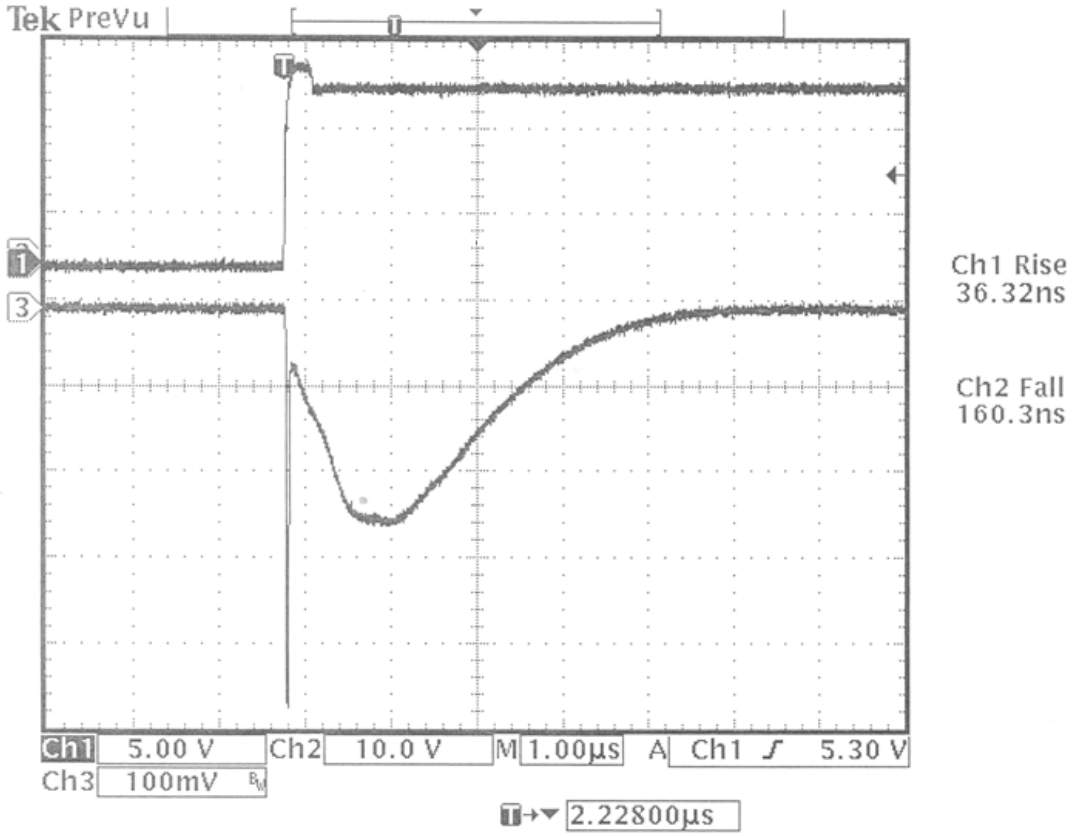
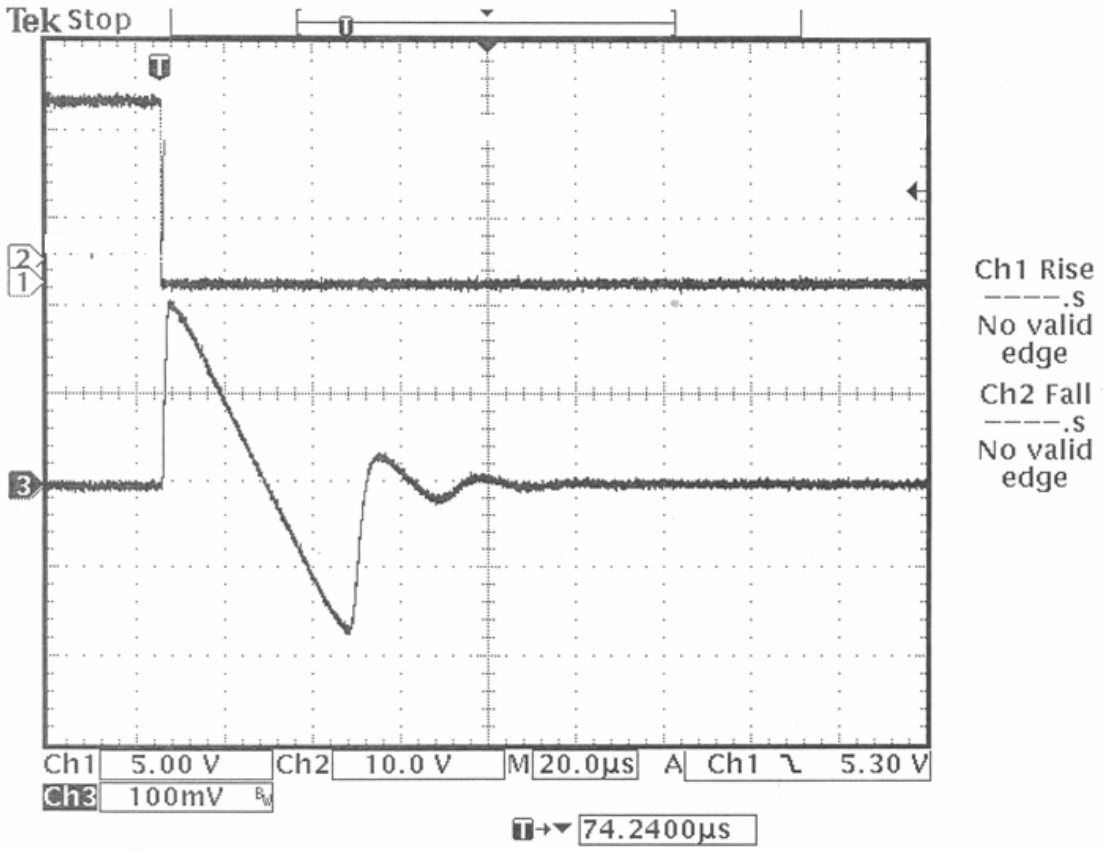
As he explained, standard 3-pin voltage regulators are far from load invariant. They in fact show clear voltage drops which occur over time before the voltage stabilizes again. This behavior is surprisingly worse at *lower* input signals to compromise small-signal fidelity. Here are two common examples of commercial regulator behavior. Notice the voltage drop at the amplifier output as the load on the regulator input changes. The first plot is for a higher input signal.



Here is the inverse scenario with a far lower input signal. Now the regulator misbehaves far worse before it regains its composure. If you're concerned with micro-signal fidelity, this is unacceptable behavior.



Here is how Soulution's discrete regulator behave. They suffer no voltage drops whatsoever.