mCube MC3413 - Reverse Costing Analysis

Description: Despite a large adoption of inertial combo sensors, the discrete accelerometers market is expected to be stable until 2020 thanks to wearable and IoT applications.

mCube, mainly active on the Chinese market and named “MEMS Start-Up of the Year” in 2014, has shipped more than 70 million units and will try to gain market share with new and clever technologies allowing very low manufacturing cost.

Compared to main competitors Bosch Sensortec, STMicroelectronics or InvenSense, mCube is the only provider of a monolithic sensor integration for consumer electronics.

With the mCube approach, the MEMS sensors are fabricated directly on top of IC electronics and connected using TSV (Through-Silicon Vias) in a standard CMOS fabrication facility. The MC3413 is shipped in a 2x2x1mm packaging, but thanks to a new design, this third generation offers a smaller die size compared to previous generation (more than 40% reduction). This very small die size allows it to be incorporated into even smaller packages for space-constrained designs.

The MC3413 is targeted towards the high-resolution marketplace for applications requiring up to 14-bit resolution.

The report includes a detailed technology and cost comparison with leading edge accelerometers from Bosch Sensortec and STMicroelectronics.

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