VCC.B
C1
1µF
GND.B

VCC.B
IC1

4	VCC	(PCINT0/CLKO/ICP1)PB0	12
6	VCC	(PCINT1/OC1A)PB1	13
18	AVCC	(PCINT2/OC1B/SS)PB2	14
		(PCINT3/OC2A/MOSI)PB3	15	MOSI
		(PCINT4/MISO)PB4	16	MISO
20	AREF	(PCINT5/SCK)PB5	17	SCK
		(PCINT6/XTAL1/TOSC1)PB6	7	XTAL1
		(PCINT7/XTAL2/TOSC2)PB7	8	XTAL2
		(PCINT8/ADC0)PC0	23
		(PCINT9/ADC1)PC1	24
		(PCINT10/ADC2)PC2	25
		(PCINT11/ADC3)PC3	26
		(PCINT12/SDA/ADC4)PC4	27
19	ADC6	(PCINT14/SCL/ADC5)PC5	28
22	ADC7	(PCINT14/RESET)PC6	29	RST
		(PCINT16/RXD)PD0	30	RXI
		(PCINT17/TXD)PD1	31	TXO
		(PCINT18/INT0)PD2	32
		(PCINT19/OC2B/INT1)PD3	1
33	GND(PAD)	(PCINT20/XCK/T0)PD4	2
21	GND	(PCINT21/OC0B/T1)PD5	9
5	GND	(PCINT22/OC0A/AIN0)PD6	10
3	GND	(PCINT23/AIN1)PD7	11

MLF/QFN32
ATMEGA168PA-M
GND.B

GND.B
1 2 3
P1
FTDI
GND.B
VCC.B
RXI
TXO
RST
6x1, 0.1in header, female, DNP

JP1
MISO   MISO VTG   VCC.B
SCK   SCK   MOSI MOSI
RST   RST   GND   GND.B
AVR_ISP
3x2, 0.05in header, female, DNP

X1
CSTCE16M0V53-R0
XTAL1   XTAL2
GND.B

MOSI SW1 GND.B
ENTER
MISO SW2
MODE

SCK D65
LED
R1 1k
GND.B

PWR_FLAG   PWR_FLAG
GND.B   VCC.B   GND.B

Boart-to-Board
TXO/LEDs P3.1 VCC.A
GND.A (3) GND.A
B-to-B-1A
TXO P3.2 VCC.B
GND.B (4) GND.B
B-to-B-1B

(just mechanical)
P4.1
(3) B-to-B-2A
P4.2
(4) B-to-B-2B

5V
POWER
P2
GND.A
5V_raw
DS1 SK84B
Vf=0.5V @ 8A
SMC
F1 3A-poly
F2 3A-poly
+5V
DS2 SS14L
VCC.A
(1) small I
small Vf

(2) Signal isolation if either power source is absent
+5V
4k7 Rp1
BSS138 SOT-23 Q2
BSS138 SOT-23 Q1
4k7 Rp2
VCC.A
TXO/LEDs

WS2812B LEDs + capacitors
WS2812B-LEDs-1
A_IN   D_OUT
+5V
VCC
GND.A   GND
WS2812B-LEDs-1.sch

WS2812B-LEDs-2
E_IN
+5V
VCC
GND.A   GND
WS2812B-LEDs-2.sch

PWR_FLAG   PWR_FLAG   PWR_FLAG
+5V   GND.A   VCC.A

(1) make sure no power flows backwards to the LEDs when just the programmer is connected.
(2) We don't want any power bleeding through input clamping diodes when just the programmer is connected and the main power supply if off.
(3) micro-Match 2x2, 2.54mm / 1.27mm, female, SMD, main-board (AMP PN: 188275-4)
(4) micro-Match 2x2, 2.54mm / 1.27mm, male, TH, daughter-board (AMP PN: 215464-4)

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Sheet: /
File: IKEA-Samtid_mood-light.sch
Title: IKEA-Samtid_mood-light
Size: A4   Date: 25 Jul 2014   Rev: 0.22
KiCad E.D.A. kicad (2014-06-29 BZR 4957)-product   Id: 1/3

WS2812B WS2812B WS2812B WS2812B

VCC DIN 4
RGB
DOUT GND 3
VCCD E_IN GND

LED33 LED41 LED49 LED57
LED34 LED42 LED50 LED58
LED35 LED43 LED51 LED59
LED36 LED44 LED52 LED60
LED37 LED45 LED53 LED61
LED38 LED46 LED54 LED62
LED39 LED47 LED55 LED63
LED40 LED48 LED56 LED64

E_OUT F_OUT G_OUT

VCC

C37 C39 C41 C43 C45 C47 C49 C51 C53 C55 C57 C59 C61 C63 C65 C67
C C C C C C C C C C C C C C C C
GND

VCC
C38 C40 C42 C44 C46 C48 C50 C52 C54 C56 C58 C60 C62 C64 C66 C68
C C C C C C C C C C C C C C C C
GND

VCC DIN RGB DOUT GND GND VCCD

E_OUT F_OUT G_OUT