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ISL28133 Long Term Drift

Figure 2 shows a plot of daily V_{OS} drift measurements of 30 individual ISL28133 amplifiers over a continuous 572 day period at +25°C. The 30 units were connected in a gain of 10k (see Figure 3), mounted on a single PC board and kept at room temperature. The 30 amplifier outputs were measured daily by a DVM and scanner under computer control. The daily V_{OS} measurements were subtracted from the initial V_{OS} value to calculate the V_{OS} shift from zero-hour. The test board was powered from a UPS to maintain uninterrupted power to the test units. Three instances of lost measurement data ranging from 2 days to 2 weeks due to power loss to the measurement scanner were detected, and data was interpolated.

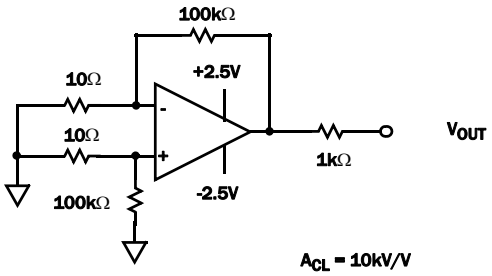

FIGURE 1. LONG TERM DRIFT TEST CIRCUIT

The change in amplifier V_{OS} over the 572 day period for all 30 amplifiers (see Figure 2) was less than ±100nV, and no clear V_{OS} long term drift trend was evident in the data. The excellent long term drift performance is a result of the chopper amplifier's ability to measure and correct V_{OS} errors, leaving only the V_{OS} error contribution due to changes in the long term stability of the external components.

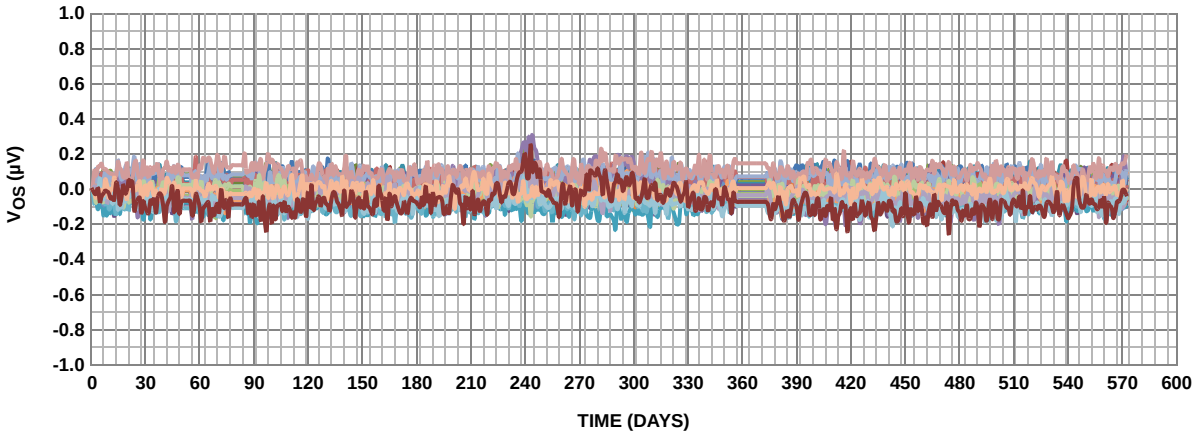

FIGURE 2. LONG TERM DRIFT (V_{OS} vs TIME) FOR 30 UNITS

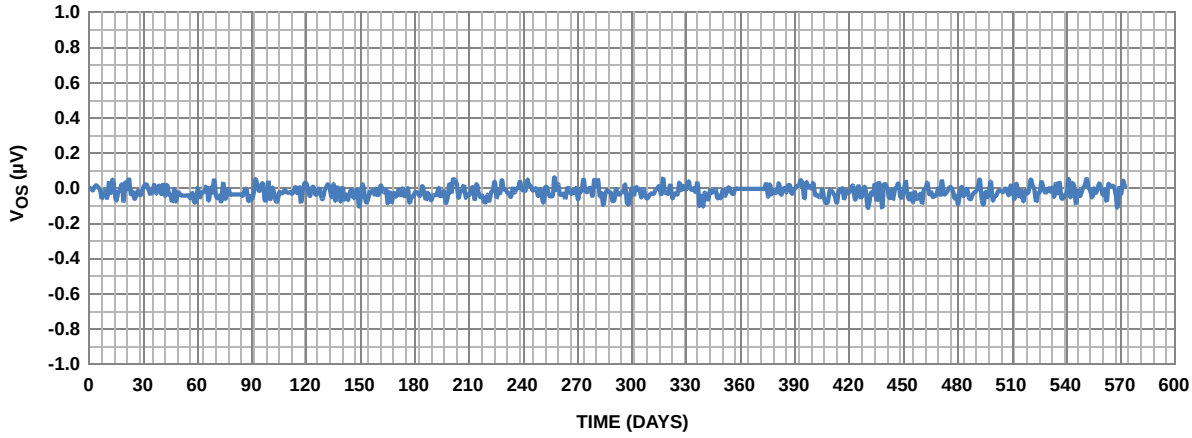

FIGURE 3. LONG TERM DRIFT (V_{OS} vs TIME) FOR A SINGLE UNIT

CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
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