

Title: Fusebox

Projekt: Fusebox.PrjPcb

Author: Nico Bieberich

Checked by: Nico Bieberich

Rules: LVS

Sheet 1 of 6

Size: A4

Revision: xx.xx

Baltic Racing
Zur Schwedenschanze 15
Haus 18
18435 Stralsund

Date: 18.11.2023 Time: 15:48:16



A

B

C

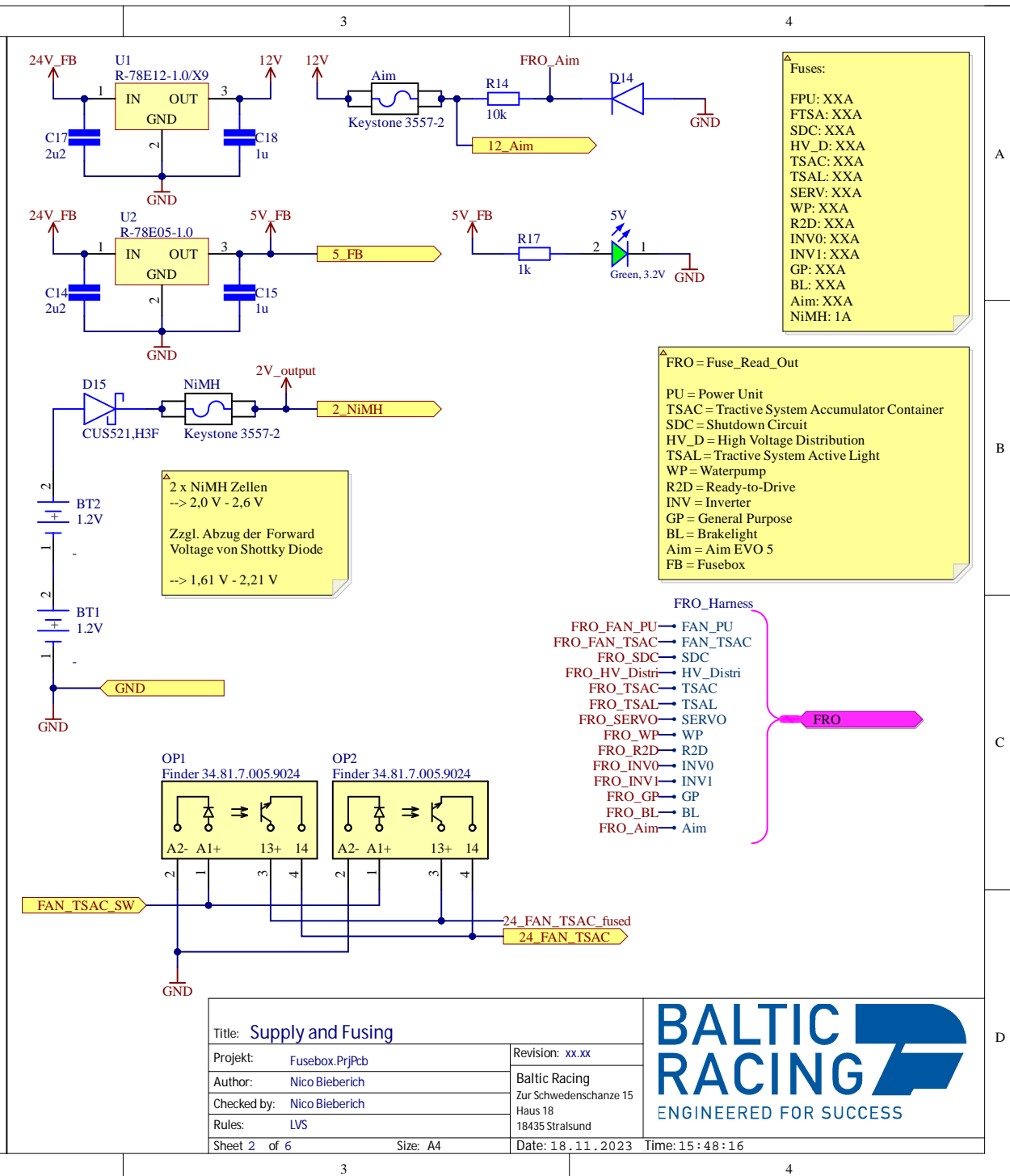
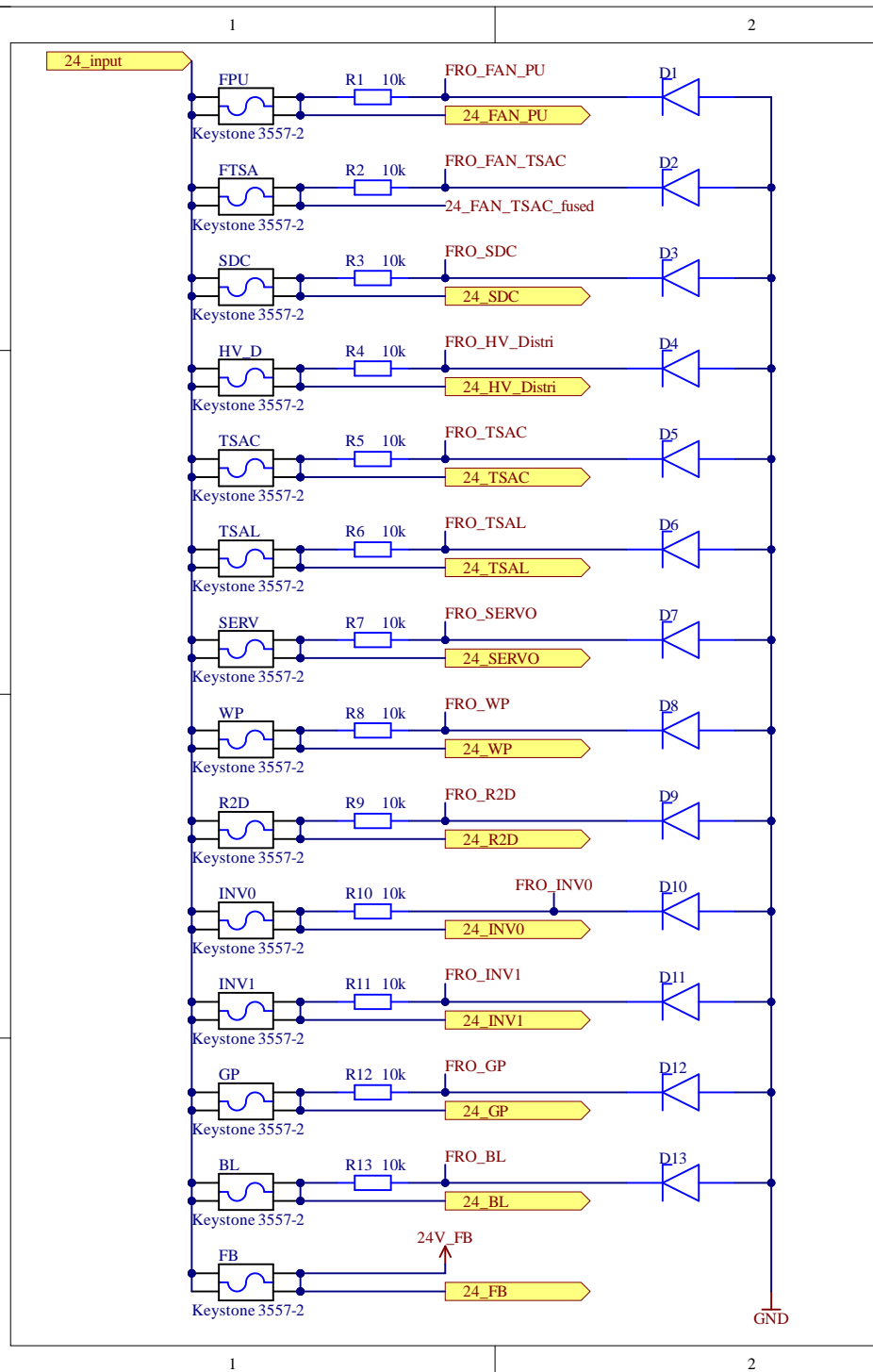
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A

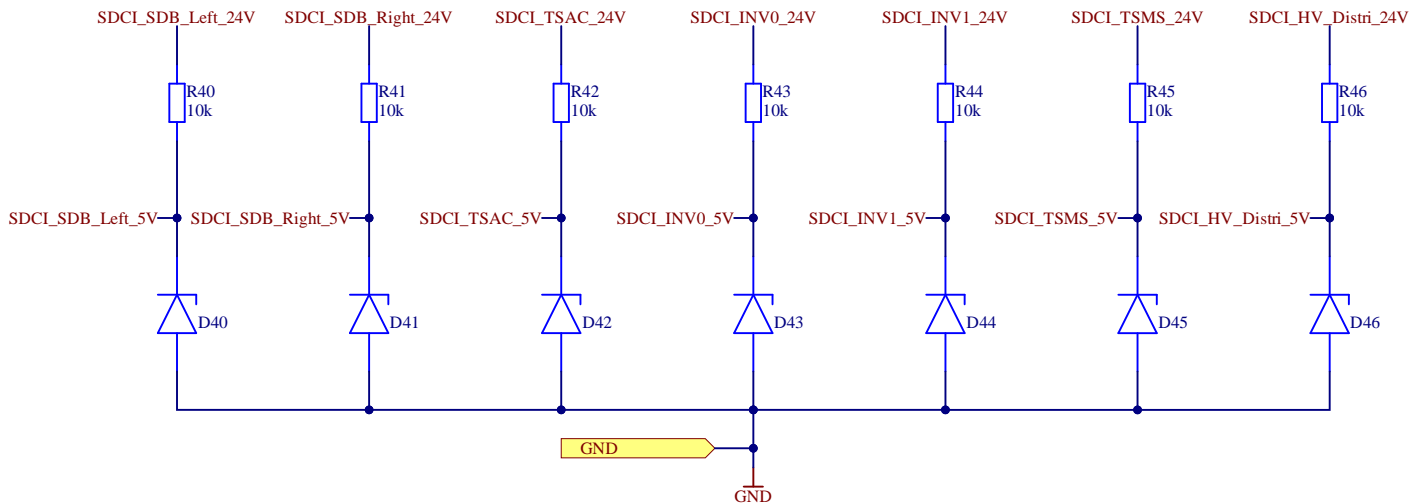
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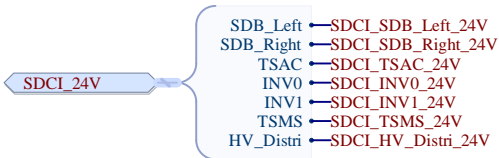
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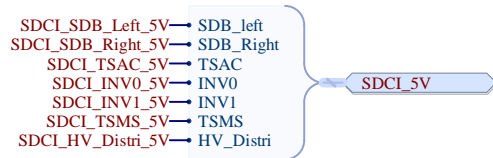




SDCI_24V_Harness



SDCI_5V_Harness



Title: Shutdown Circuit Indicator

Projekt: Fusebox.PrjPcb

Author: Nico Bieberich

Checked by: Nico Bieberich

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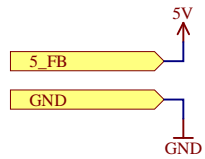
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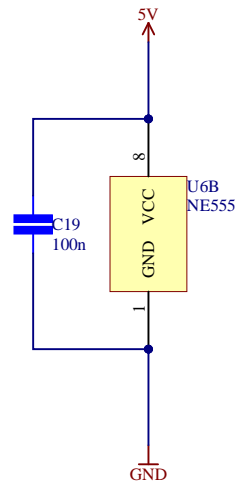
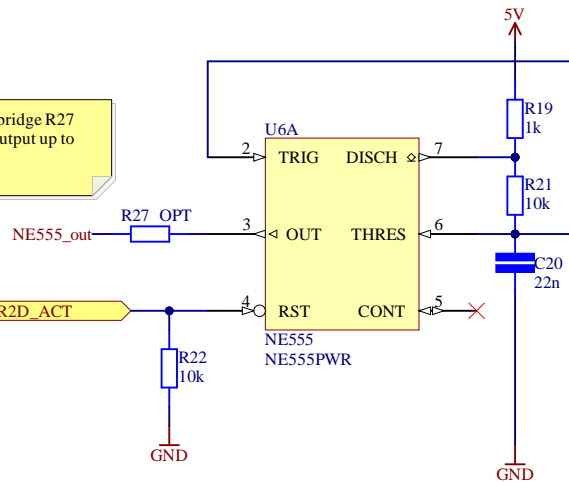
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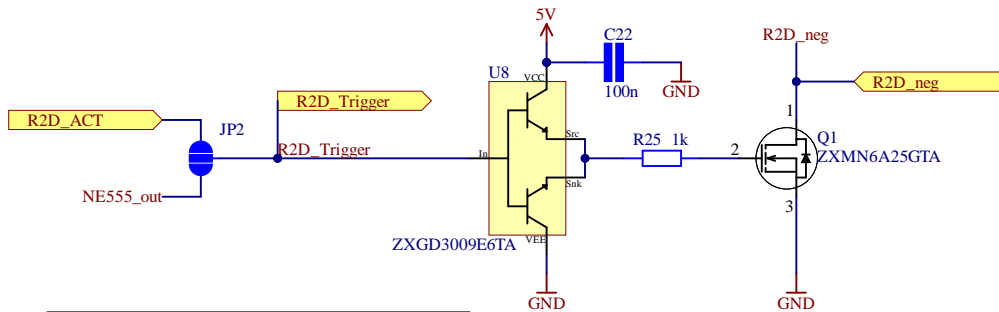
BALTIC RACING
ENGINEERED FOR SUCCESS



Recommended to bridge R27
NE555 is able to output up to
+200mA



Values for astable operation at 4kHz.
 $RA = R19$
 $RB = R21$
 $C = C20$
 $tH = 0.693 * (RA + RB) * C$
 $tL = 0.693 * RB * C$
 $tL/tH = RB/(RA + RB)$
 $f = 1.44/((RA + 2*RB) * C)$
 Approx DC of 50%: $RA = RB * 0.1$
 $tL/tH = RB / (RB * 1.1) = 0.9091$
 with $RB = 10k$ and $f = 4kHz$
 $4kHz = 1.44/((1k + 2*10k) * C)$
 $4kHz = 1.44/(21k * C)$
 $C = 1.44/(4kHz * 21k)$
 $C = 17nF$
 $C (4kHz) = 17nF$
 $C (3kHz) = 23nF$
 $C (2kHz) = 34nF$
 $C (1kHz) = 69nF$



$R25_{max} = 1/(2*pi*fs*Ciss)$
 With $Ciss = 1063pF$ (Datasheet of MOSFET)
 and $fs = 4kHz$ (Apprx freq. of R2D)
 $R25_{max} = 37k$
 Lowering R25 increases switching frequency fs and
 power dissipation
 Simulation is recommended to watch power dissipation

Title: Ready-to-Drive Sound		 ENGINEERED FOR SUCCESS	
Projekt: Fusebox.PrjPcb	Revision: xx.xx		
Author: Nico Bieberich	Baltic Racing		
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