(2) Signal isolation if either power source is absent

VCC.A

+5V

1k5 Rp1

BSS138 SOT-23 Q2

BSS138 SOT-23 Q1

1k5 Rp2

TXO/LEDs

µC side
VCC.A = VCC.B

LED side
5V > VCC.A

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

5V

POWER P2
1
2
3
4

GND.A

5V_raw

DS1
SK84B

Vf=0.5V @ 8A
SMC

F1
3A-poly

F2
3A-poly

+5V

DS2
SS14L

(1) small I
small Vf

VCC.A

PWR_FLAG   PWR_FLAG   PWR_FLAG

+5V   GND.A   VCC.A

Boart-to-Board

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

(just mechanical)

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

(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)

WS2812B — LED1 through LED32, each with VCC, RGB, DIN, DOUT, GND, VCCD, GND labels

Net labels: A_IN, A_OUT, B_OUT, C_OUT, D_OUT

Capacitors: C5, C7, C9, C11, C13, C15, C17, C19, C21, C23, C25, C27, C29, C31, C33, C35
C6, C8, C10, C12, C14, C16, C18, C20, C22, C24, C26, C28, C30, C32, C34, C36

VCC, GND power rails

WS2812B — LED33, VCC, DIN, RGB, DOUT, GND, E_IN, VCC, GND
WS2812B — LED41, E_OUT
WS2812B — LED49, F_OUT
WS2812B — LED57, G_OUT

WS2812B — LED34
WS2812B — LED42
WS2812B — LED50
WS2812B — LED58

WS2812B — LED35
WS2812B — LED43
WS2812B — LED51
WS2812B — LED59

WS2812B — LED36
WS2812B — LED44
WS2812B — LED52
WS2812B — LED60

WS2812B — LED37
WS2812B — LED45
WS2812B — LED53
WS2812B — LED61

WS2812B — LED38
WS2812B — LED46
WS2812B — LED54
WS2812B — LED62

WS2812B — LED39
WS2812B — LED47
WS2812B — LED55
WS2812B — LED63

WS2812B — LED40, E_OUT
WS2812B — LED48, F_OUT
WS2812B — LED56, G_OUT
WS2812B — LED64

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

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