

Description

The μPD23C1000A is a 131,072-word by 8-bit static 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 available in 28-pin plastic DIP or miniflat packaging.

Features

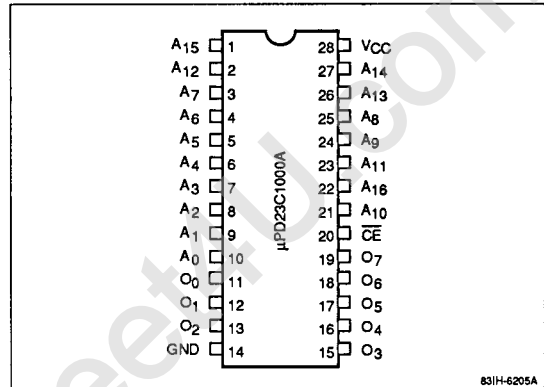
- 131,072-word by 8-bit organization
- TTL-compatible inputs and outputs
- Three-state outputs
- Single +5-volt power supply
- CMOS process technology
- Fully static operation
- Low power dissipation
 - 220 mW (active)
 - 550 μW (standby)

Ordering Information

| Part Number | Access Time (max) | Package |
|--------------|-------------------|-------------------------|
| μPD23C1000AC | 200 ns | 28-pin plastic DIP |
| μPD23C1000AG | 200 ns | 28-pin plastic miniflat |

Pin Configuration

28-Pin Plastic DIP or Miniflat



Pin Identification

| Symbol | Function |
|----------------------------------|----------------------|
| A ₀ - A ₁₆ | Address Inputs |
| O ₀ - O ₇ | Data outputs |
| CE | Chip enable |
| GND | Ground |
| V _{CC} | +5-volt power supply |

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.

Recommended Operating Conditions

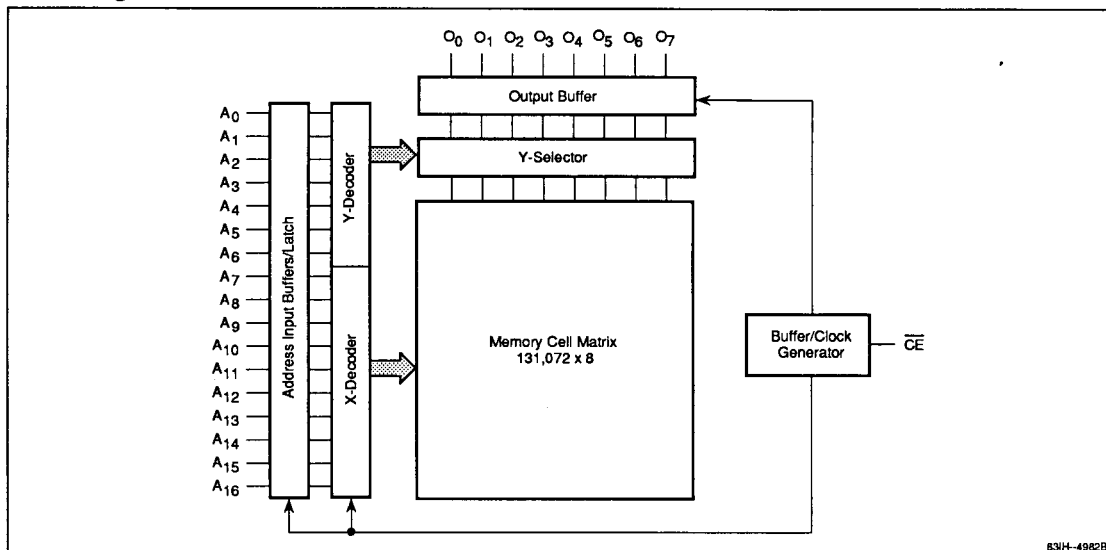
| Parameter | Symbol | Min | Typ | Max | Unit |
|---------------------|----------|------|-----|----------------|------|
| Input voltage, high | V_{IH} | 2.2 | | $V_{CC} + 0.3$ | V |
| Input voltage, low | V_{IL} | -0.3 | | 0.8 | V |
| Supply voltage | V_{CC} | 4.5 | 5.0 | 5.5 | V |
| Ambient temperature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

Capacitance

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

| Parameter | Symbol | Min | Typ | Max | Unit |
|--------------------|--------|-----|-----|-----|------|
| Input capacitance | C_I | | 15 | | pF |
| Output capacitance | C_O | | 15 | | pF |

Block Diagram



831H-4982B

DC Characteristics

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

| Parameter | Symbol | Min | Typ | 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 | $\overline{CE} = V_{IL}$ |
| | I_{CC2} | | | 1.5 | mA | $\overline{CE} = V_{IH}$ (standby) |
| | I_{CC3} | | | 100 | μA | $\overline{CE} \geq V_{CC} - 0.2$ (standby) |

AC Characteristics

$T_A = -10$ to $+70^\circ\text{C}$; $V_{CC} = +5.0\text{ V} \pm 10\%$ (Note 1)

| Parameter | Symbol | Min | Typ | Max | Unit | Test Conditions |
|-------------------------|-----------|-----|-----|-----|------|-----------------|
| Address access time | t_{ACC} | | | 200 | ns | |
| Chip enable access time | t_{CE} | | | 200 | ns | |
| Output hold time | t_{OH} | 0 | | | ns | |
| Output disable time | t_{DF} | 0 | | 60 | ns | |

Notes:

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

Timing Waveform

