$$Temp = 87\ K$$

$$C_{\det} = \left(\frac{c_d}{1 + {C_d}/{C_c}}\right) + c_{in} \approx 200\ pF$$

$$R_S \approx 44\ \Omega$$

$$R_F \approx 10^9\ \Omega$$

$$I_{leakage} \approx 2 \times 10^{-9}\ A$$

$$G = 14\ mV\ /\ fc$$

$$k_B = 1.381 \times 10^{-23}\ C.V\ /\ K$$

$$a_F \approx 10^{-15}\ V^2$$

The flicker noise goes as ${a_F}/{f} = {2\pi a_F}/{\omega}$