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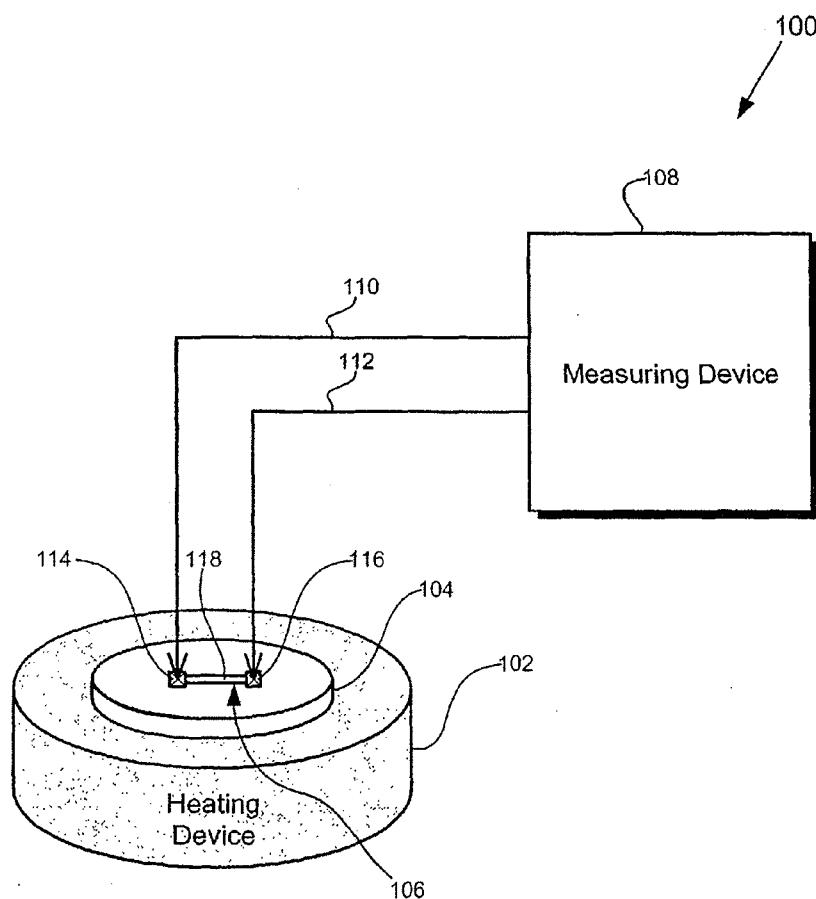
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(54) Title: METHOD AND SYSTEM FOR ESTABLISHING A RELATION BETWEEN JOULE HEATING AND A CURRENT DENSITY IN A CONDUCTOR



(57) Abstract: According to one exemplary embodiment, a method for establishing a relationship between Joule heating in a conductor and a current density in the conductor is implemented by performing wafer level measurements (500). According to this exemplary embodiment, wafer level measurements are performed to arrive at a temperature coefficient of resistance in the conductor (118, 502). The method also includes determining a thermal resistance of the conductor (510). The thermal resistance is then utilized to establish a relationship between Joule heating in the conductor and the current density in the conductor (512). The relationship so obtained is then utilized to determine design rules, mean time to fail, and other information to aid in the design of reliable semiconductor devices (514). According to another exemplary embodiment, a wafer level measurement system (100) is utilized to establish a relationship between Joule heating in a conductor and a current density in the conductor.



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