MX23C4096

4M-BIT [256K x 16] CMOS MASK ROM

FEATURES

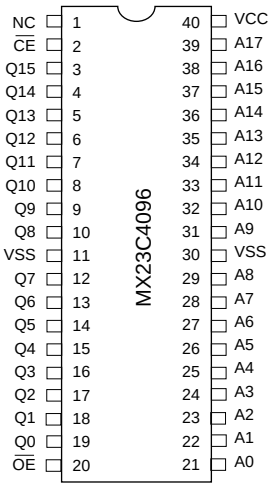
- 256K x 16 organization
- Single +5V power supply
- Fastest access time: 85ns
- Operating current: 60mA
- Standby current: 100uA
- Package
  - 40 pin DIP (600 mil)
  - 44 pin PLCC

PIN DESCRIPTION

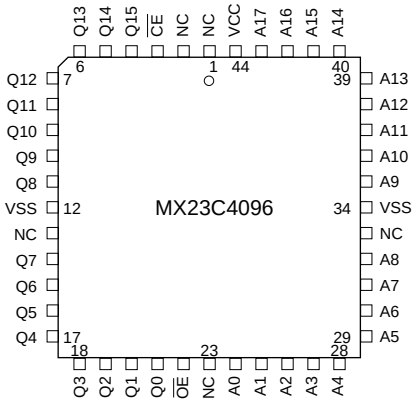
Symbol	Pin Function
A0~A17	Address Inputs
Q0~Q15	Data Outputs
$\overline{CE}$	Chip Enable Input
$\overline{OE}$	Output Enable Input
VCC	Power Supply Pin (+5V)
VSS	Ground Pin

PIN CONFIGURATION

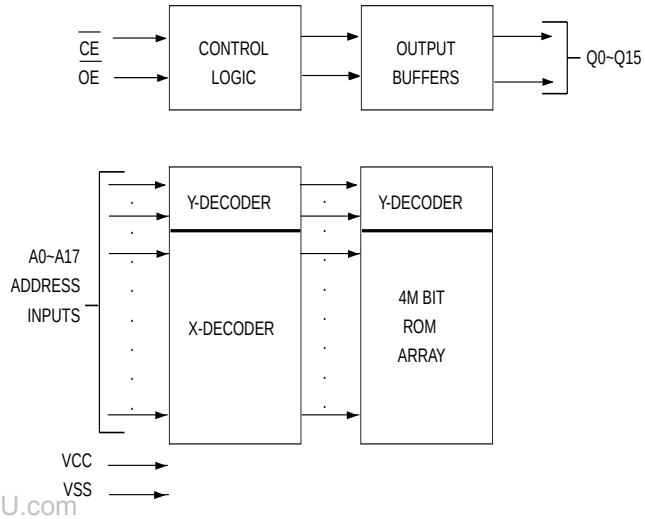
40PDIP



44 PLCC



BLOCK DIAGRAM



ORDER INFORMATION

Part No.	Access Time	Package
MX23C4096PC-85	85ns	40 pin DIP
MX23C4096PC-10	100ns	40 pin DIP
MX23C4096PC-12	120ns	40 pin DIP
MX23C4096PC-15	150ns	40 pin DIP
MX23C4096QC-85	85ns	44 pin PLCC
MX23C4096QC-10	100ns	44 pin PLCC
MX23C4096QC-12	120ns	44 pin PLCC
MX23C4096QC-15	150ns	44 pin PLCC

ABSOLUTE MAXIMUM RATINGS*

RATING	VALUE
Ambient Operating Temperature	0℃ to 70℃
Storage Temperature	-65℃ to 125℃
Applied Input Voltage	-0.5V to 7.0V
Applied Output Voltage	-0.5V to 7.0V
VCC to Ground Potential	-0.5V to 7.0V

*Notice:
Stress greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended period may affect reliability.

DC CHARACTERISTICS (TA = 0℃ ~ 70℃, VCC = 5.0V ± 10%)

Item	Symbol	MIN.	MAX.	Conditions
Output High Voltage	VOH	2.4V	-	IOH = -1.0mA
Output Low Voltage	VOL	-	0.4V	IOL = 2.1mA
Input High Voltage	VIH	2.2V	VCC+0.3V	
Input Low Voltage	VIL	-0.3V	0.8V	
Input Leakage Current	ILI	-	10uA	VIN=0 to 5.5V
Output Leakage Current	ILO	-	10uA	VOUT=0 to 5.5V
Standby Current	ISTB	-	100uA	$\overline{CE}$>VCC-0.2V
Operating Supply Current	ICC	-	60mA	f=5MHz, all output open $\overline{CE}$=VIL, $\overline{OE}$=VIH

CAPACITANCE (TA = 25℃, f = 1.0 MHz)

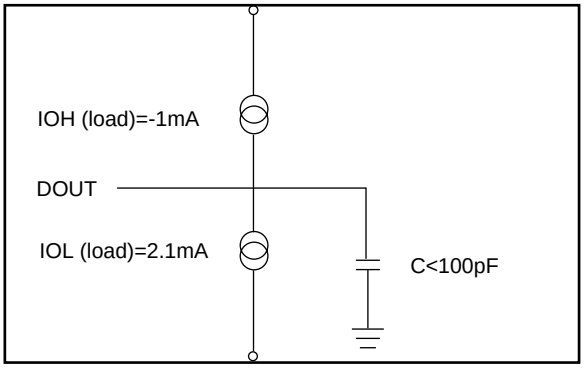
Symbol	Parameter	Min.	Max.	Unit	Conditions
CIN	Input Capacitance		10	pF	VIN=0V
COUT	Output Capacitance		10	pF	VOUT=0V

AC CHARACTERISTICS (TA = 0℃ ~ 70℃, VCC = 5.0V ± 10%)

		23C4096-85		23C4096-10		23C4096-12		23C4096-15	
PARAMETER	SYMBOL	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
Read Cycle Time	tRC	85ns	-	100ns	-	120ns	-	150ns	-
Address Access Time	tAA	-	85ns	-	100ns	-	120ns	-	150ns
Chip Enable Access Time	tACE	-	85ns	-	100ns	-	120ns	-	150ns
Output Enable Access Time	tOE	-	50ns	-	50ns	-	60ns	-	70ns
Output Hold Timer After Address Change	tOH	0ns	-	0ns	-	0ns	-	0ns	-
Output High Z Delay	tHZ	-	20ns	-	20ns	-	20ns	-	20ns

AC TEST CONDITIONS

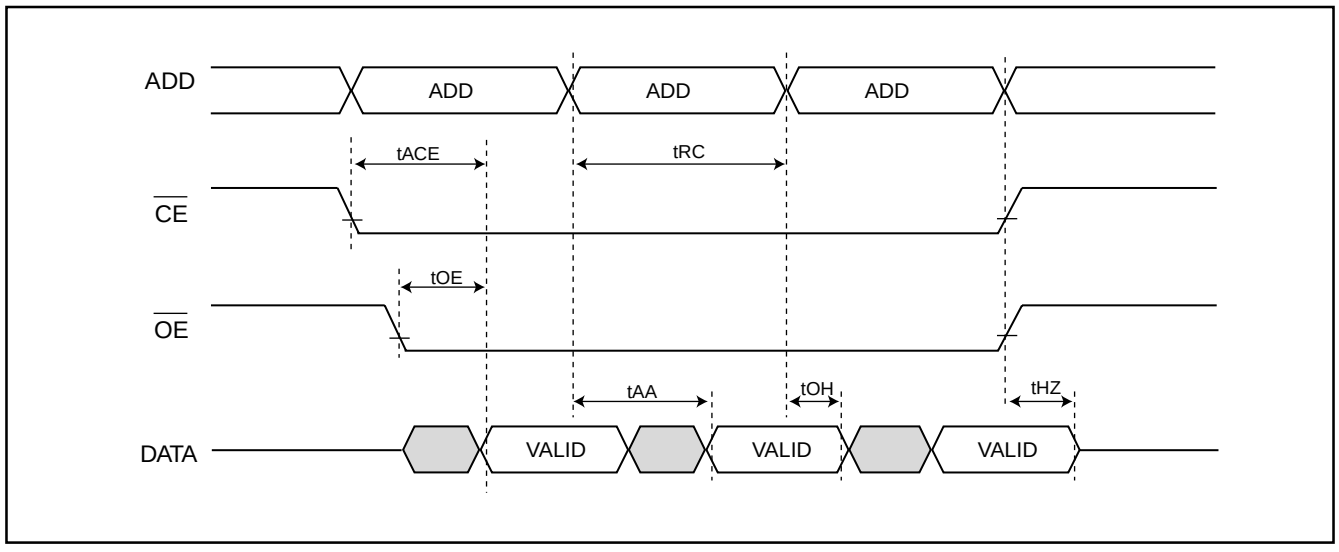
Input Pulse Levels	0.4V to 2.4V
Input Rise and Fall Times	10ns
Input Timing Level	1.5V
Output Timing Level	0.8V and 2.0V
Output Load	See Figure1



Note:
No output loading is present in tester load board.
Active loading is used and under software programming control.
Output loading capacitance includes load board's and all stray capacitance.

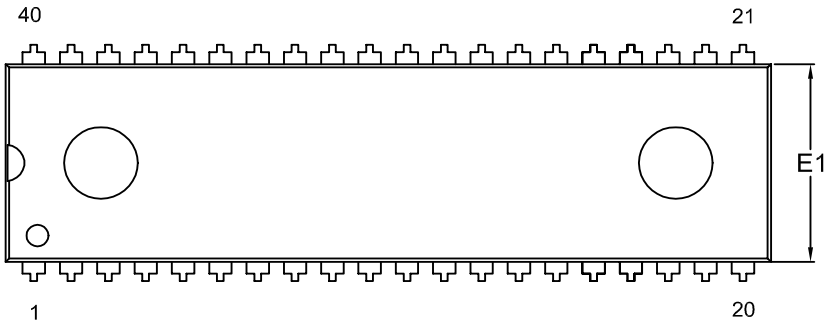
TIMING DIAGRAM

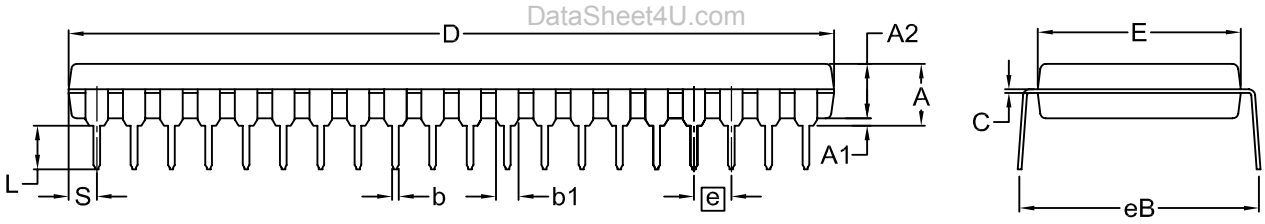
RANDOM READ



PACKAGE INFORMATION

Title: **Package Outline for PDIP 40L(600MIL)**



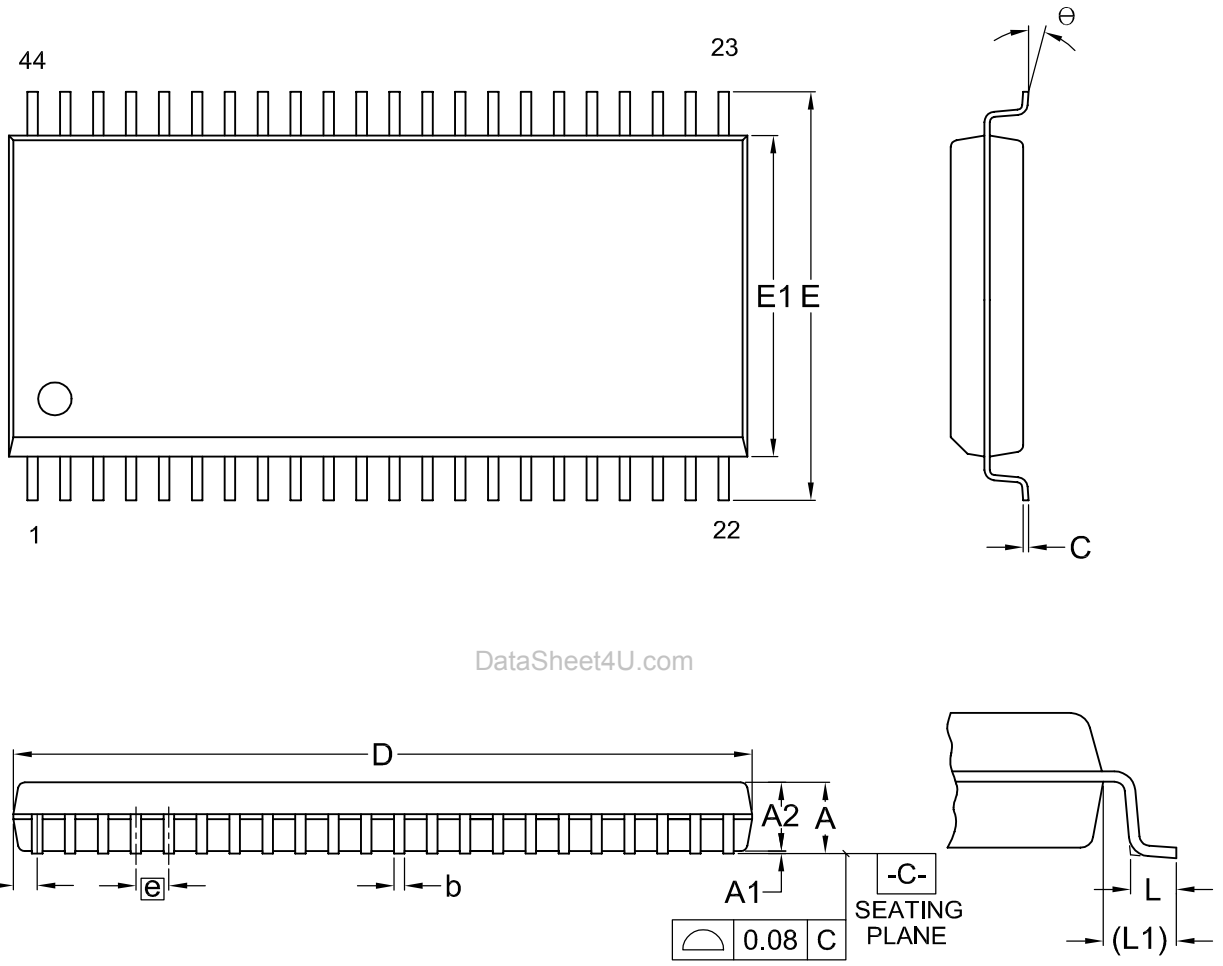


Dimensions (inch dimensions are derived from the original mm dimensions)

SYMBOL / UNIT		A	A1	A2	b	b1	C	D	E	E1	e	eB	L	S
mm	Min.	—	0.51	3.73	0.38	1.14	0.20	51.94	15.11	13.84		15.75	2.92	1.65
	Nom.	—	0.64	3.94	0.46	1.27	0.25	52.07	15.24	13.97	2.54	16.51	3.30	1.90
	Max.	4.90	0.76	4.14	0.53	1.40	0.30	52.20	15.37	14.10		17.27	3.68	2.16
Inch	Min.	---	0.020	0.147	0.015	0.045	0.008	2.045	0.595	0.545		0.620	0.115	0.065
	Nom.	---	0.025	0.155	0.018	0.050	0.010	2.050	0.600	0.550	0.100	0.650	0.130	0.075
	Max.	0.193	0.030	0.163	0.021	0.055	0.012	2.055	0.605	0.555		0.680	0.145	0.085

DWG.NO.	REVISION	REFERENCE			ISSUE DATE
		JEDEC	EIAJ		
6110-0202.4	5				07-03-02

Title: Package Outline for SOP 44L (500MIL)



Dimensions (inch dimensions are derived from the original mm dimensions)

SYMBOL / UNIT		A	A1	A2	b	C	D	E	E1	e	L	L1	S	θ
mm	Min.	---	0.10	2.59	0.36	0.15	28.37	15.83	12.47		0.56	1.51	0.78	0
	Nom.	---	0.15	2.69	0.41	0.20	28.50	16.03	12.60	1.27	0.76	1.71	0.91	5
	Max.	3.00	0.20	2.80	0.51	0.25	28.63	16.23	12.73		0.96	1.91	1.04	10
Inch	Min.	---	0.004	0.102	0.014	0.006	1.117	0.623	0.491		0.022	0.059	0.031	0
	Nom.	---	0.006	0.106	0.016	0.008	1.122	0.631	0.496	0.050	0.030	0.067	0.036	5
	Max.	0.118	0.008	0.110	0.020	0.010	1.127	0.639	0.501		0.038	0.075	0.041	10

DWG.NO.	REVISION	REFERENCE			ISSUE DATE
		JEDEC	EIAJ		
6110-1405	5	MO-175			09-24-'02

REVISION HISTORY

REVISION	DESCRIPTION	PAGE	DATE
1.4	AC CHARACTERISTICS tOH 10ns-->0ns	P3	JAN/28/1999
1.5	Add access time:85ns	P1,2	OCT/15/2001
1.6	Modify Package Information	P4,5	NOV/22/2002

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