Description

The HY23V28150 high performance read only memory is organized either as 8,388,608 x16 bit (word mode) and has an access time of 100/120ns. It needs no external control clock to assure simple operation, because of its asynchronous operation. It is designed to be suitable for use in program memory of game machine, data memory and entertainments. The HY23V28150 is packaged in a 44SOP provides polarity programmable CE and OE buffer as user option mode. The HY23V28150 includes page mode function. Page mode allows eight words of data to be read in same page, CEB and A3~A22 should not be changed.

Key features

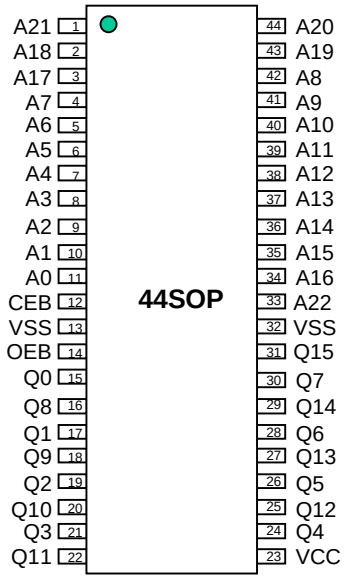
- Switchable Organization
  Word Mode : 8,388,608 X 16 bit
- Single 3.3V power supply operation
- Access Time : 100/120ns (Max)
- Standby Current : 50uA(Max)
- Operating Current : 80mA(Max)
- TTL compatible inputs and outputs
- 3-State outputs for wired-OR expansion
- Programmable CE or OE pin
- Fully static operation
- High reliability
- Package
  HY23V28150S : 44pin Plastic SOP(500mil)

Pin Description

Pin	Function
A0~A22	Address Inputs
Q0~Q15	Data Outputs
CE/$\overline{CE}$	Chip Enable Input
OE/$\overline{OE}$	Output Enable Input
VCC	Power Supply(+3.3V)
VSS	Ground

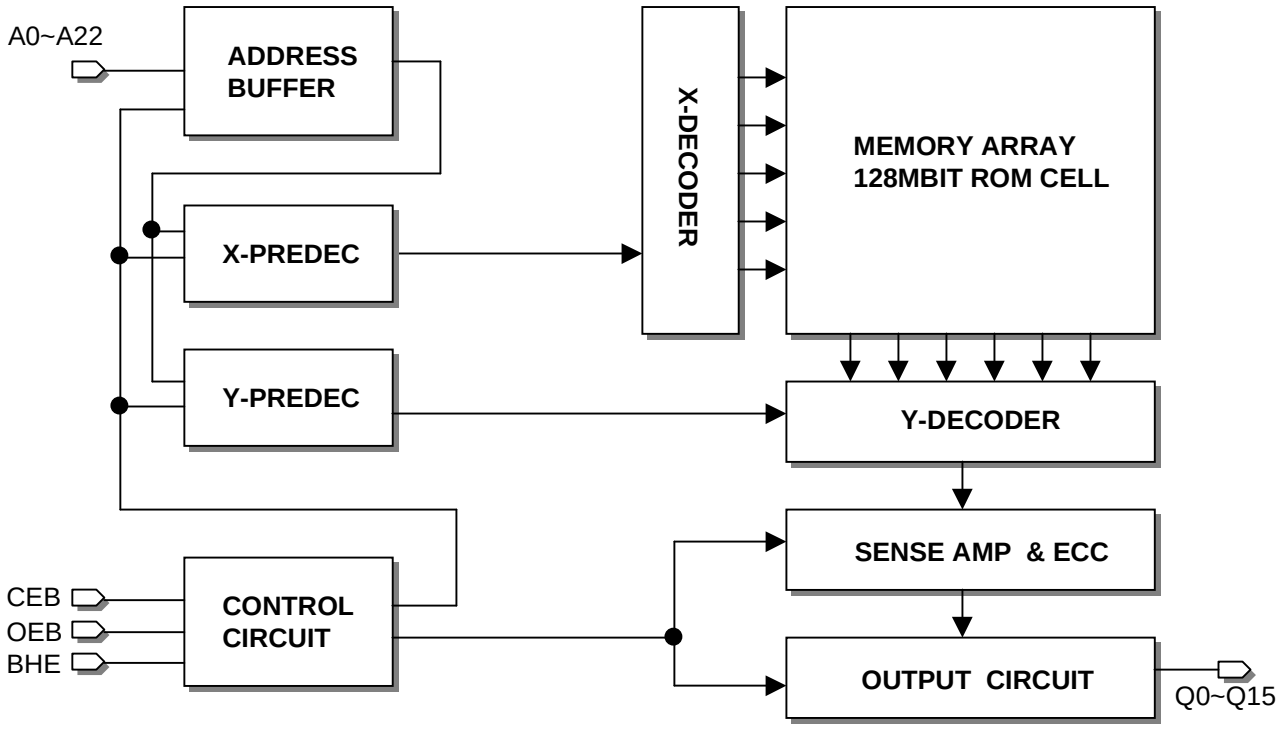
* User selectable polarity
• CEB : CE/CEB , OEB : OE/OEB

Pin Configuration



HY23V28150S

Block Diagram



❑ Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
T_A	Ambient Operating Temperature	-10 ~ 80	°C
T_{STG}	Storage Temperature	-55 ~ 150	°C
V_{CC}	Supply Voltage to Ground Potential	-0.3 ~ 4.5	V
V_{OUT}	Output Voltage	-0.3~Vcc+0.3	V
V_{IN}	Input Voltage	-0.3~Vcc+0.3	V

Stress above those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only. Functional operation of this device at these or any other conditions above those indicated in the operational sections of this specification is not implied and exposure to absolute maximum rating conditions for extended periods may affect device reliability.

❑ Recommended DC Operating Conditions(VCC=3.3±0.3V, T_A=0~70°C)

Symbol	Parameter	Min	Typ	Max	Unit
Vcc	Supply Voltage	3.0	3.3	3.6	V
Vss	Supply Voltage	0	0	0	V
V_{IH}	Input High Voltage	2.2		Vcc+0.3	V
V_{IL}	Input Low Voltage	-0.3		0.8	V

❑ DC Electrical Characteristics(VCC=3.3±0.3V, T_A=0~70 °C)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V_{OH}	Output High Voltage	I_{OH}=-0.4mA	2.4			V
V_{OL}	Output Low Voltage	I_{OL}=2.1mA			0.4	V
I_{IL}	Input Leakage Current	V_{IN}=0V to V_{CC}			±10	uA
I_{OL}	Output Leakage Current	V_{OUT}=0V to V_{CC}			±10	uA
I_{CC}	Operating Supply Current (tRC=100ns)	CEB=OEB=V_{IL} All Output Open			80	mA
I_{SB1}	Standby Current(TTL)	CEB=V_{IH}, all Output Open			500	uA
I_{SB2}	Standby Current(CMOS)	CEB=V_{CC}, all Output Open			50	uA

Capacitance(T_A=25°C , f=1.0MHz)

Symbol	Parameter	Condition	Min	Max	Unit
C_I	Input Capacitance	VIN = 0V		10	pF
C_O	Output Capacitance	VOUT = 0V		10	pF

Capacitance is periodically sampled and not 100% tested

Function Table

MODE	CEB/CE	OEB/OE	BHE	Q0 ~ Q7	Q8 ~ Q14	Q15 ~A-1	POWER
Standby	H/L	X	X	High-Z			Standby
16bit Operating	L/H	L/H	H	Data Out			Active
8bit Operating			L	Data output (lower 8bit)	High-Z	L	
				Data output (upper 8bit)		H	
Output Disable		H/L	X	High-Z		X	

AC Characteristics(VCC=3.3±0.3V, T_A=0~70°C)

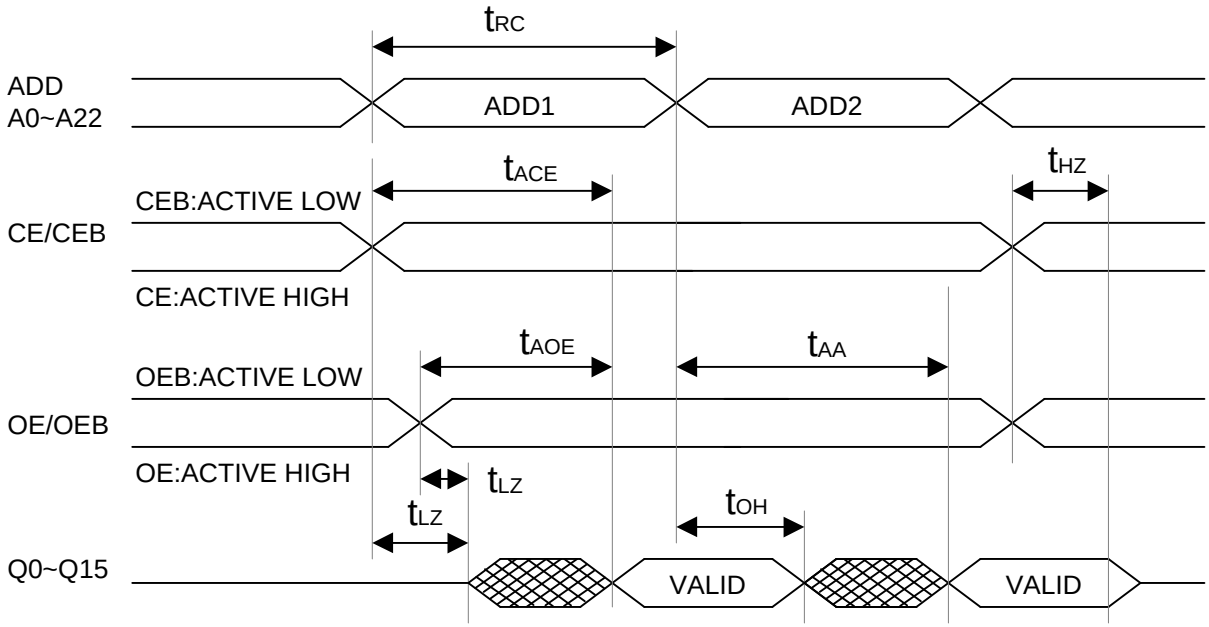
Symbol	Parameter	100ns		120ns		Unit
		Min	Max	Min	Max	
tRC	Read cycle time	100		120		ns
tACE	Chip enable access time		100		120	ns
tAA	Address access time		100		120	ns
tPA	Page Mode access time		30		50	ns
tAOE	Output enable access time		50		60	ns
tOH	Output hold time from address change	0		0		ns
tHZ	Output or chip disable to output High-Z		20		20	ns
tLZ	Output or chip Enable to output Low-Z	10		10		ns

AC Test Condition

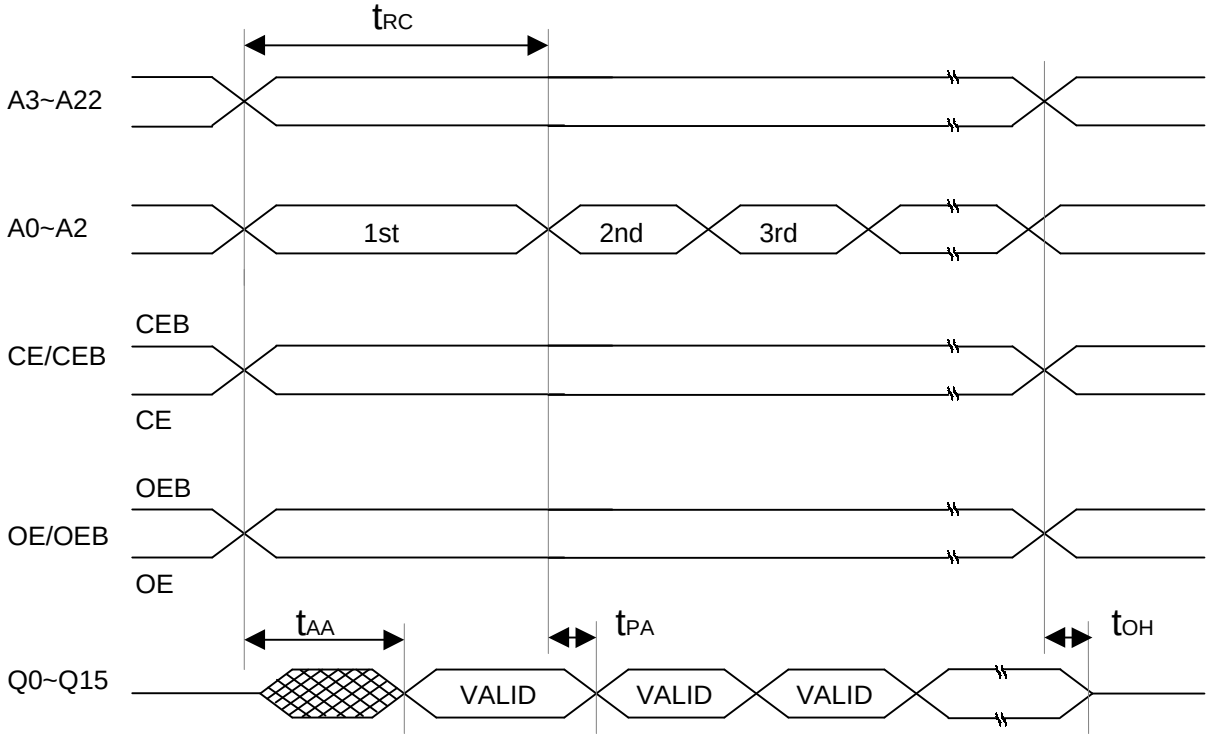
- Input pulse level 0.4V to 2.4V
- Input rise and fall time 10ns
- Input and output timing level 1.5V
- Output load 1 TTL gate and CL=100pF

Timing Waveforms

READ



Page Read Mode



Package Dimension

Unit : mm

44SOP