1 Photo
The photographs below show the top and bottom views of the PMP7263 Rev A demo board.

2 Efficiency
The efficiency data is shown in the tables and graph below. The discontinuity in the graph is where the controller enters/exits burst mode.
### 115VAC/60Hz

<table>
<thead>
<tr>
<th>Iout</th>
<th>Vout</th>
<th>Vin</th>
<th>Iin</th>
<th>Pin</th>
<th>PF</th>
<th>Pout</th>
<th>Losses</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>12.02</td>
<td>115.6</td>
<td>0.002</td>
<td>0.07</td>
<td>0.29</td>
<td>0.00</td>
<td>0.07</td>
<td>0.0%</td>
</tr>
<tr>
<td>0.024</td>
<td>12.02</td>
<td>115.6</td>
<td>0.010</td>
<td>0.44</td>
<td>0.37</td>
<td>0.29</td>
<td>0.15</td>
<td>65.6%</td>
</tr>
<tr>
<td>0.049</td>
<td>12.02</td>
<td>115.6</td>
<td>0.017</td>
<td>0.85</td>
<td>0.43</td>
<td>0.59</td>
<td>0.26</td>
<td>69.3%</td>
</tr>
<tr>
<td>0.075</td>
<td>12.02</td>
<td>115.6</td>
<td>0.023</td>
<td>1.27</td>
<td>0.47</td>
<td>0.90</td>
<td>0.37</td>
<td>71.0%</td>
</tr>
<tr>
<td>0.088</td>
<td>12.02</td>
<td>115.6</td>
<td>0.026</td>
<td>1.49</td>
<td>0.49</td>
<td>1.06</td>
<td>0.43</td>
<td>71.0%</td>
</tr>
<tr>
<td>0.101</td>
<td>12.02</td>
<td>115.6</td>
<td>0.029</td>
<td>1.69</td>
<td>0.50</td>
<td>1.21</td>
<td>0.48</td>
<td>71.8%</td>
</tr>
<tr>
<td>0.125</td>
<td>12.02</td>
<td>115.6</td>
<td>0.034</td>
<td>2.05</td>
<td>0.52</td>
<td>1.50</td>
<td>0.55</td>
<td>73.3%</td>
</tr>
<tr>
<td>0.150</td>
<td>12.02</td>
<td>115.6</td>
<td>0.040</td>
<td>2.43</td>
<td>0.53</td>
<td>1.80</td>
<td>0.63</td>
<td>74.2%</td>
</tr>
<tr>
<td>0.173</td>
<td>12.02</td>
<td>115.6</td>
<td>0.044</td>
<td>2.79</td>
<td>0.54</td>
<td>2.08</td>
<td>0.71</td>
<td>74.5%</td>
</tr>
<tr>
<td>0.202</td>
<td>12.02</td>
<td>115.6</td>
<td>0.051</td>
<td>3.27</td>
<td>0.56</td>
<td>2.43</td>
<td>0.84</td>
<td>74.3%</td>
</tr>
<tr>
<td>0.225</td>
<td>12.02</td>
<td>115.6</td>
<td>0.056</td>
<td>3.65</td>
<td>0.57</td>
<td>2.70</td>
<td>0.95</td>
<td>74.1%</td>
</tr>
<tr>
<td>0.249</td>
<td>12.02</td>
<td>115.6</td>
<td>0.061</td>
<td>4.07</td>
<td>0.58</td>
<td>2.99</td>
<td>1.08</td>
<td>73.5%</td>
</tr>
</tbody>
</table>

### 230VAC/50Hz

<table>
<thead>
<tr>
<th>Iout</th>
<th>Vout</th>
<th>Vin</th>
<th>Iin</th>
<th>Pin</th>
<th>PF</th>
<th>Pout</th>
<th>Losses</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000</td>
<td>12.02</td>
<td>230.0</td>
<td>0.003</td>
<td>0.14</td>
<td>0.25</td>
<td>0.00</td>
<td>0.14</td>
<td>0.0%</td>
</tr>
<tr>
<td>0.024</td>
<td>12.02</td>
<td>230.0</td>
<td>0.008</td>
<td>0.57</td>
<td>0.32</td>
<td>0.29</td>
<td>0.28</td>
<td>50.6%</td>
</tr>
<tr>
<td>0.051</td>
<td>12.02</td>
<td>230.0</td>
<td>0.013</td>
<td>1.05</td>
<td>0.36</td>
<td>0.61</td>
<td>0.44</td>
<td>58.4%</td>
</tr>
<tr>
<td>0.074</td>
<td>12.02</td>
<td>230.0</td>
<td>0.017</td>
<td>1.46</td>
<td>0.38</td>
<td>0.89</td>
<td>0.57</td>
<td>60.9%</td>
</tr>
<tr>
<td>0.088</td>
<td>12.02</td>
<td>230.0</td>
<td>0.021</td>
<td>1.94</td>
<td>0.40</td>
<td>1.06</td>
<td>0.88</td>
<td>54.5%</td>
</tr>
<tr>
<td>0.100</td>
<td>12.02</td>
<td>230.0</td>
<td>0.022</td>
<td>2.11</td>
<td>0.41</td>
<td>1.20</td>
<td>0.91</td>
<td>57.0%</td>
</tr>
<tr>
<td>0.125</td>
<td>12.02</td>
<td>230.0</td>
<td>0.025</td>
<td>2.45</td>
<td>0.42</td>
<td>1.50</td>
<td>0.95</td>
<td>61.3%</td>
</tr>
<tr>
<td>0.148</td>
<td>12.02</td>
<td>230.0</td>
<td>0.029</td>
<td>2.87</td>
<td>0.43</td>
<td>1.78</td>
<td>1.09</td>
<td>62.0%</td>
</tr>
<tr>
<td>0.175</td>
<td>12.02</td>
<td>230.0</td>
<td>0.033</td>
<td>3.34</td>
<td>0.44</td>
<td>2.10</td>
<td>1.24</td>
<td>63.0%</td>
</tr>
<tr>
<td>0.200</td>
<td>12.02</td>
<td>230.0</td>
<td>0.036</td>
<td>3.78</td>
<td>0.45</td>
<td>2.40</td>
<td>1.38</td>
<td>63.6%</td>
</tr>
<tr>
<td>0.224</td>
<td>12.02</td>
<td>230.0</td>
<td>0.040</td>
<td>4.21</td>
<td>0.46</td>
<td>2.69</td>
<td>1.52</td>
<td>64.0%</td>
</tr>
<tr>
<td>0.249</td>
<td>12.02</td>
<td>230.0</td>
<td>0.042</td>
<td>4.64</td>
<td>0.47</td>
<td>2.99</td>
<td>1.65</td>
<td>64.5%</td>
</tr>
</tbody>
</table>

### 3 Cross-Regulation

The graph below shows the output voltage of the -12V output versus the loading on the +12V output. The two plots on this graph were taken with no load on the -12V output and full load (10mA) on the -12V output. The input voltage was 115VAC/60Hz.
4  Thermal Images

The thermal images below show the top and bottom of the board with a 250mA load on the +12V output, no load on the -12V output, and no forced air flow. The ambient temperature was 25ºC.

4.1 120VAC/60Hz Input

4.2 220VAC/50Hz Input
5 Startup

The output voltage at startup is shown in the images below. The +12V output is shown on channel 1, and the -12V output is shown on channel 3.

5.1 No Load – 115VAC/60Hz Input

5.2 No Load – 230VAC/50Hz Input
5.3  +12V/250mA & -12V/10mA – 115VAC/60Hz Input

5.4  +12V/250mA & -12V/10mA – 230VAC/50Hz Input
6  +12V Output Ripple Voltage

6.1  No Load – 115VAC/60Hz Input

6.2  No Load – 230VAC/50Hz Input
6.3  +12V/250mA & -12V/10mA – 115VAC/60Hz Input

6.4  +12V/250mA & -12V/10mA – 230VAC/50Hz Input
7  -12V Output Ripple Voltage

7.1  No Load – 115VAC/60Hz Input

7.2  No Load – 230VAC/50Hz Input
7.3 +12V/250mA & -12V/10mA – 115VAC/60Hz Input

7.4 +12V/250mA & -12V/10mA – 230VAC/50Hz Input
8 Loop Response

The frequency response of the feedback loop is shown below. The outputs were loaded with +12V/250mA and -12V/10mA. For gain/phase plot 1, the input was 115VAC/60Hz. For gain/phase plot 2, the input was 230VAC/50Hz. The loop was broken and measured in series with R14.

9 Load Transients

The images below show the response to a 25mA to 250mA load transient on the +12V output. For the top image, the input was set to 115VAC/60Hz. For the bottom image, the input was set to 230VAC/50Hz. Channel 1 displays the +12V output voltage (ac coupled). Channel 3 displays the -12V output voltage (ac coupled). Channel 4 displays the +12V output current.
10 Switching Waveforms

The images below show the voltage waveforms on the switching devices within the supply. The input was 270VAC/50Hz. The output was loaded with +12V/250mA and -12V/10mA.

10.1 Primary Waveforms

The image below shows the drain-to-source voltage on Q1.
10.2 Secondary Waveforms

The image below shows the voltage on the anode of D1 (channel 1) and the anode of D14 (channel 3).
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