

# MF1 MOA4 S50

## Contactless Chip Card Module Specification

Rev. 3.2 — 19 December 2006  
083032

Product data sheet  
PUBLIC

## 1. General description

### 1.1 Addendum

This document gives specifications for the product MF1 MOA4 S50.

The MF1 MOA4 S50 is the integrated circuit MF1 ICS50 in the package SOT500BA2.

Therefore this document encompasses all information not covered by the specification of the package and/or the functional specification of the integrated circuit.

Detailed information on the package is given in the “MOA4 contactless chip card module specification”.

Functionality of the integrated circuit is described in the “MF1 IC S50 functional specification”.

### 1.2 Chip

Functionality of the integrated circuit is described in the document “MF1 IC S50 functional specification”.

## 2. Ordering information

Table 1. Ordering information

Type number	Package		
	Name	Description	Ordering Code
MF1 MOA4 S50 / D		Silicon Source ICN, ASMC	12 NC: 9352 737 01118

### 3. Limiting values

**Table 2. Limiting values** [\[1\]](#)[\[2\]](#)[\[3\]](#)

In accordance with the Absolute Maximum Rating System(IEC 134)

Symbol	Parameter	Min	Max	Unit
T <sub>STOR</sub>	Storage temperature	-25	85	°C
T <sub>OP</sub>	Operating temperature	-25	70	°C
Processing temperature: refer to "MOA4 contactless chip card module specification"				

- [1] Stresses above one or more of the limiting values may cause permanent damage to the device
- [2] These are stress ratings only. Operation of the device at these or any other conditions above those given in the Characteristics section of the specification is not implied
- [3] Exposure to limiting values for extended periods may affect device reliability

### 4. Characteristics

#### 4.1 Characteristics

**Table 3. Electrical characteristics** [\[1\]](#)[\[2\]](#)[\[3\]](#)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
f <sub>IN</sub>	input frequency		-	13.56	-	MHz
C <sub>IN</sub>	Input capacitance	22 °C, Cp-D, (LCR meter HP4258) 13.56 MHz, 2 V	14.4	16.1	17.4	pF
t <sub>W</sub>	EEPROM write time		-	2.9	-	ms
t <sub>RET</sub>	EEPROM data retention		10			years
N <sub>WE</sub>	EEPROM write endurance		10 <sup>5</sup>			cycles
V <sub>ESD</sub>	electrostatic discharge voltage LA-LB	<a href="#">[4]</a>	2			kV

- [1] Stresses above one or more of the limiting values may cause permanent damage to the device
- [2] These are stress ratings only. Operation of the device at these or any other conditions above those given in the Characteristics section of the specification is not implied
- [3] Exposure to limiting values for extended periods may affect device reliability
- [4] MIL Standard 883-C method 3015; Human body model: C = 100 pF, R = 1.5 kW

### 5. Support information

For additional information, please visit: <http://www.nxp.com>

## 6. Revision history

Table 4. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
	19 December 2006	Product data sheet		5.1
Modifications:		<ul style="list-style-type: none"><li>• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.</li><li>• Legal texts have been adapted to the new company name where appropriate.</li></ul>		

## 7. Legal information

### 7.1 Data sheet status

Document status <sup>[1][2]</sup>	Product status <sup>[3]</sup>	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL <http://www.nxp.com>.

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