

Clamping Limit of an LDX-3525 Precision Current Source

This technical note presents the results of a test performed on a production model ILX Lightwave LDX-3525 Precision Current Source to measure the effectiveness of current limit. The test was also performed on other manufacturers' laser diode drivers for comparison.

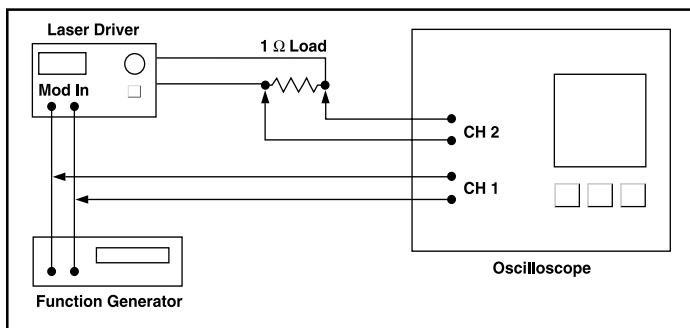


Figure 1. Measurement Setup Diagram.

MEASUREMENT SETUP

The measurement setup is shown in Figure 1. Each tested unit was set to drive a 1 Ω load, with the DC output level set to 100 mA, and the limit set at 125 mA. The output was then modulated via the analog input port to produce output modulation of ±50 mA. Both the input modulation voltage and the load voltage (proportional to output current) were measured with an oscilloscope.

RESULTS

It can be seen from the results in Figures 2a-2c that of the tested units, only the LDX-3525 effectively clamped the output current at the set limit, and prevented overdrive current.

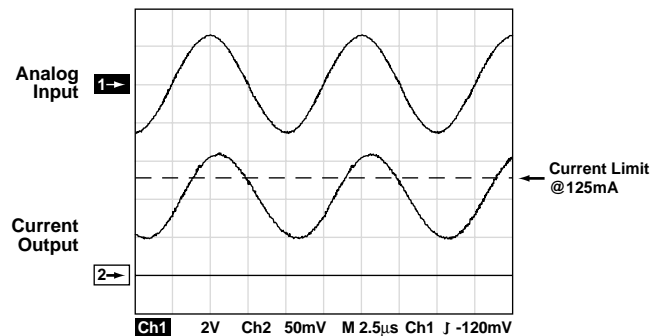


Figure 2(a). Manufacturer "A": Limit fails. Drive current exceeds limit.

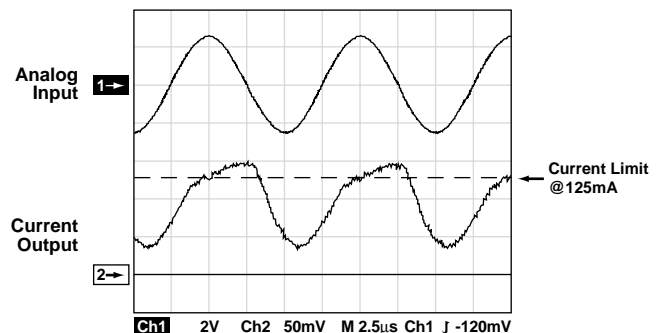


Figure 2(b). Manufacturer "B": Current only partially effective. Drive current exceeds limit.

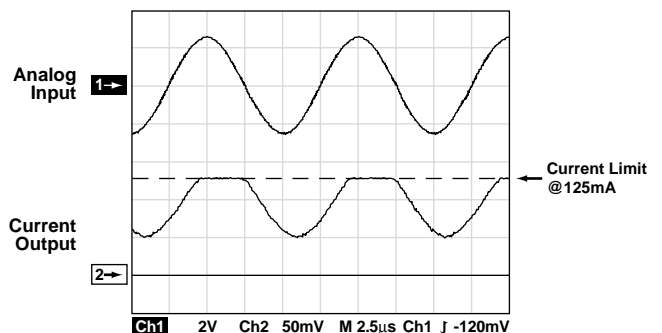


Figure 2(c). ILX Lightwave LDX-3525: Current clamped at 125mA limit.