## PMP4022REVA 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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>C11</td>
<td>2.2uF Capacitor, Ceramic, 6.3V, X5R, 10%</td>
<td>0603</td>
<td>C1608X5R0J225K</td>
<td>TDK</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>C15</td>
<td>0.1uF Capacitor, Ceramic, 6.3V, X5R, 10%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>C16</td>
<td>0.01uF Capacitor, Ceramic, 6.3V, X5R, 10%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>C2, C3</td>
<td>22uF Capacitor, Ceramic, 6.3V, X5R</td>
<td>0805</td>
<td>C2012X5R0J226MT</td>
<td>TDK</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>C4, C13</td>
<td>0.1uF Capacitor, Ceramic, 6.3V, X5R, 10%</td>
<td>0603</td>
<td>C1608X5R0J105K</td>
<td>TDK</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>C5, C6, C7, C8</td>
<td>10uF Capacitor, Ceramic, 6.3V, X5R, 10%</td>
<td>0805</td>
<td>C2012X5R0J106K</td>
<td>TDK</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>J1, J3, J4, J5, J9, J10, J13, J15</td>
<td>PTC36SAAN Header, 2 pin, 100mil spacing, (36-pin strip)</td>
<td>0.100 x 2</td>
<td>PTC36SAAN</td>
<td>Sullins</td>
</tr>
<tr>
<td>4</td>
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<td>JP3, JP4, JP7, JP8</td>
<td>Header, 3 pin, 100mil spacing, (36-pin strip)</td>
<td>0.100 x 3</td>
<td>PTC36SAAN</td>
<td>Sullins</td>
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<tr>
<td>1</td>
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<td>L1</td>
<td>3.3uH Inductor, 3.3uH, SMT, 3.39A, 18.3milliohm</td>
<td>0.300 sq*</td>
<td>DR74-3R3-R</td>
<td>Coiltronics</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>L2</td>
<td>3.3uH Inductor, SMT, 3.3uH, 4.76A, 12.6milliohm</td>
<td>0.300 sq*</td>
<td>DR74-3R3-R</td>
<td>Coiltronics</td>
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<tr>
<td>1</td>
<td></td>
<td>R1</td>
<td>499K Resistor, Chip, 499k, 1/16W, 1%</td>
<td>0603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R10</td>
<td>100K Resistor, Chip, 1/16W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>R11, R16, R17, R20, R21</td>
<td>0 Resistor, Chip, short, 1/16W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>1</td>
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<td>R12</td>
<td>720k Resistor, Chip, 1/16W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
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<tr>
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<td>R13</td>
<td>1.00Meg Resistor, Chip, 1.00Meg, 1/16W, 1%</td>
<td>0603</td>
<td>CRCW0603-xxxx-F</td>
<td>Vishay</td>
</tr>
<tr>
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<td>R14</td>
<td>10.0K Resistor, Chip, 1/16W, 1%</td>
<td>0603</td>
<td>CRCW0603-xxxx-F</td>
<td>Vishay</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R15</td>
<td>0 Resistor, Chip, short, 1/16W, 5%</td>
<td>0603</td>
<td>CRCW0603-xxxx-F</td>
<td>Vishay</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R18</td>
<td>100K Resistor, Chip, 1/16W, 5%</td>
<td>0603</td>
<td>CRCW0603-xxxx-F</td>
<td>Vishay</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R2</td>
<td>499K Resistor, Chip, 499k, 1/16W, 1%</td>
<td>0603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R3</td>
<td>open Resistor, Chip, open, 1/16W, 1%</td>
<td>0603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R4</td>
<td>0 Resistor, Chip, short, 1/16W, 1%</td>
<td>0603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R5</td>
<td>665k Resistor, Chip, 665k, 1/16W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R6</td>
<td>287k Resistor, Chip, 322k, 1/16W, 1%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>R9</td>
<td>10 Resistor, Chip, 10, 1/16W, 5%</td>
<td>0603</td>
<td>Std</td>
<td>Std</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>U1</td>
<td>TPS650243RHB IC, Power Management IC for Li-Ion Powered Systems</td>
<td>QFN-32</td>
<td>TPS650243RHB</td>
<td>TI</td>
</tr>
</tbody>
</table>
The following test report includes measurements for the following output voltage rails for 5V input:

A. **Start Up Waveform for all outputs**
   - Output Voltage Ripple (Measured Full Load)
   - Load Transient (50% to 100% Load Step)
   - Load Regulation
   - Efficiency
   - Switch Node

B. **1.2V @ 1.48A Using the TPS650243 Device – DCDC1**
   - Output Voltage Ripple (Measured Full Load)
   - Load Transient (50% to 100% Load Step)
   - Load Regulation
   - Efficiency
   - Switch Node

C. **1.8V @ 0.14A Using the TPS650243 Device - DCDC2**
   - Output Voltage Ripple (Measured Full Load)
   - Load Transient (50% to 100% Load Step)
   - Load Regulation
   - Efficiency

D. **3.3V @ 0.04A Using the TPS650243 Device - LDO1**
   - Output Voltage Ripple (Measured Full Load)
   - Load Transient (50% to 100% Load Step)
A Start Up Waveform All Outputs – TPS 650243

Sequence is 3.3V, 1.8V and 1.2V
A 1.2V @ 1.48A – TPS 650243 – DCDC1

1 Output Ripple Voltage
The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Output Current – Blue (0.5A/Division)

1.48A External Load; 5us/Division
2 Load Transients (1.2V @ 1.48A)

The photo below shows the transient response. The current is pulsed from 0.75A to 1.48A. The input voltage is 5V. The time-base is set to 200us/Division.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Output Current - Blue (100mA/Division)
3 Load Regulation – 1.2V @ 1.48A

The load regulation is shown in the figure below. The input voltage is 5V.
4 Efficiency – 1.2V @ 1.48A

The efficiency is shown in the figure below. The input voltage is 5V.
5  **Switch Node Waveforms – 1.2V @ 1.48A**

The plot below shows the switching waveforms for the converter. The input is 5V.

Channel 2: Switch Node - Orange (2V/Division)

Switchnode 1.2V@1.48A External Load,
1. Output Ripple Voltage for 1.8V @ 0.14A

The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
2. Load Transients – 1.8V @ 0.14A

The photo below shows the transient response. The current is pulsed from 0.07A to 0.14A. The input voltage is 5V. The time-base is set to 200us/Division.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Output Current - Blue (100mA/Division)
3. Load Regulation – 1.8V @ 0.14A

The load regulation is shown in the figure below. The input voltage is 5V.

Output Voltage vs. Load Current
4. Efficiency – 1.8V @ 0.14A

The efficiency is shown in the figure below. The input voltage is 5V.

![Efficiency vs. Load Current Graph]
B 3.3V @ 0.04A – TPS 650243 – LDO1

1. Output Ripple Voltage for 3.3V @ 0.04A

The photo below shows the output voltage ripple. The input voltage is 5V.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)
Channel 4: Current Output – Blue (10mA/Division)

3.3V@0.04A External Load; 5us/Division
2. Load Transients – 3.3V @ 0.04A

The photo below shows the transient response. The current is pulsed from 0.02A to 0.04A. The input voltage is 5V. The time-base is set to 200us/Division.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)  
Channel 4: Output Current - Blue (10mA/Division)