

## iButton DESCRIPTION

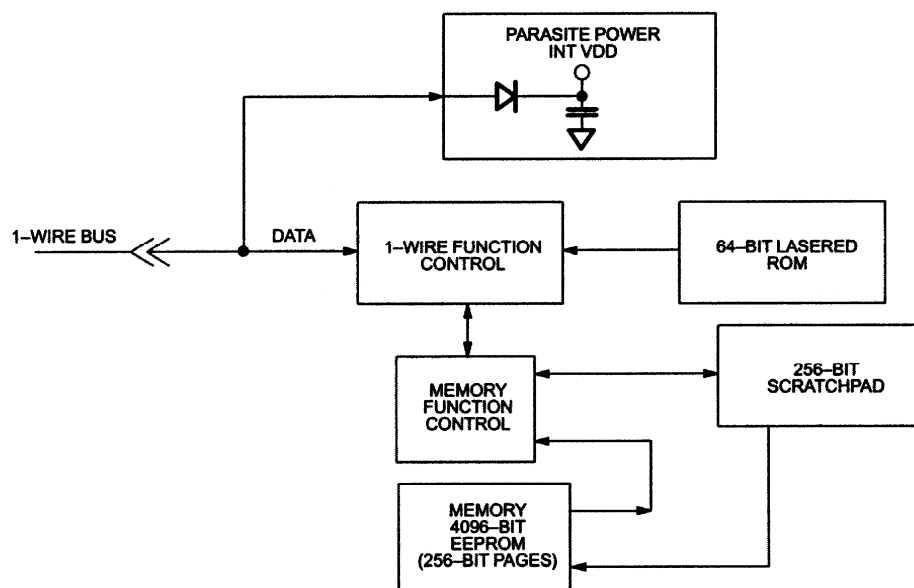
The DS1973 4Kb EEPROM iButton is a rugged read/write data carrier that identifies and stores relevant information about the product or person to which it is attached. This information can be accessed with minimal hardware, for example a single port pin of a micro-controller. The DS1973 consists of a factory-lasered registration number that includes a unique 48-bit serial number, an 8-bit CRC, and an 8-bit Family Code (23H) plus 4096 bits of EEPROM. The power to program and read the DS1973 is derived entirely from the 1-Wire communication line. The memory is organized as sixteen pages of 256 bits each. The 64-bit registration number provides a guaranteed unique identity which allows for absolute traceability. Data is transferred serially via the 1-Wire protocol which requires only a single data lead and a ground return. The durable MicroCan package is highly resistant to harsh environments such as dirt, moisture, and shock. Its compact button-shaped profile is self-aligning with cup-shaped receptacles, allowing the DS1973 to be used easily by human operators or automatic equipment. Accessories permit the DS1973 to be mounted on printed circuit boards, plastic key fobs, photo-ID badges, ID bracelets, and many other objects. Applications include work-in-progress tracking, electronic travelers, access control and storage of calibration constants.

## OVERVIEW

The block diagram in Figure 1 shows the relationships between the major control and memory sections of the DS1973. The DS1973 has three main data components: 1) 64-bit lasered ROM, 2) 256-bit scratchpad, and 3) 4096-bit EEPROM. The bus master must first provide one of the ROM function commands before the memory functions become accessible. All data is read and written least significant bit first.

The DS1973 contains the same memory chip as the DS2433. For a full description of the logical behavior, please refer to the DS2433 data sheet.

## DS1973 BLOCK DIAGRAM Figure 1



**REVISION HISTORY**

<b>REVISION DATE</b>	<b>DESCRIPTION</b>	<b>PAGES CHANGED</b>
071508	Updated the <i>F3 MicroCan</i> and <i>F5 MicroCan</i> face brands with the latest per PCN H020201.	1
8/09	Added the + sign to the PART numbers in the <i>Ordering Information</i> table, indicating lead(Pb)-free/RoHS-compliant packages.	1
	Removed the UL#913 bullet from the <i>Common iButton Features</i> section.	1