

- 1) Part of the suspension system
- 2) Proof mass
- 3) For the release etch for the proof mass structure
- 4) Sensing the y -axis (Coriolis induced) proof mass motion
- 5) Comb drive actuator (CDA) to produce proof mass motion along the x -axis
- 6) z -axis
- 7) Angular rate

$$8) \omega_n^2 = \frac{k}{m} \rightarrow k = m\omega_n^2 = (1 \times 10^{-9})(2\pi \times 10,000)^2 = 3.95 \text{ N/m}$$

$$\frac{\omega_n}{Q} = \frac{c}{m} \rightarrow c = \frac{m\omega_n}{Q} = \frac{(1 \times 10^{-9})(2\pi \times 10,000)}{100} = 6.28 \times 10^{-7} \text{ Kg/s}$$

$$9) \gamma_{amp} = \frac{2m\Omega Ax}{c^2 \omega_n} = \frac{2(1 \times 10^{-9})(300)(2\pi/360)(1 \times 10^{-6})}{(6.28 \times 10^{-7})^2 (2\pi \times 10,000)} = 4.23 \times 10^{-7} \text{ m}$$

$$10) \Omega = \frac{\gamma_{amp} c^2 \omega_n}{2m Ax} = \frac{(1 \times 10^{-6})(6.28 \times 10^{-7})^2 (2\pi \times 10,000)}{2(1 \times 10^{-9})(1 \times 10^{-6})}$$

$$= 12.39 \text{ rad/s}$$

$$= 709.9 \%$$