ON/OFF SW1A
1 — 16
DIPSW8

CR2032
BT1
+ 1
2
PWR_FLAG

**Battery
CR2032**

VCC

NORMAL
SW1B
2 — 15
DIPSW8

R6 4/k

FEEDBACK — R5 47k

SW1C
3 — 14
DIPSW8
INVERT

NPN
C 3
B 2
E 1
Q3

R7 10k — FEEDBACK_IN

Feedback/Inverter

7805
VI V0
GND
U2

POWER P2
1
2

+ C4 10u

+ C5 10u

VCC

Optional 9V input

P4
LEDMATRIX
GND

Tie outputs as wanted
to the LED matrix

LED_OUT
P1
1 2 3 4 5 6 7 8

R8 R9 R1 R1 R1 R1 R1 R1

Select resistors based on
LED matrix population,
max. 20mA per segment

Astable BJT Multivibrator

VCC   VCC

RV1 1M   RV2 1M

R1 47k R2 47k   R3 47k R4 47k

C1 2.2u   C2 2.2u

NPN
C 3
B 2
E 1
Q1

NPN
C 3
B 2
E 1
Q2

CLK

t = 0.7((RV1+R2)C1 + (RV2+R3)C2)

with above values, 0.1s < t < 3s (approx.)

VCC

SW2
1   2
SPST

FILL SW1D
4 — 13
DIPSW8

ROTATE SW1E
5 — 12
DIPSW8

FEEDBACK

SW1F
6 — 11
DIPSW8

CLEAR

CLK

SW1G
7 — 10
DIPSW8

BLINK

VCC

C3 100n

U1
14 SER   QA 15
11 SRCLK   QB 1
10 SRCLR   QC 2
12 RCLK   QD 3
13 OE   QE 4
                QF 5
                QG 6
                QH 7
                QsH 9
74HC595

P3
FEEDBACK
1 2 3 4 5 6 7 8 9

Tie any of those to
the feedback_in pin

FB_IN
P5   FEEDBACK_IN

CERN OHL v.1.1 or later
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File: practice−nametag.sch
Sheet: /
Title: Blinking name tag
Size: A4 | **Date: 23 jan 2012** | **Rev: 1**
KiCad E.D.A. | Id: 1/1