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(54) **HIGH-SPEED, ACCURATE PEAK AND VALLEY SENSING FOR SECONDARY-CONTROLLED FLYBACK CONVERTER**

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(57) **ABSTRACT**

A secondary side controller for a flyback converter includes an integrated circuit (IC), which in turn includes: a synchronous rectifier (SR) sense pin coupled to a drain of an SR transistor on a secondary side of the flyback converter; a capacitor having a first side coupled to the SR sense pin, the capacitor to charge or discharge responsive to a voltage sensed at the SR sense pin; a diode-connected transistor coupled between a second side of the capacitor and ground; a first current mirror coupled to the diode-connected transistor and configured to receive, as input current, a reference current from a variable current source; and a peak detect transistor coupled to the diode-connected transistor and to an output of the first current mirror. The peak detect transistor is to output a peak detection signal in response to detecting current from the capacitor drop below the reference current.

