Test Procedure for the LV5980MCGEVB Evaluation Board

Test Setup 1

1. **Operating Current**
2. **Soft Start Waveforms**
3. **Operate & Output Waveforms**
4. **HICCUP Operating Waveforms**
5. **Load Transient Response**

Test Setup 1

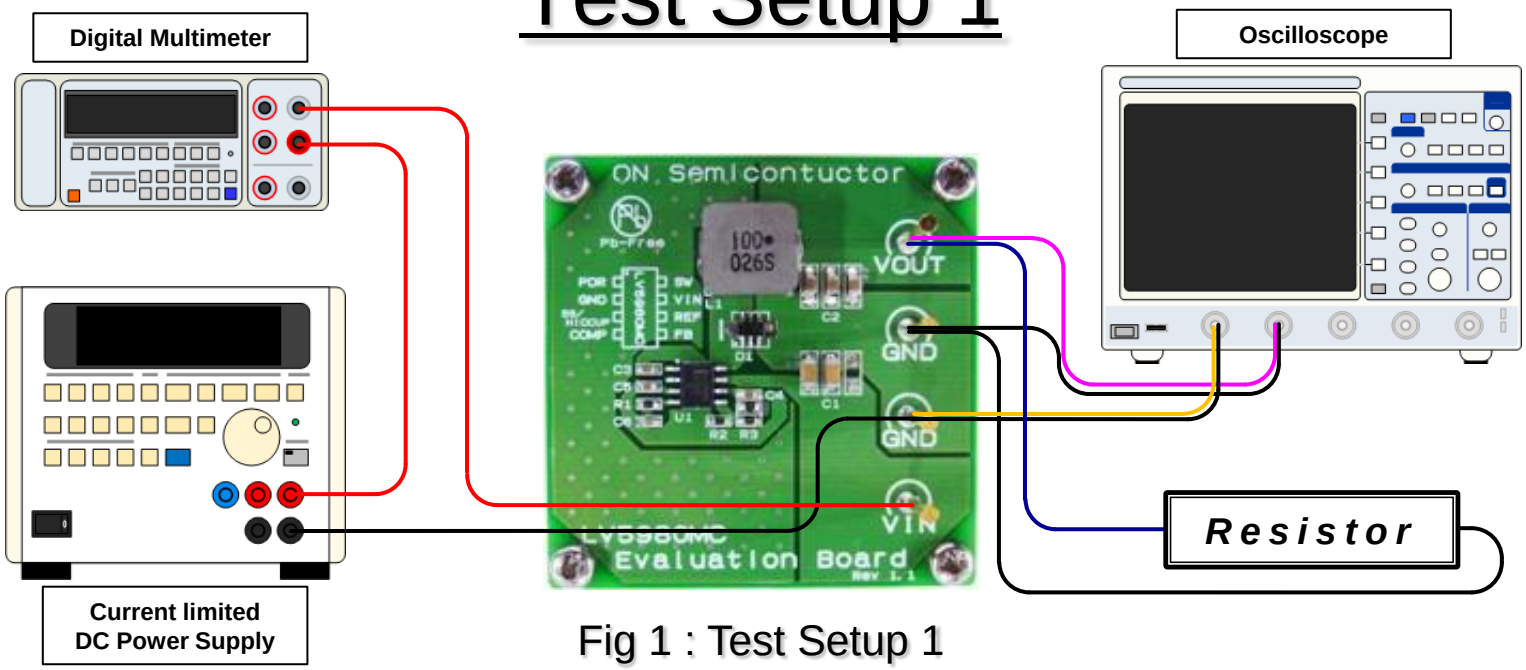


Fig 1 : Test Setup 1

Suggested Equipment :

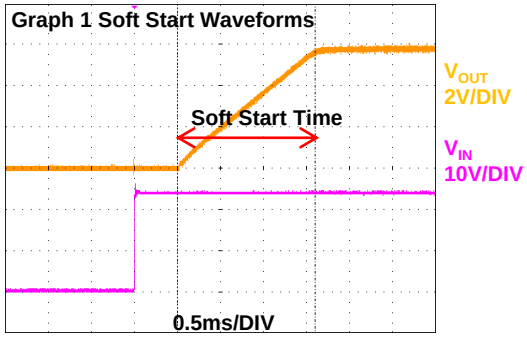
- ✓ Current limited DC Power Supply (e.g. ADVANTEST R6243 DC Voltage Current Source/Monitor) …… 1pc
- ✓ Digital Multimeter {able to measure up to 30V and 3A} (e.g. ADVANTEST R6452 Digital Multimeter) …… 1pc
- ✓ Electronic Load (e.g. FUJITSU ACCESS LIMITED Electric Load EUL-150αXL) …… 1pc
- ✓ Oscilloscope (e.g. LeCroy WaveJet) …….. 1pc

1.Operating Current

- The layout is as shown in Figure 1 : Test_setup1 and supply input voltage (V_{IN} = 24V).
- Connected to the output load resistance (2.5kΩ).
- Measure the current consumption, to ensure that it is within the specified value.

2.Soft Start Waveforms

- The trigger of oscilloscope is set to the rising edge and falling edge of EN voltage (V_{EN}).
- To measure the waveform of the startup when terminal EN shorted to GND, was released.
- Soft-start time to confirm whether it is within the specified value. (Graph.1)



Test Setup 2

1. Operating Current
2. Soft Start Waveforms
3. **Operate & Output Waveforms**
4. **HICCUP Operating Waveforms**
5. **Load Transient Response**

Test Setup 2

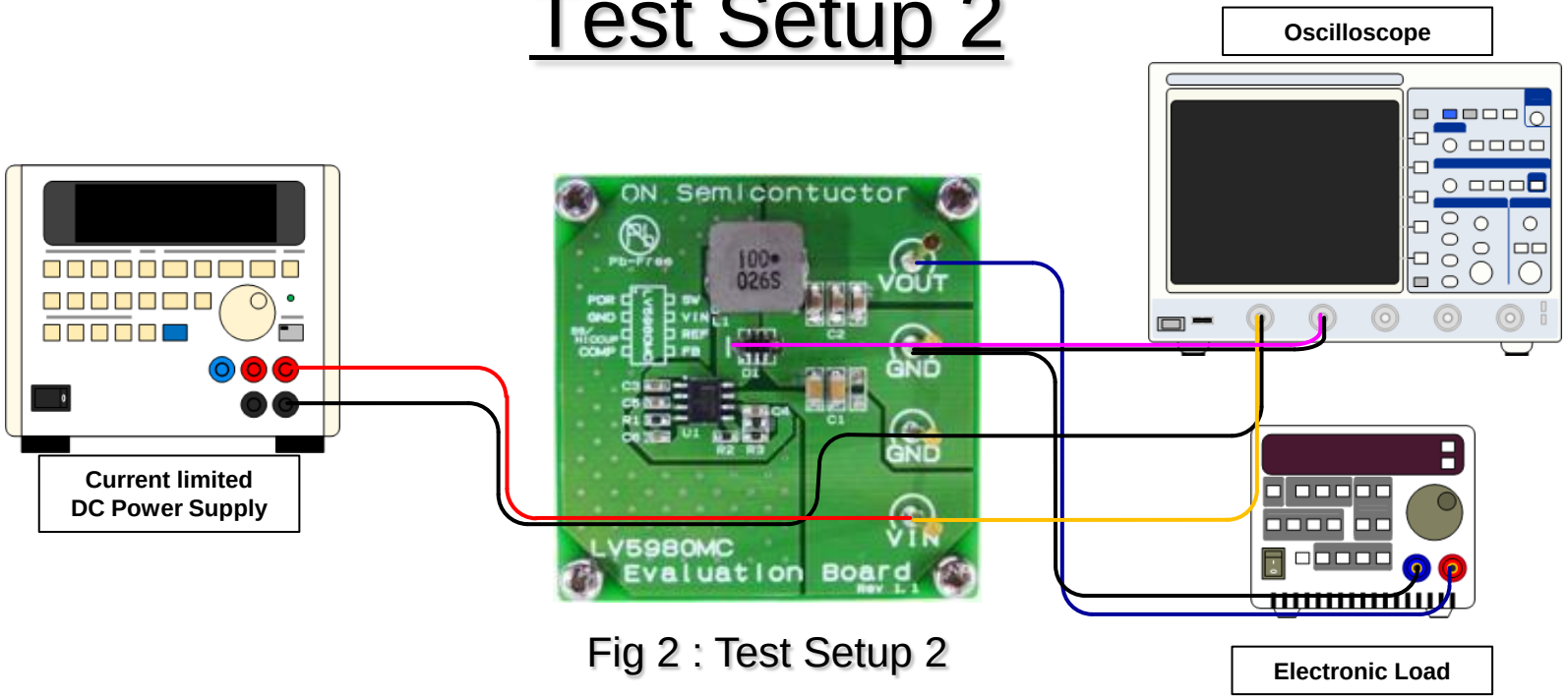


Fig 2 : Test Setup 2

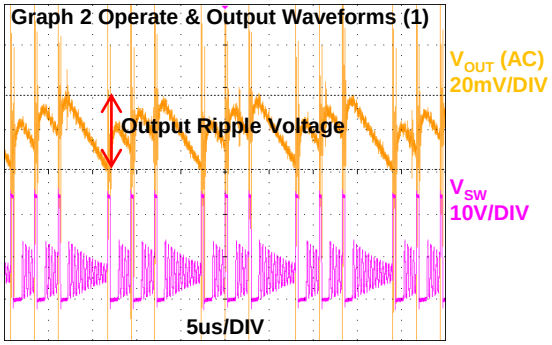
Suggested Equipment :

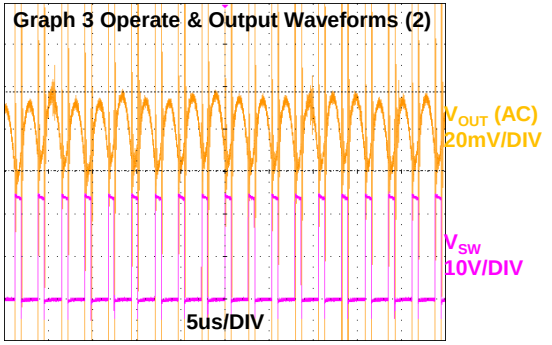
- ✓ Current limited DC Power Supply (e.g. ADVANTEST R6243 DC Voltage Current Source/Monitor) …… 1pc
- ✓ Electronic Load (e.g. FUJITSU ACCESS LIMITED Electric Load EUL-150αXL) …… 1pc
- ✓ Oscilloscope (e.g. LeCroy WaveJet) …….. 1pc

3.Operate & Output Waveforms

- The layout is as shown in Figure 1 : Test_setup1 and supply input voltage (V_{IN} = 24V).

- Ensure that the output ripple voltage and the switching frequency is within the specified value raise the current value of the electronic load. (Graph.2 & Graph.3)

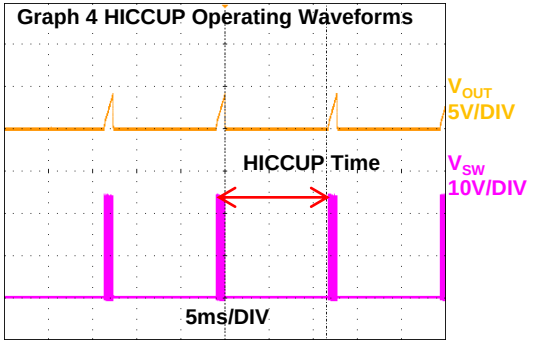




4.HICCUP Operating Waveforms

- (OCP) makes the over-current limiter operation further up the current value of the electronic load.

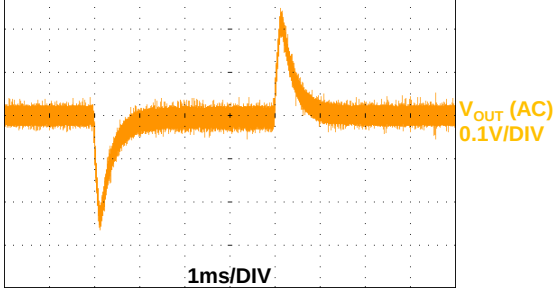
- Measure the HICCUP time, to ensure that it is within the specified value.



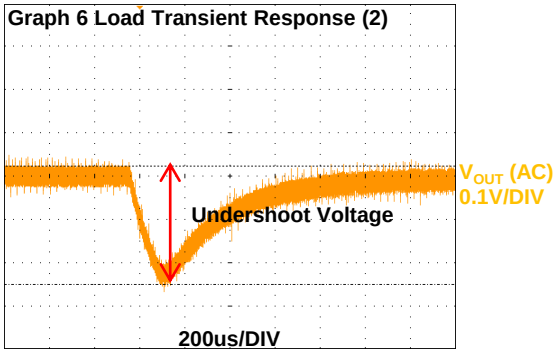
5.Load Transient Response

- The load current (I_{OUT}) is increased by pulse (1A ⇔ 3A) using the electric load.
  Setting Slew Rate = 100us
- Measure the waveform of output ripple voltage (V_{OUT} (AC)) when the load is changed. (Graph.5 ~ 7)
- Ensure that the variation of the output voltage is within the specified value.
  Probe to measure V_{OUT} (AC) connect as short as possible.

Graph 5 Load Transient Response (1)



Graph 6 Load Transient Response (2)



Graph 7 Load Transient Response (3)