-76724		A
Date:	Friday, June 12, 2009	Sheet 3 of 3	



NOTES (UNLESS OTHERWISE SPECIFIED):

1. THIS DRAWING SPECIFIES THE REQUIREMENTS FOR A PRINTED WIRING BOARD IN ACCORDANCE WITH SPECIFICATION IPC-A-600 (LATEST REVISION).
2. THIS PWB MUST BE COMPLIANT WITH THE FREESCALE ECD REQUIREMENTS (DOCUMENT # 12MMS000478) THESE REQUIREMENTS PROHIBIT THE USE OF CONTROLLED SUBSTANCES INCLUDING THOSE FOUND IN RoHS STANDARDS. DISCLOSURE OF RESTRICTED AND REPORTABLE SUBSTANCES IS ALSO REQUIRED.
3. THE PWB MUST BE LEAD FREE ASSEMBLY PROCESS COMPATIBLE AND MUST BE ABLE TO HANDLE A MINIMUM OF 5 CYCLES AT 260 DEGREES CELSIUS FOR 10 SECONDS.
4. BASE MATERIAL - FR4 (OR EQUIVALENT RoHS COMPLIANT) LAMINATE AND PREPREG SHALL MEET IPC-4101A-94  
T<sub>g</sub> - MUST BE GREATER THAN OR EQUAL TO 150 DEGREES CELSIUS.  
T<sub>d</sub> - MUST BE GREATER THAN OR EQUAL TO 330 DEGREES CELSIUS.
5. COPPER FOIL WEIGHT - OUTSIDE LAYERS AND INNER LAYERS 1.0 OZ. SEE STACKUP DETAIL 'A'
6. OVERALL PCB THICKNESS 62 MILS. TOP AND BOTTOM FR4 LAYERS 10 MILS. INNER FR4-LAYER IS 40 MILS.
7. PLATING FINISH - BOTH SIDES ENIG (EMERSIONLESS NICKEL IMMERSION GOLD):  
76.2-203.2 MILLIMICRON (3-8 MICROINCH) OF GOLD OVER  
2,540-5,080 MILLIMICRON (100-200 MICROINCH) MINIMUM NICKEL.
8. ALL THROUGH HOLE VIAS MAY BE PLATED SHUT.
9. SOLDERMASK - GREEN COLOR (TAYO OR EQUIVALENT), BOTH SIDES.
10. SILKSCREEN - WHITE EPOXY INK, BOTH SIDES. NO SILK ON PADS.
11. ELECTRICAL TEST - 100% IPCD356.
12. PRINTED WIRING BOARD IS TO BE INDIVIDUALLY BAGGED.
13. DRC'S MUST BE RUN ON THE GERBER BEFORE BUILDING BOARDS. UNLESS PRIOR APPROVAL IS GIVEN IN WRITING BY FREESCALE.
14. SOLDER SAMPLES TO BE PROVIDED.
15. BASIC GRID INCREMENT AT 1:1 IS .0001.
16. MODIFICATION OF SOLDERMASK IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM FREESCALE.
17. SUPPLIER MARKINGS - ON SOLDER SIDE ONLY, WHERE SHOWN.  
- MUST BE UL RECOGNIZED AND MUST HAVE AN ID THAT CONFORMS TO UL94V-0
18. MINIMUM CONDUCTIVE WIDTH/SPACING TO BE .008"/.007"
19. THE PWB WILL BE MARKED AS LEAD FREE BY USE OF AN INK STAMP (LF)
20. THE PWB WILL BE MARKED AS LEAD FREE PROCESS COMPATIBLE BY USE OF AN INK STAMP (260°C)
21. SOLDER STENCIL MUST BE 5MILS (0.13MM) MINIMUM THICKNESS.  
THICKNESS CAN BE ADJUSTED TO OPTIMIZE ASSEMBLY YIELDS.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
A		ORIGINAL RELEASE	06-06-09	DB



FREESCALE SEMICONDUCTOR	BASIC 12 ELECTRODE DEMO BOARD
SHEET 1/1	DATE 06-09-09 NUMBER 170-76724 REV A

DRILL CHART: TOP to BOTTOM				
ALL UNITS ARE IN MILS				
FIGURE	SIZE	TOLERANCE	PLATED	QTY
•	15.0	+2.0/-2.0	PLATED	13
◊	35.0	+3.0/-3.0	PLATED	30
□	125.0	+3.0/-3.0	NON-PLATED	2

	LAYER 1 COMPONENT SIDE	1 oz.
	LAYER 2 SOLDER SIDE	1 oz.

DETAIL A  
LAYER STACKUP  
SCALE: NONE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: DECIMALS .010 ANGLES .250° XXX .005 X.XX .002 X.XXX .001 BOTH SIDES BREAK ALL SHARP EDGES AND CORNERS INDICATE SPHERE UNPLATED DIM. NOT TO SCALE 3-DIM. SCALE: ORTHOGRAPHIC PROJECTION IS USED.	PART NO. 170-76724	FREESCALE SEMICONDUCTOR 2100 E. Elliot Road, TEMPE, ARIZONA 85284 USA	
	APPROVALS DRAWN S. Mejia CHECKED B. Oslnach DESIGN CHECKED B. Oslnach	DATE 06-09-09 06-09-09 06-09-09	TITLE IBAT PRINTED WIRING BOARD BASIC 12ELECTRODE DEMOBOARD
PATCHES	SIZE CAD FILE NAME D LAY-76724	ENG. NO. FAB-76724	SCALE DO NOT SCALE DRAWING
HEAT TREAT	SHEET 1 OF 1		



