

TDK-EPC P8009

Module with Maxim Embedded Dies

REVERSE COSTING ANALYSIS



*One of the few high volume 3D embedded dies package
Latest evolution of the TDK SESUB Process*

TDK-EPC and Maxim Integrated have joined forces to provide an innovative power management solution with an embedded die technology.

Integrated in some version of the BlackBerry Z10, the P8009 Power Management Unit (PMU) of TDK-EPC is one of the few high-volume embedded dies package. It integrates two ICs from Maxim Integrated, a power management IC (PMIC) and a 16-bit MCU, to reduce the module size by 60% compared to using conventional discrete devices and BGA packages.

The embedded die process of TDK-EPC, called SESUB (Semiconductor embedded in SUBstrate), is an innovative packaging technology based on the emerging embedded die in laminate substrate concept where all of the package assembly operations are done at the panel-scale level. A 4-layer 3D interconnection routing path with 20 μ m minimum line width is provided. This technology extends the package size beyond the ICs surface area and allows for mounting additional passives components on top of the laminated module.

With this packaging approach, TDK considerably changed the conventional supply chain model, where the chip maker sells directly to the system maker. Here the module maker is taking a larger role by adding considerable value.

This report provides a complete teardown of the embedded dies package with:

- Detailed photos & Material analysis
- Schematic assembly description
- Manufacturing Process Flow
- In-depth manufacturing cost analysis
- Supply chain evaluation
- Exhaustive cost breakdown and selling price estimation

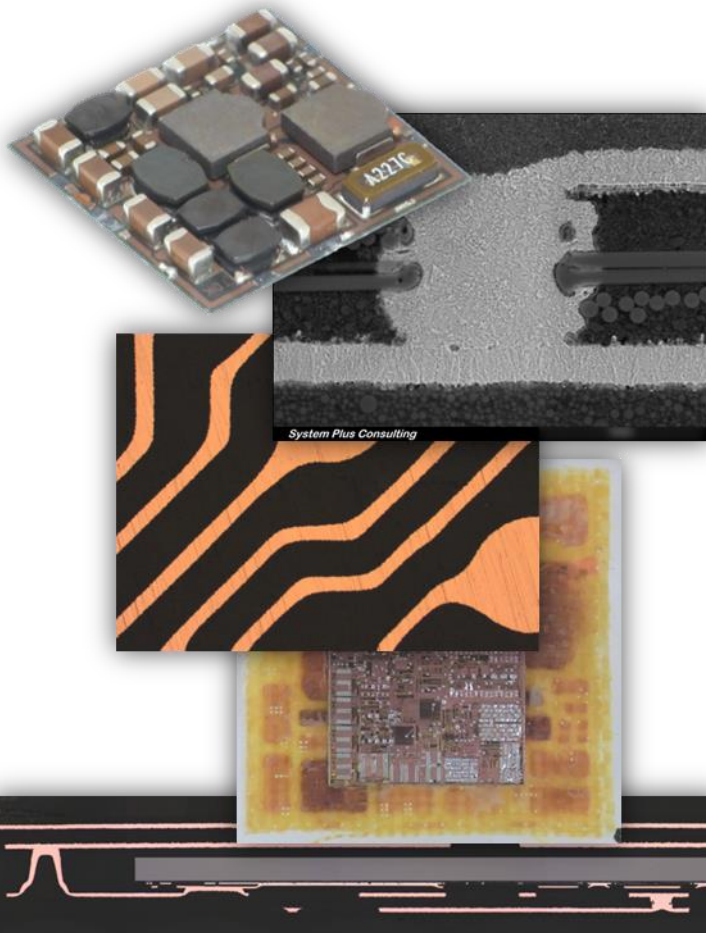


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COSTING SERVICES

- ✓ **On demand Reverse Costing studies** are performed on ICs, ASICs, MEMs, Power Devices, ECUs, electronic boards and full electronic systems.
- ✓ **The catalog of available reports** includes cost analyzes on MEMS, LEDs, Modules and Electronic systems.

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COSTING TOOLS

« Purchaser » tools

- ✓ IC Price+ to estimate the cost of any integrated circuit
- ✓ Power Price+ for any power component or module
- ✓ SYS.Cost

- ✓ PCB Price+ for printed circuit boards
- for electronic boards and systems

Cost Simulation Tools, process flow based

- ✓ MEMS CoSim+
- ✓ LED CoSim+
- ✓ Power CoSim+
- ✓ TSV CoSim+ (thru silicon vias)
- ✓ Sapphire CoSim+

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