

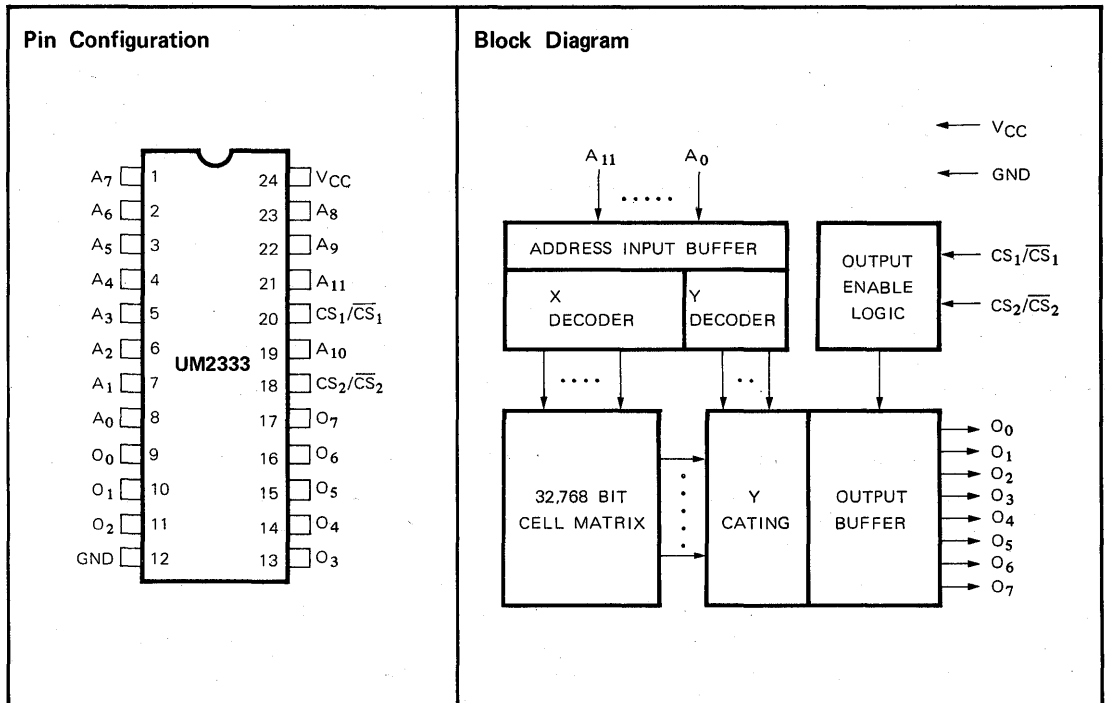
**Features**

- Access time 250/350/450ns (max.)
- Single +5V ±10% power supply
- TTL compatible inputs and outputs
- Three-state outputs
- Pin compatible with 2732 EPROM
- Two programmable chip selects for output control
- N-channel silicon gate technology

**General Description**

The UM2333 is a 32,768-bit static MOS read only memory organized as 4096 words by 8 bits. The device is completely static in operation, and operates from a single +5V power supply. All inputs and outputs are TTL compatible. The two chip select inputs are programmable.

Programming of the device is accomplished by a custom masking process. The UM2333 is designed for memory applications where high performance, large bit storage, and simple interfacing are important design objectives.



**Absolute Maximum Ratings\***

Ambient temperature under bias, $T_A$ . . . . .	-10 to +80°C
Storage temperature, $T_{STG}$ . . . . .	-65 to +150°C
Applied voltage on any pin with respect to ground . . . . .	-0.5 to +7V
Power dissipation, $P_D$ . . . . .	1.0W

**\*Comments**

Stresses 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.

**D.C. Electrical Characteristics**

( $T_A = 0$  to 70°C,  $V_{CC} = 5V \pm 10\%$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Limits			Units
			Min.	Typ.	Max.	
$V_{IL}$	Input low voltage		-0.05		0.8	
$V_{IH}$	Input high voltage		2.0		$V_{CC}$	V
$V_{OL}$	Output low voltage	$I_{OL} = 2.1mA$			0.4	V
$V_{OH}$	Output high voltage	$I_{OH} = -400\mu A$	2.4		$V_{CC}$	V
$I_{LI}$	Input load current	$V_{IN} = V_{CC} = 5.25V$			10	$\mu A$
$I_{LO}$	Output leakage current	$V_{OUT} = V_{CC} = 5.25V$			10	$\mu A$
$I_{CC}$	$V_{CC}$ current				100	mA

**Capacitance**

( $T_A = 25^\circ C$   $f = 1.0MHz$ )

Symbol	Parameter	Test Conditions	Limits		Unit
			Typ.	Max.	
$C_{IN}$	Input capacitance	All pins except pin under tied to AC ground		7	pF
$C_{OUT}$	Output capacitance			10	pF

Note:  
This parameter is periodically sampled and is not 100% tested.

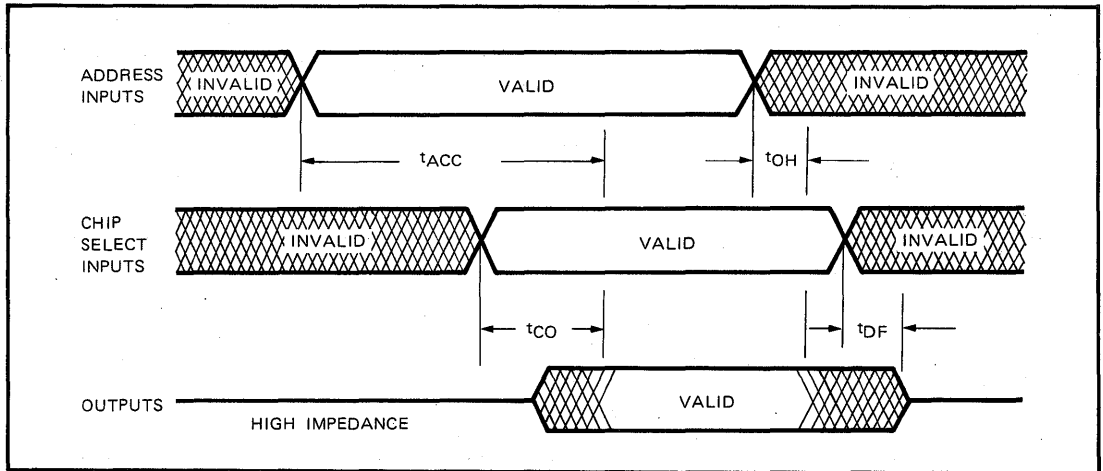
**A.C. Electrical Characteristics**
 $(T_A = 0 \text{ to } 70^\circ\text{C}, V_{CC} = 5\text{V} \pm 10\%)$ 

Symbol	Parameter	UM2333		UM2333-1		UM2333-2		Unit
		Min.	Max.	Min.	Max.	Min.	Max.	
$t_{ACC}$	Address access time 1		450		350		250	ns
$t_{CO}$	Output enable delay from $CS_1/\overline{CS}_1$ or $CS_2/\overline{CS}_2$		150		120		120	ns
$t_{DF}$	Output disable delay from $CS_1/\overline{CS}_1$ or $CS_2/\overline{CS}_2$	0	100	0	100	0	100	ns
$t_{OH}$	Output hold from address change	10		10		10		ns

**Test Conditions**

Output load . . . . . 1 TTL load and 100pF  
 Input transition time . . . . . 20ns

Timing reference levels . . . . .  
 . . . . . Input = 1.5V, Output = 0.8V and 2.0V

**Timing Diagram**

**Ordering Information**

Part Number	Access Time	Package
UM2333	450ns	Plastic
UM2333-1	350ns	Plastic
UM2333-2	250ns	Plastic