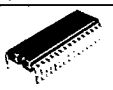
LC6523C,6523H,6526C,6526H C-MOS LSI

CIRCUIT DRAWING No.1016

SINGLE-CHIP 4-BIT MICROCOMPUTER FOR SMALL-SCALE CONTROL-ORIENTED APPLICATIONS



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The LC6523C/H, LC6526C/H belong to our single-chip 4-bit microcomputer LC6500 series fabricated using CMOS process technology and are suited for use in small-scale control-oriented application. Their basic architecture and instruction set are the same. Application areas include audio equipment (deck, player, etc.), office equipment, communications equipment, car equipment, home applications as well as circuit so far formed with standard logics and applications where the number of controls is small.

Features

- CMOS technology for low-power operation
- ROM/RAM
  LC6523C/H ROM: 2K x 8 bits, RAM: 128 x 4 bits
  LC6526C/H ROM: 1K x 8 bits, RAM: 64 x 4 bits
- Instruction set: 79 instructions common to the LC6500 series
- Wide operating voltage range from 3.0V to 6.0V (C version)
- Instruction cycle time of 0.95usec. (H version)
- On-chip serial I/O port
- Flexible I/O ports
  - Number of ports: 7 ports /25 pins max.
  - All ports: Input/output common
    Input/output voltage 15V max. (open drain type)
    Output current 20mA max. (sink current)
  - Option selectable for your intended system
    (A) Open drain output, pull-up resistor: Single-bit select for all ports
    (B) Output level at the reset mode: 4-bit select of H/L level for port C/D
- Interrupt function
  Vectored interrupt by timer overflow (instruction-testable)
  Vectored interrupt by $\overline{\text{INT}}$ pin or completion of transmit/receive at serial I/O port (instruction-testable)
- Stack level: 4 levels
- Timer: 4-bit prescaler + 8 bit programmable timer
- Clock oscillation option selectable for your intended system
  - Oscillator option: 1-pin C oscillation (with R), 1-pin external clock input, 2-pin CR oscillation (C version)
    2-pin ceramic filter oscillation (C version and H version)
  - Predivider option: No predivider, 1/3 predivider, 1/4 predivider (C version)
- Consecutive output of rectangular wave (cycle being 64 times the cycle time)

	Item	LC6523C	LC6523H	LC6526C	LC6526H
Memory	ROM	2048 x 8 bits	2048 x 8 bits	1024 x 8 bits	1024 x 8 bits
	RAM	128 x 4 bits	128 x 4 bits	64 x 4 bits	64 x 4 bits
Instruction	Instruction set	79	79	79	79
	Table read	With	With	With	With
On-chip function	Interrupt	External 1, Internal 1	External 1, Internal 1	External 1, Internal 1	External 1, Internal 1
	Timer	4-bit prescaler + 8-bit timer	4-bit prescaler + 8-bit timer	4-bit prescaler + 8-bit timer	4-bit prescaler + 8-bit timer
	Stack level	4	4	4	4
	Standby function	Standby available by HALT instruction	Standby available by HALT instruction	Standby available by HALT instruction	Standby available by HALT instruction
Input/ output port	Number of ports	I/O 25 max.	I/O 25 max.	I/O 25 max.	I/O 25 max.
	Serial port	4-bit I/O	4-bit I/O	4-bit I/O	4-bit I/O
	I/O voltage	15V max.	15V max.	15V max.	15V max.
	Output current	10mA typ. 20mA max.	10mA typ. 20mA max.	10mA typ. 20mA max.	10mA typ. 20mA max.
	I/O circuit configuration	Open drain (N channel) or pull-up resistor-provided output selectable bit by bit.			
	Output level at reset mode	"H" or "L" level selectable port by port (port C, D only)			
	Rectangular wave output	Available	Available	Available	Available
Characteristic	Minimum cycle time	2.85μs($V_{DD}\geqq$4V) 7.6μs ($V_{DD}\geqq$3V)	0.95μs	2.85μs($V_{DD}\geqq$4V) 7.6μs ($V_{DD}\geqq$3V)	0.95μs
	Supply voltage	3 to 6V	4.5 to 6V	3 to 6V	4.5 to 6V
	Current dissipation	2.5mA typ.	4mA typ.	2.5mA typ.	4mA typ.
Oscillation	Resonator	CR(600kHz typ) Ceramic (400k, 800k, 4MHz)	Ceramic 4MHz	CR(600kHz typ) Ceramic (400k, 800k, 4MHz)	Ceramic 4MHz
	Predivider option	1/1, 1/3, 1/4	1/1	1/1, 1/3, 1/4	1/1
Other	Package	DIP30 shrink type	DIP30 shrink type	DIP30 shrink type	DIP30 shrink type

Note) Information on the resonator and oscillation circuit constants will be presented as soon as the recommended circuit is determined.