

# 512K x 8 STATIC RAM—SOI

# HX6408

## FEATURES

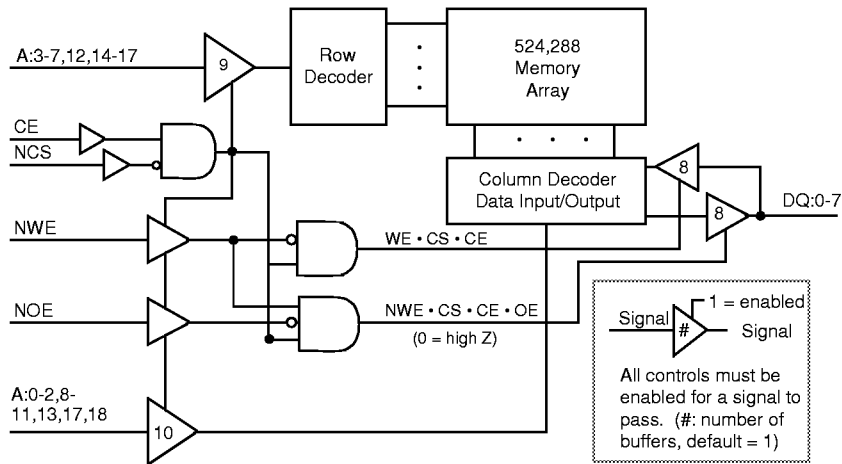
### RADIATION

- Fabricated with RICMOS™ V Silicon on Insulator (SOI) 0.5 μm Process ( $L_{eff} = 0.4 \mu\text{m}$ )
- Total Dose Hardness  $\geq 5 \times 10^5 \text{ rad}(\text{SiO}_2)$
- Neutron Hardness  $\geq 1 \times 10^{14} \text{ cm}^{-2}$
- Dynamic and Static Transient Upset Hardness  $\geq 1 \times 10^9 \text{ rad}(\text{Si})/\text{s}$
- Dose Rate Survivability  $\geq 1 \times 10^{11} \text{ rad}(\text{Si})/\text{s}$
- Soft Error Rate  $\leq 1 \times 10^{-10} \text{ Upsets/bit-day}$
- No Latchup

### OTHER

- Read/Write Cycle Times  $\leq 25 \text{ ns}$  (-55 to 125°C)
- Typical Operating Power  $\leq 9.5 \text{ mW/MHz}$
- Asynchronous/Synchronous Operation
- CMOS Compatible I/O
- Single 3.3 V  $\pm 0.3 \text{ V}$  Power Supply
- Operating Range is -55°C to +125°C
- 40-Lead Flat Pack

## FUNCTIONAL DIAGRAM



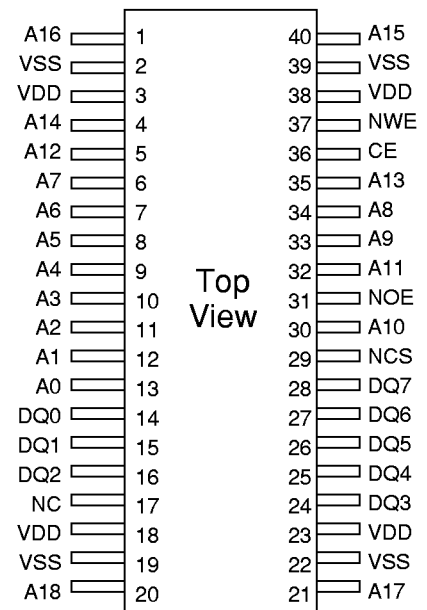
## TRUTH TABLE

NCS	CE	NWE	NOE	MODE	DQ
L	H	H	L	Read	Data
L	H	L	H	Read	High Z
L	H	L	X	Write	Data In
H	H	X	XX	Deselected	High Z
XX	L	XX	XX	Disabled	High Z

X:  $V_I = V_{IH}$  or  $V_{IL}$ , XX:  $V_{SS} \leq V_I \leq V_{DD}$

NOE=H: High Z output state maintained for NCS=X, CE=X, NWE=X

## 40-LEAD FLAT PACK PINOUT



The 512K x 8 is offered in a custom 40-lead flat pack. This package is constructed of multilayer ceramic ( $\text{Al}_2\text{O}_3$ ) and contains internal power and ground planes.

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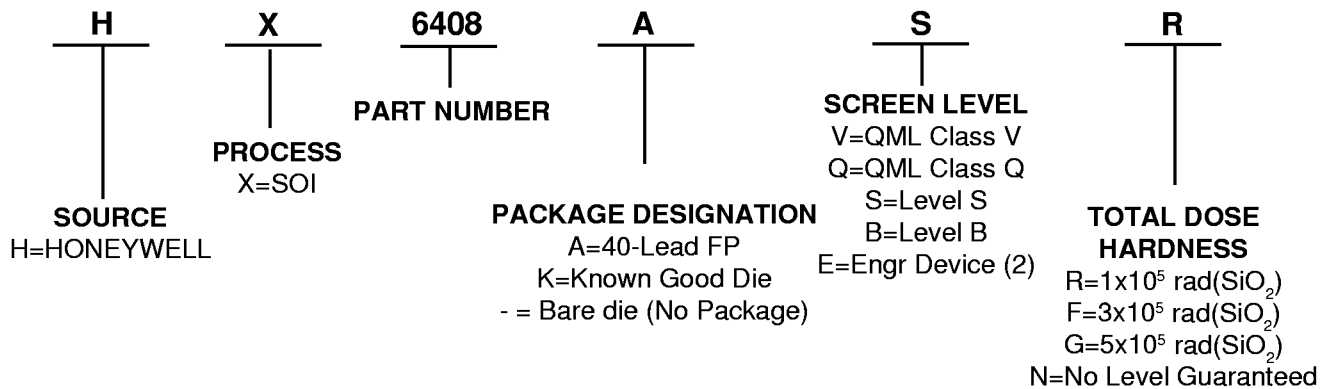
## DC ELECTRICAL CHARACTERISTICS (1)

Symbol	Parameter	Min.	Max.	Units	Conditions
VIL	Low-Level Input Voltage		0.3xVDD	V	VDD = 3.0V
VIH	High-Level Input Voltage	0.7xVDD		V	VDD = 3.6V
VOL	Low-Level Output Voltage		0.4	V	VDD = 3.0V
VOH	High-Level Output Voltage	2.7		V	VDD = 3.0V, IOL = 8mA
IDDSB	Static Supply Current — Standby		4	mA	IO = 0, f = 40 MHz, NCS = VDD
IDDOP	Dynamic Supply Current		4	mA/MHz	IO = 0, CE = VDD, NCS = VSS
TAVQV	Address Access Time		25	ns	(2)
TAVWH	Address Valid to End of Write Time	20		ns	(2)

(1) Worst case operating conditions: VDD = 3.0 V to 3.6 V, TC = -55°C to 125°C, post total dose at 25°C.

(2) Input levels VIL/VIH = VSS/VDD input rise and fall times <1 ns/V, input and output timing reference = 1.5 V, output loading = 50 pF.

## ORDERING INFORMATION (1)



(1) Orders may be faxed to 612-954-2051. Please contact our Customer Service Department at 612-954-2888 for further information.

(2) Engineering Device description: Parameters are tested from -55 to 125°C, 24 hr burn-in, no radiation guaranteed.

Contact Factory with other needs.

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