

Thin film piezoelectric micro-actuator for HDD application

SAE Magnetics (Hong Kong) Limited, Naoto Matono, Garry Topacio, Michael Wong

E-mail: n_matono@sae.com.hk

Advancing areal density requires a challenging combination of technology. One of these challenges is the precise positioning of magnetic heads. Dual stage actuator (DSA) enables better head-positioning accuracy. Thin film piezoelectric actuator has been practical in HDD application to realize higher recording density. Thin film piezoelectric actuator has below advantages over bulk material.

- 2X times higher stroke
- Clean due to full encapsulation by Polyimide
- Better shock & FRF optimization (thinner, much lighter mass)
- Better servo and TPI (track per inch) performance

And also thin film piezoelectric actuator needs good suspension design to achieve optimum performance as micro actuator system.