TPS54425 – 1.8V @ 3.0A

1 Output ripple voltage

The output ripple voltage at 3.0A load and 12.0V input voltage is shown in Figure 1.

Channel C2: output voltage, -13mV minimum and 8mV maximum
20mV/div, 2us/div, AC coupled

Figure 1
2 Transient response

The transient response at an input voltage of 12.0V is shown in Figure 2.

Channel C2: output voltage, no voltage change measurable
20mV/div, 1ms/div, AC coupled

Channel C1: load current, load step 1.5A to 3.0A and vice versa
1A/div, 1ms/div

Figure 2
3 Switching node

The drain-source voltage on the switching node at an input voltage of 12.0V is shown in Figure 3.

Channel C1: **drain-source voltage**, -2.1V minimum and 13.1V maximum

2V/div, 1us/div

![Figure 3](image)
4 Efficiency & load regulation

The efficiency and load regulation are shown in Figure 4.

![Figure 4](image-url)
5 Thermal measurement

The thermal image (Figure 5) shows the circuit at an ambient temperature of 21 °C with an input voltage of 12.0V and a load of 3.0A.

![Figure 5](image)

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<td></td>
<td>L1</td>
<td>50.5 °C</td>
<td>0.95</td>
<td>21.0 °C</td>
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<tr>
<td></td>
<td>U1</td>
<td>49.0 °C</td>
<td>0.95</td>
<td>21.0 °C</td>
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