μPD7533/75CG33E
4-Bit Microcomputer With A/D Converter

Description

The μPD7533 is a 4-bit, single-chip CMOS microcomputer with a 4-channel, 8-bit A/D converter, 8-bit timer/event counter, and an 8-bit serial interface. The μPD7533 has 30 I/O lines, 8 of which can be used to directly drive LEDs. The μPD7533 executes 67 instructions of the μPD7500-series A instruction set.

The A/D converter is particularly useful for temperature control and can be used in household electrical appliances, such as air conditioners and electric ovens. Other applications include health monitoring equipment and cameras.

The μPD75CG33E consists of a 28-pin socket "piggybacked" on the lower 42-pin ceramic DIP. This socket is configured to hold either a 2732A or 2764 EPROM. For engineering purposes, programs can be tried and debugged before ROM code submission.

Features

- 4-bit single-chip microcomputer
- 67 instructions (subset of μPD7500-series set A)
- Instruction cycle
  - 4 μs at 5 V; 500-kHz ceramic resonator, DIVSEL = high
  - 8 μs at 5 V; 500-kHz ceramic resonator, DIVSEL = low
- Program memory (ROM): 4096 words x 8 bits
  - External in the μPD75CG33E
- Data memory (RAM): 160 words x 4 bits
- 8 high current output lines for LED direct drive
- Input/output ports
  - Two 4-bit input ports
  - One 2-bit output port
  - One 4-bit output port
  - Three 4-bit input/output ports (two of these can function in 8-bit units)
  - One 4-bit input/output port usable at bit level
- Interrupts: two internal and one external
- 8-bit serial interface
- Two low power standby modes: HALT, STOP
- Data retention mode
- On-chip system clock oscillator
  - Ceramic resonator
  - Full or 1/2 oscillation frequency
- CMOS technology
- Low power consumption
- Single power supply: 2.7 to 6.0 V (4.5 to 6.0 V when A/D converter is used)

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Ordering Information

Part Number	Package	Maximum Frequency of Operation
μPD7533C-xxx	42-pin plastic DIP	510 kHz
μPD7533CU-xxx	42-pin plastic shrink DIP	
μPD7533G-xxx-22	44-pin plastic QFP	
μPD75CG33E	42-pin ceramic piggyback DIP	

Notes:

(1) xxx indicate ROM code suffix.

Block Diagram