⬈ CryptoRF® World's Largest Family of Secure RF Memories

CryptoRF supports the most stringent security standards used for track and trace, logistics management, anti-cloning and anti-counterfeiting, identification, and e-purse.

CryptoRF is a 13.56 MHz RFID device family with a 64-bit embedded hardware encryption engine, mutual authentication capability, and up to 64-Kbits of user memory. Based on ISO 14443-B standard, CryptoRF is ideally suited to meet a variety of security applications such as contactless payment, product authentication, patient safety, and patron management.

CryptoRF devices are great for proximity applications where hardware security is desired or when environmental factors such as dirt, moisture, chemicals, etc., exist.

CryptoRF devices are available with EEPROM densities from 1-Kbit to 64-Kbits of user memory to accommodate a wide range of information storage and cost requirements. The user memory is divided into 4, 8 or 16 separate sections, each of which can be customized to allow different levels of read and write access, including:

- Free access
- Password protection
- Authentication
- Data encryption and message authentication codes (MACs)

These user selectable optional security features give customers tremendous flexibility in developing and deploying a secure RF solution. CryptoRF is also deliverable as modules for creation of complete RFID tags, RFID cards and thinned wafers.

Highlights: Stream encryption ensuring data privacy, multiple key sets for authentication and encryption, encrypted passwords with attempt counters, selectable access rights by zone, tamper sensors, compliant with industry standards.

Advantages of Using Epoxy Glass: High reliability, long life (10 years or more in most applications), corrosion and moisture resistant.

MY1 Epoxy Glass
17mm thin profile round tag transponders

MECHANICAL

Parameter	Typical Value	Units
Substrate	Epoxy Glass	-
Substrate Thickness	110	µm
Track	Cu with Ni+Au plating	-
Center Hole Diameter	3	mm
Max Operating Distance*	7 to 15	mm
Typical Punched Outer Dimension	17.0 diameter	mm
Maximum Thickness	0.6	mm

* Communication range is dependent on the reader antenna design.

ELECTRICAL

Parameter	Typical Value	Units
Resonance Frequency, f_0	14.0	MHz
Write Endurance	100,000	Cycles
Data Retention	10	Years

TEMPERATURE

Parameter	Range	Units
Storage	-40° to +85°	Celsius
Operating	-25° to +70°	Celsius

Delivery Option
35mm Tape

MX1 Epoxy Glass
13mm thin profile square tag transponders

MECHANICAL

Parameter	Typical Value	Units
Substrate	Epoxy Glass	-
Substrate Thickness	110	µm
Track	Cu with Ni+Au plating	-
Center Hole Diameter	-	mm
Max Operating Distance*	5 to 13	mm
Typical Punched Outer Dimension	13.0 x 13.0	mm
Maximum Thickness	0.9	mm

ELECTRICAL

Parameter	Typical Value	Units
Resonance Frequency, f_0	14.5	MHz
Write Endurance	100,000	Cycles
Data Retention	10	Years

TEMPERATURE

Parameter	Range	Units
Storage	-40° to +85°	Celsius
Operating	-25° to +70°	Celsius

Delivery Option
35mm Tape

PRODUCTS

Catalog	Configuration Memory	User Memory	Zones	RF Protocol
AT88SC0104CRF-MX1, AT88SC0104CRF-MY1	2 Kbits	1 Kbit	4	ISO/IEC 14443 Type B
AT88SC0204CRF-MX1, AT88SC0404CRF-MY1	2 Kbits	2 Kbit	4	ISO/IEC 14443 Type B
AT88SC0404CRF-MX1, AT88SC0404CRF-MY1	2 Kbits	4 Kbit	4	ISO/IEC 14443 Type B
AT88SC0808CRF-MX1, AT88SC0808CRF-MY1	2 Kbits	8 Kbit	8	ISO/IEC 14443 Type B
AT88SC1616CRF-MX1, AT88SC1616CRF-MY1	2 Kbits	16 Kbit	16	ISO/IEC 14443 Type B
AT88SC3216CRF-MX1, AT88SC3216CRF-MY1	2 Kbits	32 Kbit	16	ISO/IEC 14443 Type B
AT88SC6416CRF-MX1, AT88SC6416CRF-MY1	2 Kbits	64 Kbit	16	ISO/IEC 14443 Type B

Target Applications: Anti-counterfeiting, clone prevention and authentication, IP and brand protection, energy metering and payments, medical, safety, and security.
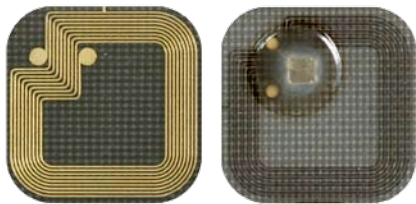
CryptoRF is available in many different shapes and sizes. Specially designed CryptoRF tags in a variety of shapes can be developed for high volume applications.

MY1 Epoxy Glass
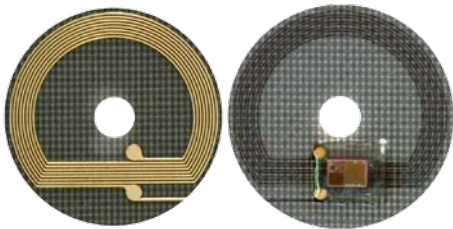
Delivery Format for MY1 Module

MX1 Epoxy Glass

Delivery Format for MX1 Module

For free samples of the 4k device
contact Atmel sales at
www.atmel.com/contacts