EM MICROELECTRONIC

A COMPANY OF THE **SWATCH GROUP**

FACT SHEET | EM4237SLIC/SLIX

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Version 1.0, 10-July-15
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1k bit R/W Memory
ISO/IEC 15693
Standard Compliant Device

General Description

The EM4237SLIC/SLIX is a long range passive CMOS integrated circuit intended for use in applications requiring a contactless read/write memory and offering optionally a certain level of security based on a 32-bit password authentication.

The SLIC 1k-bit / SLIX 2k-bit R/W NV memory are organized in 32/64 blocks of 4-bytes. The EM4237SLIC/SLIX offers a high level of flexibility in terms of memory management and access conditions. A memory block can be read/write protected and/or locked separately.

This latest generation of NV memory offers data retention of 60-years enabling solutions for long-term asset management applications.

Chip application privacy and NV memory access conditions are optionally protected by a 32-bit password, good trade-off for most part of anti-theft applications. To ensure a good level of privacy, the chip can be personalized to remain silent to any command received from the RFID interrogator or be programmed to return a random ID number value.

The EM4237SLIC/SLIX features are enriched with a Smart Electronic Article Surveillance (EAS) mainly used in library applications. The EAS is configurable and programmable providing the maximum of efficiency and optionally protected by the IC password.

The IC supports all the ISO/IEC 15963-3 mandatory commands and many of the optional commands. The chip command set is completed by custom commands providing a higher degree of differentiation in terms of security, flexibility and data protection.

Features

| ISO/IEC15693 & ISO/IEC18000-3 compliant

| Long range, low power vicinity transponder IC

| 64-bit ISO/IEC 15963-3 Unique Identifier

| 1024-bit / 2048-bit user's free data memory

| Security features based on a 32-bit password

| Optional Random ID for enhanced security and privacy

| Advanced NVM management access conditions

| Smart EAS for advanced library management systems

| Data Storage Format Identifier (DSFID)

| Application Field Identifier (AFI)

| Memory blocks/pages Locking mechanism

| Lock mechanism for AFI, DSFIS and EAS

| Password protected EAS and AFI functionality

| Destroy function to deactivate the chip forever

| Support all mandatory, most of optional ISO/IEC15693-3 commands and an enriched set of custom commands

| 53kbps baud rate for read multiple block command

| On-chip and accurate resonant capacitor: 23.5pF

| -40°C to +85°C temperature range

| Bonding pads optimized for flip-chip assembly

| 60-years NVM data retention

| Wafer delivery 3 mils thickness, suitable solution for ticketing applications

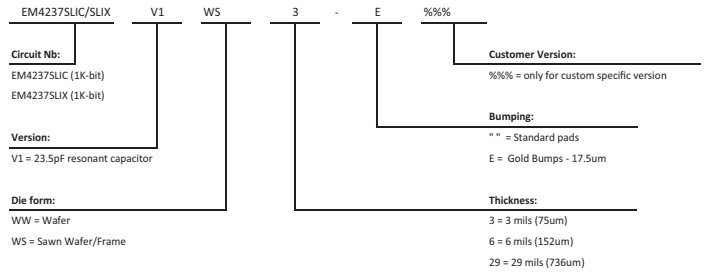| Package option: ultra-thin DFN403 package

Applications

| Library management

| Access Control

| Industrial laundries

| Ticketing

| Casino and Gaming

| Supply Chain Management

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Ordering Information

For wafer from delivery, please refer to EM4237SLIC/SLIX wafer specification document.

DIE FORM:

| EM4237SLIC/SLIX | V1 | WS | 3 | - | E | %%% |

Circuit Nb:
EM4237SLIC (1K-bit)
EM4237SLIX (1K-bit)

Version:
V1 = 23.5pF resonant capacitor

Die form:
WW = Wafer
WS = Sawn Wafer/Frame

Customer Version:
%%% = only for custom specific version

Bumping:
" " = Standard pads
E = Gold Bumps - 17.5um

Thickness:
3 = 3 mils (75um)
6 = 6 mils (152um)
29 = 29 mils (736um)

Die Form Standard Versions

The versions below are considered standards and should be readily available. For the other delivery form, please contact EM Microelectronic-Marin S.A. Please make sure to give the complete part number when ordering.

Part Number	Package / Die Form	Delivery form / Bumping
EM4237SLIC/SLIXV1WS3E	Sawn wafer, 3 mils thickness	Gold bump
EM4237SLIC/SLIXV1WS6E	Sawn wafer, 6 mils thickness	Gold bump
EM4237SLIC/SLIXV1WW29	Un-sawn wafer, 29 mils thickness	Standard aluminium pads

EMDFN403 PACKAGE:

2 leads Plastic extremely thin small outline package; body 1.1 x 1.4 x 0.46 mm: EMDFN403

All dimensions in inches [mm].

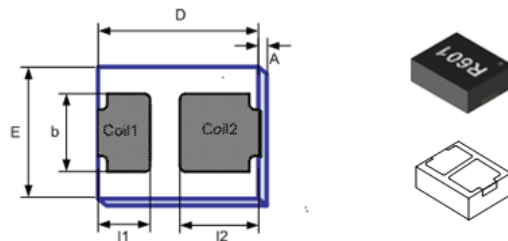Packing method : Loose form (Aluminum canisters)
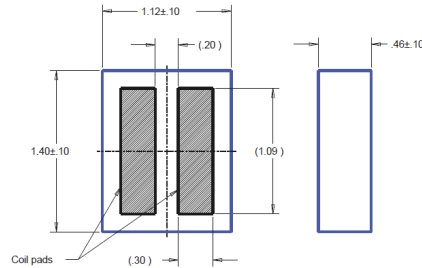
Part Number	IC Reference	IC Resonant capacitor	Delivery format
EM4237SLIC/SLIXV1DF403C+	EM4237SLIC/SLIX	23.5pF	Loose form

EMDFN-02 PACKAGE:

	A	D	E	B	l1	l2
Size	0.76	2.20	1.78	1.07	0.71	1.08
Tolerance	0.10	0. 15	0.15	0.05	0.05	0.05

All dimensions in mm.

Packing method : Loose form (Aluminum canisters)

Part Number	IC Reference	IC Resonant capacitor	Delivery format
EM4237SLIC/SLIXV1DF02C+	EM4237SLIC/SLIX	23.5pF	Loose form