


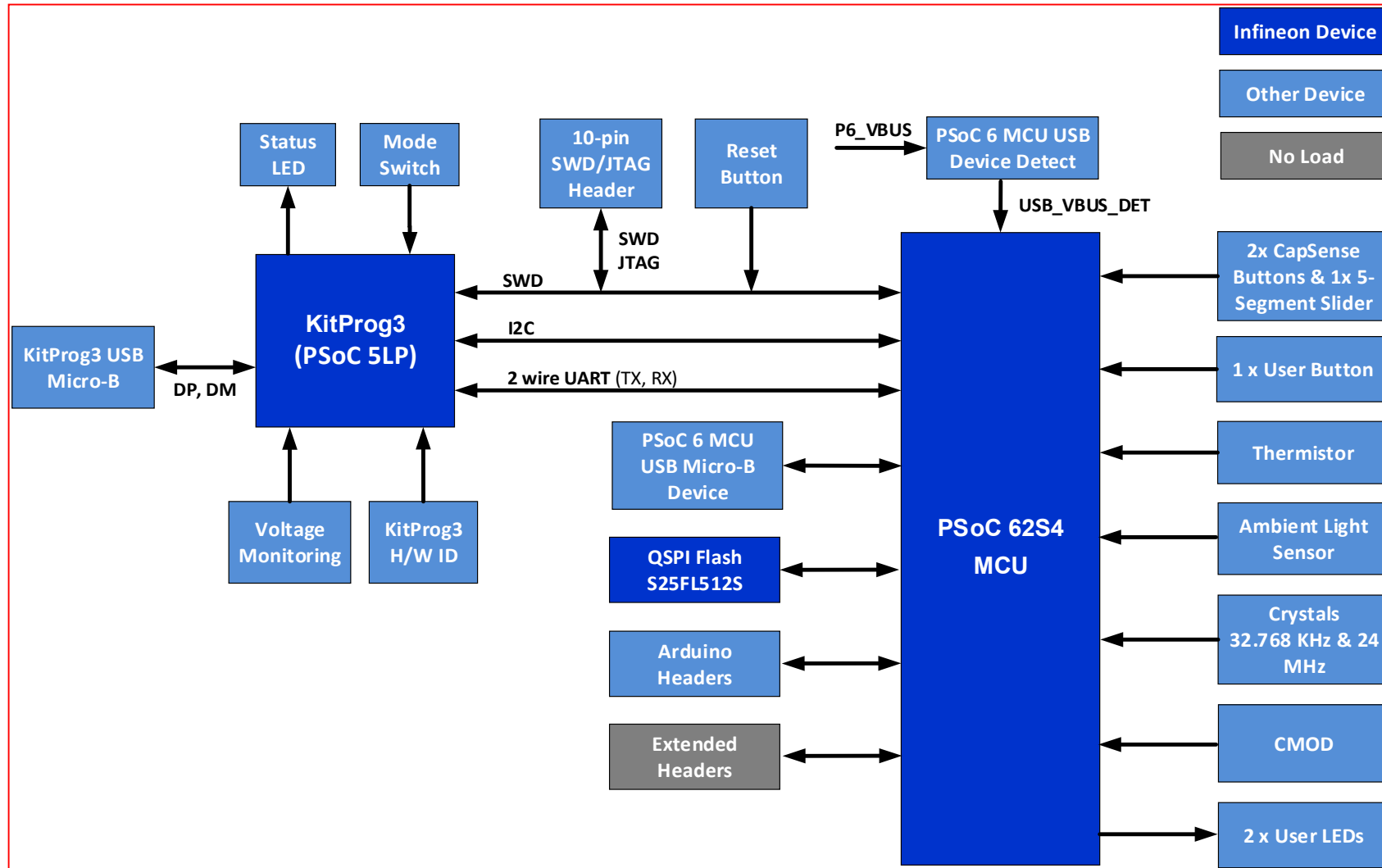
## CY8CKIT-062S4 PSoC 62S4 Pioneer Kit


| <b>CONTENTS</b> |   |
|-----------------|---|
| <b>PAGE</b>     | <b>DESCRIPTION</b>                              |
| 01              | Title Table, Table of Contents, Drawing Numbers |
| 02              | Functional Block Diagram                        |
| 03              | Power Domain Block Diagram                      |
| 04              | Kit Power Supply and PSoC 6 MCU USB Detect      |
| 05              | Onboard Regulators                              |
| 06              | PSoC 5LP Based KitProg3                         |
| 07              | PSoC 6 MCU                                      |
| 08              | Multiplexed Pins & Crystals                     |
| 09              | KitProg3 Interface                              |
| 10              | Peripherals                                     |
| 11              | Arduino & Extended Headers                      |
| 12              | Accessories                                     |
| 13              | Revision History                                |

| <b>Drawing Numbers</b> |              |
|------------------------|--------------|
| PCBA                   | 121-60588-01 |
| PCB                    | 600-60588-01 |
| FAB DRW                | 610-60588-01 |
| ASSY DRW               | 620-60588-01 |
| SCH DRW                | 630-60588-01 |

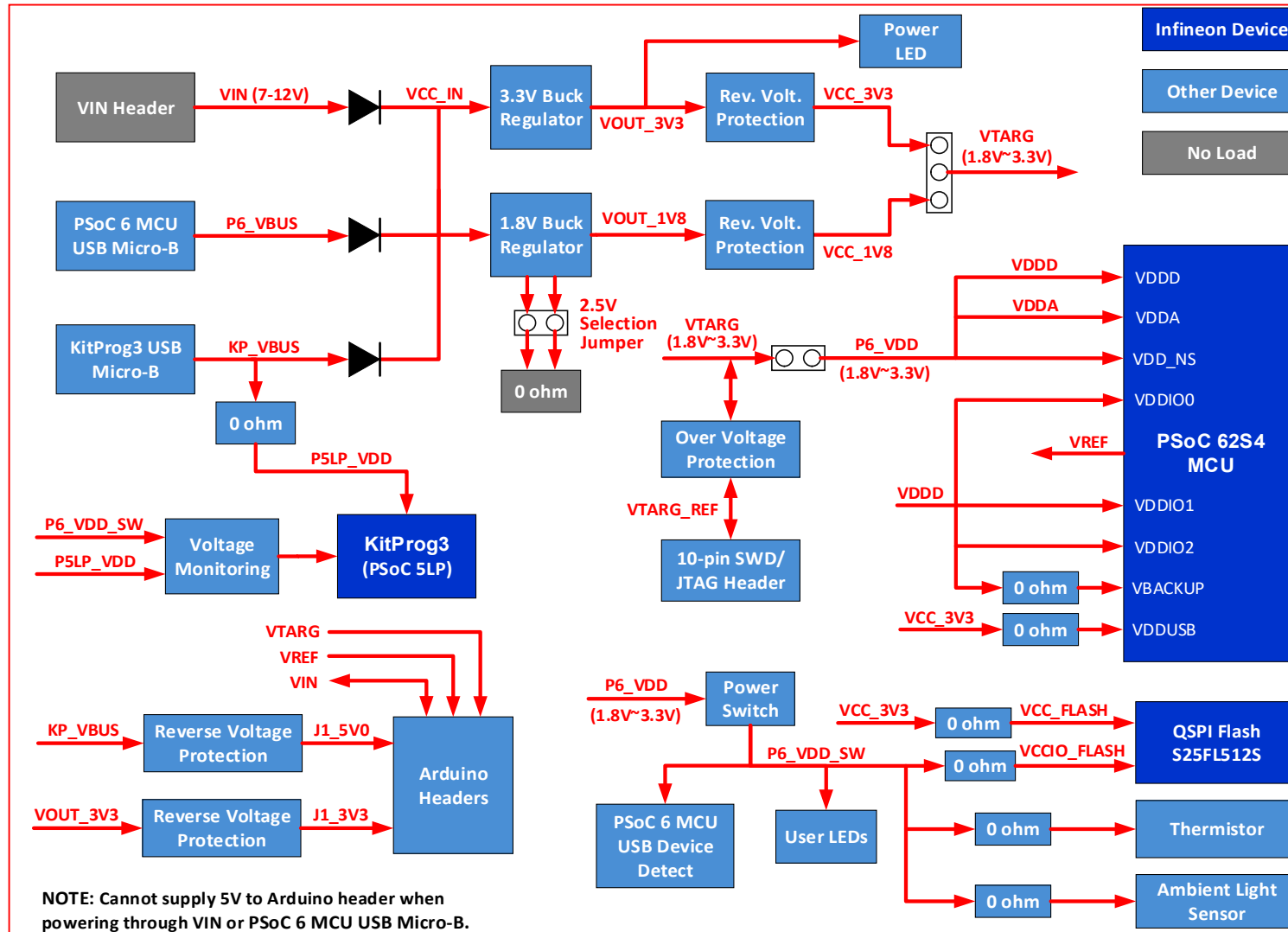
|   |  |  |                            |                  |
|---|--|--|----------------------------|------------------|
|  | <b>CYPRESS</b><br><small>EMBEDDED IN TOMORROW™</small> | <b>CYPRESS SEMICONDUCTOR</b><br>198 CHAMPION COURT<br>SAN JOSE, CA 95134<br>(408) 943-2600 |                            |                  |
| <b>CYPRESS SEMICONDUCTOR © 2020</b>   |  |  |                            |                  |
| <b>SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit</b>                                |  |  |                            |                  |
| <b>Page Title : Title Page</b>  |  |  |                            |                  |
| Size<br>A4  | Document Number<br><b>630-60588-01</b>                 | Drawn By<br><b>RISR</b>  | Approved By<br><b>RKAD</b> | Rev<br><b>03</b> |
| Date: Wednesday, January 20, 2021   |  | Sheet 1 of 13  |                            |                  |


# FUNCTIONAL BLOCK DIAGRAM



|   |                            |  |             |           |
|---|----------------------------|--|-------------|-----------|
|  |                            | <b>CYPRESS SEMICONDUCTOR</b><br>198 CHAMPION COURT<br>SAN JOSE, CA 95134<br>(408) 943-2600 |             |           |
| <b>CYPRESS SEMICONDUCTOR © 2020</b>   |                            |  |             |           |
| <b>SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit</b>                                |                            |  |             |           |
| <b>Page Title : Functional Block Diagram</b>  |                            |  |             |           |
| Size  | Document Number            | Drawn By   | Approved By | Rev       |
| A4  | <b>630-60588-01</b>        | <b>RISR</b>  | <b>RKAD</b> | <b>03</b> |
| Date:   | Tuesday, February 02, 2021 |  | Sheet       | 2 of 13   |

# POWER DOMAIN BLOCK DIAGRAM





**CYPRESS SEMICONDUCTOR**  
 198 CHAMPION COURT  
 SAN JOSE, CA 95134  
 (408) 943-2600

---

**CYPRESS SEMICONDUCTOR © 2020**

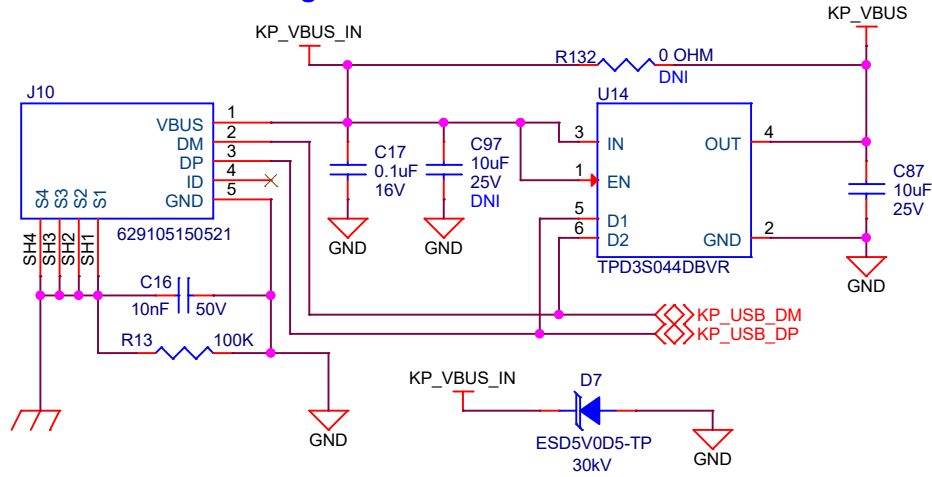
**SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit**

**Page Title : Power Domain Block Diagram**

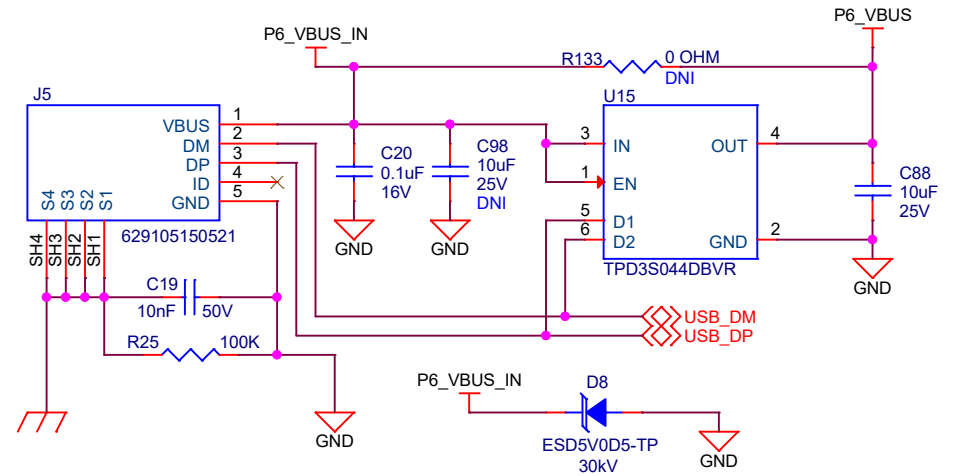
|       |                            |             |             |           |
|-------|----------------------------|-------------|-------------|-----------|
| Size  | Document Number            | Drawn By    | Approved By | Rev       |
| A4    | <b>630-60588-01</b>        | <b>RISR</b> | <b>RKAD</b> | <b>03</b> |
| Date: | Tuesday, February 02, 2021 |             | Sheet       | 3 of 13   |

# KIT POWER SUPPLY AND PSoC 6 MCU USB DETECT

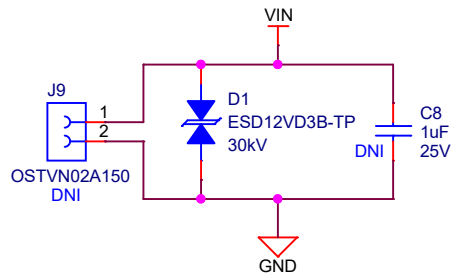
## KitProg3 USB Micro-B Connector



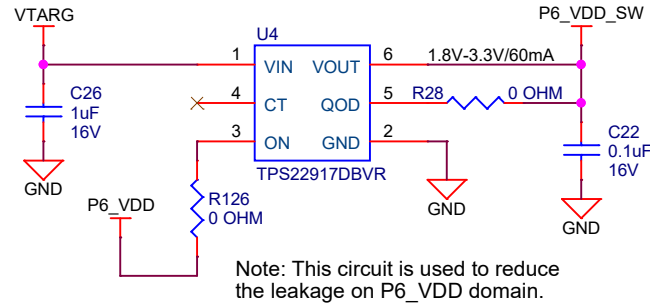
## PSoC 6 MCU USB Device Micro-B Connector



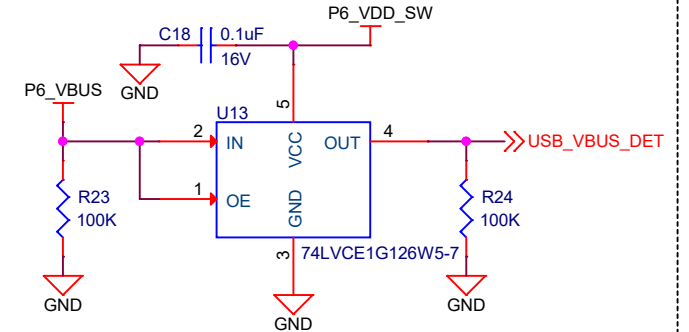
## VIN Header



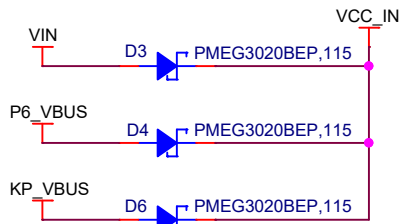
## Power Switch



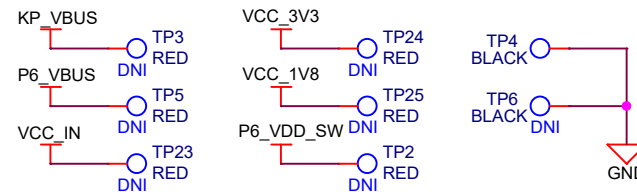
## PSoC 6 MCU USB Device Detect



## Power Supply 'OR'ing



## Kit Power Test Points



**CYPRESS** SEMICONDUCTOR  
 198 CHAMPION COURT  
 SAN JOSE, CA 95134  
 (408) 943-2600

CYPRESS SEMICONDUCTOR © 2020

SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit

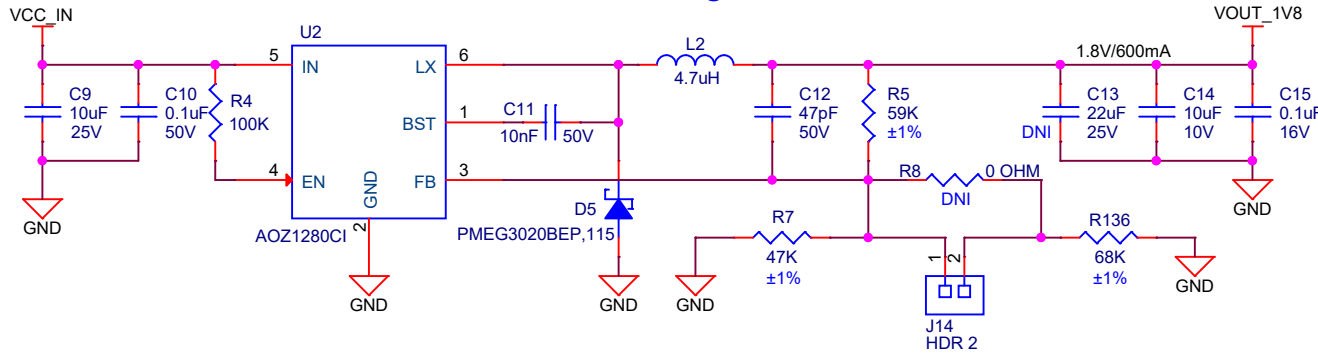
Page Title : Kit Power Supply and PSoC 6 MCU USB Detect

|            |  |                         |                            |                  |
|------------|--|-------------------------|----------------------------|------------------|
| Size<br>A4 | Document Number<br><b>630-60588-01</b> | Drawn By<br><b>RISR</b> | Approved By<br><b>RKAD</b> | Rev<br><b>03</b> |
|------------|--|-------------------------|----------------------------|------------------|

Date: Friday, February 12, 2021 Sheet 4 of 13

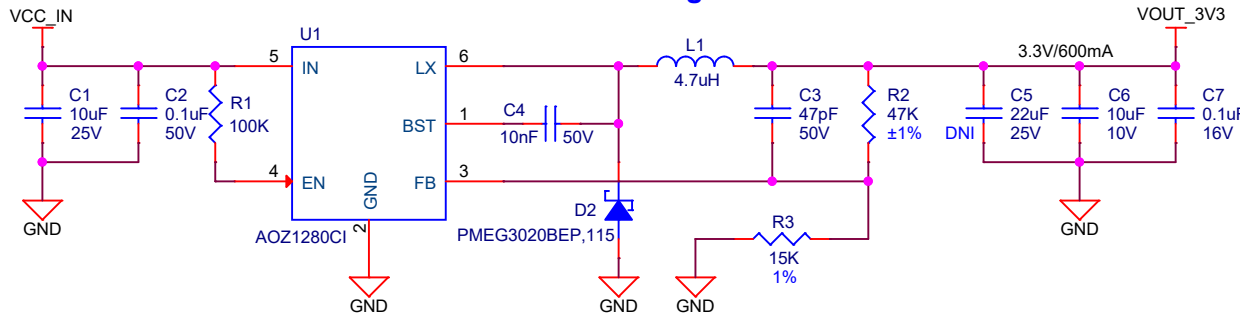
# ONBOARD REGULATORS

## 1.8V Buck Regulator

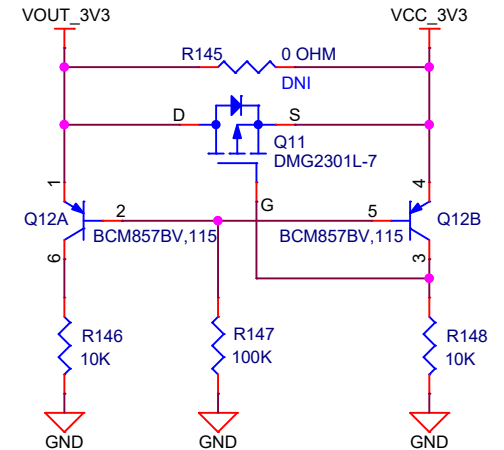
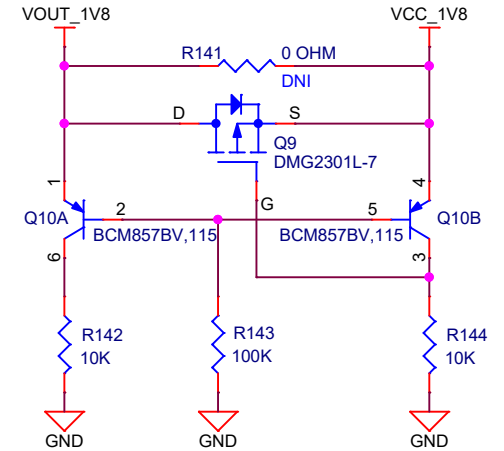


Note: Populate R8 or short J14 to change the voltage to 2.5V for e-Fuse programming.

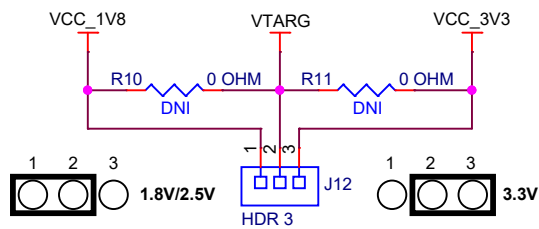
## 3.3V Buck Regulator



## Reverse Voltage Protection for Regulators



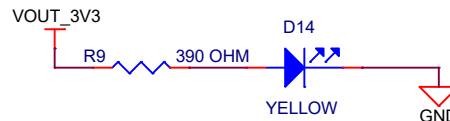
## PSoC 6 MCU Power Selection Jumper



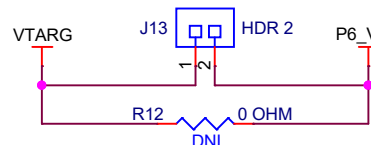
Note: Do not remove jumper when powered.

Connect to VCC\_1V8 for e-Fuse programming. (Default jumper position is 3.3V). Populate R8 or short J14 to change the voltage to 2.5V for e-Fuse programming.

## Power LED



## PSoC 6 MCU Current Measurement



Note: Do not remove jumper when powered.



CYPRESS SEMICONDUCTOR © 2020

SCH Title : CY8CKIT-062S4 PSoc 62S4 Pioneer Kit

Page Title : Onboard Regulators

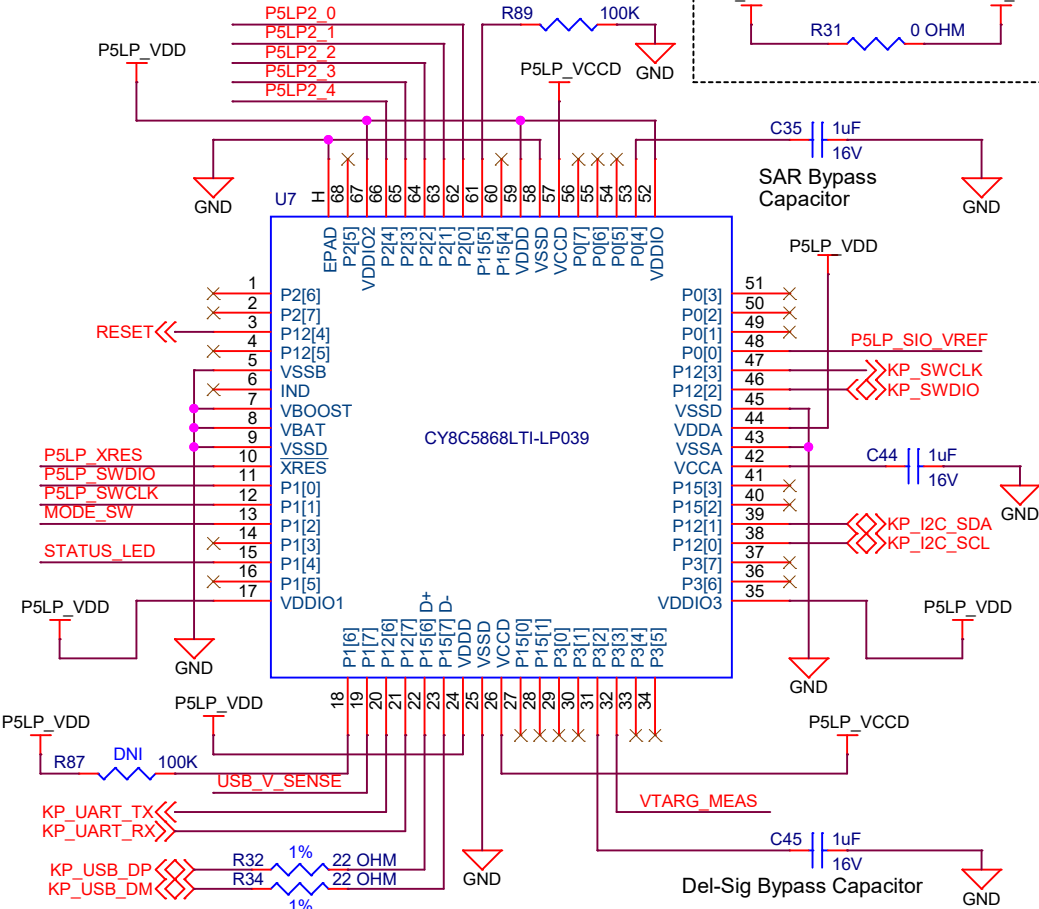
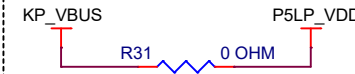
| Size  | Document Number        | Drawn By | Approved By | Rev     |
|-------|------------------------|----------|-------------|---------|
| A4    | 630-60588-01           | RISR     | RKAD        | 03      |
| Date: | Friday, March 05, 2021 |          | Sheet       | 5 of 13 |

# PSoC 5LP BASED KITPROG3

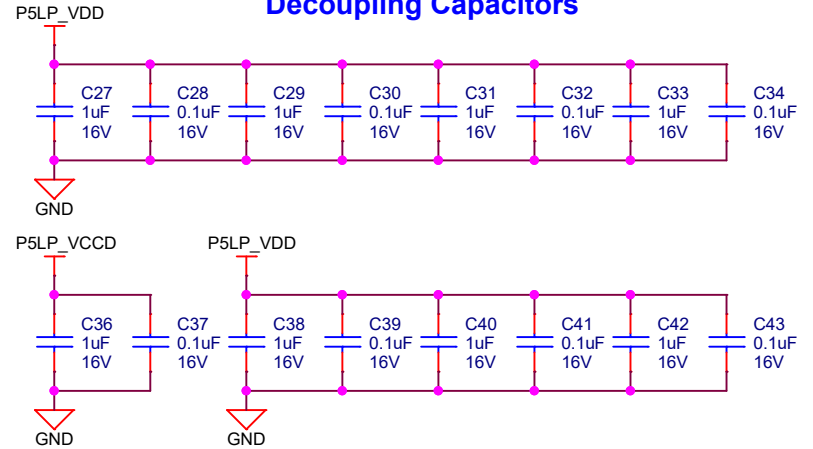
## PSoC 5LP based KitProg3

Note: CTS is configured to disable Flow Control.

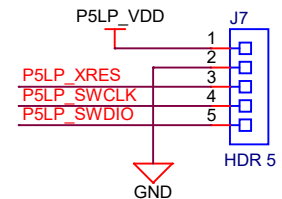
### PSoC 5LP Power



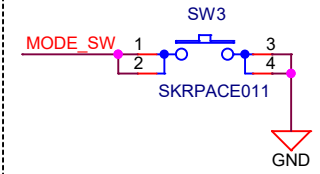
### Decoupling Capacitors



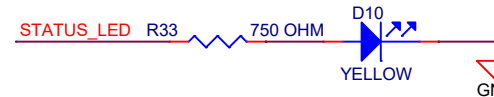
### PSoC 5LP Programming Header



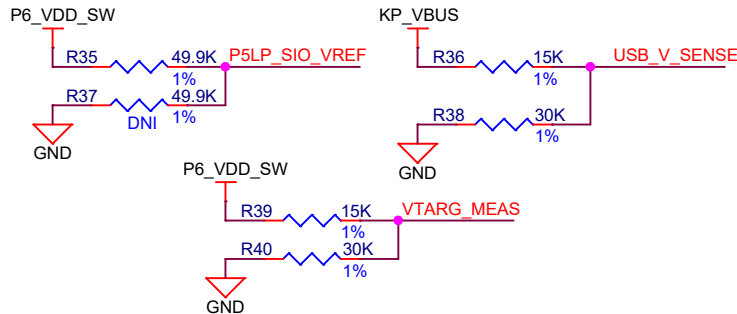
### Mode Switch



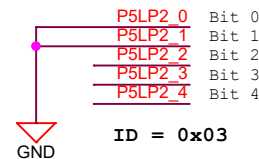
### KitProg3 Status LED



### Voltage Monitoring



### KitProg3 H/W Revision



Note: GND is read as binary "1" and floating as "0".

**CYPRESS**  
EMBEDDED IN TOMORROW™

**CYPRESS SEMICONDUCTOR**  
198 CHAMPION COURT  
SAN JOSE, CA 95134  
(408) 943-2600

CYPRESS SEMICONDUCTOR © 2020

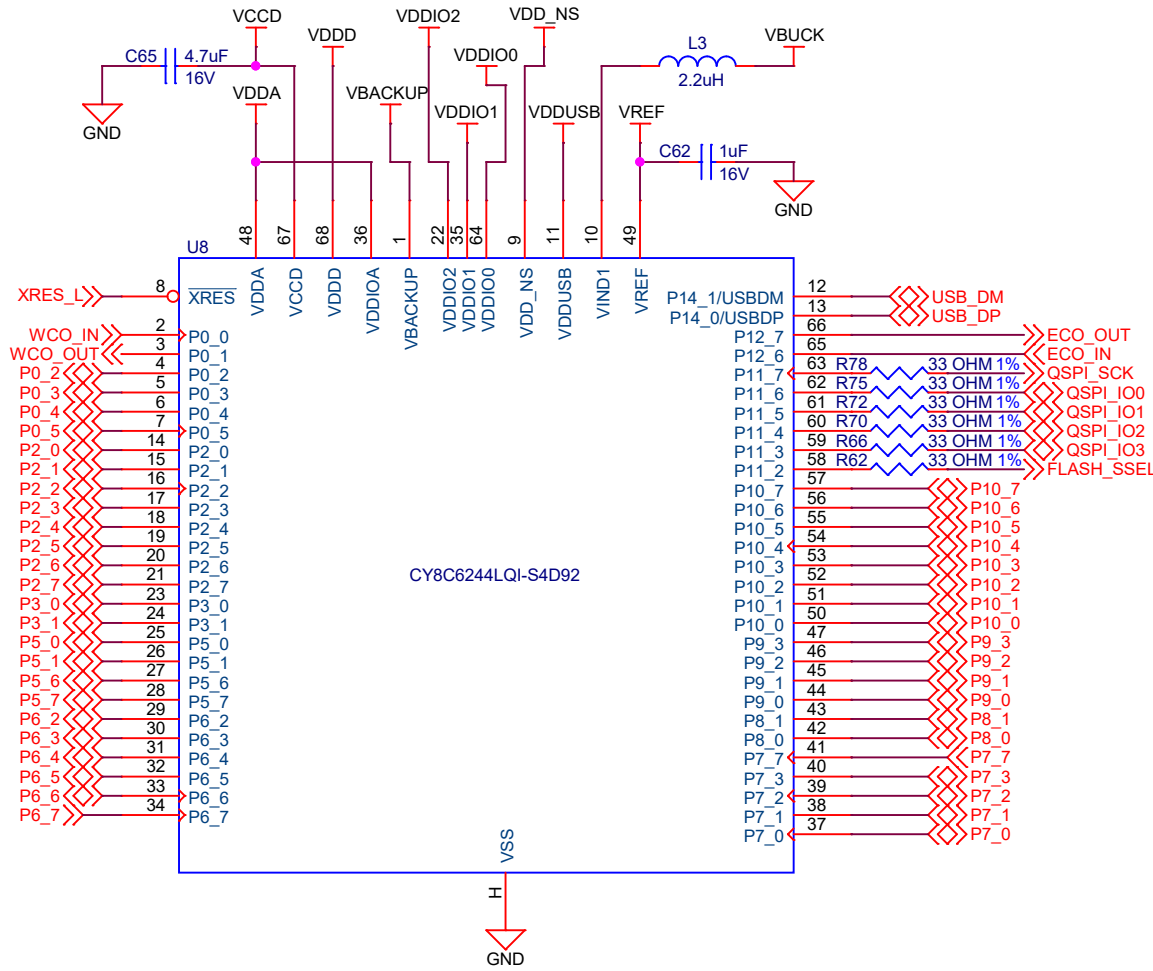
SCH Title : CY8CKIT-062S4 PSoc 62S4 Pioneer Kit

Page Title : PSoc 5LP Based KitProg3

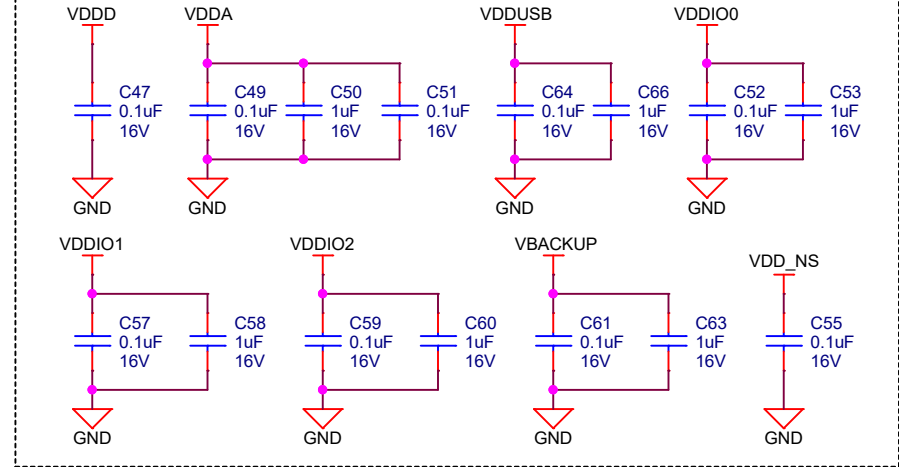
|       |                             |          |             |         |
|-------|-----------------------------|----------|-------------|---------|
| Size  | Document Number             | Drawn By | Approved By | Rev     |
| A4    | 630-60588-01                | RISR     | RKAD        | 03      |
| Date: | Wednesday, January 20, 2021 |          | Sheet       | 6 of 13 |

# PSOC 6 MCU

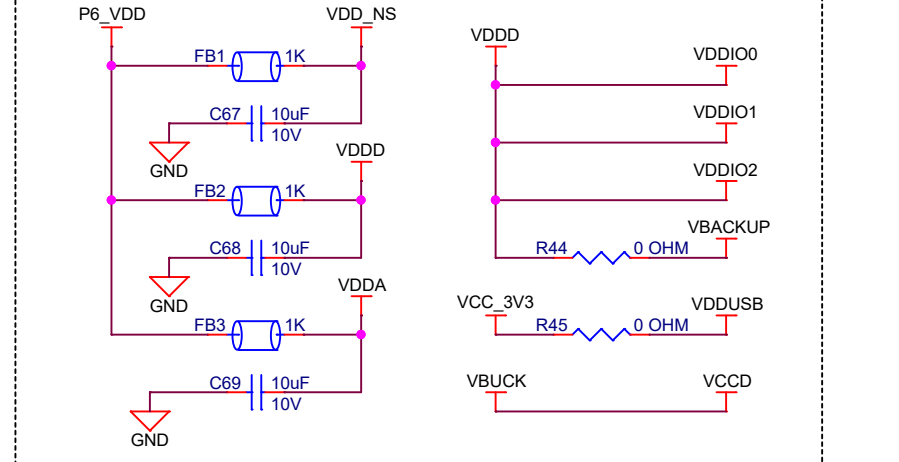
## PSoC 62S4 MCU



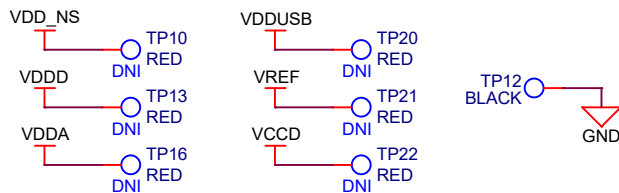
## Decoupling Capacitors



## PSoC 6 MCU Power In



## PSoC 6 MCU Power Domain Test Points

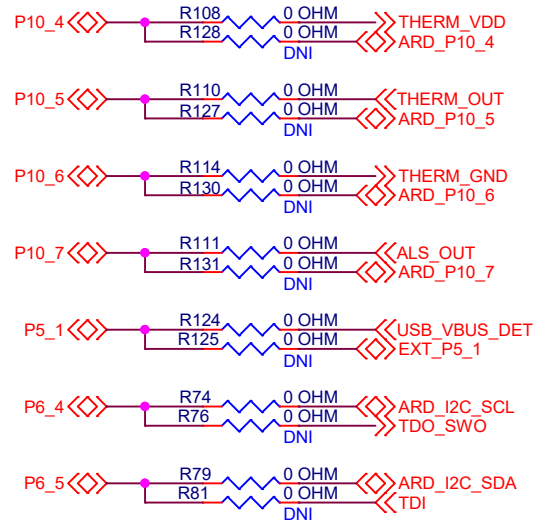


**CYPRESS SEMICONDUCTOR**  
**CYPRESS** EMBEDDED IN TOMORROW™  
 198 CHAMPION COURT  
 SAN JOSE, CA 95134  
 (408) 943-2600

|  |  |                         |                            |                  |
|--|--|-------------------------|----------------------------|------------------|
| <b>CYPRESS SEMICONDUCTOR © 2020</b>                    |  |                         |                            |                  |
| <b>SCH Title : CY8CKIT-062S4 PSoc 62S4 Pioneer Kit</b> |  |                         |                            |                  |
| <b>Page Title : PSoc 6 MCU</b>                         |  |                         |                            |                  |
| Size<br>A4   | Document Number<br><b>630-60588-01</b> | Drawn By<br><b>RISR</b> | Approved By<br><b>RKAD</b> | Rev<br><b>03</b> |
| Date:<br>Wednesday, January 20, 2021                   | Sheet<br>7                             |                         | of<br>13                   |                  |

# MULTIPLEXED PINS & CRYSTALS

## Additional Multiplexed Pins

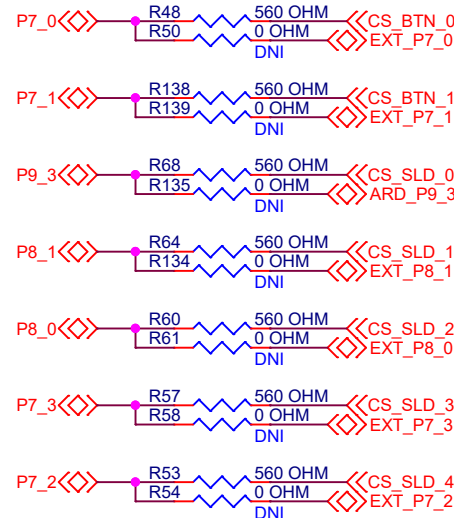


Note: Remove R74, R79 and mount R76, R81 for JTAG connection.

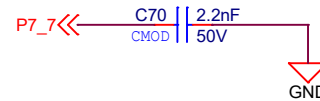
Note: Remove R108, R110, R111, R114 and populate R127, R128, R130, R131 for full functionality of the Arduino compatible shield.

Note: Port P6\_5 defaults to logic high with internal pull-up on device reset. This can result in higher deep sleep and hibernate current when measured at header J13. If JTAG functionality is not being used, configure P6\_5 drive mode to High-Z Analog in the project.

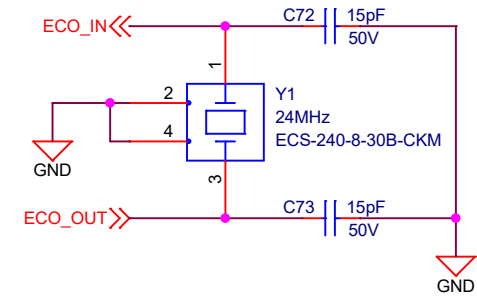
## CapSense Multiplexed Pins



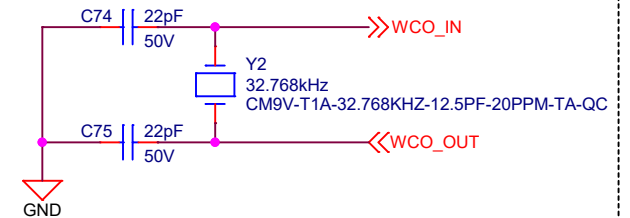
## CMOD



## ECO



## WCO



**CYPRESS**  
EMBEDDED IN TOMORROW™

**CYPRESS SEMICONDUCTOR**  
198 CHAMPION COURT  
SAN JOSE, CA 95134  
(408) 943-2600

**CYPRESS SEMICONDUCTOR © 2020**

**SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit**

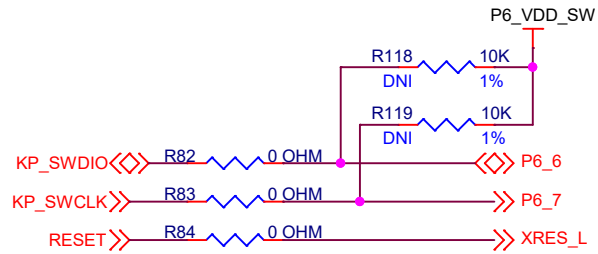
**Page Title : Multiplexed Pins & Crystals**

|       |                             |             |             |           |
|-------|-----------------------------|-------------|-------------|-----------|
| Size  | Document Number             | Drawn By    | Approved By | Rev       |
| A4    | <b>630-60588-01</b>         | <b>RISR</b> | <b>RKAD</b> | <b>03</b> |
| Date: | Wednesday, January 20, 2021 |             | Sheet       | 8 of 13   |

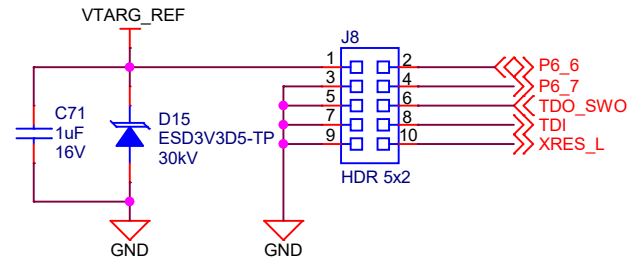


# KITPROG3 INTERFACE

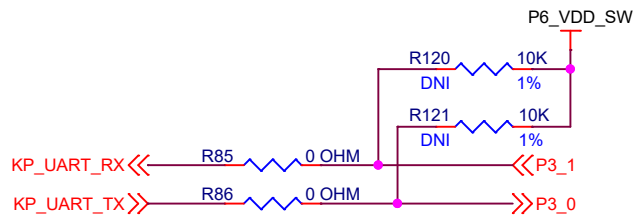
## PSoC 6 MCU SWD KitProg3 Interface



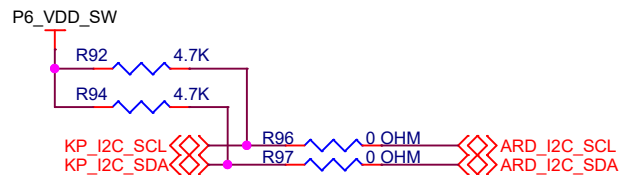
## PSoc 6 MCU 10-pin SWD/JTAG Header



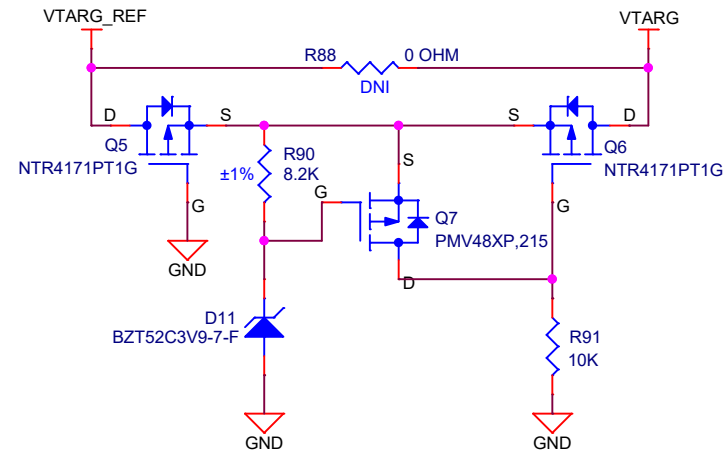
## KitProg3 UART Interface



## KitProg3 I2C Interface



## Over Voltage Protection for SWD/JTAG Header



CYPRESS SEMICONDUCTOR © 2020

SCH Title : CY8CKIT-062S4 PSoc 62S4 Pioneer Kit

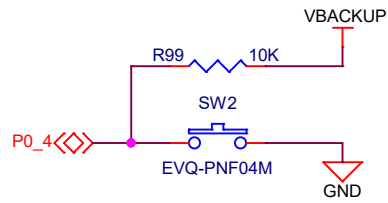
Page Title : KitProg3 Interface

|      |                 |          |             |     |
|------|-----------------|----------|-------------|-----|
| Size | Document Number | Drawn By | Approved By | Rev |
| A4   | 630-60588-01    | RISR     | RKAD        | 03  |

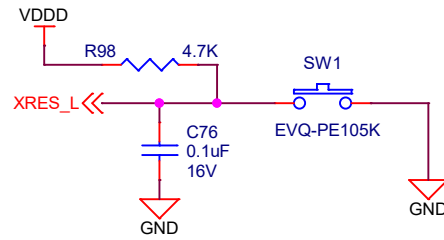
Date: Wednesday, January 20, 2021 Sheet 9 of 13

# PERIPHERALS

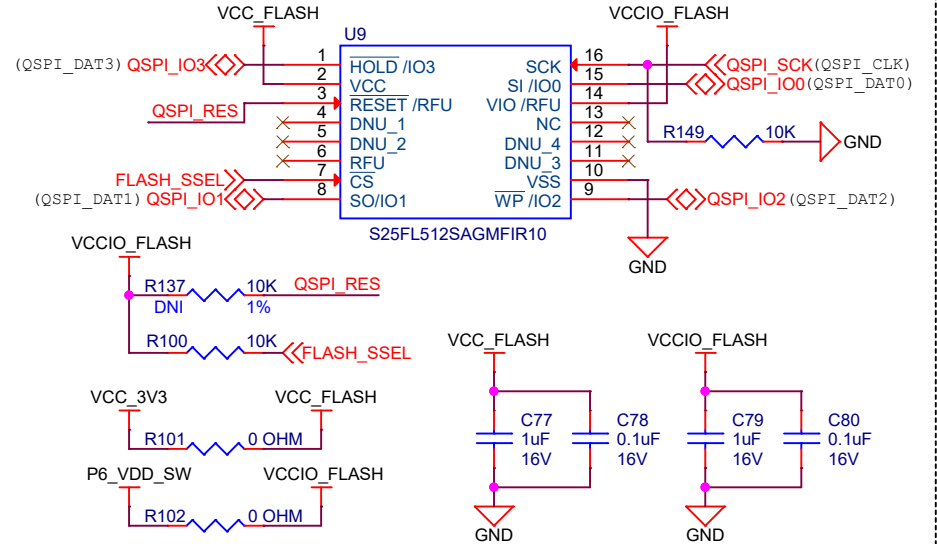
## User Button/Hibernate Wakeup



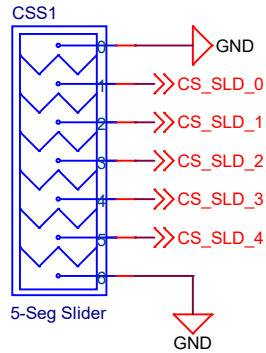
## Reset Button



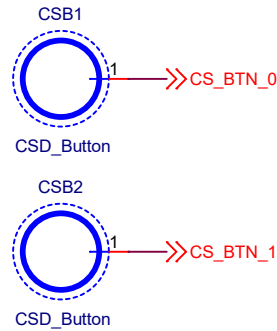
## Quad SPI Flash Memory



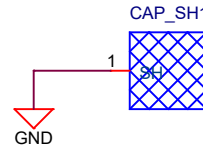
## CapSense Slider



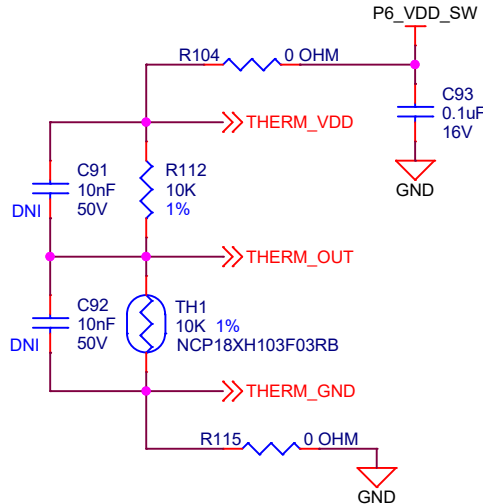
## CapSense Buttons



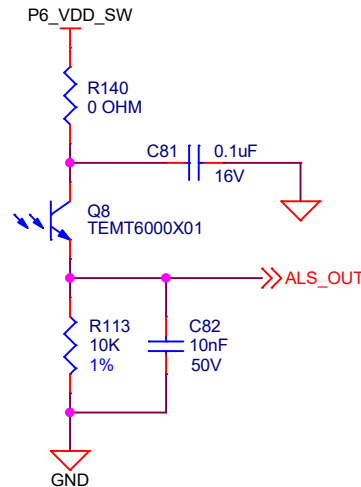
## CapSense Shield



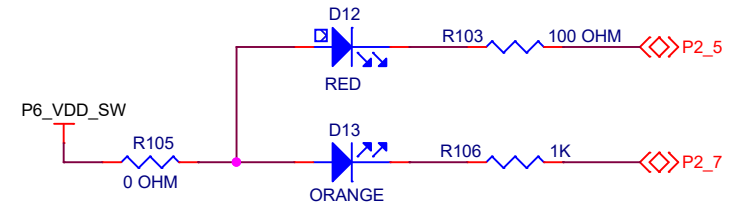
## Thermistor



## Ambient Light Sensor



## User LEDs



CYPRESS SEMICONDUCTOR © 2020

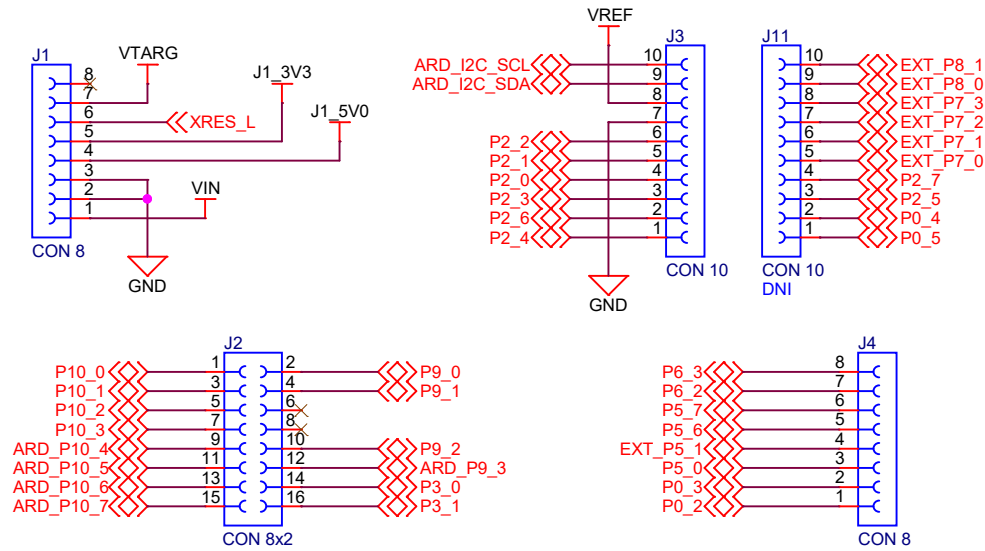
SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit

Page Title : Peripherals

| Size | Document Number | Drawn By | Approved By | Rev |
|------|-----------------|----------|-------------|-----|
| A4   | 630-60588-01    | RISR     | RKAD        | 03  |

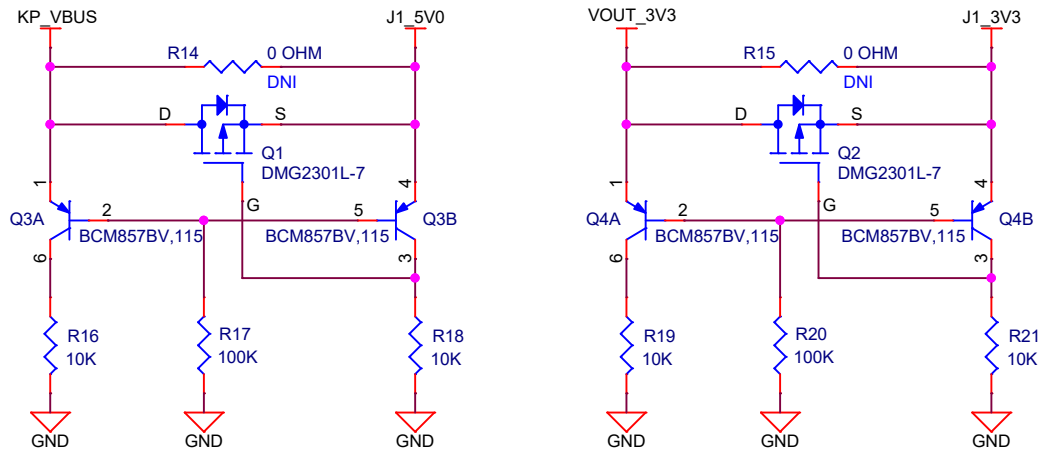
# ARDUINO & EXTENDED HEADERS

## Arduino & Extended Headers



Note: 5V on Arduino header will be present only when KitProg3 USB is connected.

## Reverse Voltage Protection for Arduino Header



**CYPRESS SEMICONDUCTOR**  
 198 CHAMPION COURT  
 SAN JOSE, CA 95134  
 (408) 943-2600

CYPRESS SEMICONDUCTOR © 2020

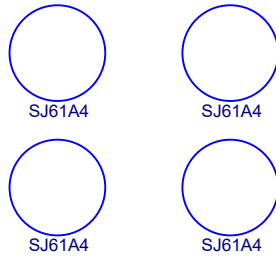
SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit

Page Title : Arduino & Extended Headers

|       |                             |          |             |          |
|-------|-----------------------------|----------|-------------|----------|
| Size  | Document Number             | Drawn By | Approved By | Rev      |
| A4    | 630-60588-01                | RISR     | RKAD        | 03       |
| Date: | Wednesday, January 20, 2021 |          | Sheet       | 11 of 13 |

# ACCESSORIES

## Cylindrical Bump-ons



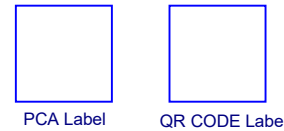
## Acrylic Overlay

Overlay

Color: Clear, Transparent  
Finish: Matt

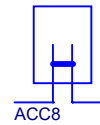
Dimensions:  
42.62mm - length  
40.28mm - height  
1mm - thickness

## PCBA label



## Jumper Shunts

SPC02SYAN



ACC8

SPC02SYAN



ACC9

SPC02SYAN



ACC16



**CYPRESS SEMICONDUCTOR**  
198 CHAMPION COURT  
SAN JOSE, CA 95134  
(408) 943-2600


**CYPRESS SEMICONDUCTOR © 2020**

**SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit**

**Page Title : Accessories**

|       |                             |             |             |           |
|-------|-----------------------------|-------------|-------------|-----------|
| Size  | Document Number             | Drawn By    | Approved By | Rev       |
| A4    | <b>630-60588-01</b>         | <b>RISR</b> | <b>RKAD</b> | <b>03</b> |
| Date: | Wednesday, January 20, 2021 |             | Sheet       | 12 of 13  |

| <b>REVISION HISTORY</b> |   |                        |             |
|-------------------------|---|------------------------|-------------|
| <b>REV</b>              | <b>DESCRIPTION OF CHANGE</b>  | <b>ORIG. OF CHANGE</b> | <b>DATE</b> |
| 01                      | Initial Release   | RISR                   | 11/06/2020  |
| 02                      | 1) Test points 'TP4' and 'TP12' are mounted by default.<br>2) Single ended mode sensing changed to differential mode sensing for thermistor by default.<br>3) Reference designators changed for switches SW1, SW2, SW3<br>4) QSPI Chip select net name is 'FLASH_SSEL'.   | RISR                   | 20/07/2020  |
| 03                      | 1) Block Diagrams updated<br>2) U14, U15 updated with TPD3S044DBVR<br>3) U4 updated with TPS22917DBVR<br>4) CSB2, R140 added<br>5) Reverse Voltage Protection circuit added for Buck Regulators<br>6) R149 pulldown resistor added; Multiplexing resistors removed for P10_3<br>7) ALS supply changed to P6_VDD_BUF<br>8) VBUCK & VCCD shorted by reoving R46; C56 removed<br>9) Drawing nos made not DNI; JMP1 & JMP2 removed; P6_VDD_BUF renamed as P6_VDD_SW | RISR                   | 14/11/2020  |

|   |                             |  |             |           |
|---|-----------------------------|--|-------------|-----------|
|  |                             | <b>CYPRESS SEMICONDUCTOR</b><br>198 CHAMPION COURT<br>SAN JOSE, CA 95134<br>(408) 943-2600 |             |           |
|   |                             | <b>CYPRESS SEMICONDUCTOR © 2020</b>  |             |           |
| <b>SCH Title : CY8CKIT-062S4 PSoC 62S4 Pioneer Kit</b>                                |                             |  |             |           |
| <b>Page Title : Revision History</b>  |                             |  |             |           |
| Size  | Document Number             | Drawn By   | Approved By | Rev       |
| A4  | <b>630-60588-01</b>         | <b>RISR</b>  | <b>RKAD</b> | <b>03</b> |
| Date:   | Wednesday, January 20, 2021 |  | Sheet       | 13 of 13  |