IT'S ULTRA-THIN

NXP® ultra-thin contactless chip module MOB10

Ultra-thin module transforms ePassport and eID card production

Measuring just 200 μm - roughly four times the thickness of an average human hair - the MOB10 is an impressive 20% thinner than its predecessor, and is ideally suited for use in ultra-thin inlays for passport datapages and identity cards. It is the first ultrathin contactless module available in high volume, and supports polycarbonate technology and new security features, yet is compatible with the existing production infrastructure.

KEY BENEFITS

Allows for additional security layers and features and is optimized for polycarbonate technology

Protects the chip against mechanical and environmental stress and reverse engineering

Ultra-thin and flexible inlays for passport data page and eID cards

Improved product quality and increased document durability

Higher production efficiency

Builds on proven MOB industry technology and ensures production handshake

KEY FEATURES

⇦ Total package thickness: 200 μm

⇦ Leadframe thickness: 35 μm

⇦ Improved leadframe material with Ag plating

⇦ Compatible with MOB4/6 production lines

⇦ One process for all chips

APPLICATIONS

⇦ ePassports

⇦ National eID cards

⇦ eHealth cards

⇦ Citizen cards

⇦ Resident permits

⇦ eDriver's licenses

⇦ High-security physical / logical access

MINIATURIZATION AND PRODUCT QUALITY

Extensive testing has proven the robustness of the MOB10. The very high degree of resilience leads to higher end-product quality, by making the document less vulnerable to damage. For example, the MOB10 withstands the damage caused by
- Mechanical stress in the field and during production
- Micro-cracks that can be initiated in the naked flip chip
- Environmental stress like humidity, chemicals, solvents etc.
- Thermal stress
- Light and laser
- Attacks and reverse engineering

Furthermore, to support the evolution of biometric passports, which will move the contactless module from the cover to the data page, the demand for miniaturization increases. The MOB10 meets this demand by being the leading ultra-thin contactless module.

MOB MODULE EVOLUTION

MOB2
400 µm

MOB4
320 µm

MOB6
250 µm
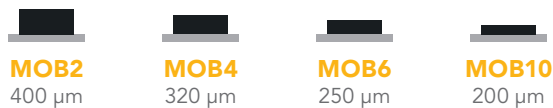
MOB10
200 µm

The MOB10 is the latest in NXP's groundbreaking MOB series which has set the industry standard for contactless IC packages. As a pioneer in the area of miniaturization, we have introduced several generations of contactless chip modules, each thinner than the one before it.

Standard Footprint
(MOB)

Small Footprint
(MOA8)

The ultra-thin profile of the MOB10 makes it possible to accommodate new security features and still include the secure microcontroller and its antenna, without adding bulk. As an option, the MOB10 will be available in the MOA8 footprint, for an even smaller design.

PRODUCT COMPATIBILITY

The MOB10 is designed to be compatible with existing production lines and can be integrated into current manufacturing processes without modifying or replacing the in-place setup. This helps manufacturers to keep the costs low, and makes it easier to transition to more advanced government documents.

The MOB10 is compatible with standard production steps, including punching from frame, pick and place, interconnecting to modules with thermocompression welding, conductive gluing or soldering, and laminating. And, because the MOB10 module can accommodate a number of different secure ICs, multiple designs can be supported without increasing production costs or slowing down the production line.

SOLUTION PRODUCTIVITY

With the MOB10, NXP enables ultra-thin inlays, eCovers, and eDatapages, and supports fast production ramp-up. The NXP offer includes the chip, an operating system, an applet suite, and middleware - all of which are Common Criteria certified and ICAO compliant. We also offer pre-personalization and initialization support, for maximum flexibility in every implementation.

NXP LEADERSHIP

NXP is the world leader in secure microcontrollers for contact and contactless applications. We invented MIFARE contactless ICs and have made leading contributions to many innovations, including Near Field Communiation (NFC). Our proven end-to-end solutions include reader ICs, security ICs, and enabling technologies for mobile transactions, infrastructure, and end-user applications. We are also the number-one provider of secure identity products for eGov applications. We were first with tiny MOB contactless modules and continue to set the industry standard by focusing on production, productivity, quality, and security.

With DPA Countermeasures functionality

NXP ICs containing functionality implementing countermeasures to Differential Power Analysis and Simple Power Analysis are produced and sold under applicable license from Cryptography Research, Inc.