From PM 2887
## PMP4024REVB BOM

<table>
<thead>
<tr>
<th>COUNT</th>
<th>RefDes</th>
<th>Value</th>
<th>Description</th>
<th>Size</th>
<th>Part Number</th>
<th>MFR</th>
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<tbody>
<tr>
<td>4</td>
<td>C1, C8, C10, C11</td>
<td>10uF</td>
<td>Capacitor, Ceramic, 25V, X5R, 20%</td>
<td>1206</td>
<td>C3216X5R1E106</td>
<td>TDK</td>
</tr>
<tr>
<td>1</td>
<td>C101</td>
<td>10pF</td>
<td>Capacitor, Ceramic, 10-pF, 50-V, C0G, 5%</td>
<td>0603</td>
<td>C1608CG1H100DB</td>
<td>TDK</td>
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<tr>
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<td>C15</td>
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<td>Std</td>
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<td>2</td>
<td>C2, C3</td>
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<td>C1608XT1E105K</td>
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<td>C4, C6, C7</td>
<td>22 uF</td>
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<td>C3216X5R1A226</td>
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<td>C5</td>
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<td>TDK</td>
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<td>C9</td>
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<td>Capacitor, Ceramic, 50V, C0G, 5%</td>
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<td>C1608CG1H100DB</td>
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<tr>
<td>4</td>
<td>J1, J2, J3, J4</td>
<td>PTC36SAAN</td>
<td>Header, Male 6-pin, 100mil spacing, (36-pin strip)</td>
<td>0.100 inch x 6</td>
<td>PTC36SAAN</td>
<td>Sullins</td>
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<td>J5, J8</td>
<td>PTC36SAAN</td>
<td>Header, 2-pin, 100mil spacing, (36-pin strip)</td>
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<td>PTC36SAAN</td>
<td>Sullins</td>
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<tr>
<td>4</td>
<td>JP1, JP2, JP3, JP4</td>
<td>PTC36SAAN</td>
<td>Header, 3-pin, 100mil spacing, (36-pin strip)</td>
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<td>Sullins</td>
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<td>2</td>
<td>L1, L2</td>
<td>6.8uH</td>
<td>Inductor, SMT, 3.67A, 41.8 milliohm</td>
<td>0.276 x 0.276 inch</td>
<td>DR74-6R8-R</td>
<td>Coiltronics</td>
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<tr>
<td>5</td>
<td>R15</td>
<td>Open</td>
<td>Resistor, Chip, open, 1/16-W, 1%</td>
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<td>Std</td>
<td>Std</td>
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<td>R10</td>
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<td>Resistor, Chip, short, 1/2W, 1%</td>
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<td>R2</td>
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<td>R21</td>
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<td>Std</td>
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<td>R4</td>
<td>301K</td>
<td>Resistor, Chip, 301k, 1/16-W, 1%</td>
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<td>Std</td>
<td>Std</td>
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<tr>
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<td>R6, R14</td>
<td>0</td>
<td>Resistor, Chip, short, 1/16-W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
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<tr>
<td>3</td>
<td>R8, R16, R17</td>
<td>1.00M</td>
<td>Resistor, Chip, 1/16-W, 1%</td>
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<td>Std</td>
<td>Std</td>
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<td>SH1, SH2</td>
<td>Short jumper</td>
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<tr>
<td>2</td>
<td>U1, U2</td>
<td>TPS62110RSA</td>
<td>IC, Synchronous Step-Down Converter, 17V, 1.2A</td>
<td>QFN-16</td>
<td>TPS62110RSA</td>
<td>TI</td>
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</tbody>
</table>

### 1.2V and 3.3V SWIFT

### 1.8V LDO
The following test report includes measurements for the following output voltage rails using a 12V input:

A. **Start Up Waveform for all outputs**

B. **1.2V @ 1.48A Using the TPS62110 Device**
   1. Output Voltage Ripple (Measured Full Load)
   2. Load Transient (25% to 100% Load Step)
   3. Load Regulation
   4. Efficiency
   5. Switch Node

C. **3.3V @ 0.18A Using the TPS62110 Device**
   1. Output Voltage Ripple (Measured Full Load)
   2. Load Transient (25% to 100% Load Step)
   3. Load Regulation
   4. Efficiency
   5. Switch Node

D. **1.8V @ 0.14A Using the TPS73018 Device - LDO**
   1. Output Voltage Ripple (Measured Full Load)
   2. Load Transient (25% to 100% Load Step)
A Start Up Waveform All Outputs – TPS 62110 & TPS 73018

Sequence is 3.3V, 1.8V and 1.2V, with 12Vin

Channel 2: 3.3V DC/DC – green - TPS62110 – 2V/Div
Channel 1: 1.8V LDO – orange - TPS 73018 -2V/Div
Channel 3: 1.2V DC/DC – red - TPS62110 -2V/Div
B. 1.2V @ 1.48A – TPS 62110 – DCDC

1 Output Ripple Voltage for 1.2V @ 1.48A (TPS62110)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 1.2V Output – Green (1V/Division, DC Coupled)
Channel 4: Output Current – Blue (1A/Division, DC Coupled)
2 Load Transients – 1.2V @ 1.48A (TPS62110)
25% to 100% Load Step

The photo below shows the transient response. The current is pulsed from 0.37A to 1.48A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.2V Output - Orange (50mV/Division; AC Coupled)
Channel 2: 1.2V Output – Green (1V/Division, DC Coupled)
Channel 4: Output Current - Blue (1A/Division)
3 Load Regulation (TPS62110)

The load regulation is shown in the figure below. The input voltage is 12V.

1.2V@1.48A Output Voltage vs. Load Current
4 Efficiency (TPS62110)

The efficiency is shown in the figure below. The input voltage is 12V.

1.2V@1.48A Efficiency vs. Load Current
5 Switch Node Waveforms 1.2V @ 1.48A (TPS62110)

The plot below shows the switching waveforms for the converter. The input is 12V.

Channel 1: Switch Node - Orange (10V/Division)
C. 3.3V @ 0.18A – TPS 62110 – DCDC

1 Output Ripple Voltage for 3.3V @ 0.18A (TPS62110)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)
Channel 3: 3.3V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current – Blue (100 mA/Division. DC Coupled)
2 Load Transients – 3.3V @ 0.18A (TPS62110)

The photo below shows the transient response. The current is pulsed from 0.04A to 0.18A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 3.3V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current - Blue (100mA/Division)
3 Load Regulation (TPS62110)

The load regulation is shown in the figure below. The input voltage is 12V.

3.3V@0.18A Output Voltage vs. Load Current
4 Efficiency (TPS62110)

The efficiency is shown in the figure below. The input voltage is 12V.

3.3V@0.18A Efficiency vs. Load Current
5 Switch Node Waveforms 3.3V @ 0.18A (TPS62110)

The plot below shows the switching waveforms for the converter. The input is 12V.

Channel 1: Switch Node - Orange (10V/Division)
D. 1.8V @ 0.14A – TPS 73018 – LDO

1. Output Ripple Voltage for 1.8V @ 0.14A LDO (TPS73018)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
Channel 3: 1.8V Output – Red (2V/Division, DC Coupled)
Channel 4: Current Output – Blue (100mA/Division)
2. Load Transients – 1.8V @ 0.14A TPS 73018

25% to 100% Load Step

The photo below shows the transient response. The current is pulsed from 0.035A to 0.14A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 1.8V Output - Green (1V/Division; DC Coupled)
Channel 4: Output Current - Blue (100mA/Division)