Resistive Losses in Single-Crystal $\text{Ba}_{0.6}\text{K}_{0.4}\text{Fe}_2\text{As}_2$ BRENDAN BENAPFL, University of Notre Dame, CHENGLIN ZHANG, PENGCHENG DAI, University of Tennessee, Knoxville, H.A. BLACKSTEAD, University of Notre Dame — Temperature- and field-dependent surface resistance measurements were conducted using Electron Spin Resonance (ESR) techniques on single-crystal $\text{Ba}_{0.6}\text{K}_{0.4}\text{Fe}_2\text{As}_2$ samples ($rf$ frequency = 20.3 GHz). At a fixed temperature, field scans were performed at various angles of $H_0$ with respect to $H_{rf}$. To our knowledge, this is the first report of such studies on this material. For temperatures exceeding $T_C$, there was no evidence of iron ESR. In the superconducting state, the samples exhibit dissipative losses which increase monotonically as a function of applied field for fixed temperature. The level of field-dependent dissipation increases as $T$ approaches $T_C$ from below, and vanishes at the transition.

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