MX23L4100

4M-BIT MASK ROM (8/16 BIT OUTPUT)

FEATURES

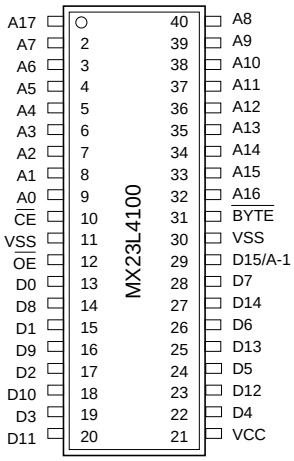
- Bit organization
  - 512K x 8 (byte mode)
  - 256K x 16 (word mode)
- Fast access time
  - Random access: 100ns
- Current
  - Operating: 30mA
  - Standby: 20uA
- Supply voltage
  - 3.3V±10%
- Package
  - 40 pin SOP (500 mil)
  - 40 pin PDIP (600 mil)

ORDER INFORMATION

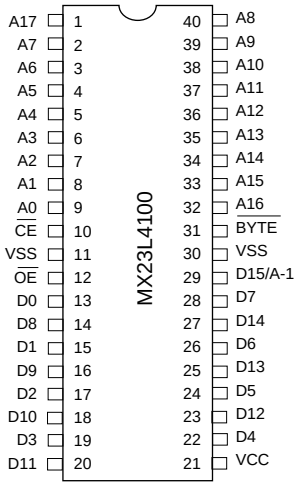
Part No.	Access Time	Package
MX23L4100MC-10	100ns	40 pin SOP
MX23L4100MC-12	120ns	40 pin SOP
MX23L4100MC-15	150ns	40 pin SOP
MX23L4100PC-10	100ns	40 pin PDIP
MX23L4100PC-12	120ns	40 pin PDIP
MX23L4100PC-15	150ns	40 pin PDIP

PIN CONFIGURATION

40 SOP



40 PDIP



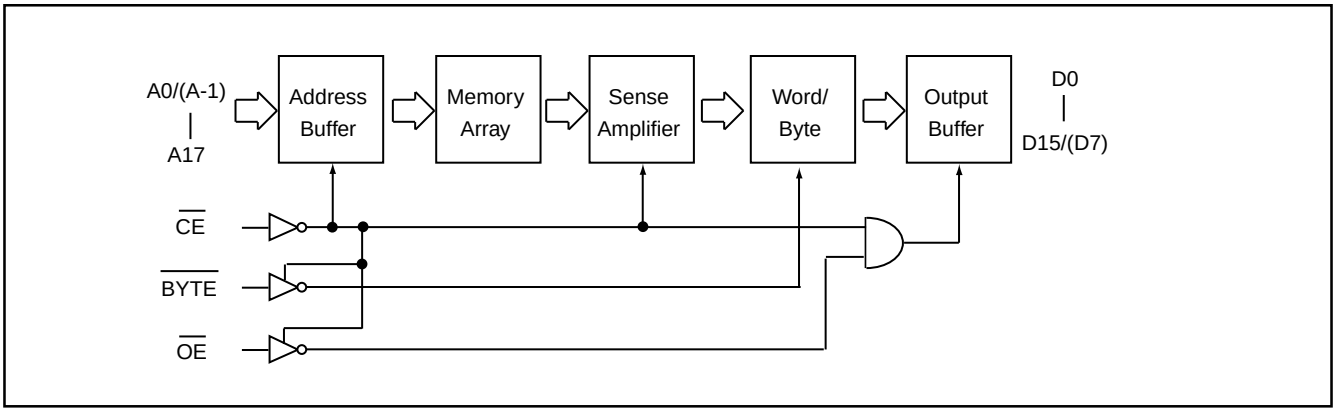
PIN DESCRIPTION

Symbol	Pin Function
A0~A17	Address Inputs
D0~D14	Data Outputs
$\overline{CE}$	Chip Enable Input
$\overline{OE}$	Output Enable Input
$\overline{Byte}$	Word/ Byte Mode Selection
VCC	Power Supply Pin
VSS	Ground Pin
NC	No Connection

MODE SELECTION

$\overline{CE}$	$\overline{OE}$	$\overline{Byte}$	D15/A-1	D0~D7	D8~D15	Mode	Power
H	X	X	X	High Z	High Z	-	Stand-by
L	H	X	X	High Z	High Z	-	Active
L	L	H	Output	D0~D7	D8~D15	Word	Active
L	L	L	Input	D0~D7	High Z	Byte	Active

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Ratings
Voltage on any Pin Relative to VSS	VIN	-0.8V to VCC+2.0V (Note)
Ambient Operating Temperature	Topr	0℃ to 70℃
Storage Temperature	Tstg	-65℃ to 125℃

Note: Minimum DC voltage on input or I/O pins is -0.5V. During voltage transitions, inputs may undershoot VSS to -0.8V for periods of up to 20ns. Maximum DC voltage on input or I/O pins is VCC+0.5V. During voltage transitions, input may overshoot VCC to VCC+2.0V for periods of up to 20ns.

DC CHARACTERISTICS (Ta = 0℃ ~ 70℃, VCC = 3.3V±10%)

Item	Symbol	MIN.	MAX.	Conditions
Output High Voltage	VOH	2.4V	-	IOH = -0.4mA
Output Low Voltage	VOL	-	0.4V	IOL = 1.6mA
Input High Voltage	VIH	2.2V	VCC+0.3V	
Input Low Voltage	VIL	-0.3V	0.8V	
Input Leakage Current	ILI	-	5uA	0V, VCC
Output Leakage Current	ILO	-	5uA	0V, VCC
Operating Current (CE toggle)	ICC1	-	30mA	tRC=100ns, all output open
Standby Current (TTL)	ISTB1	-	1mA	$\overline{CE}$ = VIH
Standby Current (CMOS)	ISTB2	-	20uA	$\overline{CE}$ > VCC - 0.2V
Input Capacitance	CIN	-	10pF	Ta = 25℃, f = 1MHZ
Output Capacitance	COUT	-	10pF	Ta = 25℃, f = 1MHZ

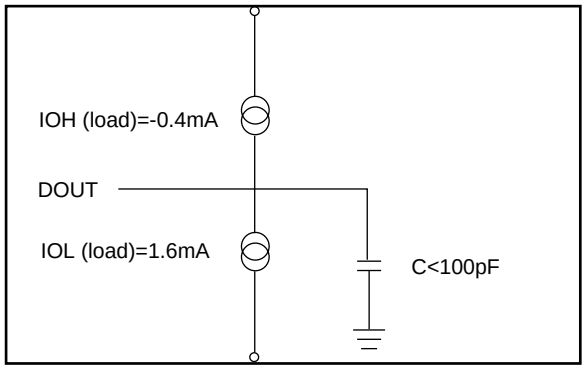
AC CHARACTERISTICS (Ta = 0℃ ~ 70℃, VCC = 3.3V±10%)

Item	Symbol	23L4100-10		23L4100-12		23L4100-15	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
Read Cycle Time	tRC	100ns	-	120ns	-	150ns	-
Address Access Time	tAA	-	100ns	-	120ns	-	150ns
Chip Enable Access Time	tACE	-	100ns	-	120ns	-	150ns
Output Enable Time	tOE	-	50ns	-	60ns	-	70ns
Output Hold After Address	tOH	-	0ns	-	0ns	-	0ns
Output High Z Delay	tHZ	-	20ns	-	20ns	-	20ns

Note:Output high-impedance delay (tHZ) is measured from $\overline{OE}$ or $\overline{CE}$ going high, and this parameter guaranteed by design over the full voltage and temperature operating range - not tested.

AC Test Conditions

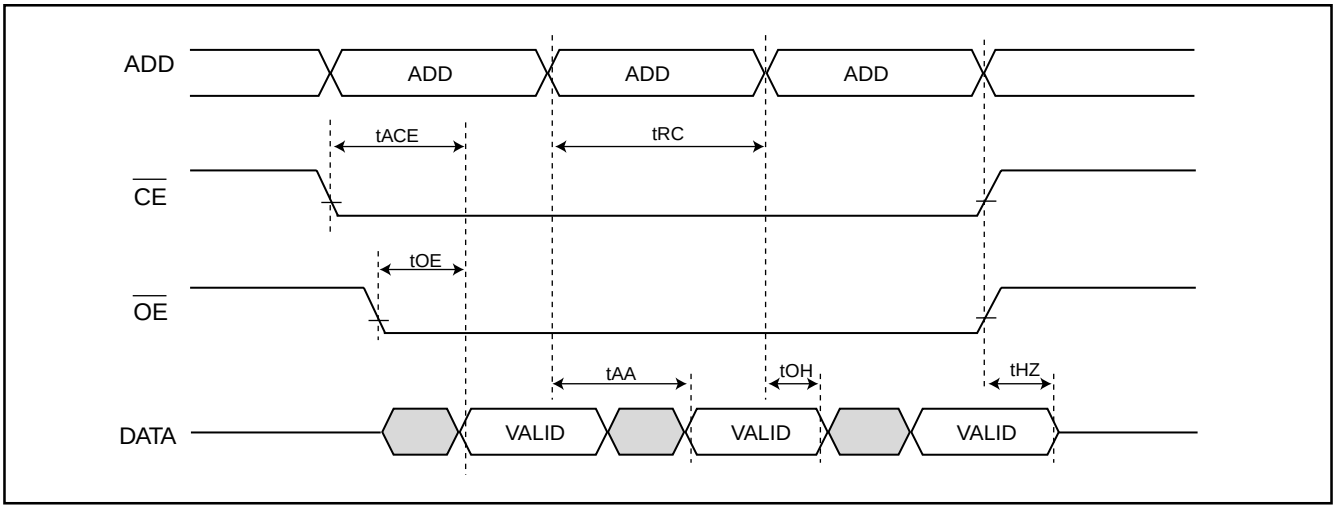
Input Pulse Levels	0.4V~2.4V
Input Rise and Fall Times	10ns
Input Timing Level	1.4V
Output Timing Level	1.4V
Output Load	See Figure



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.

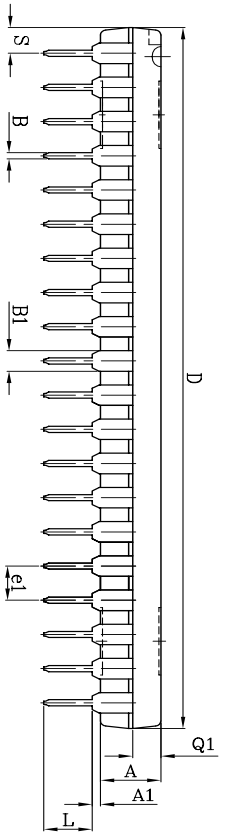
TIMING DIAGRAM

ACCESS TIMING



PACKAGE INFORMATION

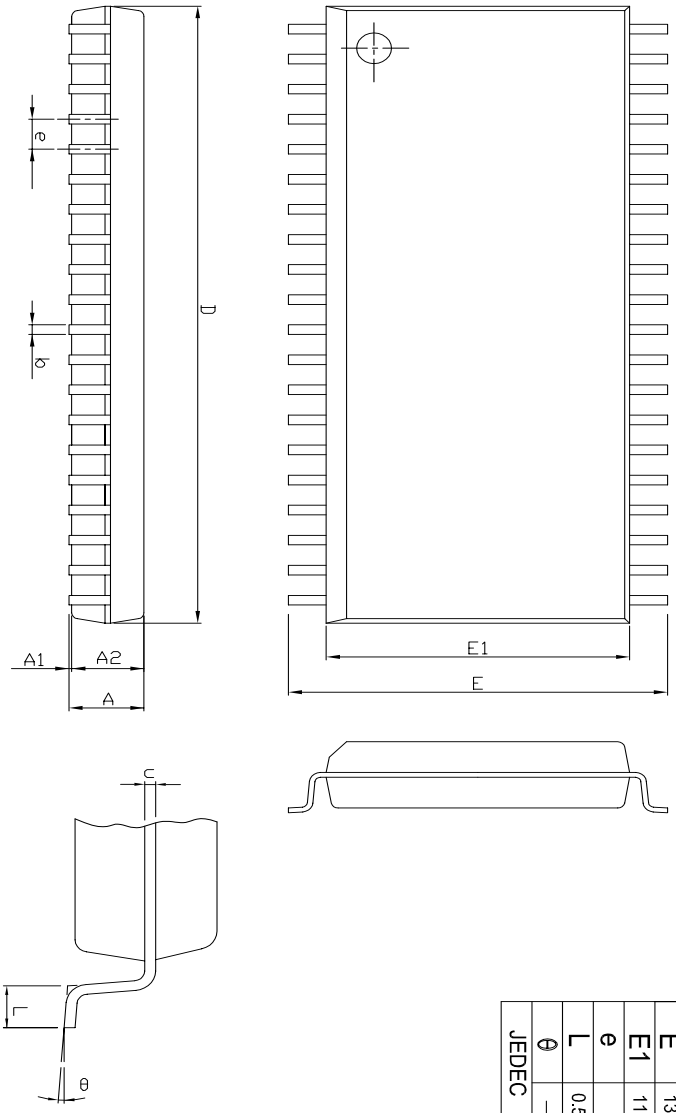
40-PIN PLASTIC DIP (600 mil)



SYMBOL / UNIT	INCH(BASE)	MM(REF.)
A	0.155±0.008	3.937±0.203
A1	0.025±0.005	0.635±0.127
B	0.018 (REF.)	0.457 (REF.)
B1	0.050 (REF.)	1.270 (REF.)
c	0.010 (REF.)	0.254 (REF.)
D	2.05±0.005	52.07±0.127
E	0.600±0.005	15.240±0.127
E1	0.550±0.005	13.970±0.127
e1	0.100(REF.)	2.540 (REF.)
eA	0.650±0.030	16.510±0.762
L	0.13	3.30
Q1	0.0725±0.005	1.8415±0.127
S	0.075±0.005	1.0905±0.127

旺宏電子股份有限公司 Macronix International Co., Ltd.			DWG. NO. 6110-0202.4
TITLE: PACKAGE OUTLINE FOR PDIP 40L (600 MIL)			TOLERANCE .X ±. ANGLE .XX ±.01 .XXX±.002
DRAWN	APPROVED	DATE	UNIT
C.L.Chiang	Leo Lee	05-02-'01	
			REVISION 4

40-PIN PLASTIC SOP



Symbol	Dimension in mm (Base)			Dimension in inch (Ref.)		
	Min	Nom	Max	Min	Nom	Max
A	—	—	3.00	—	—	0.118
A1	0.10	—	—	0.004	—	—
A2	2.57	2.69	2.82	0.101	0.106	0.111
b		0.41REF			0.016 REF	
c		0.20 REF			0.008 REF	
D	25.93	26.06	26.19	1.021	1.026	1.031
E	13.87	14.12	14.38	0.546	0.556	0.566
E1	11.18	11.30	11.43	0.440	0.445	0.450
e		1.27 REF			0.050 REF	
L	0.58	0.79	0.99	0.023	0.031	0.039
θ	—	5°	—	—	5°	—
JEDEC						

MXIC 旺宏電子股份有限公司			DWG. NO.
Macronix International Co., Ltd.			6110-0206.1
TITLE			TOLERANCE
PACKAGE OUTLINE FOR SOP 40L (450 MIL)			.X ±. .XX ±.01 .XXX±.002 ANGLE ROUGHNESS
DRAWN	APPROVED	DATE	UNIT
C.L.Chiang	Dennis Chang	05-03-'01	INCH
			REVISION
			1

REVISION HISTORY

REVISION	DESCRIPTION	PAGE	DATE
1.3	AC CHARACTERISTICS tOH 10ns-->0ns	P3	FEB/01/1999
1.4	Modify Package Information	P4~5	JUL/16/2001

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