optimized for switching frequencies in the mega hertz region, and were set at $0.5-4.5 \,\mu$ H. 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 effciency, 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 y y y ss of se n % erter2 _ f nerter2 _ 0 q c nng t f a