

Test Procedure for the NCP5425 Dual Output Evaluation Board

ON Semiconductor®



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1.0 Equipment Required

- Variable DC Power Supply (0 – 12 V, 0 – 15 A)
- Oscilloscope (0 – 10 V, 300 kHz)
- DC Ammeter (0 – 15 A)
- Load

An electronic load capable of sinking 15 A at 1.5 V.

OR

Resistive loads comprised of: 10 1.0 Ω , 5 W resistors in parallel (1.5 V)
10 1.2 Ω , 5 W resistors in parallel (1.8 V)

2.0 Startup Test

2.1 With no load applied, set input current limit to 1 A and slowly increase input voltage to 5 V. Input current should correspond to the following table:

Input Volatge	Input Current
0 V	0 mA
1 V	0 mA
2 V	1 mA
3 V	8 mA
4 V	15 mA
5 V	90 mA

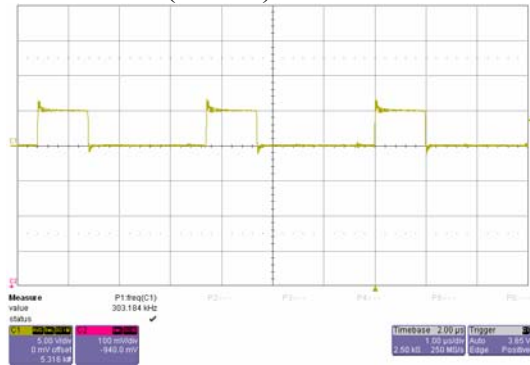
2.2 With DC supply set at 5 V, verify that the output voltages are 1.5 V (1.478 – 1.522 V) and 1.8 V (1.772 – 1.829 V).

3.0 Operating Frequency

Verify that the frequency of the following waveforms is approximately 300 kHz (224 – 376 kHz).

1.5 V Regulator

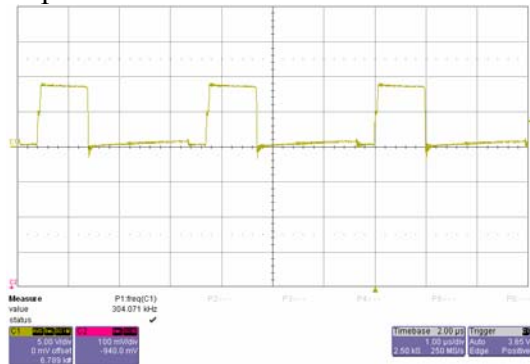
Switchnode (SWN1):



Bottom Gate:

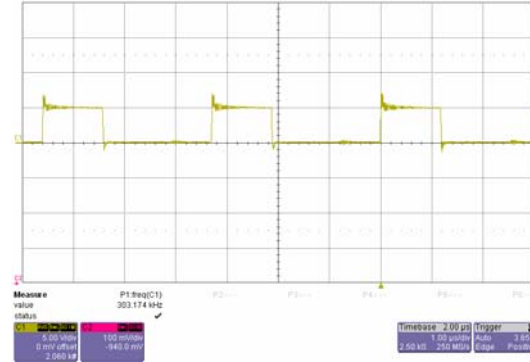


Top Gate:

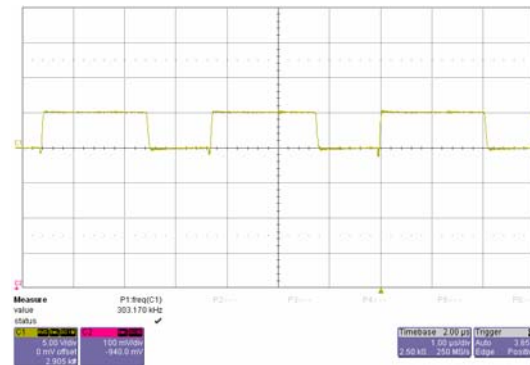


1.8 V Regulator

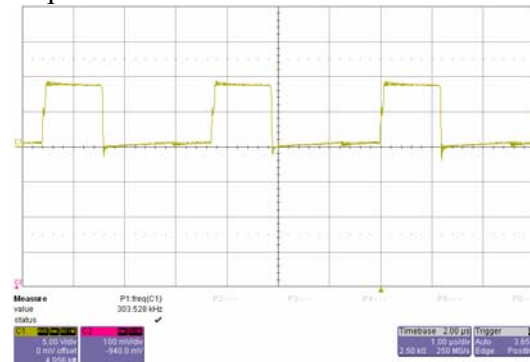
Switchnode (SWN2):



Bottom Gate:



Top Gate:



4.0 Line Regulation

Monitor output voltage while DC supply is increased from 5 V to 12 V. Verify that both outputs maintain regulation over the input voltage range and that input current does not exceed 12 A. Also, verify that the board does not hiss or squeal.

5.0 Load Regulation

5.1 Test each output with a 15 A electronic or resistive load. Verify that both outputs remain in regulation under load.

5.2 Briefly short each output to ground. Verify that the input current does not exceed 5 A.