

LH534Y00

CMOS 4M (256K × 16) Mask-Programmable ROM

FEATURES

- 262,144 words × 16 bit organization
- Access time: 120 ns (MAX.)
- Power consumption:
 - Operating: 357.5 mW (MAX.)
 - Standby: 550 μW (MAX.)
- Static operation
- Three-state outputs
- Single +5 V power supply
- Packages:
 - 40-pin, 600-mil DIP
 - 44-pin, 650-mil QFJ (PLCC)

DESCRIPTION

The LH534Y00 is a 4M-bit mask-programmable ROM organized as 262,144 × 16 bits. It is fabricated using silicon-gate CMOS process technology.

PIN CONNECTIONS

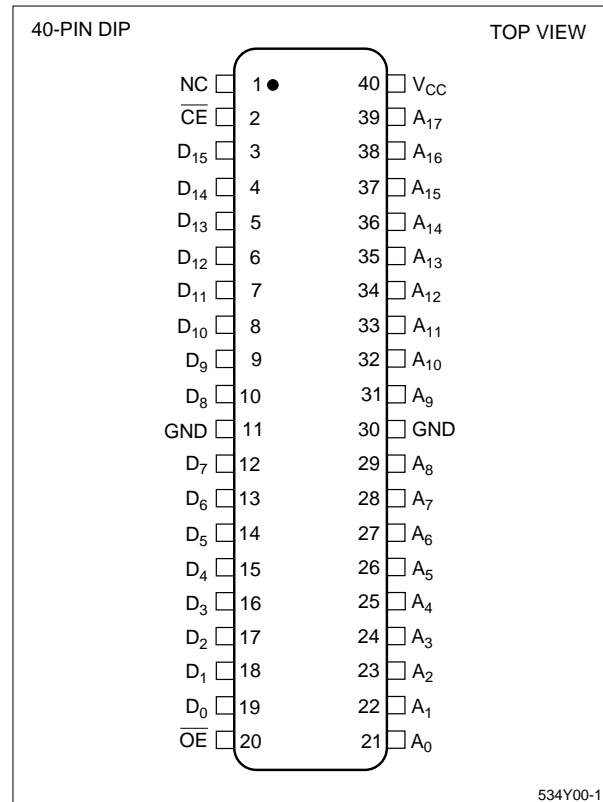


Figure 1. Pin Connections for DIP Package

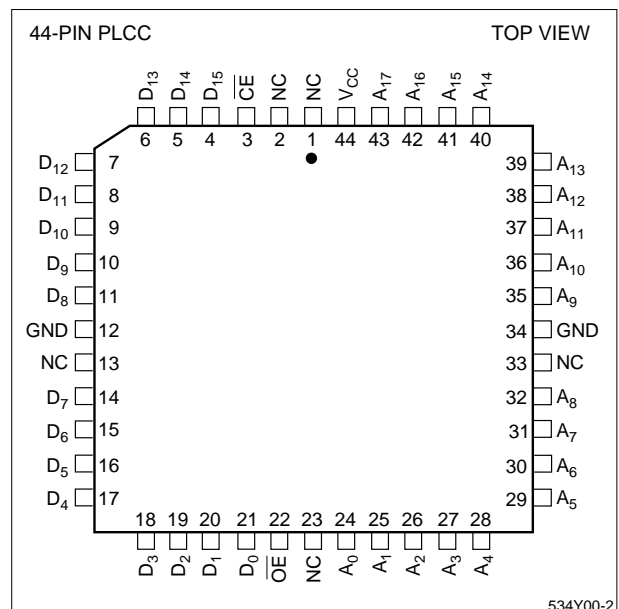


Figure 2. Pin Connections for QFJ (PLCC) Package

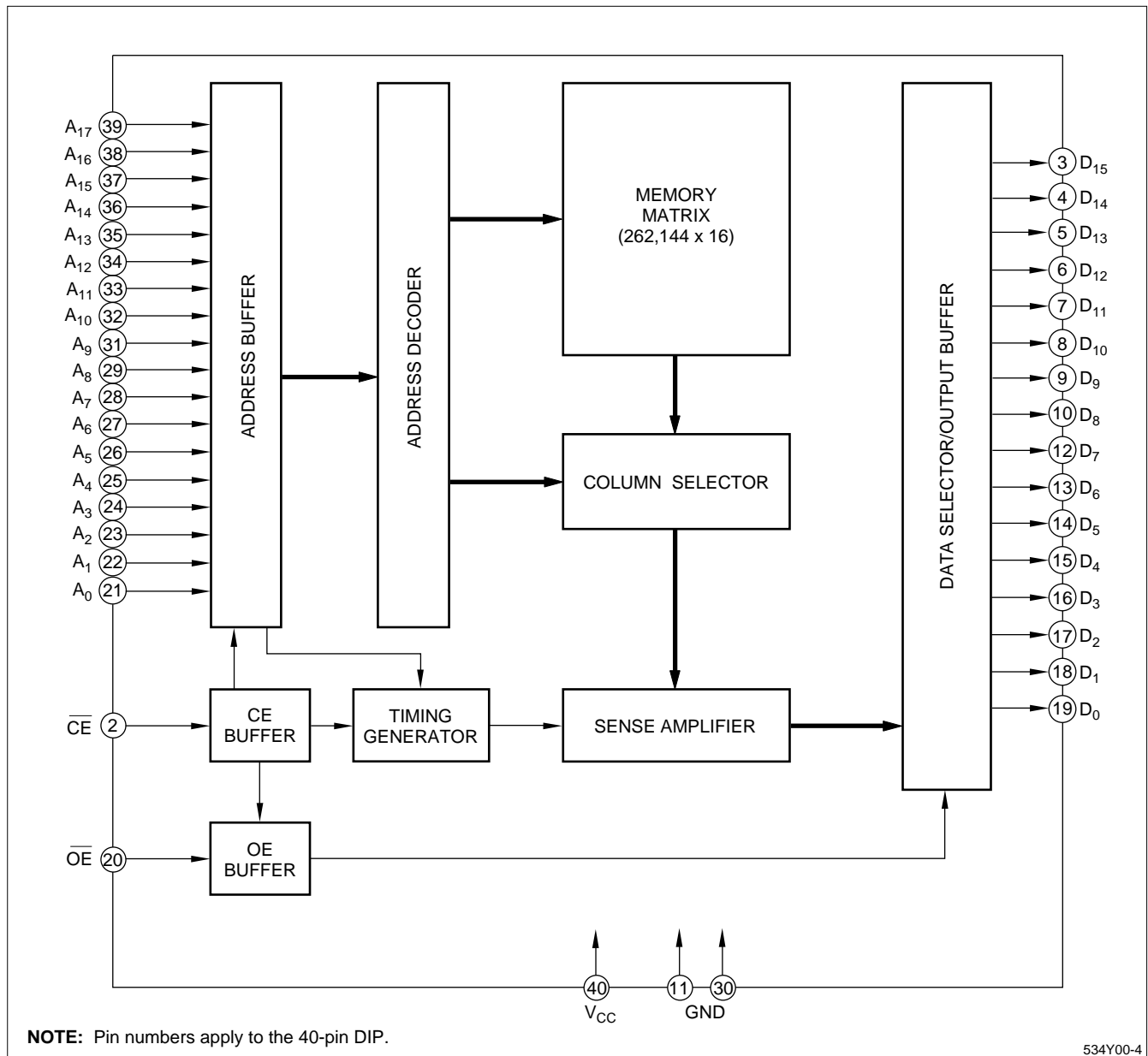


Figure 3. LH534Y00 Block Diagram

PIN DESCRIPTION

SIGNAL	PIN NAME
A ₀ – A ₁₇	Address input
D ₀ – D ₁₅	Data output
\overline{CE}	Chip Enable input
\overline{OE}	Output Enable input

SIGNAL	PIN NAME
V _{CC}	Power supply (+5 V)
GND	Ground
NC	No connection

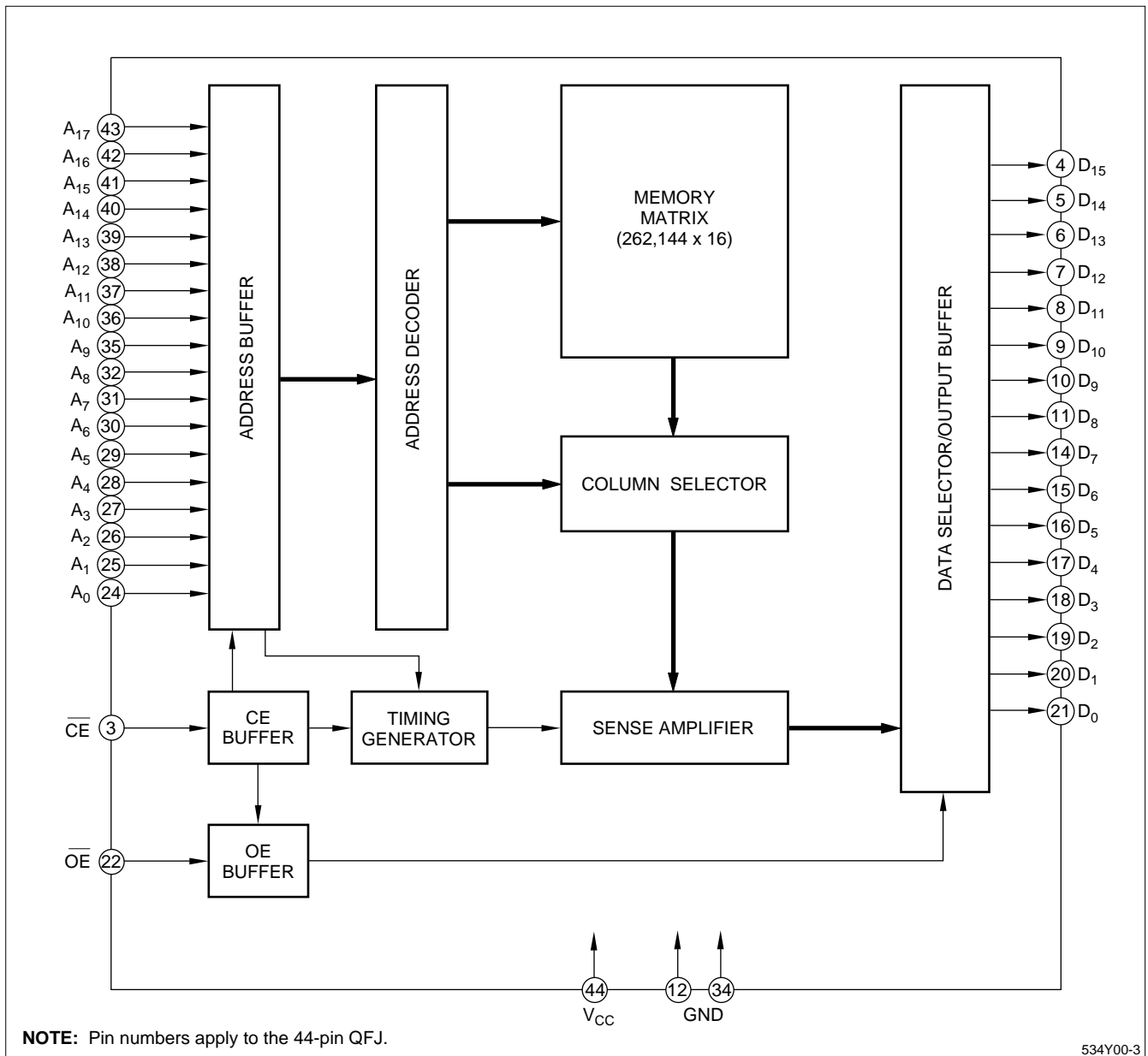


Figure 4. LH534Y00 Block Diagram

TRUTH TABLE

\overline{CE}	\overline{OE}	DATA OUTPUT	SUPPLY CURRENT
H	X	High-Z	Standby (I_{SB})
L	H	High-Z	Operating (I_{CC})
L	L	Output	Operating (I_{CC})

NOTE:

X = H or L

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply voltage	V_{CC}	-0.3 to +7.0	V
Input voltage	V_{IN}	-0.3 to $V_{CC} + 0.3$	V
Output voltage	V_{OUT}	-0.3 to $V_{CC} + 0.3$	V
Operating temperature	T_{opr}	0 to +70	°C
Storage temperature	T_{stg}	-65 to +150	°C

RECOMMENDED OPERATING CONDITIONS ($T_A = 0^\circ\text{C}$ to $+70^\circ\text{C}$)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply voltage	V_{CC}	4.5	5.0	5.5	V

DC CHARACTERISTICS ($V_{CC} = 5\text{ V} \pm 10\%$, $T_A = 0^\circ\text{C}$ to $+70^\circ\text{C}$)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	NOTE
Input 'Low' voltage	V_{IL}		-0.3		0.8	V	
Input 'High' voltage	V_{IH}		2.2		$V_{CC} + 0.3$	V	
Output 'Low' voltage	V_{OL}	$I_{OL} = 2.0\text{ mA}$			0.4	V	
Output 'High' voltage	V_{OH}	$I_{OH} = -400\ \mu\text{A}$	2.4			V	
Input leakage current	$ I_{LI} $	$V_{IN} = 0\text{ V to }V_{CC}$			10	μA	
Output leakage current	$ I_{LO} $	$V_{OUT} = 0\text{ V to }V_{CC}$			10	μA	1
Operating current	I_{CC1}	$t_{RC} = 120\text{ ns}$			65	mA	2
	I_{CC2}	$t_{RC} = 1\ \mu\text{s}$			50		
	I_{CC3}	$t_{RC} = 120\text{ ns}$			60	mA	3
	I_{CC4}	$t_{RC} = 1\ \mu\text{s}$			45		
Standby current	I_{SB1}	$\overline{CE} = V_{IH}$			3	mA	
	I_{SB2}	$\overline{CE} = V_{CC} - 0.2\text{ V}$			100	μA	
Input capacitance	C_{IN}	$f = 1\text{ MHz}$			10	pF	
Output capacitance	C_{OUT}	$T_A = 25^\circ\text{C}$			10	pF	

NOTES:

- $\overline{CE}/\overline{OE} = V_{IH}$
- $V_{IN} = V_{IH}$ or V_{IL} , $\overline{CE} = V_{IL}$, outputs open
- $V_{IN} = (V_{CC} - 0.2\text{ V})$ or 0.2 V , $\overline{CE} = 0.2\text{ V}$, outputs open

AC CHARACTERISTICS ($V_{CC} = 5\text{ V} \pm 10\%$, $T_A = 0^\circ\text{C}$ to $+70^\circ\text{C}$)

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	NOTE
Read cycle time	t_{RC}	120		ns	
Address access time	t_{AA}		120	ns	
Chip enable access time	t_{ACE}		120	ns	
Output enable delay time	t_{OE}		60	ns	
Output/output hold time	t_{OH}	0		ns	
CE to output in High-Z	t_{CHZ}		60	ns	1
OE to output in High-Z	t_{OHZ}		60	ns	

NOTE:

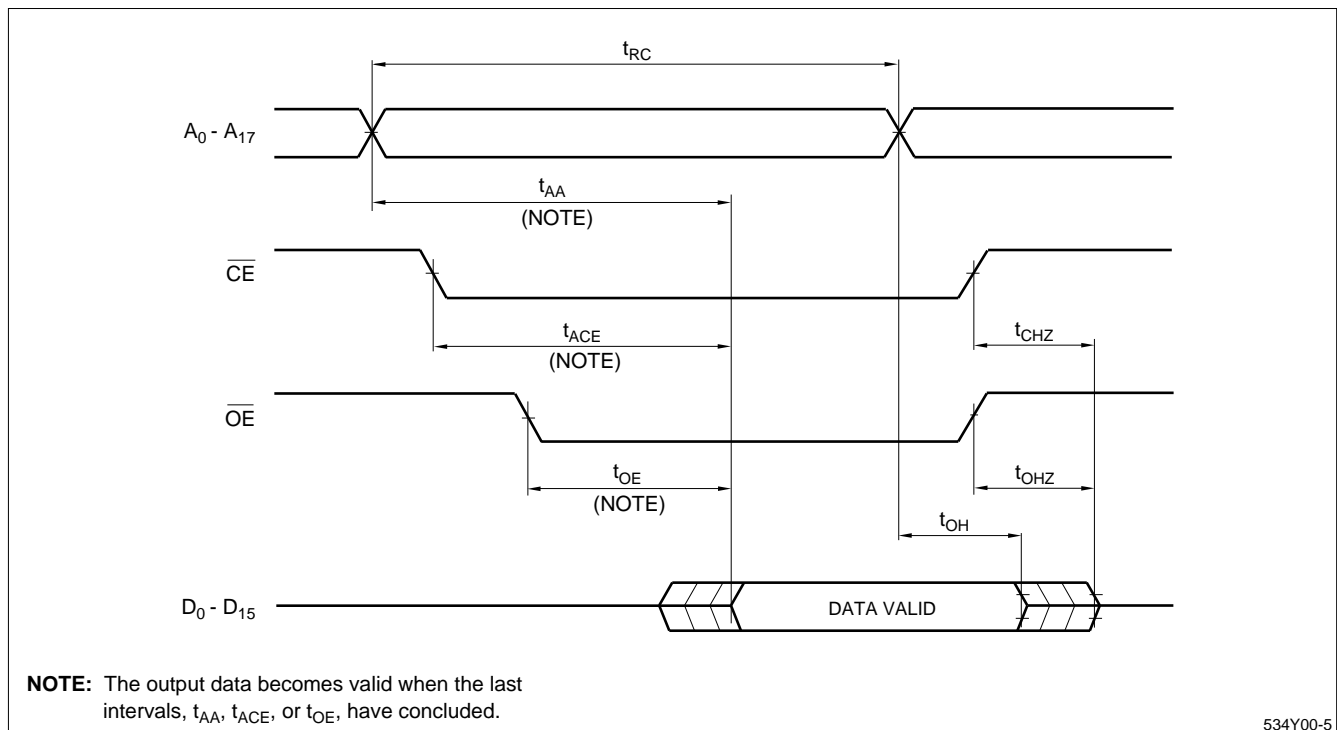
1. This is the time required for the outputs to become high-impedance.

AC TEST CONDITIONS

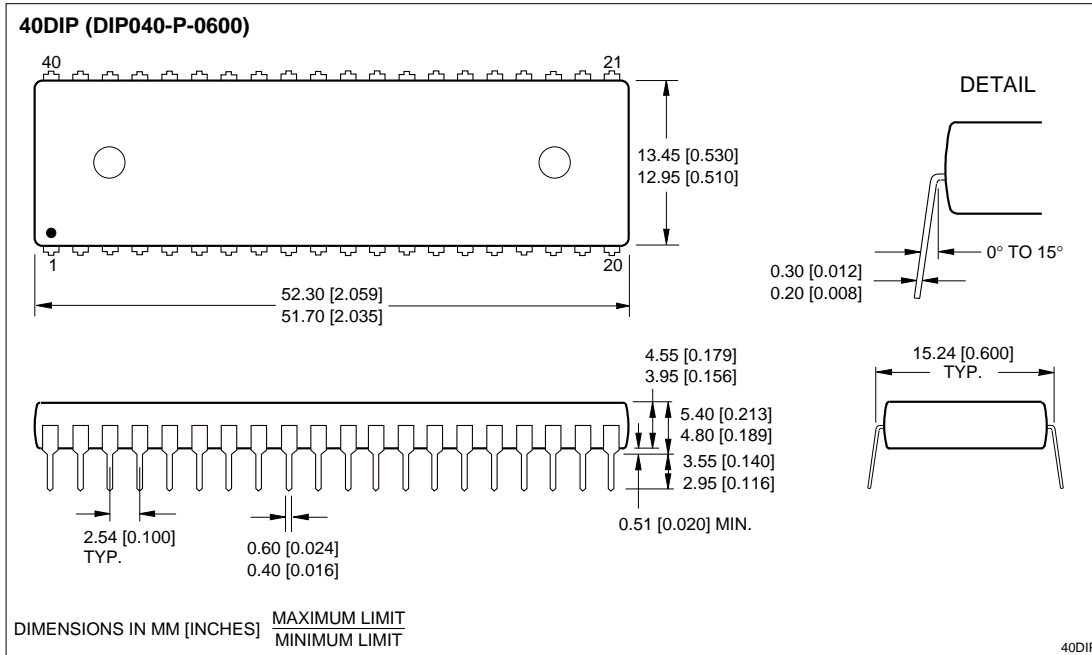
PARAMETER	RATING
Input voltage amplitude	0.4 V to 2.6 V
Input rise/fall time	10 ns
Input/output reference level	1.5 V
Output load condition	1TTL + 100 pF

CAUTION

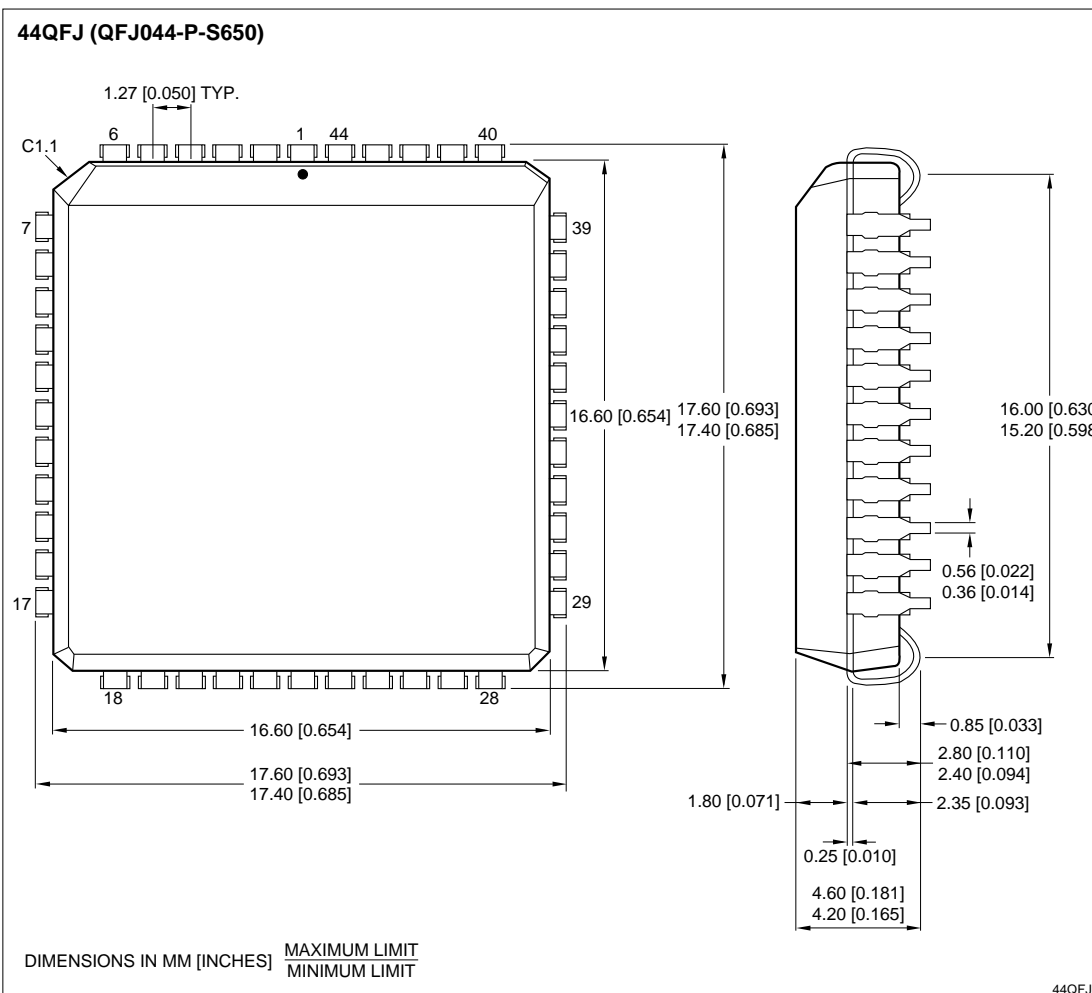
To stabilize the power supply, it is recommended that a high-frequency bypass capacitor be connected between the V_{CC} pin and the GND pin.

**Figure 5. Timing Diagram**

PACKAGE DIAGRAMS



40-pin, 600-mil DIP



44-pin, 650-mil QFJ (PLCC)

ORDERING INFORMATION

