RICOH

T-46-13-15 EK-047-9006

RP231027D/E

NMOS 1Mbit MASK ROM

(131,072 word × 8 bit)

■ GENERAL DESCRIPTION

The RP231027D/E is a static NMOS read only Memory organized as 131,072 words by 8 bits and operates from a single+5V supply.

The RP231027D/E features automatic power-down mode. When Chip Enable ($\overline{CE}$) goes HIGH level, the supply current is reduced from 100mA (max.) to 30mA (max.).

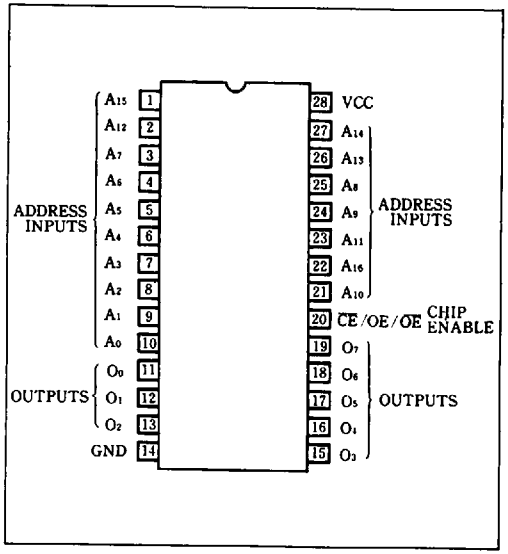
Pin 20 can be used as OE.

According to your order, Logic of the OE pin may be selected ACTIVE LOW or ACTIVE HIGH.

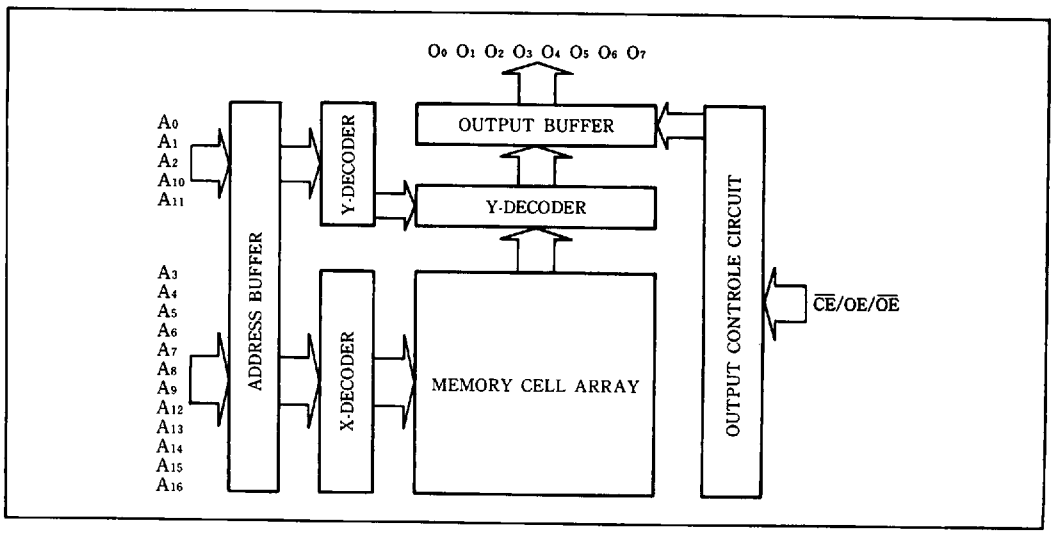
■ FEATURES

- 131,072 words×8 bits organization
- Low power dissipation Active 550mW max.
  Standby 165mW max.
- Fast access time RP231027D 250ns max.
  RP231027E 200ns max.
- Single +5V (±10%) power supply
- Completely TTL compatible: All outputs and inputs
- 3-state outputs for wired-OR expansion
- Pin compatible with Intel 27512

■ PIN CONFIGURATION (Top view)



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Condition	Limit	Unit
V_{CC}	Supply Voltage	With respect to GND	−0.3~7	V
V_I	Input Voltage		−0.3~Vcc+0.3	V
V_O	Output Voltage		−0.3~Vcc+0.3	V
Pd	Maximum Power Dissipation	Ta=25℃	700	mW
Topr	Operating Ambient Temperature		0~70	℃
Tstg	Storage Temperature		−40~125	℃

■ RECOMMENDED OPERATING CONDITIONS (Ta=0~70℃)

Symbol	Parameter	Specified Value			Unit
		Min	Typ	Max	
V_{CC}	Supply Voltage	4.5	5.0	5.5	V
V_{IH}	Input High Voltage	2.0		V_{CC}	V
V_{IL}	Input Low Voltage	−0.3		0.8	V

■ ELECTRICAL CHARACTERISTICS

● DC ELECTRICAL CHARACTERISTICS (Ta=0~70℃, Vcc=5V±10%)

Symbol	Parameter	Test Condition	Specified Value			Unit
			Min	Typ	Max	
I_{CC1}	Supply Current (Standby)	$\overline{CE}=V_{CC}$			30	mA
I_{CC2}	Supply Current (Active)	I_O=0mA			100	mA
V_{OH}	Output High Voltage	$I_{OH}=-400\mu A$	2.4		Vcc	V
V_{OL}	Output Low Voltage	I_{OL}=2.0mA			0.4	V
V_{IH}	Input High Voltage		2.0			V
V_{IL}	Input Low Voltage		−0.3		0.8	V
I_{LI}	Input Leakage Current	V_I=0V~Vcc	−10		10	μA
I_{LO}	Output Leakage Current	V_O=Vcc, Chip Deselected	−10		10	μA

● AC ELECTRICAL CHARACTERISTICS (Ta=0~70℃, Vcc=5V±10%)

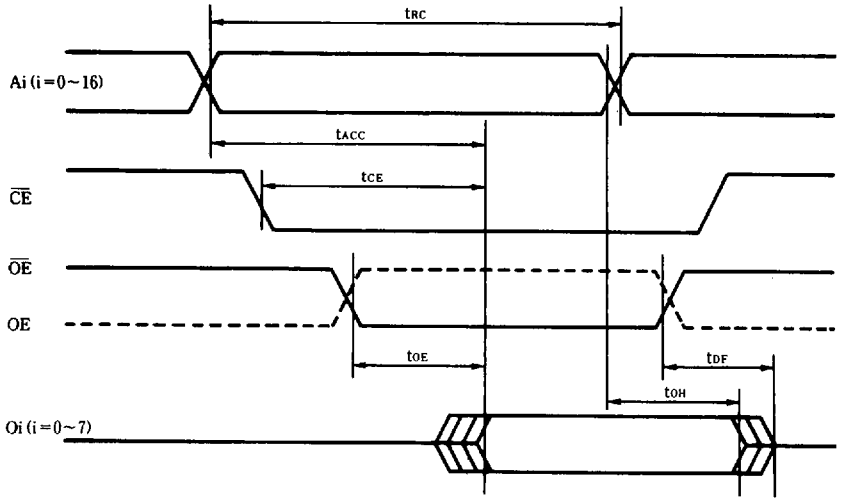
Symbol	Parameter	RP231027D			RP231027E			Unit
		Min	Typ	Max	Min	Typ	Max	
t_{RC}	Read Cycle Time	250			200			ns
t_{ACC}	Address Access Time			250			200	ns
t_{CE}	Chip Enable Access Time			250			200	ns
t_{OE}	Output Enable Access Time			100			80	ns
t_{DF}	Output Floating Delay Time	0		100	0		80	ns
t_{OH}	Output Hold Time	0			0			ns

Note) Test Condition
Input Pulse Voltage: V_{IL}=0.6V, V_{IH}=2.4V
Input Pulse Rise/Fall Time: 10ns
Timing Measuring Voltage: Input V_{IL}=0.8V, V_{IH}=2.2V
Output V_{OL}=0.8V, V_{OH}=2.0V
Output Load: 1TTL + 100pF (including jig capacitance)

● TERMINAL CAPACITANCE

Symbol	Parameter	Test Condition	Specified Value			Unit
			Min	Typ	Max	
Ci	Input Capacitance	f=1MHz			8	pF
Co	Output Capacitance				12	pF

■ TIMING CHART



■ 28 PIN PLASTIC PACKAGE (Unit:mm)