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(54) **METHODS AND APPARATUSES FOR TEMPERATURE INDEPENDENT DELAY CIRCUITRY**

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(57) **ABSTRACT**

Methods and apparatuses are provided for temperature independent resistive-capacitive delay circuits of a semiconductor device. For example, delays associated with ZQ calibration or timing of the RAS chain may be implemented that to include circuitry that exhibits both proportional to absolute temperature (PTAT) characteristics and complementary to absolute temperature (CTAT) characteristics in order to control delay times across a range of operating temperatures. The RC delay circuits may include a first type of circuitry having impedance with PTAT characteristics that is coupled to an output node in parallel with a second type of circuitry having impedance with CTAT characteristics. The first type of circuitry may include a resistor and the second type of circuitry may include a transistor, in some embodiments.