DATA SHEET

CONFIDENTIAL

General Wafer Specification

Product Specification (Rev. 1997 Jul 24)
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Philips
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General Wafer Specification

CONTENTS

DATA SHEET

HT1 Transponder Family

Communication Protocol
Reader ⇔ HITAG™1 Transponder

Product Specification
Revision 2.1
Confidential

September 1997

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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.	

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 Semiconductors customers using or selling these products for use in such applications do so on their own risk and agree to fully indemnify Philips Semiconductors for any damages resulting from such improper use or sale.

1. Basic Features of the HITAG System

hitag™ is the name of one of the universal and powerful product lines of our 125 kHz family. The contactless read/write system that works with passive transponders is suitable for various applications. Inductive coupling helps you to achieve big reading ranges and the use of cryptography guarantees highest data security.
Anticollision (AC) Mode, which is used only in long range operation, allows you to handle several transponders that are within the communication field of the antenna at the same time, thus achieving highest operating security and permitting to handle several transponders (TAGs) quickly and simultaneously.
The HITAG product family is used both in the proximity area (operating range up to about 200 mm) and in the long range area (operating range up to about 1000 mm).

HITAG 1 transponders are highly integrated and do not need any external components beside the HITAG 1 TAG ASIC (HT1 ICS30 02x) and one coil. The memory of the transponder has a size of 2 KBit.

2. Introduction

The HITAG 1 ASIC is a flexible and powerful member of our HITAG™ family. Data are transmitted bidirectionally, in half duplex mode, between read/write device and transponder. To achieve a high level of security, data may be transmitted enciphered.

The following chapters describe the transmission protocols of HITAG 1 TAG ASICs with operating modes, course of operation and timing.

The HITAG 1 TAG ASIC provides two protocol modes, Standard and Advanced Protocol Mode.
These modes are not set by configuration, the user has the possibility to choose among the modes by the proper command set.

The differences between the Standard Protocol Mode and the Advanced Protocol Mode are:
The Advanced Protocol Mode works compared to the Standard Protocol Mode with increased number of Startbits and an 8 Bit Cyclic Redundancy Check (CRC) sent by the TAG ASIC in read operations.

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HT2 Transponder Family

Communication Protocol
Reader ⇔ HITAG™2 Transponder

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HT1 ICS30 02 Family

HITAG™1 Transponder IC

Product Specification
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APPLICATION NOTE

HITAG™ Proximity System

EMC, EMI
Measurements and Design Hints

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