

U_input

input.SchDoc

VDD

OUT[1..16]

N

GND

IN[1..16]

U_sbc

sbc.SchDoc

5V

3V3

OUT[1..32]

GND

OUT[1..32]

U_output

output.SchDoc

VDD

IN[1..32]

GND

L

CON2

DG306-5.0-02P-12-00A(H)

2

1

D1

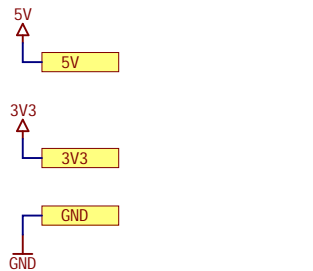
FR05JFL

N

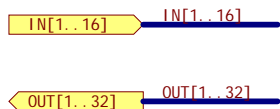
N terminal with a series diode to allow only for half sine to pass through the opto couplers diodes.

Title: top.SchDoc	Project: BeagleNode.PrjPcb	Rev: A	Address:	
Description: Top level sheet	Author: Łukasz Przeniosło	Contact: lukasz@przenioslo.com	Ofiar Katynia 21 72-100 Goleniów Poland	
	Company: Przenioslo Electronics & Software			Sheet 1 of 6
	Created: 2023-02-10 Edited: 2023-10-28			
	File: D:\storage\repo\git\github\BeagleNodeHW\top.SchDoc			

A

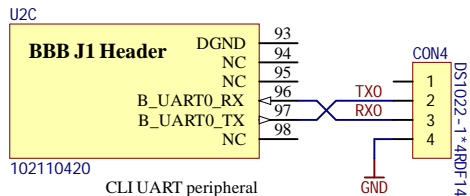
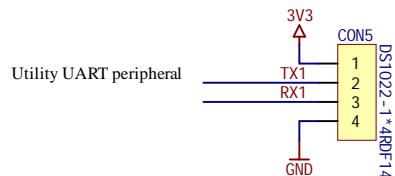


B



C

Digital power on the board comes from the BBB P9 connector (ext 5V provided via DC jack connector on the BBB).



D

Title: [sbc.SchDoc](#)

Description:

[BeagleBone Black connectors](#)Project: [BeagleNode.PrjPcb](#)Rev: [A](#)

Address:

Author: [Łukasz Przeniosło](#)Contact: lukasz@przenioslo.com

Ofiar Katynia 21
72-100 Goleniów
Poland

Company: [Przenioslo Electronics & Software](#)

Sheet 2 of 6

Created: 2023-02-11 Edited: 2023-10-28

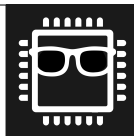
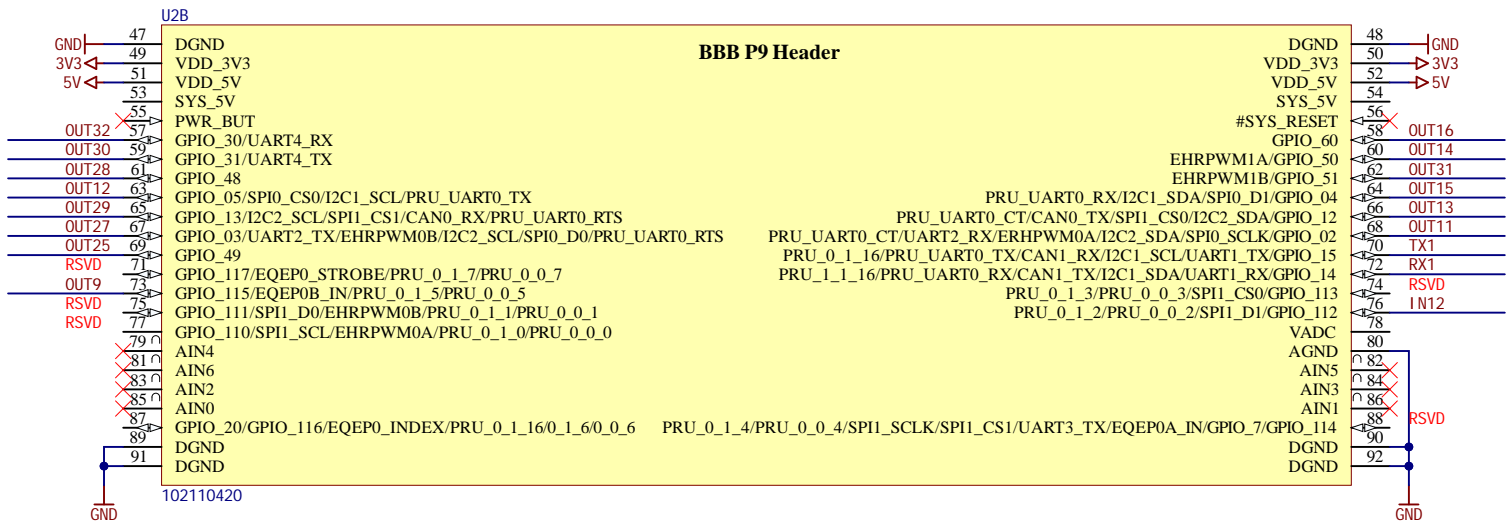
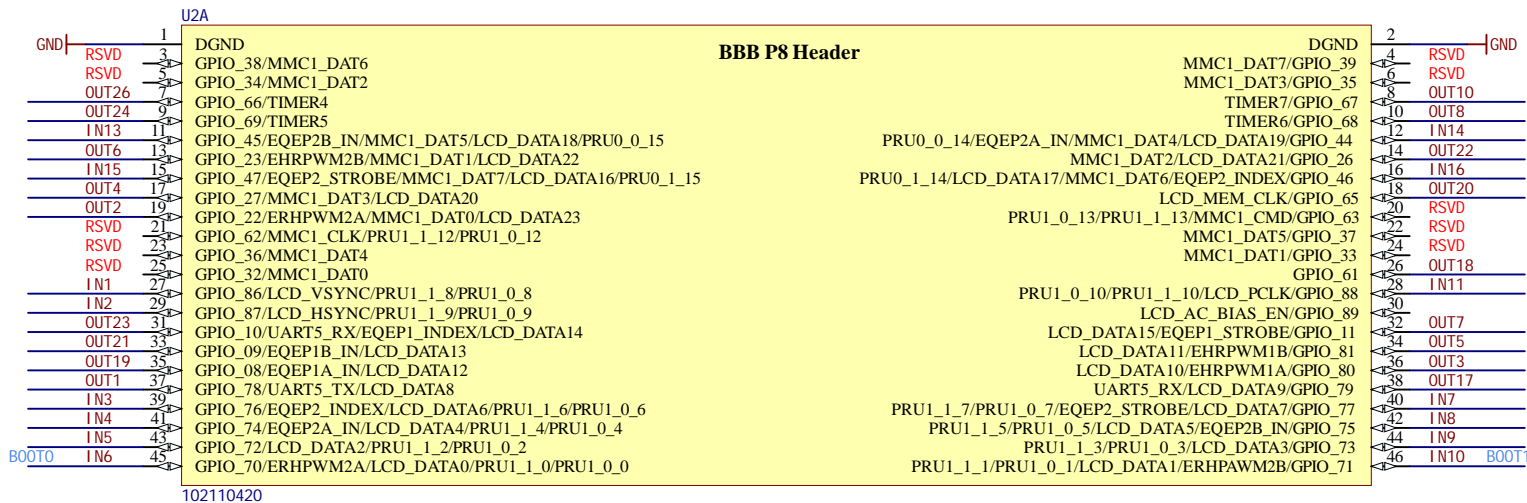
File: [D:\storage\repo\git\github\BeagleNodeHW\sbc.SchDoc](#)

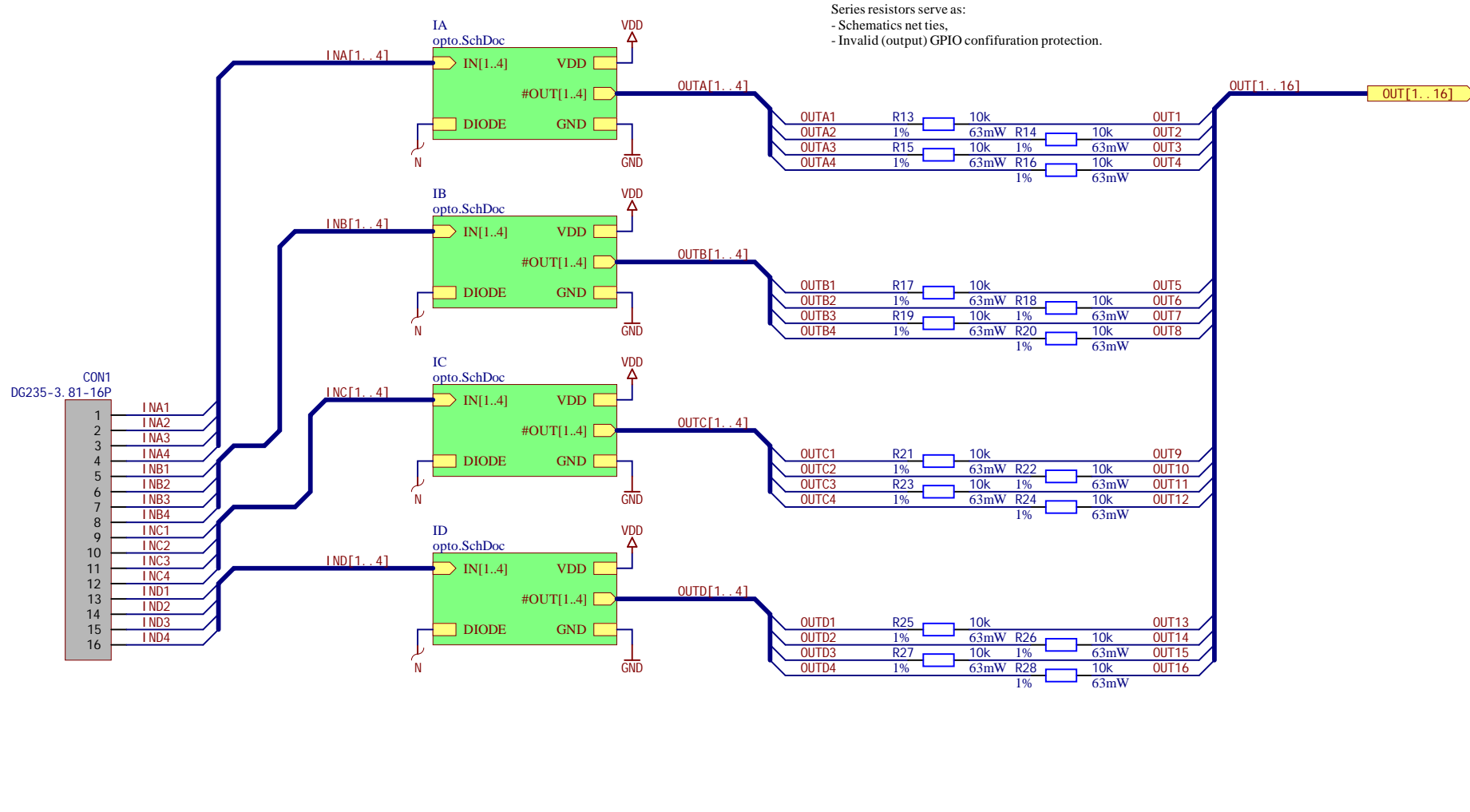
A

B

C

D





Title: input.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

Ofiar Katynia 21
72-100 Goleniów
Poland

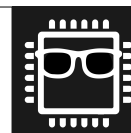
230 VAC switches inputs connectors circuit

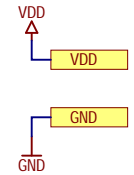
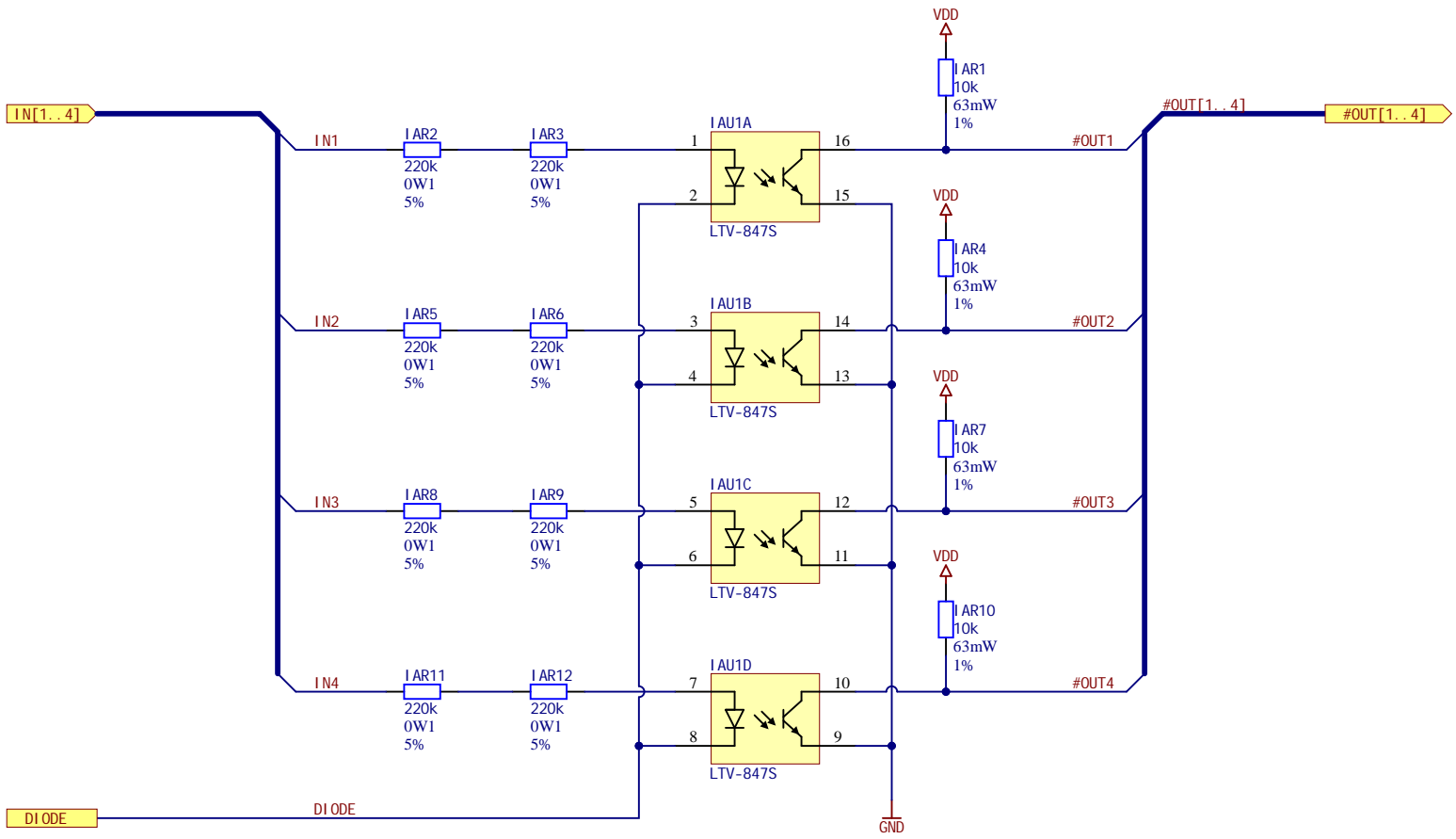
Company: Przenioslo Electronics & Software


Sheet 3 of 6

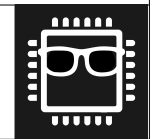
Created: 2023-02-07 Edited: 2023-02-15

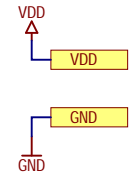
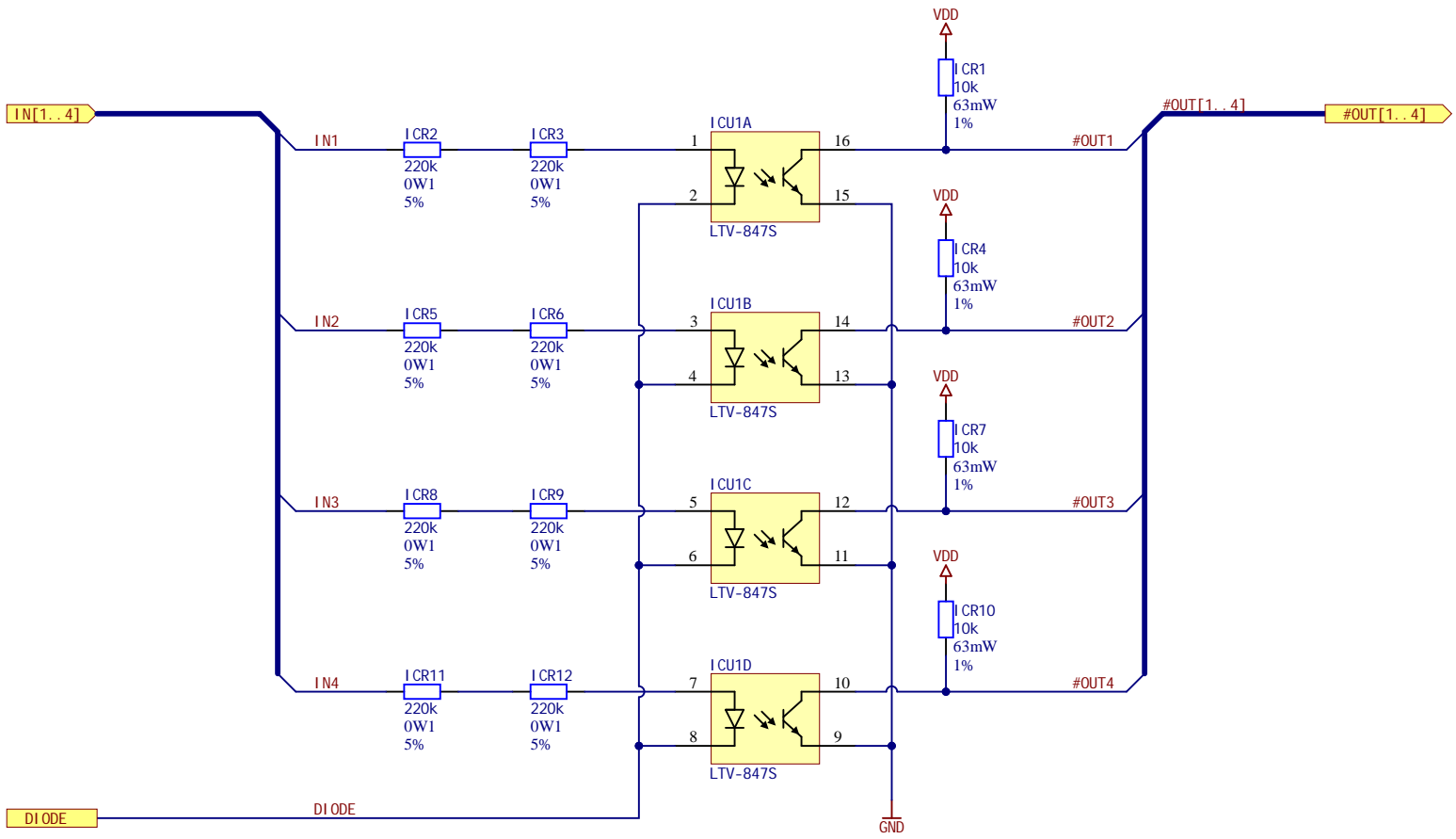
File: D:\storage\repo\git\github\BeagleNodeHW\input.SchDoc




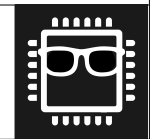


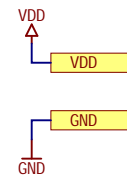
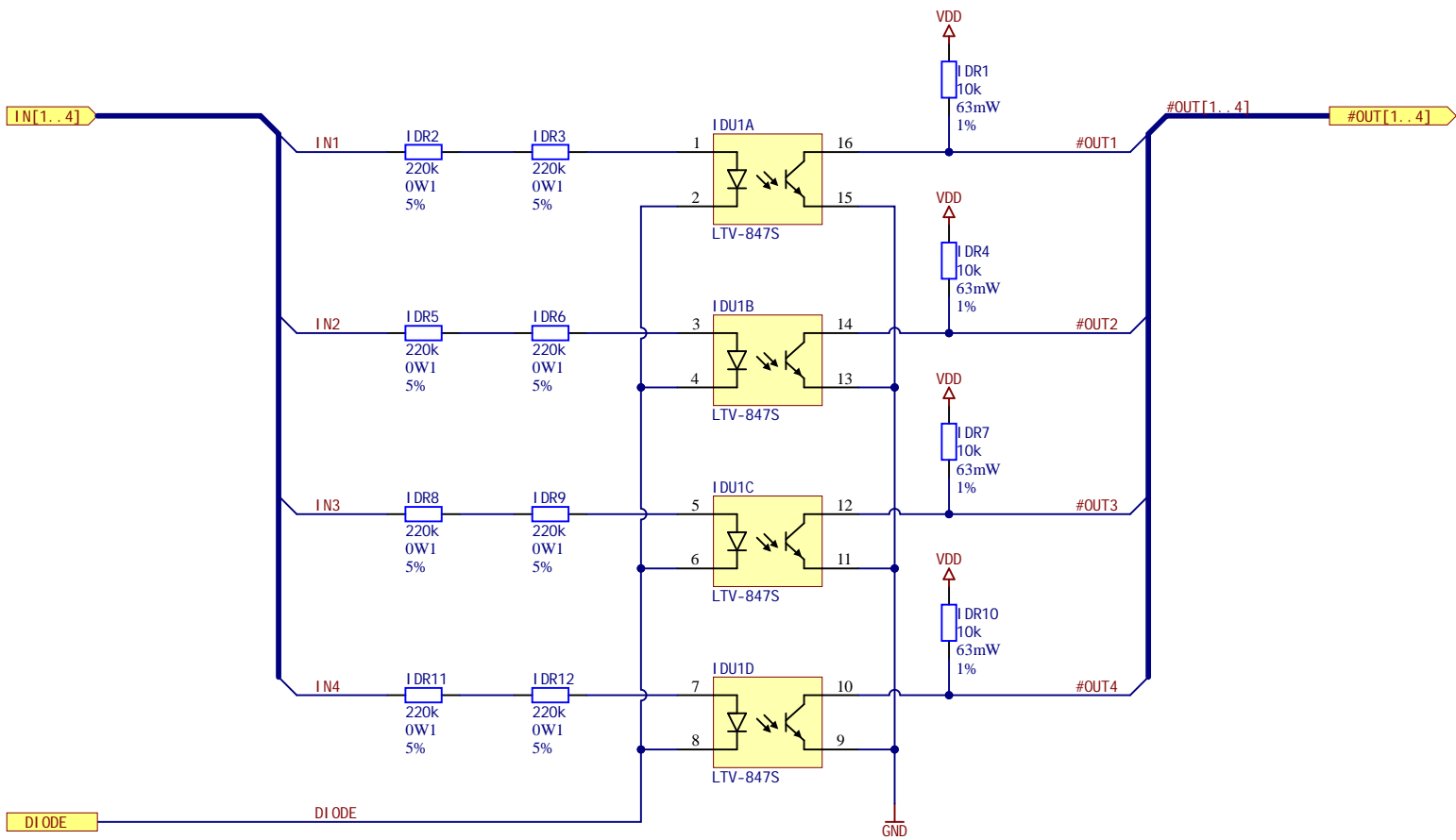
Title: <code>opto.SchDoc</code>		Project: <code>BeagleNode.PrjPcb</code>			Rev: <code>A</code>	Address:			
Description: <code>High voltage quad opto isolation circuit</code>		Author: <code>Łukasz Przeniosło</code>		Contact: <code>lukasz@przenioslo.com</code>		<code>Ofiar Katynia 21</code> <code>72-100 Goleniów</code> <code>Poland</code>			
		Company: <code>Przenioslo Electronics & Software</code>			Sheet <code>4</code> of <code>6</code>				
		Created: <code>20xx-xx-xx</code> Edited: <code>2023-02-15</code>							
		File: <code>D:\storage\repo\git\github\BeagleNodeHW\opto.SchDoc</code>							





Title: <code>opto.SchDoc</code>		Project: <code>BeagleNode.PrjPcb</code>			Rev: <code>A</code>	Address:		
Description:		Author: <code>Łukasz Przeniosło</code>		Contact: <code>lukasz@przenioslo.com</code>			Ofiar Katynia 21 72-100 Goleniów Poland	
High voltage quad opto isolation circuit		Company: <code>Przenioslo Electronics & Software</code>			Sheet <code>4</code> of <code>6</code>			
		Created: <code>20xx-xx-xx</code> Edited: <code>2023-02-15</code>						
		File: <code>D:\storage\repo\git\github\BeagleNodeHW\opto.SchDoc</code>						





Title: `opto.SchDoc`

Description:
High voltage quad opto isolation circuit

Project: `BeagleNode.PrjPcb`

Author: `Łukasz Przeniosło`

Company: `Przenioslo Electronics & Software`

Created: `20xx-xx-xx` Edited: `2023-02-15`

File: `D:\storage\repo\git\github\BeagleNodeHW\opto.SchDoc`

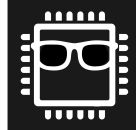
Contact: `lukasz@przenioslo.com`

Sheet 4 of 6

Rev: A

Address:

Ofiar Katynia 21
72-100 Goleniów
Poland



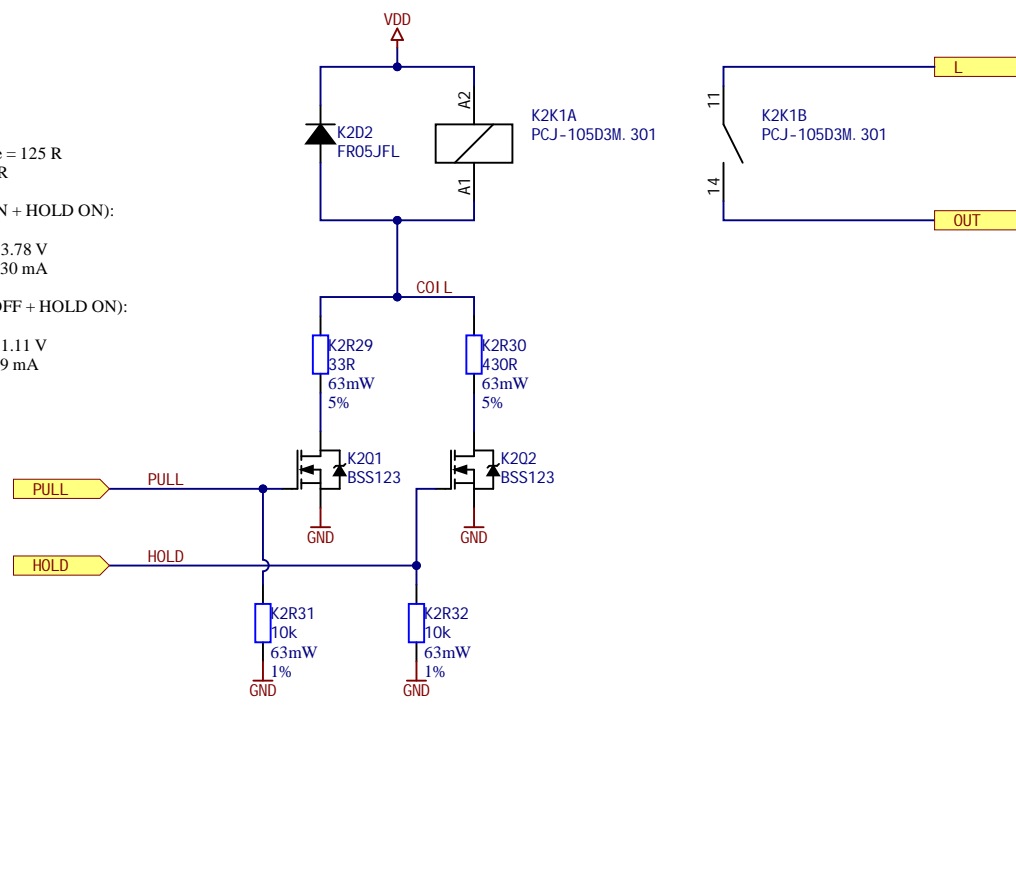
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:

230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

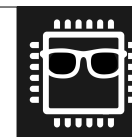
Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc

Ofiar Katynia 21
72-100 Goleniów
Poland



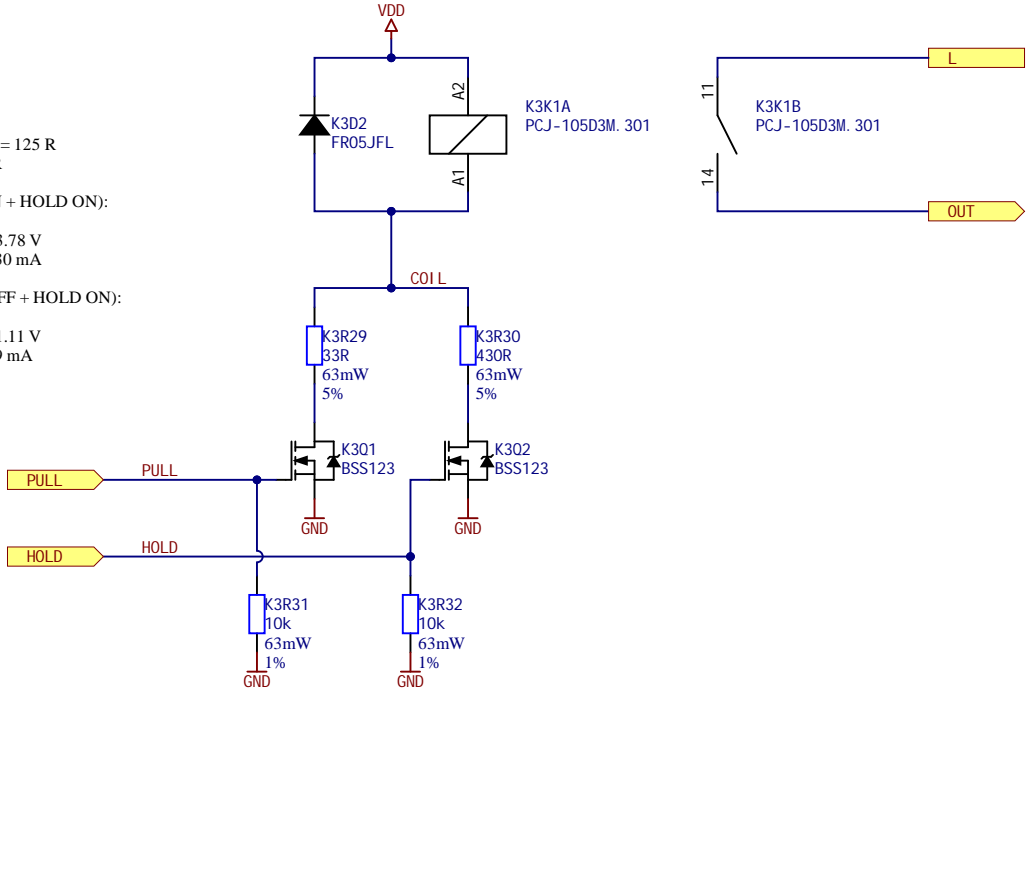
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Author: Łukasz Przeniosło

Company: Przeniosło Electronics & Software

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc

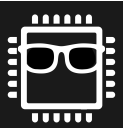
Contact: lukasz@przenioslo.com

Sheet 6 of 6

Rev: A

Address:

Ofiar Katynia 21
72-100 Goleniów
Poland



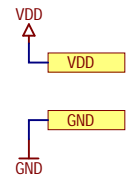
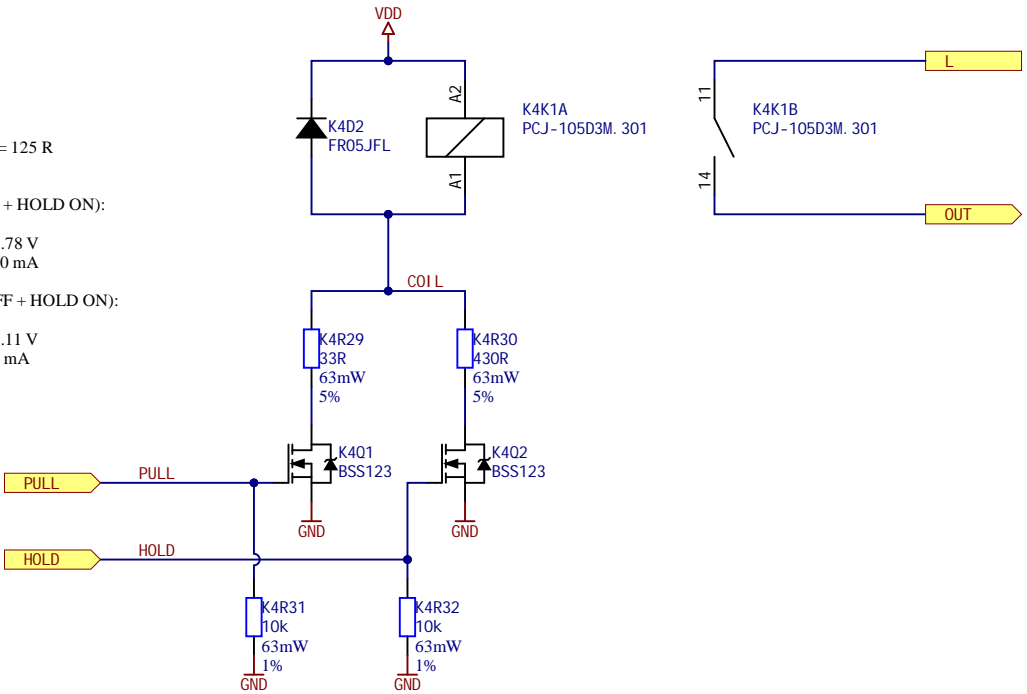
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:
230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

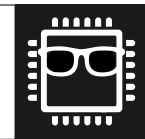
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



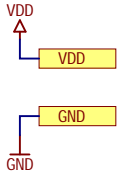
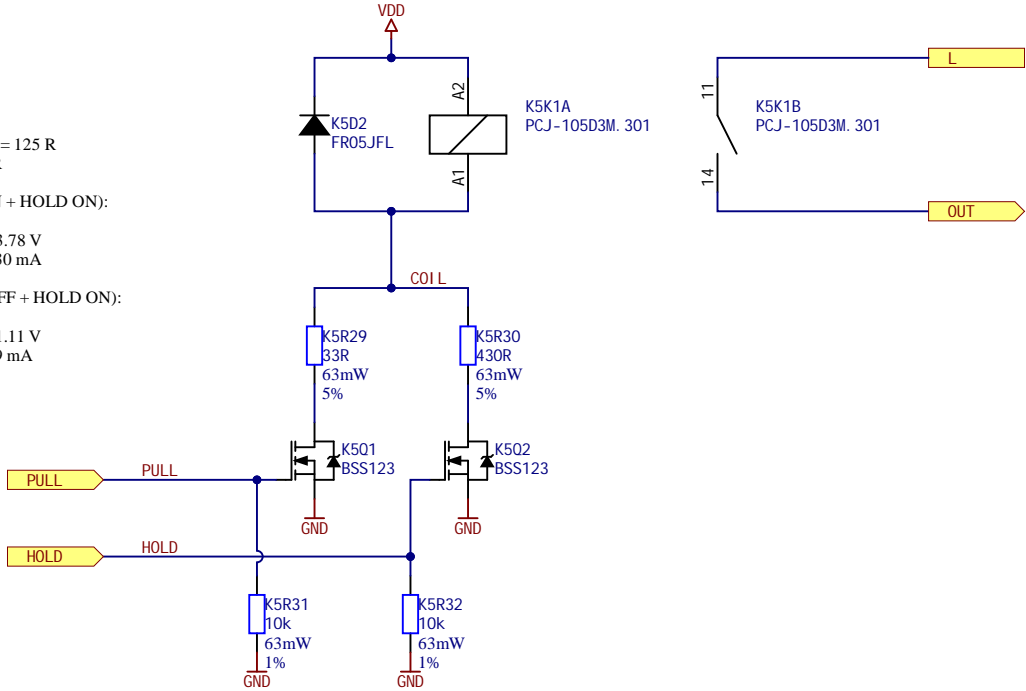
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:
230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

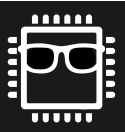
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



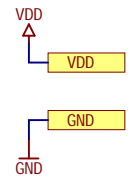
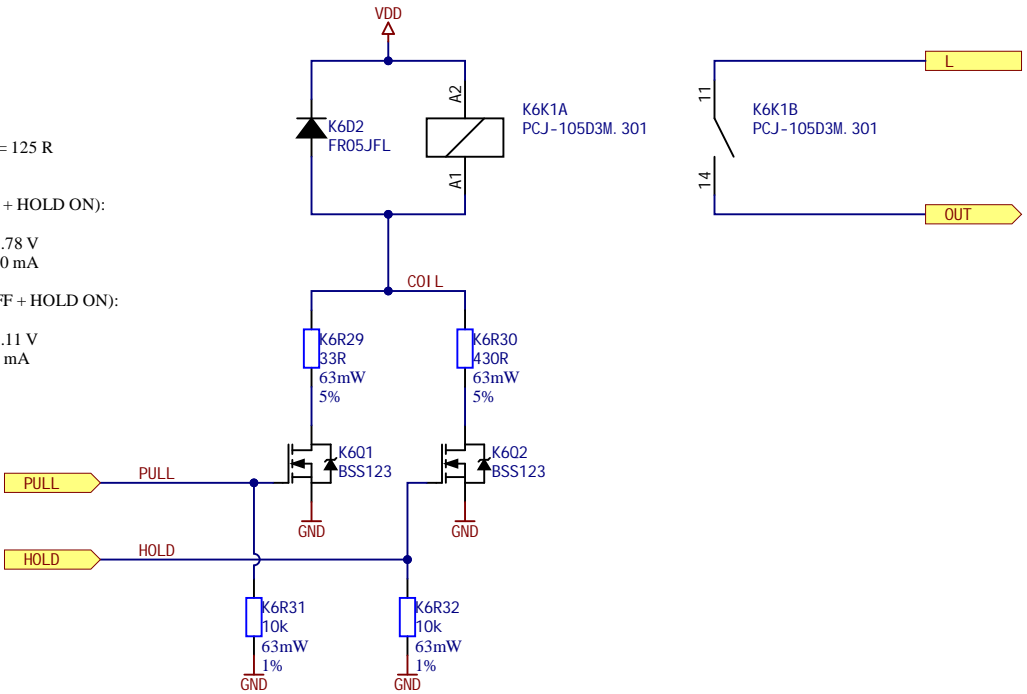
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Rev: A

Address:

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

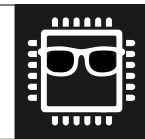
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



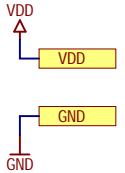
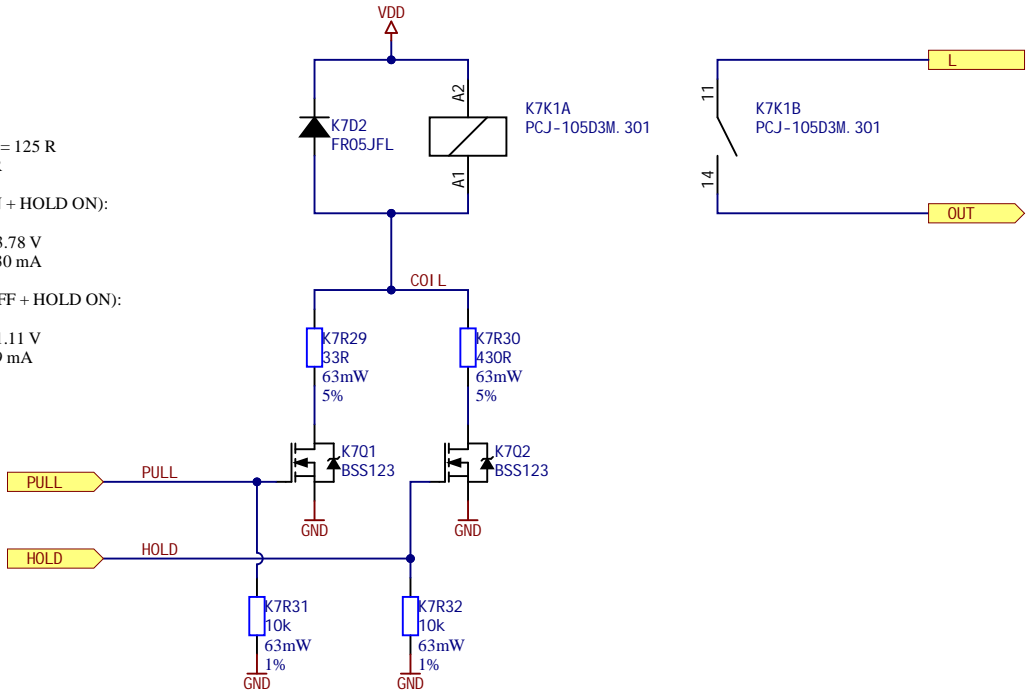
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: [relay.SchDoc](#)

Description:
230 VAC output relay control circuit

Project: [BeagleNode.PrjPcb](#)

Author: [Łukasz Przeniosło](#)

Company: [Przenioslo Electronics & Software](#)

Created: 2023-02-10 Edited: 2023-10-28

File: [D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc](#)

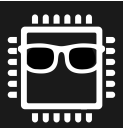
Contact: lukasz@przenioslo.com

Sheet 6 of 6

Rev: A

Address:

Ofiar Katynia 21
72-100 Goleniów
Poland



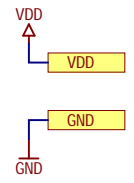
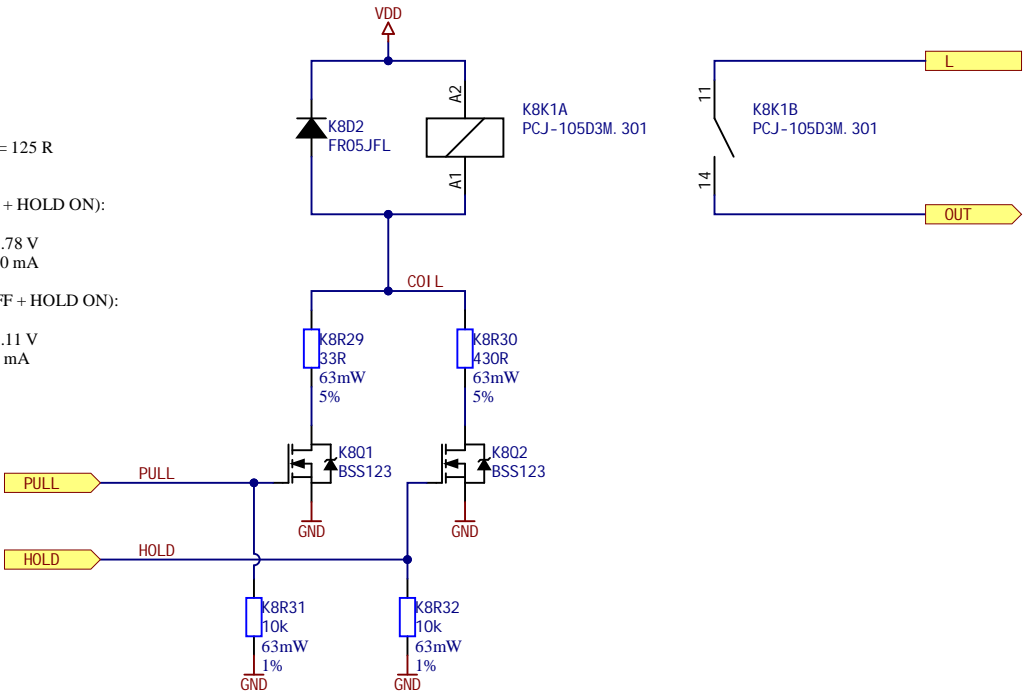
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:
230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

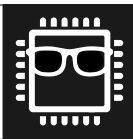
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



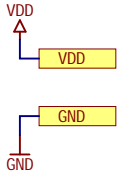
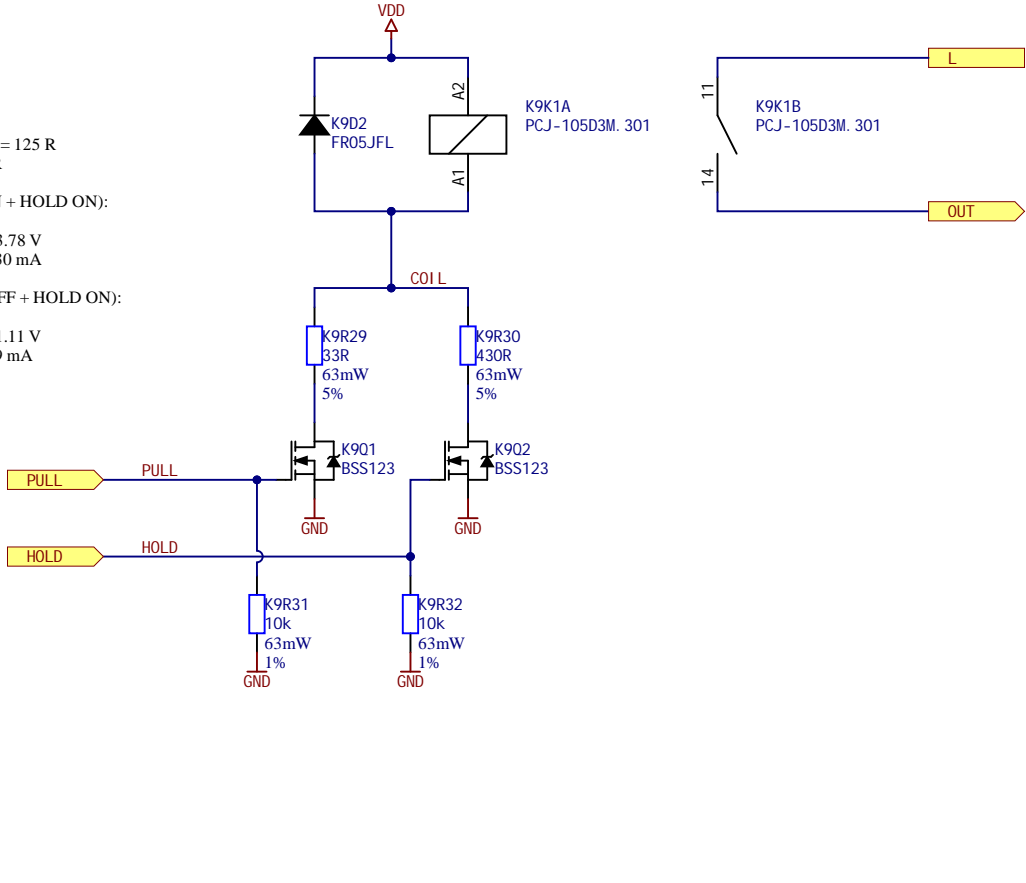
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:
230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



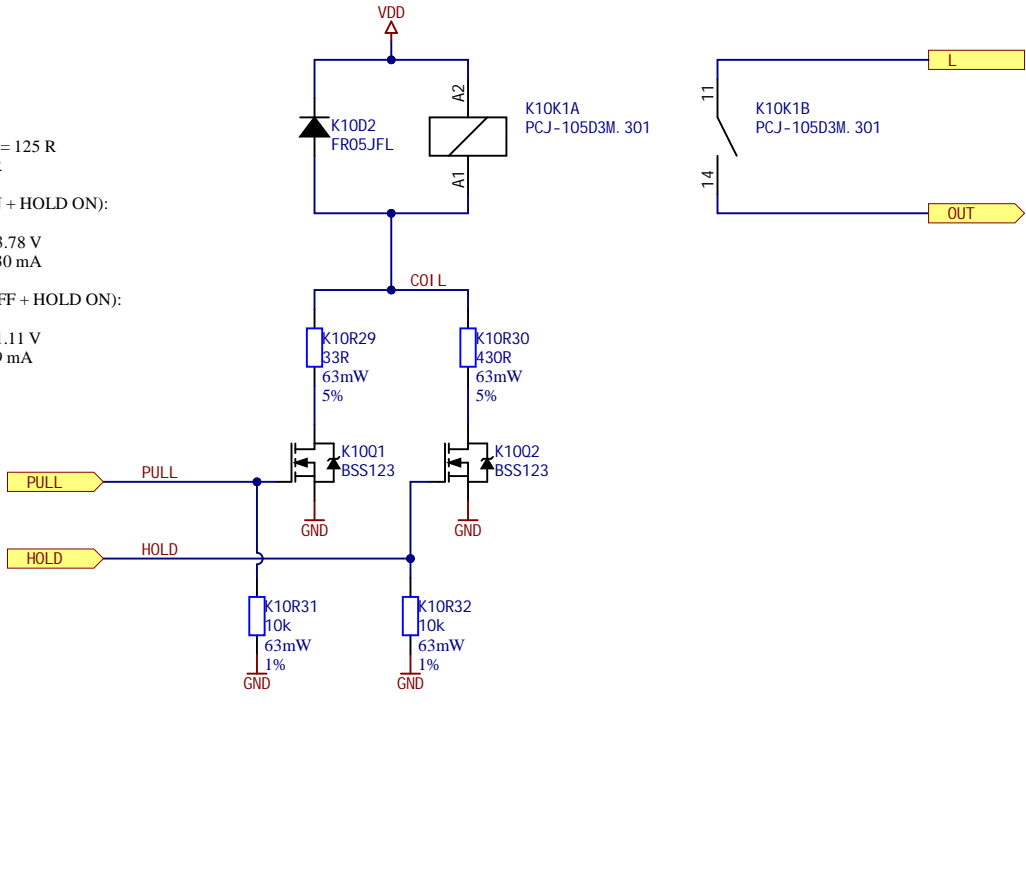
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Author: Łukasz Przeniosło

Company: Przenioslo Electronics & Software

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc

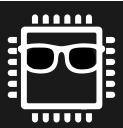
Contact: lukasz@przenioslo.com

Sheet 6 of 6

Rev: A

Address:

Ofiar Katynia 21
72-100 Goleniów
Poland



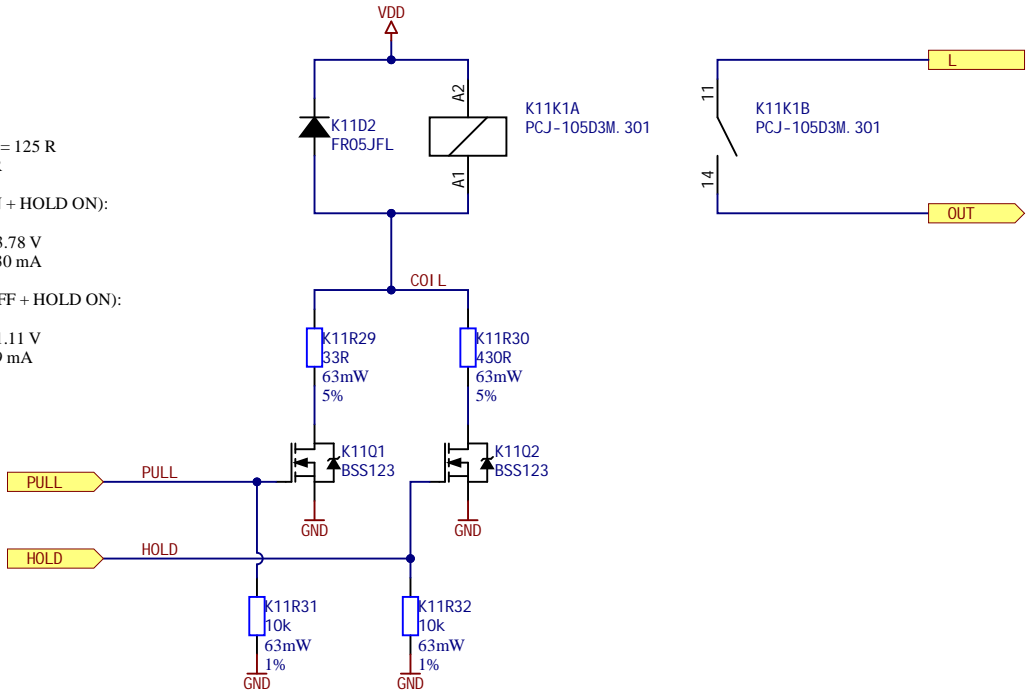
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Author: Łukasz Przeniosło

Company: Przenioslo Electronics & Software

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc

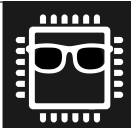
Contact: lukasz@przenioslo.com

Sheet 6 of 6

Rev: A

Address:

Ofiar Katynia 21
72-100 Goleniów
Poland



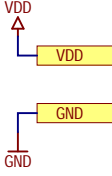
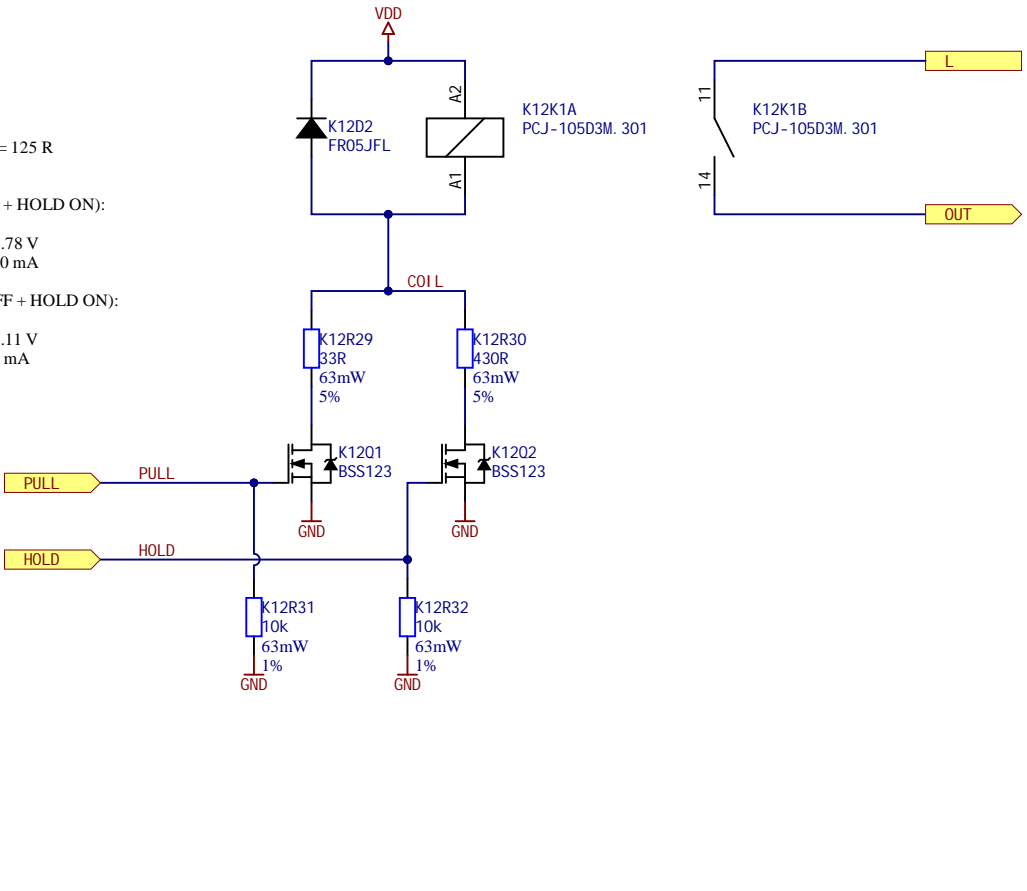
Coil resistance = 125 R
R_DSON = 5 R

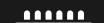
Pull (PULL ON + HOLD ON):

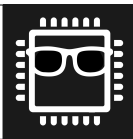
Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc		Project: BeagleNode.PrjPcb			Rev: A	Address: Ofiar Katynia 21 72-100 Goleniów Poland	
Description: 230 VAC output relay control circuit		Author: Łukasz Przeniosło		Contact: lukasz@przenioslo.com			
		Company: Przenioslo Electronics & Software			Sheet 6 of 6		
		Created: 2023-02-10 Edited: 2023-10-28					
		File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc					



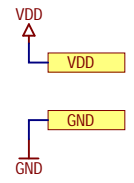
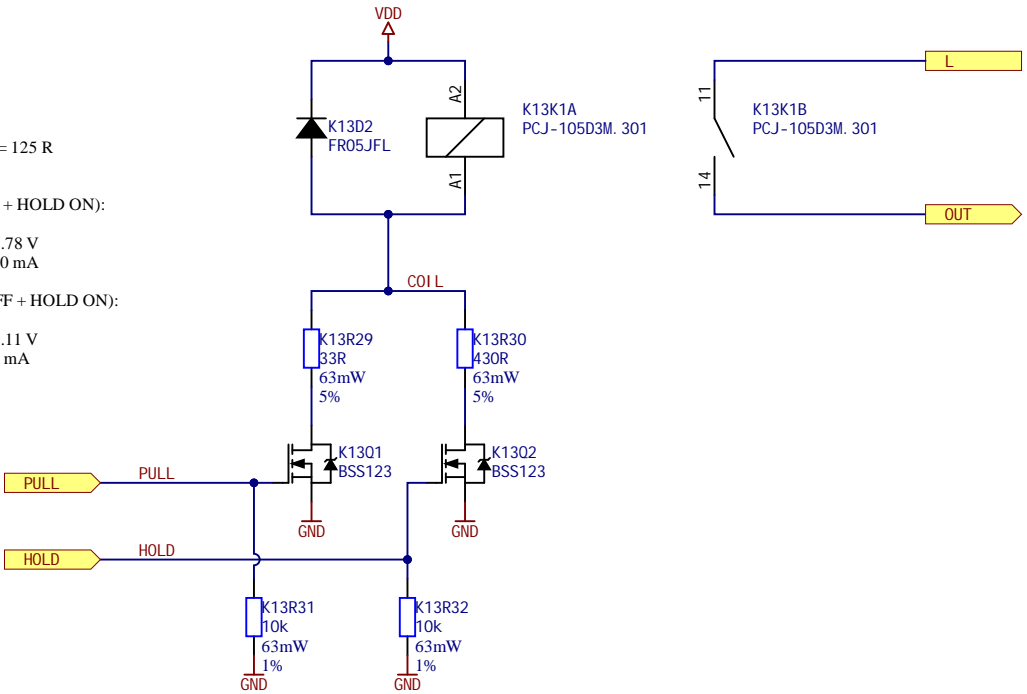
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Rev: A

Address:

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

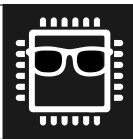
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



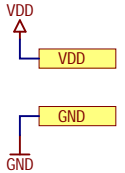
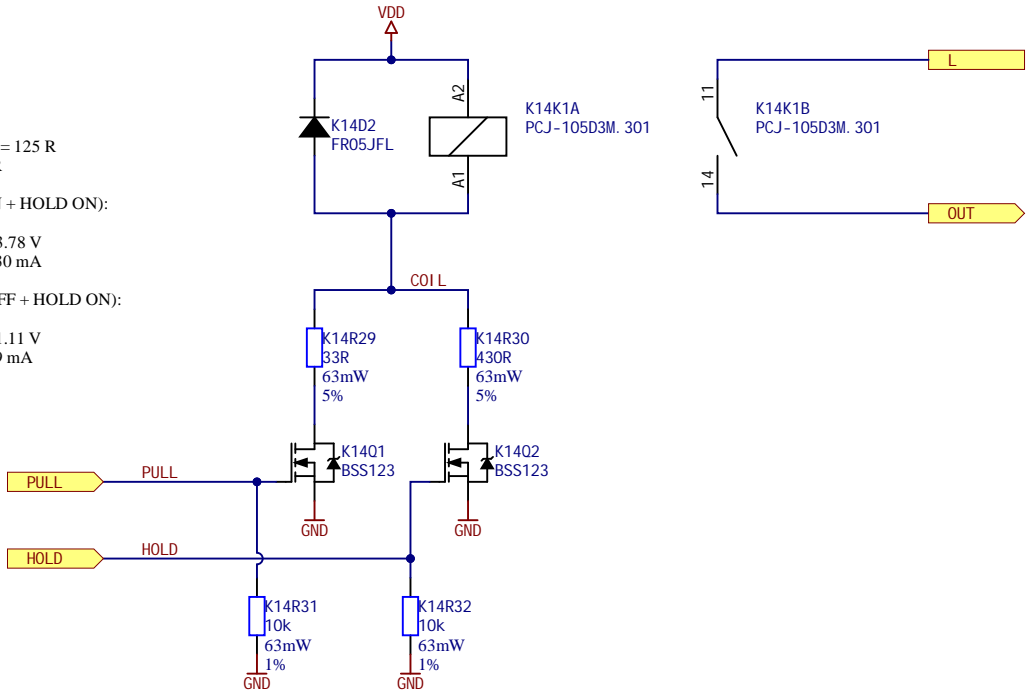
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Description:
230 VAC output relay control circuit

Project: BeagleNode.PrjPcb

Rev: A

Address:

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

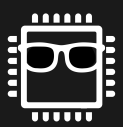
Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc



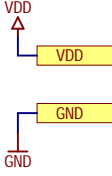
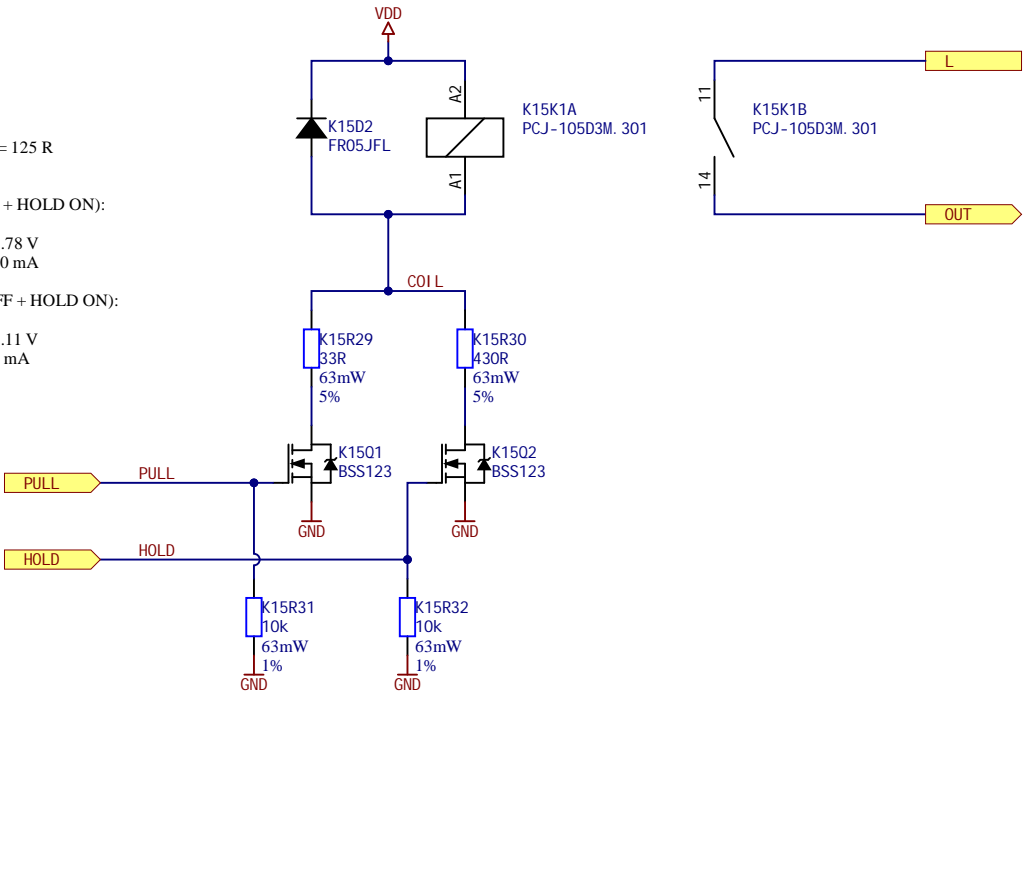
Coil resistance = 125 R
R_DSON = 5 R

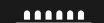
Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc	Project: BeagleNode.PrjPcb		Rev: A	Address: Ofiar Katynia 21 72-100 Goleniów Poland	
Description: 230 VAC output relay control circuit	Author: Łukasz Przeniosło	Contact: lukasz@przenioslo.com			
	Company: Przenioslo Electronics & Software		Sheet 6 of 6		
	Created: 2023-02-10 Edited: 2023-10-28				
	File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc				

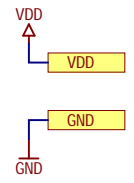
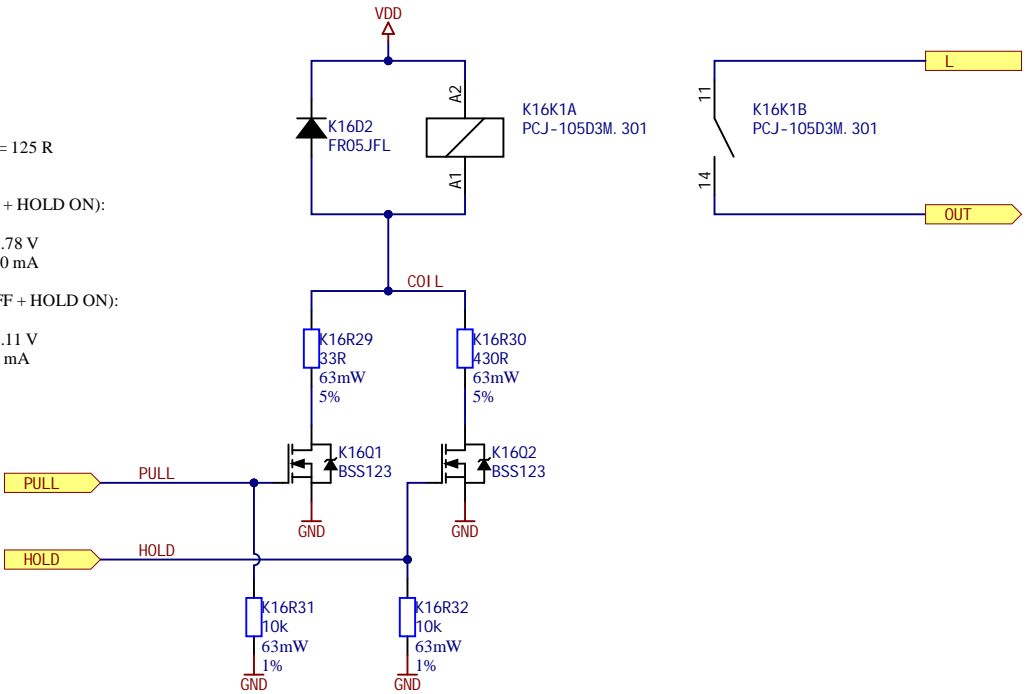
Coil resistance = 125 R
R_DSON = 5 R

Pull (PULL ON + HOLD ON):

Coil voltage = 3.78 V
Coil current = 30 mA

Hold (PULL OFF + HOLD ON):

Coil voltage = 1.11 V
Coil current = 9 mA



Title: relay.SchDoc

Project: BeagleNode.PrjPcb

Rev: A

Address:

Description:
230 VAC output relay control circuit

Author: Łukasz Przeniosło

Contact: lukasz@przenioslo.com

Ofiar Katynia 21
72-100 Goleniów
Poland

Company: Przenioslo Electronics & Software

Sheet 6 of 6

Created: 2023-02-10 Edited: 2023-10-28

File: D:\storage\repo\git\github\BeagleNodeHW\relay.SchDoc

