As the discussion in sec. 8.1, the current density and magnetic induction below the conducting surface are

$$\mathbf{J} = \frac{(1-i)}{\delta}\hat{\mathbf{n}} \times \mathbf{H}_\parallel \; e^{-\frac{\xi}{\delta}(1-i)} e^{-i\omega t} \qquad\qquad \mathbf{B}_c = \mu_c \mathbf{H}_c = \mu_c \mathbf{H}_\parallel e^{-\frac{\xi}{\delta}} e^{i\frac{\xi}{\delta}} e^{-i\omega t}$$

(ref: textbook (8.13) and (8.9).)

The time-averaged force is

$$\langle \mathbf{F} \rangle = \langle \int \mathbf{J} \times \mathbf{B}^* \, \mathrm{d}^3x \rangle = \langle \iint \mathbf{J} \times \mathbf{B}^* \, \mathrm{d}\xi \mathrm{d}a \rangle = \int \mathrm{d}a \underbrace{\int \mathrm{d}\xi \; \langle \mathbf{J} \times \mathbf{B}^* \rangle}_{=\mathbf{f}}$$

The time-averaged force per unit area $\mathbf{f}$ can be rewritten as

$$\begin{aligned}
\mathbf{f} &= \int \mathrm{d}\xi \; \langle \mathbf{J} \times \mathbf{B}^* \rangle = \int \mathrm{d}\xi \; \frac{1}{2}\mathrm{Re}\left[\, \mathbf{J} \times \mathbf{B}^* \,\right] \\
&= \frac{1}{2}\mathrm{Re}\int \mathrm{d}\xi \; \left(\frac{(1-i)}{\delta}\hat{\mathbf{n}} \times \mathbf{H}_\parallel \; e^{-\frac{\xi}{\delta}(1-i)} e^{-i\omega t} \right) \times \left(\mu_c \mathbf{H}_\parallel e^{-\frac{\xi}{\delta}} e^{i\frac{\xi}{\delta}} e^{-i\omega t} \right)^* \\
&= \mathrm{Re}\left[\frac{\mu_c(1-i)}{2\delta} \; (\hat{\mathbf{n}} \times \mathbf{H}_\parallel) \times \mathbf{H}_\parallel^* \; \int \mathrm{d}\xi \; \left(e^{-\frac{\xi}{\delta}(1-i)} e^{-i\omega t} e^{-\frac{\xi}{\delta}} e^{-i\frac{\xi}{\delta}} e^{+i\omega t} \right) \right] \\
&= \mathrm{Re}\left[\frac{\mu_c(1-i)}{2\delta} \; \left(-\hat{\mathbf{n}}(\mathbf{H}_\parallel^* \cdot \mathbf{H}_\parallel) + \mathbf{H}_\parallel \underbrace{(\hat{\mathbf{n}} \cdot \mathbf{H}_\parallel^*)}_{=0} \right) \; \int_0^\infty \mathrm{d}\xi \; e^{-\frac{2\xi}{\delta}} \right] \\
&= \mathrm{Re}\left[-\frac{\mu_c(1-i)|\mathbf{H}_\parallel|^2}{2\delta}\hat{\mathbf{n}} \cdot \frac{\delta}{2} \right] \\
&= -\hat{\mathbf{n}}\frac{\mu_c}{4}|\mathbf{H}_\parallel|^2
\end{aligned}$$