RICOH

EKM-8-8807

NMOS 128kbit MASK ROM
(16,384word × 8bit)

T-46-13-15

RP23128E

■ GENERAL DESCRIPTION

The RP23128E is static NMOS Read Only Memory organized as 16,384 words by 8-bits and operate from a single + 5V supply.

The RP23128E features automatic power-down mode. When Chip Enable ($\overline{CE}$) goes HIGH level, the supply current is reduced from 100mA (max.) to 20mA (max.).

These devices have Chip Enable ($\overline{CE}$) input and output Enable (OE/$\overline{OE}$) inputs allowing up to 16 wired ORs to be tied without external decoding.

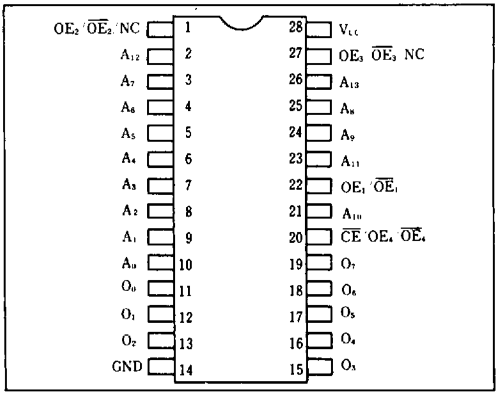
According to your order, logic of the following pins may be selected.

Pin 22 (active low/active high)
Pin 1, 27 (active low/active high/No Connection)
Pin 20 (Chip Enable/active low/active high)

■ FEATURES

- 16,384 words × 8 bits organization
- Low power dissipation: Active 550mWmax.
  Standby 110mW max.
- Fast access time: 200ns max.
- Single + 5V (±10%) power supply
- Completely TTL compatible: All outputs and inputs

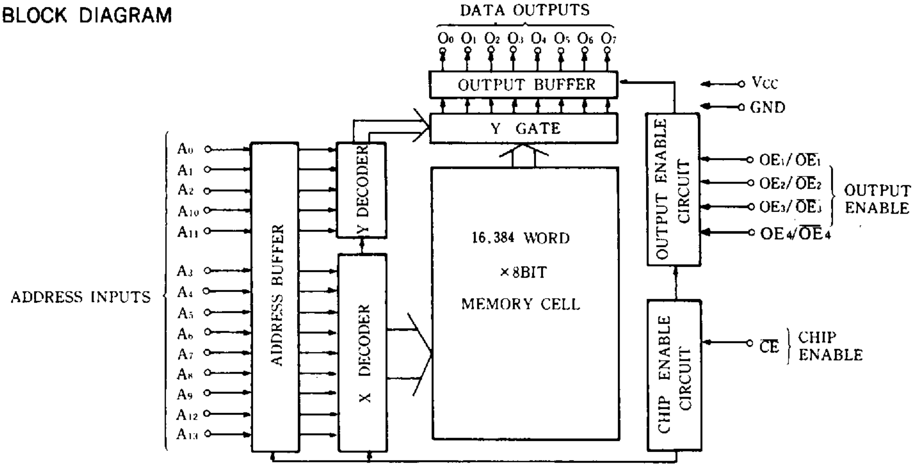
■ PIN CONFIGURATION (Top view)



■ PIN DESCRIPTION

PIN NAME	FUNCTION
$A_0 \sim A_{13}$	Address Input
$O_0 \sim O_7$	Data Output
$\overline{OE}_1 \sim \overline{OE}_4$	Output Enable
$\overline{CE}$	Chip Enable
NC	No Connection
Vcc	Power Supply
GND	GND

■ 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℃, V_{CC}=5V±10%)

Symbol	Parameter	Test Condition	Specified Value			Unit
			Min	Typ	Max	
I_{CC1}	Supply Current (Standby)	$\overline{CE}=V_{CC}$			20	mA
I_{CC2}	Supply Current (Active)	$I_O=0mA$			100	mA
V_{OH}	Output High Voltage	$I_{OH}=-400\mu A$	2.4			V
V_{OL}	Output Low Voltage	$I_{OL}=2.0mA$			0.4	V
V_{IH}	Input High Voltage		2.0		V_{CC}	V
V_{IL}	Input Low Voltage		−0.3		0.8	V
I_{LI}	Input Leakage Current	$V_I=0V\sim V_{CC}$	−10		10	μA
I_{LO}	Output Leakage Current	$V_O=0V\sim V_{CC}$ Chip Deselected	−10		10	μA

● AC ELECTRICAL CHARACTERISTICS (Ta=0~70℃, V_{CC}=5V±10%)

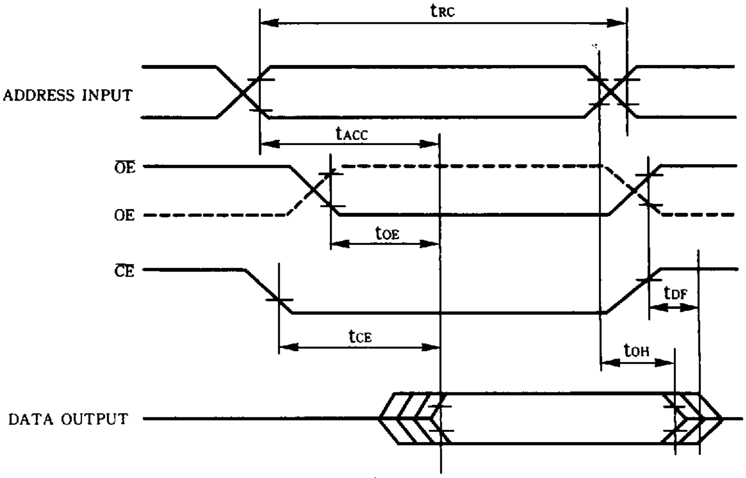
Symbol	Parameter	Specified Valve			Unit
		Min	Typ	Max	
t_{RC}	Read Cycle Time	200			ns
t_{ACC}	Address Access Time			200	ns
t_{CE}	Chip Enable Access Time			200	ns
t_{OE}	Output Enable Access Time			80	ns
t_{DF}	Output Floating Delay Time			80	ns
t_{OH}	Output Hold Time	0			ns

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)