TEMPORISATEUR 99 MINUTES + ALARME
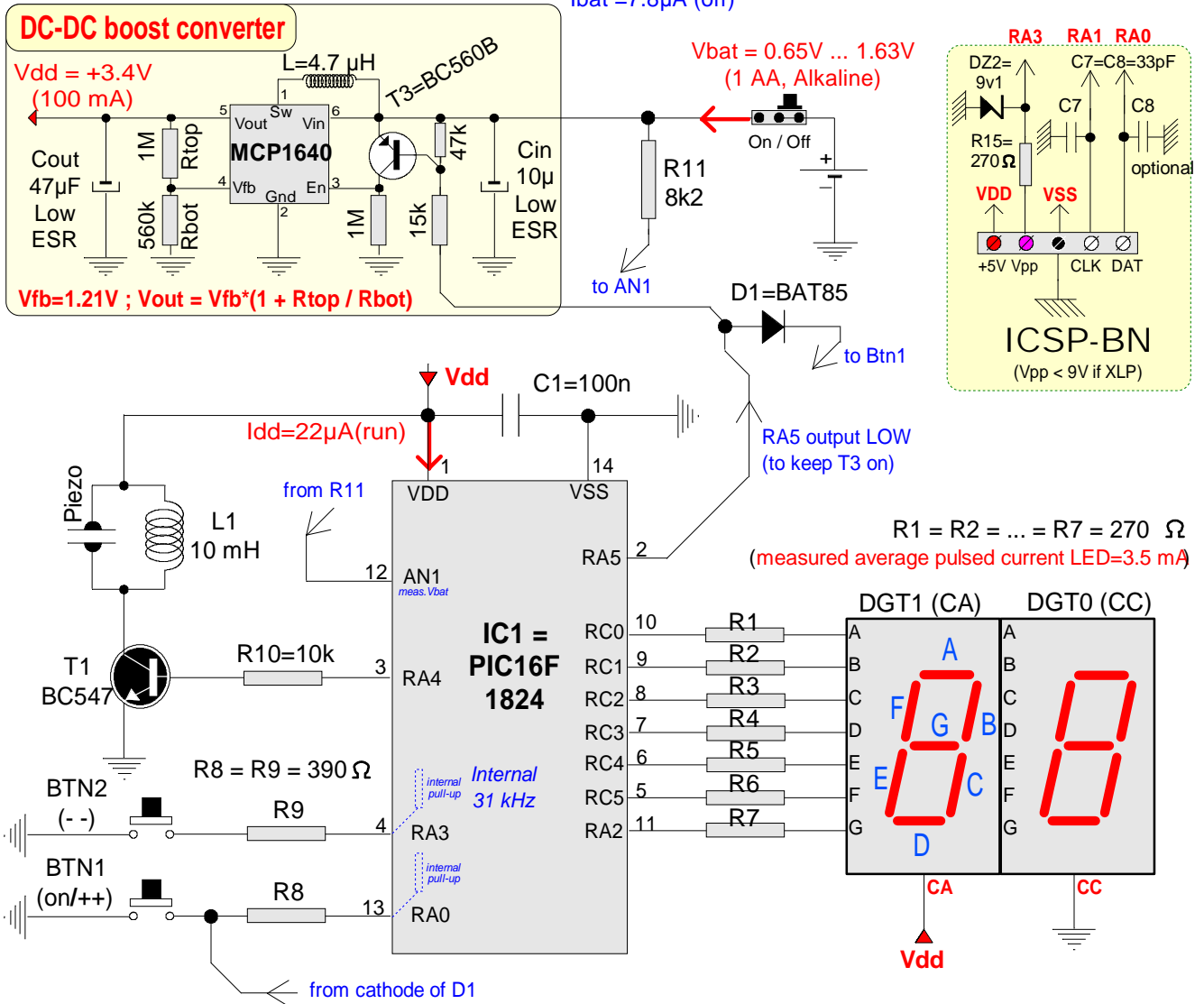
(KL101/KL101PP.DRW - A4 / mm)   à base du PIC16F1824   07/10/2017

Ibat =1.89mA(run) @ Vbat=1.48V
Ibat =7.8µA (off)

DC-DC boost converter

Vdd = +3.4V
(100 mA)

L=4.7 µH   T3=BC560B

MCP1640

Cout 47µF Low ESR
1M
Rtop
560k
Rbot
47k
1M
15k
Cin 10µ Low ESR

Vfb=1.21V ; Vout = Vfb*(1 + Rtop / Rbot)

Vbat = 0.65V ... 1.63V
(1 AA, Alkaline)

On / Off

R11 8k2

to AN1

D1=BAT85

to Btn1

ICSP-BN

RA3   RA1 RA0

DZ2= 9v1
C7=C8=33pF
C7   C8
R15= 270Ω
optional

VDD   VSS

+5V Vpp   CLK DAT

(Vpp < 9V if XLP)

Vdd   C1=100n

Idd=22µA(run)

from R11

RA5 output LOW
(to keep T3 on)

VDD   VSS

1   14

R1 = R2 = ... = R7 = 270 Ω
(measured average pulsed current LED=3.5 mA)

Piezo
L1 10 mH

RA5   2

IC1 = PIC16F 1824

RC0   10   R1
RC1   9   R2
RC2   8   R3
RC3   7   R4
RC4   6   R5
RC5   5   R6
RA2   11   R7

T1 BC547

R10=10k

3   RA4

AN1 meas.Vbat   12

Internal 31 kHz
internal pull-up

R8 = R9 = 390 Ω

BTN2 (- -)   R9   4   RA3
BTN1 (on/++)   R8   13   RA0

from cathode of D1

DGT1 (CA)   DGT0 (CC)

A   A
F   G   B   B
E   C   C
D   D

CA   CC

Vdd

MCP1640D: *synchronous boost with input-output bypass at shutdown:*
Iout = 100mA / Vout = 5.0V @ Vin=1.5V ; 0.65V start-up @ Vout=3.3V / 1 mA
Iq = 19µA at no load (in PFM mode) ; Iq = 220µA at no load (in PWM mode)
PWM operation @ 500 kHz ; shutdown current < 1µA
Vin (max) = 6.5 V

PIC16F1824: *14-pin Flash Microcontroller*
with nanoWatt XLP Technology :
4 Kwords Flash ROM (self-write) + 256 bytes static RAM + 256 EEP.
+ 4 timers 8-bit + 1 timer 16-bit + EUSART + ECCP/PWM + SR Latch
+ 8 ADC 10bit + 8 capacitive sense + 2 Comparators
Low power :
165 µA @ 4MHz, 1.8V ; 21 µA @ 31kHz, 1.8V ; 20 nA @ 2V standby

BC547 (N/BF) : 125...500@2mA / 50V / 200 mA
BC548 :   25...900@2mA / 30V / 200 mA
BC549 : 240...900@2mA / 30V / 200 mA
BC550 : 240...900@2mA / 45V / 200 mA

BC557 (P/BF) : 75...450@2mA / 45V / 100mA
BC558 :   25...800@2mA / 30V / 100 mA
BC559 : 240...800@2mA / 30V / 100 mA
BC560 : 125...800@2mA / 45V / 100 mA
(low noise BC559 & BC560)

(TO92)
BC 547
C B E

PIC16F1824 pinout	
VDD □ 1	14 ■ VSS
CCP2/P2A/T1CKI/T1OSI/OSC1/CLKIN/RA5 2	13 RA0/AN0/CPS0/C1IN+/DACOUT/TX/CK/ICSPDAT
T1G/P2B/SDO/CLKR/T1OSO/CLKOUT/OSC2/CPS3/AN3/RA4 3	12 RA1/AN1/CPS1/C12IN0-/VREF+/SRI/RX/DT/ICSPCLK
MCLR/VPP/T1G/SS/RA3 4	11 RA2/AN2/CPS2/T0CKI/INT/C1OUT/SRQ/CCP3/FLT0
MDCIN2DT/RX/CCP1/P1A/RC5 5	10 RC0/AN4/CPS4/C2IN+/SCL/SCK/P1D
MDOUT/CK/TX/P1B/SRNQ/C2OUT/RC4 6	9 RC1/AN5/CPS5/C12IN1-/SDA/SDI/P1C/CCP4
MDMIN/SS/PIC/CCP2/P2A/C12IN3-/CPS7/AN7/RC3 7	8 RC2/AN6/CPS6/C12IN2-/P1D/P2B/SDO/MDCIN1

Vss 3
TC1047A   (SOT23)
1 2
Vdd Vout

TC1047A:
temperature to voltage converter
T = - 40°C ...+125°C
accuracy = +/- 0.5% @ 25°C
Vdd=2.5V ... 5.5V
Iq = 35 µA typical