MSP430 LaunchPad Pin Connections

- **+3V3**
- **+5V**
- **GND**
- **P6.5/A5/CB5**
- **P3.4/UCA0RXD/UCA0SOMI**
- **GND**
- **P6.0/A0/CB0**
- **P3.3/UCA0TXD/UCA0SIMO**
- **P6.1/A1/CB1**
- **P6.2/A2/CB2**
- **P6.3/A3/CB3**
- **P6.4/A4/CB4**
- **P1.6/TA1CLK/CBOUT**
- **P6.6/A6/CB6**
- **P3.2/UCB0CLK/UCA0STE**
- **P2.7/UCA0CLK/UCB0STE**
- **P7.0/A12/CB8**
- **P4.2/PM_UCB1SCL/PM_UCB1SOMI**
- **P3.6/TB0.6**
- **P4.1/PM_UCB1SDA/PM_UCB1SIMO**
- **P3.5/TB0.5**

**MSP-EXP430F5529 LaunchPad**

- **U1A**
- **P2.5/TA2.2**
- **GND**
- **P2.4/TA2.1**
- **P1.5/TA0.4**
- **P2.0/TA1.1**
- **P2.2/SMCLK/TA2CLK**
- **P1.4/TA0.3**
- **P7.4/TB0.2**
- **RST/NMI/SBWTDIO**
- **P3.0/UCB0SIMO/UCB0SDA**
- **P3.1/UCB0SOMI/UCB0SCL**
- **P1.3/TA0.2**
- **P1.2/TA0.1**

**BCM Driver Reference Design**

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Low Side Driver

Channels: 1-5

Low side loads 1 to 5
Load: Lamps (1300mA)
Device max. output: 500mA out on J1-J3, 1A on J4, J5

Load: Lamps (1300mA)
High Side Driver

Channels: 2-5

Load: Window actuator + Windshield wiper actuator (4x 250mA relay)

Device max. output: 1A each channel, 3.75A max total
High Side Driver

Channel 5

R14 - 5.83kOhm for 300mA sensing range
R15 - Current limit set for 300mA
R12/13 - MSP430 compatible analog output

High side load 5
Load: HVAC blower (1x 250mA relay)
Device max. output: 3.21A

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High Side/Low Side Driver

**HS Channels:** 6-7
**LS Channels:** 6-7

- **Load:** Door lock actuator (2x 250mA relay)
- **Device max. output:**
  - 2x 650mA
  - 4x 540mA
  - 2x 1200mA (parallel mode)

- **Jumper J12 & J17 for parallel mode, leave open for normal operation**

- **Mode Set = 0; Device in RETRY mode (OCP flag clears after 200ms)**
- **10k resistor in series with MODE_SEL, select parallel mode**

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Contact:
- [http://www.ti.com/support](http://www.ti.com/support)

Assembly Variant:
- [No Variations]
High Side Pre-FET Driver

Channel 1

Pre-FET high side load 1
Load: Seat heater
Typ: 3.5A @ 12V
Max: 4.5A @ 20V

LM9061M

LM9061_ON

12V

GND

C13 - Delay timer set to 55ms
0.1µF

J18

ED555/2DS

GND

Q1

SQ4470EY-T1-GE3
60V, 16A

R20

6A

1.00k

R21

15.4k

R23

TP2

Typ: 3.5A @ 12V
Max: 4.5A @ 20V

1.13k

R22

R22 - OCP threshold set to 5.5A
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High Side Pre-FET Driver

Channels: 2-5

Pre-FET high side loads 2 to 5.

Min. Safe loads Typ. 3.5A @ 12V each

Max. 4.5A @ 20V each

Engineer:

Contact:

File:

Assembly Variant:

Project Title:

Designed for:

Number:

Sheet:

Mod. Date:

Size:

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LED Driver

Channels: 1-3
Car Battery
12V typical
9-20V typical continuous range
40V load dump transients
You should delete the nylon screws/standoffs and/or the bumpers as needed for your design (or substitute other parts from Hardware.IntLib). Bumpers are cheaper, but provide less clearance.

Deleting anything else from this page may result in your EVM submission being rejected (until you add them back).

Update the Label Text in the Label Table as needed for each Assembly Variant.

You can delete this note too.

Label Table

<table>
<thead>
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<th>Variant</th>
<th>Label Text</th>
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</tr>
<tr>
<td>002</td>
<td>ChangeMe!</td>
</tr>
</tbody>
</table>

Assembly Note

ZZ2

These assemblies are ESD sensitive. ESD precautions shall be observed.

ZZ3

These assemblies must be clean and free from flux and all contaminants. Use of no-clean flux is not acceptable.

ZZ4

These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.
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