DATA SHEET

ADDENDUM

mifare®

MF1 FCP2 S50

Flip Chip Package Specification

Product Specification

Revision 3.1

PUBLIC

October 2004

Philips Semiconductors

PHILIPS

Flip Chip Package Specification MF1 FCP2 S50

CONTENTS

1 SCOPE

This document specifies the product MF1FCP2S50:

- The MF1FCP2S50/DH is the integrated circuit MF1ICS50 in the package SOT732CA2.

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 “Specification FCP2 Flip Chip Package”.
- Functionality of the integrated circuit is described in the “MF1 IC S50 Functional Specification”.

2 SPECIFICATIONS

2.1 Integrated Circuit

Functionality of the integrated circuit is described in the MF1 IC S50 Functional Specification.

2.2 Absolute Maximum Ratings

ABSOLUTE MAXIMUM RATINGS[1, 2]	TEST CONDITIONS	MIN	TYP[1]	MAX	UNIT
Operating Temperature		-25	-	+70	°C
ESD Voltage Immunity	MIL-STD-883-C, Method 3015, Human Body Model C= 100 pF, R = 1.5kς	2	-	-	kV_{peak}
Input Current		-	-	30	mA
Storage and Processing temperature: refer to specification “FCP2 Flip Chip Package”					

NOTES:

1. Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any conditions other than those described in the Operating Conditions and Electrical Characteristics section of this specification is not implied.

2. This product includes circuitry specifically designed for the protection of its internal devices from the damaging effects of excessive static charge. Nonetheless, it is suggested that conventional precautions be taken to avoid applying greater than the rated maxima.

2.3 Electrical Characteristics

T_{jop} = - 25 to +70 °C

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP[1]	MAX	UNIT
f_{IN}	input frequency		-	13.56	-	MHz
C_{in}	Input Capacitance between LA - LB[2]	22°C, Cp-D, 13.56 MHz, 2 V	14.85		20.13	pF
t_W	EEPROM write time		-	2.9	-	ms
t_{ret}	EEPROM Data Retention		10	-	-	Years
n_{write}	EEPROM Write Endurance		10^5	-	-	Cycles

NOTES:

1. Typical ratings are not guaranteed. These values listed are at room temperature.

2. Measured with an HP4258 LCR meter at 13.56 MHz.

3 ORDERING INFORMATION

Ordering Name	Description	Ordering Code
MF1FCP2S50/DH	Hot laminated backside tape	12NC: 9352 722 00118

4 DEFINITIONS

Data sheet status	
Objective specification	This data sheet contains target or goal specifications for product development.
Preliminary specification	This data sheet contains preliminary data; supplementary data may be published later.
Product specification	This data sheet contains final product specifications.
Limiting values	
Limiting values given are in accordance with the Absolute Maximum Rating System (IEC 134). Stress above one or more of the limiting values may cause permanent damage to the device. These are stress ratings only and operation of the device at these or at any other conditions above those given in the Characteristics section of the specification is not implied. Exposure to limiting values for extended periods may affect device reliability.	
Application information	
Where application information is given, it is advisory and does not form part of the specification.	

5 DISCLAIMERS

5.1 Life support applications

These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Philips customers using or selling these products for use in such applications do so on their own risk and agree to fully indemnify Philips for any damages resulting from such improper use or sale.

6 REVISION HISTORY

Table 1 Addendum Flip Chip Package Specification Revision History

REVISION	DATE	CPCN	PAGE	DESCRIPTION
3.1	Oct 2004	2004 01023		FCP2 layout improvements
3.0	Dec 2002			Product version
2.0	June 2002			Preliminary version
1.0	June 2002			Initial version.

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