ON Semiconductor

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Test Procedure for the NCN5150SOICGEVB

Test equipment required

Oscilloscope, Power supply, Signal generator, Multimeter

General remarks

When performing measurements on an oscilloscope capture the oscilloscope must be set so that a stable trigger is achieved. Average over the largest possible number of measurements, and limit the bandwidth to eliminate noise. Stop acquisition when taking measurements, so that all measurements are of the same waveform.

A test result page is provided on the end of this document. Fill in the result of each test.

When connector pin numberings are supplies, look for a square pad. This is pin 1. The connector pin numbering follows the numbering in figure 1.
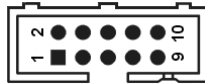

Figure 1: Connector pin numbering

TEST 0: Visual inspection

Perform a brief visual inspection of the board
- Check if the board is properly etched

- Check solder connections (loose pins, tombstoning, etc)

TEST 1: Idle Operation

- Connect the board to a power supply set to 42V, 100mA through a benchtop multimeter by the bus connector (polarity independent).

- Measure the current drawn (IMARK) from the power supply

- Measure the 3V3 output (VDD) at pin 10 of connector J3

- Measure the PFb (PFBHIGH) output at pin 1 of connector J3

TEST 2: Transmit Operation

- Place a jumper shorting RX (pin 3 of connector J3) to pin 8 of connector J3 (ground). Measure the current (ISPACETX) drawn from the power supply. Remove the jumper.

- Place a jumper shorting RXI (pin 5 of connector J3) to VDD at pin 10 of connector J3. Measure the current (ISPACETXI) drawn from the power supply. Remove the jumper.

TEST 3: Receive Operation

- Set the Power Supply to 30V, 100mA. Connect a Function Generator in series to the power supply (see figure 2). Set the Function generator to square wave, high Z output, 15Vpp, 19.2 kHz.

- Connect the oscilloscope to pins TX and TXI (pins 7 and 9 resp. of connector J3). Verify that the both pins output a 3.3Vpp square wave of 19.2 kHz. Use the ground at pins 4 or 6 for the probe measurement. TXI should be logically inverted from TX (see figure 3).

Test Report NCN5150
Test performed by: Date:

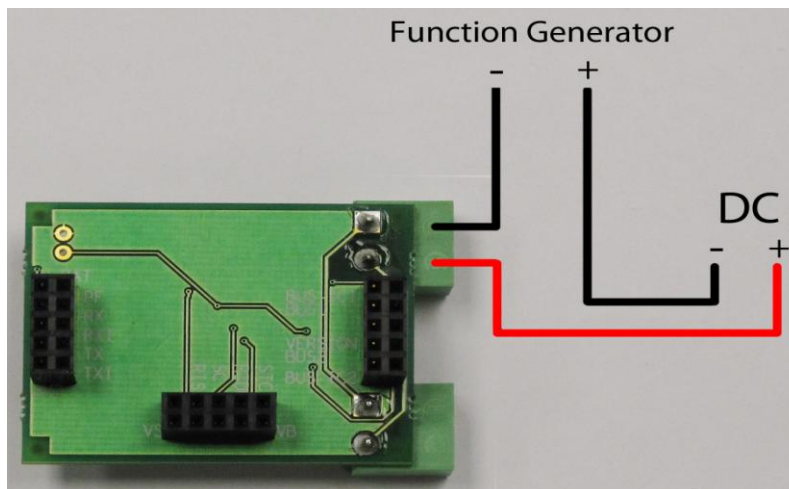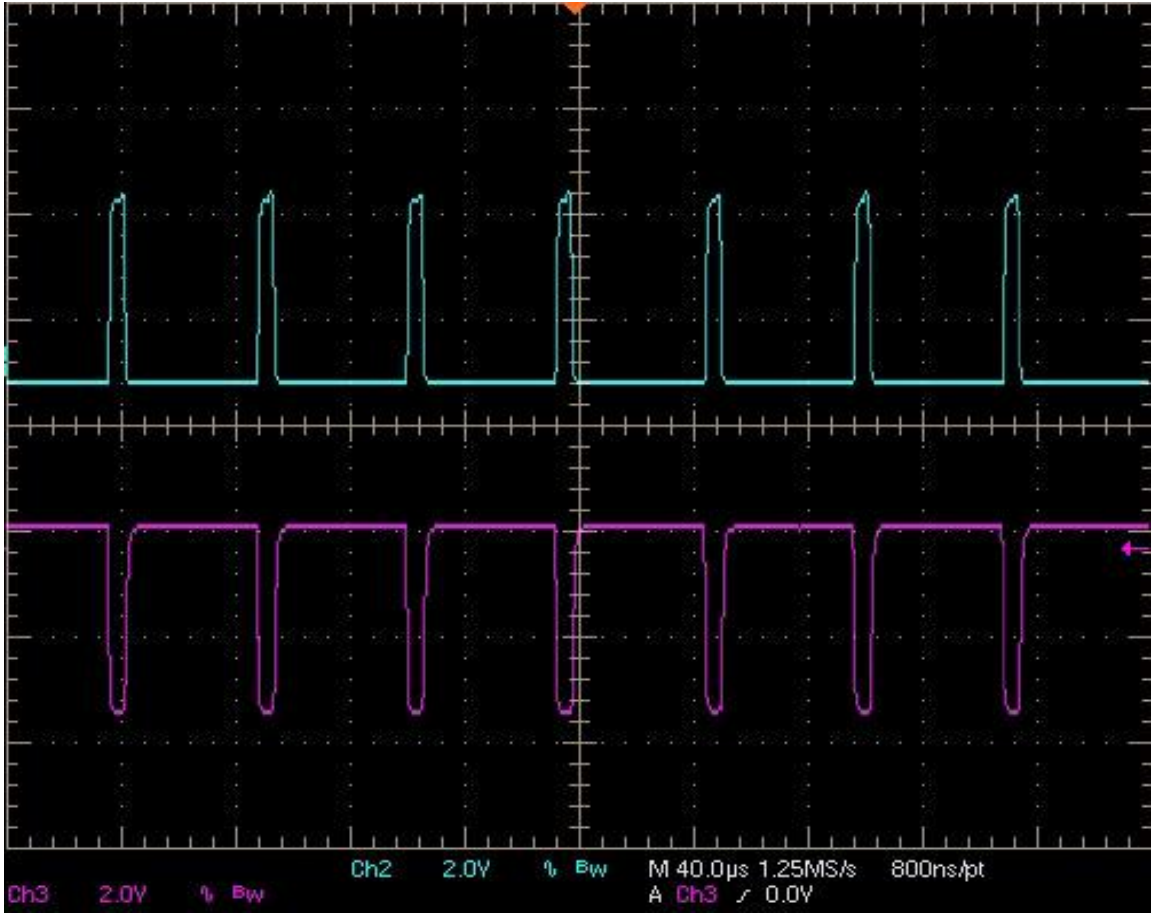| NAME	MIN	NOM	MAX	MEASURED	PASS/FAIL
IMARK		1.2 mA	1.3 mA	1.5 mA	
VDD	3.1V	3.3V	3.6 V		
PFBHIGH	3.1V	3.3V	3.6 V		
ISPACETX	11 mA	15 mA	20 mA		
ISPACETXI	11 mA	15 mA	20 mA		
TX WAVEFORM		OK?			
TXI WAVEFORM		OK?			

Figure 2: TEST 3 setup

Figure 3: Logically inverted waveforms