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Please note:

This test report was done w/ HS FET / LS FET SiR426DP; SiR422DP wasn’t available fast enough. W/ LS FET SiR422DP efficiency will increase a bit !
1. Startup
The startup waveform is shown in the Figure 1. The input voltage was set at 24V, with 4A load on the output.

2. Shutdown
The shutdown waveform is shown in the Figure 2. The input voltage was set at 24V, with 4A load on the output.
3. Efficiency

The efficiency is shown in the Figure 3 below. The input voltage was set to 24V.

![Figure 3](image)

4 Load Regulation

The load regulation of the output is shown in the Figure 4 below. The input voltage was set to 24V.

![Figure 4](image)
4. Line Regulation

The line regulation with 4A output current is shown in Figure 5.

With the same measurement the corresponding efficiencies are shown in Figure 6.
5. Ripple Voltage

The output ripple voltage is shown in Figure 7. The image was taken with a 4A load and 24V at the input.

The input ripple voltage is shown in Figure 8. The image was taken with a 4A load and 24V at the input.
6. Load Transients

The Figure 9 shows the response to load transients. The load is switching from 2A to 4A with 24V at the input. Transient switching frequency was set to 200Hz.

![Figure 9](image)

Ch1 =>
output voltage
(C11)
50mV/div
Ch1 =>
load step:
2A/div
20Mhz
bandwidth
setting
(CH1)
1ms/div

The same setup with the transient switching frequency of 700Hz is shown in Figure 10.

![Figure 10](image)

Ch2 =>
output voltage
50mV/div
(C11)
Ch1 =>
load step:
2A/div
20Mhz
bandwidth
setting
(CH1)
200µs/div
7. Switch Node Waveform

With input voltage set to 24V result in the waveform shown in Figure 11 and Figure 12. Output current was set to 4A. Around 254kHz was the switching frequency.
8. Control Loop Frequency Response

Figure 13 shows the control loop frequency response and in Table 1 are the corresponding values for gain and phase margin. The output current were set to 4A and input voltage to 24V. Please note the view of the phase is not symmetric.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth (kHz)</td>
<td>37</td>
</tr>
<tr>
<td>Phase margin</td>
<td>55°</td>
</tr>
<tr>
<td>slope (20dB/decade)</td>
<td>-0.927</td>
</tr>
<tr>
<td>gain margin (dB)</td>
<td>-9.4</td>
</tr>
<tr>
<td>at frequency (kHz)</td>
<td>78.4</td>
</tr>
<tr>
<td>slope (20dB/decade)</td>
<td>-1.38</td>
</tr>
</tbody>
</table>

Table 1
9. Thermal Image

The images were taken at 4A output current and 24V input voltage.
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