MF1 MOA4 S20

Contactless chip card module

1. Introduction

This document gives specifications for the product MF1 MOA4 S20.The MF1 MOA4 S20 is the integrated circuit MF1 IC S20 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 S20 Functional Specification.

2. General description

2.1 Chip

Functionality of the integrated circuit is described in the document MF1 IC S20 Functional Specification.

3. Ordering information

Table 1.   Ordering information

Type number	Package		
	Name	**Description**	**Version**
MF1 MOA4 S20 / D			9352 851 75118

4. Limiting values

Table 2.   Limiting values [1][2][3][4]

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
T_{STOR}	Storage Temperature		-25	+85	°C
T_{OP}	Operating Temperature		-25	+70	°C
V_{ESD}	ESD Voltage Level	MIL883D, human body	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]   Processing temperature: refer to "MOA4 Contactless Chip Card Module Specification"

5. Characteristics

Table 3.   Characteristics [1]

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
f_{IN}	Input frequency		-	13.56	-	MHz
C_{IN}	Input Capacitance		14.85	-	20.13	pF
t_W	EEPROM Write Time		-	2.9	-	ms
t_{RET}	EEPROM Data Retention		10			years
N_{WE}	EEPROM Write Endurance		100,000	-	-	cycles

[1]   at - 25°C< $T_{Ambient}$ < + 70°C

6. Support information

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

7. Revision history

Table 4.   Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
	3.0	Product data sheet		3.0
Modifications:	• The format of this data sheet has been redesigned to comply with the new identity guidelines of NXP Semiconductors.			
	• Legal texts have been adapted to the new company name where appropriate.			

142130

Product data sheet   **Rev. 03.00 — 25 July 2007**   **2 of 4**

8. Legal information

8.1 Data sheet status

Document status[1][2]	Product status[3]	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.

8.2 Definitions

Short data sheet — A short data sheet is an extract from a full data sheet with the same product type number(s) and title. A short data sheet is intended for quick reference only and should not be relied upon to contain detailed and full information. For detailed and full information see the relevant full data sheet, which is available on request via the local NXP Semiconductors sales office. In case of any inconsistency or conflict with the short data sheet, the full data sheet shall prevail.

8.3 Disclaimers

General — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information.

Right to make changes — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in medical, military, aircraft, space or life support equipment, nor in applications where failure or malfunction of a NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors accepts no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

Limiting values — Stress above one or more limiting values (as defined in the Absolute Maximum Ratings System of IEC 60134) may cause permanent damage to the device. Limiting values are stress ratings only and operation of the device at these or any other conditions above those given in the Characteristics sections of this document is not implied. Exposure to limiting values for extended periods may affect device reliability.

Terms and conditions of sale — NXP Semiconductors products are sold subject to the general terms and conditions of commercial sale, as published at http://www.nxp.com/profile/terms, including those pertaining to warranty, intellectual property rights infringement and limitation of liability, unless explicitly otherwise agreed to in writing by NXP Semiconductors. In case of any inconsistency or conflict between information in this document and such terms and conditions, the latter will prevail.

No offer to sell or license — Nothing in this document may be interpreted or construed as an offer to sell products that is open for acceptance or the grant, conveyance or implication of any license under any copyrights, patents or other industrial or intellectual property rights.

8.4 Trademarks

Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

Mifare is a trademark of NXP B.V.

9. Contact information

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

For sales office addresses, send an email to: **salesaddresses@nxp.com**

10. Tables

11. Contents

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[NXP](#):
  [MF1MOA4S20/D,118](#)