

Description

The μ PD23C1024E is a 65,536-word by 16-bit mask-programmable ROM fabricated with CMOS silicon-gate technology and designed to operate from a single +5-volt power supply. The device has three-state outputs and fully TTL-compatible inputs and outputs, and is packaged in a 600-mil, 40-pin plastic DIP.

Features

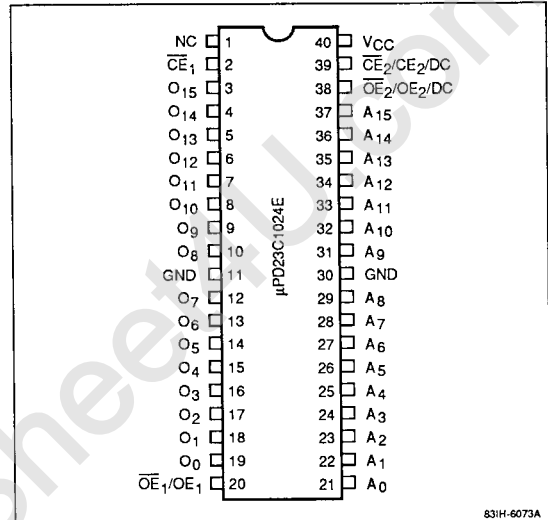
- 65,536-word by 16-bit organization
- Fast access time: 200 ns maximum
- TTL-compatible inputs and outputs
- Three-state outputs
- Single +5-volt power supply
- CMOS process technology
- Fully static operation
- Low power dissipation

Ordering Information

Part Number	Access Time (max)	Package
μ PD23C1024EC	200 ns	40-pin plastic DIP

Pin Configuration

40-Pin Plastic DIP



Pin Identification

Symbol	Function
A ₀ - A ₁₅	Address inputs
O ₀ - O ₁₅	Data outputs
\overline{CE}_1	Chip enable 1
$\overline{CE}_2/CE_2/DC$	Chip enable 2 (Note 1)
\overline{OE}_1/OE_1	Output enable 1
$\overline{OE}_2/OE_2/DC$	Output enable 2 (Note 1)
GND	Ground
V _{CC}	+5-volt power supply
NC	No connection

Notes:

- (1) This pin is user-definable as active low, active high, or "don't care."

Absolute Maximum Ratings

Supply voltage, V_{CC}	-0.3 to +7.0 V
Input voltage, V_I	-0.3 V to $V_{CC} + 0.3$ V
Output voltage, V_O	-0.3 V to $V_{CC} + 0.3$ V
Operating temperature, T_{OPR}	-10 to +70°C
Storage temperature, T_{STG}	-65 to +150°C

Exposure to Absolute Maximum Ratings for extended periods may affect device reliability; exceeding the ratings could cause permanent damage. The device should be operated within the limits specified under DC and AC Characteristics.

Capacitance

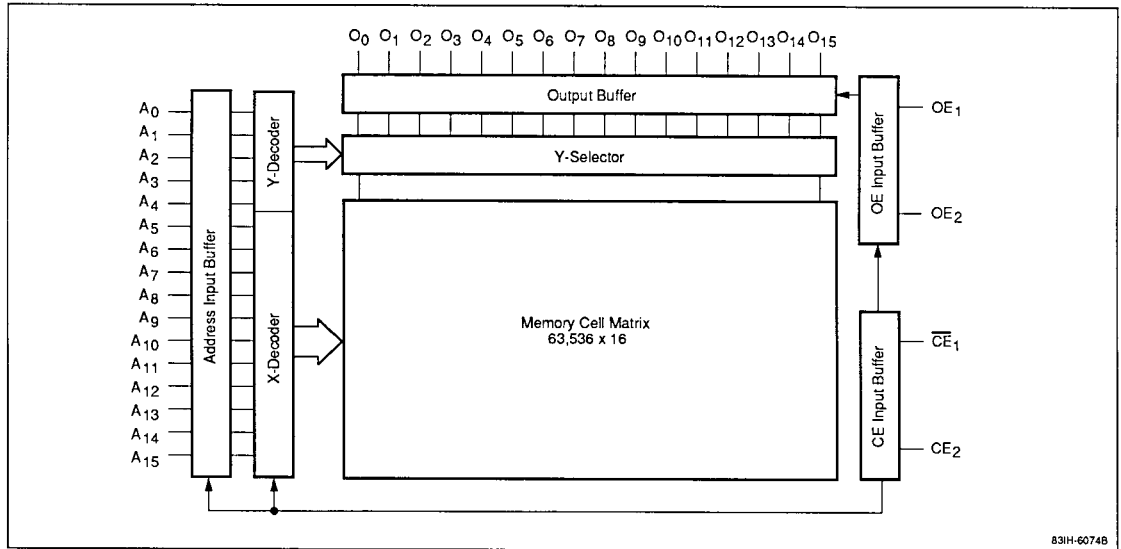
$T_A = 25^\circ\text{C}; f = 1 \text{ MHz}$

Parameter	Symbol	Min	Typ	Max	Unit
Input capacitance	C_i		15		pF
Output capacitance	C_o		15		pF

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Input voltage, high	V_{IH}	2.2		$V_{CC} + 0.3$	V
Input voltage, low	V_{IL}	-0.3		0.8	V
Supply voltage	V_{CC}	4.5	5.0	5.5	V
Ambient temperature	T_A	-10		70	°C

Block Diagram



831H-6074B

Truth Table

\overline{CE}_1	CE_2	OE_1	OE_2	Function	Outputs	I_{CC}
V_{IH}	X	X	X	Not Selected	High-Z	Standby
X	Inactive	X	X	Not Selected	High-Z	Standby
V_{IL}	Active	Inactive	X	Selected	High-Z	Active
V_{IL}	Active	X	Inactive	Selected	High-Z	Active
V_{IL}	Active	Active	Active	Read	Data Output	Active

Notes:

(1) X = don't care.

DC Characteristics

$T_A = -10$ to $+70^\circ\text{C}$; $V_{CC} = +5.0\text{ V} \pm 10\%$

Parameter	Symbol	Min	Max	Unit	Test Conditions
Output voltage, high	V_{OH}	2.4		V	$I_{OH} = -400\ \mu\text{A}$
Output voltage, low	V_{OL}		0.4	V	$I_{OL} = +2.5\ \text{mA}$
Input leakage current	I_{LI}	-10	10	μA	$V_I = 0\ \text{V}$ to V_{CC}
Output leakage current	I_{LO}	-10	10	μA	$V_O = 0\ \text{V}$ to V_{CC} (chip deselected)
Power supply current	I_{CC1}		40	mA	$\overline{CE}_1 = V_{IL}$; $CE_2 = \text{active}$ (chip selected)
	I_{CC2}		1.5	mA	$\overline{CE}_1 = V_{IH}$ or $CE_2 = \text{inactive}$ (chip deselected)
	I_{CC3}		100	μA	$\overline{CE}_1 \geq V_{CC} - 0.2\ \text{V}$; $CE_2 \leq 0.2\ \text{V}$ (if CE_2 is programmed active high) or $CE_2 \geq V_{CC} - 0.2\ \text{V}$ (if CE_2 is programmed active low)

AC Characteristics

$T_A = -10$ to $+70^\circ\text{C}$; $V_{CC} = +5.0\text{ V} \pm 10\%$

Parameter	Symbol	Min	Max	Unit	Test Conditions
Address access time	t_{ACC}		200	ns	
Chip enable access time	t_{CE}		200	ns	
Output enable access time	t_{OE}		100	ns	
Output hold time	t_{OH}	0		ns	
Output disable time	t_{DF}	0	70	ns	

Notes:

(1) Input voltage rise and fall times = 20 ns; Input and output timing reference levels = 0.8 V and 2.0 V; output load = 1 TTL + 100 pF.

Timing Waveform

