optimized for switching frequencies in the mega hertz region, and were set at 0.5−4.5 μH. **Figure 3** shows the frequency dependence of inductance. The constant L value is maintained at frequencies from 0.1 MHz to 10 MHz. **Figure 4** shows the superimposed DC current characteristics at a frequency of 2 MHz. The L value gradually decreases as the superimposed DC current increases. The superimposed DC current characteristics were measured until the temperature rise of the products exceeded 40°C. **Figure 5** shows the temperature rise characteristics of the products with DC bias current. The slope of the temperature rise is smaller in products with lower DC resistance. **Table 2** shows the reliability test results of the 32R1560 product. In each conditions, the change in the

4. Power Loss Simulation

The main component parts of a power supply are semiconductor devices, inductors, and capacitors. In increasing power conversion eff ciency, it is necessary to reduce the power loss of each of these components. In the case of a step-down type DC/DC converter, the power loss of ne ss Ş ɣ y y y ss ofs e n ر ٦ % erter2] Ş ₭f nerter2 ò] 0 q c nng Ŏt Ȯ ȯ f a