HN62334B Series

524288-word × 8-bit CMOS Mask Programmable ROM

HITACHI

Description

The HN62334B is a 4-Mbit CMOS mask-programmable ROM organized as 524288 words by 8 bits. Realizing low power consumption, this memory is allowed for battery operation.

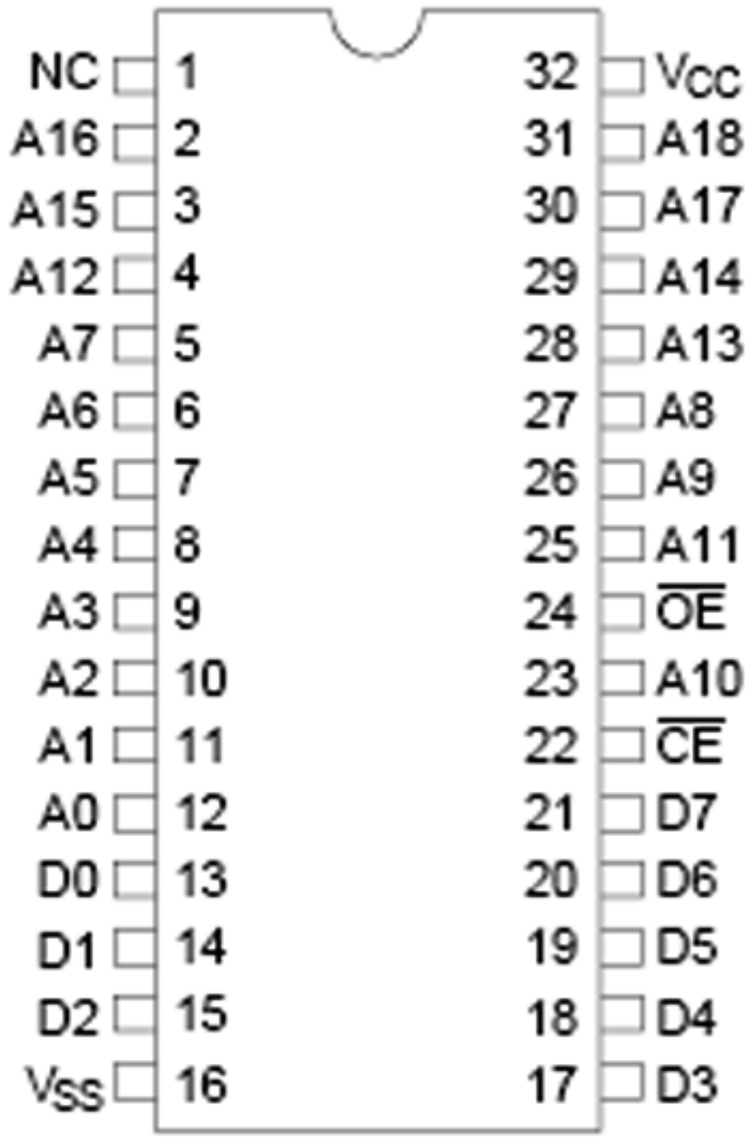
Features

- Single +5V power supply
- Wired OR is permitted for the output in three states.
- TTL compatible
- Maximum access time: 150 ns (max)
- Low power consumption: 100 mW (typ) active
  5 µW (typ) standby
- Byte-wide data organization
- Pin compatible with JEDEC (EP-ROM)

Ordering Information

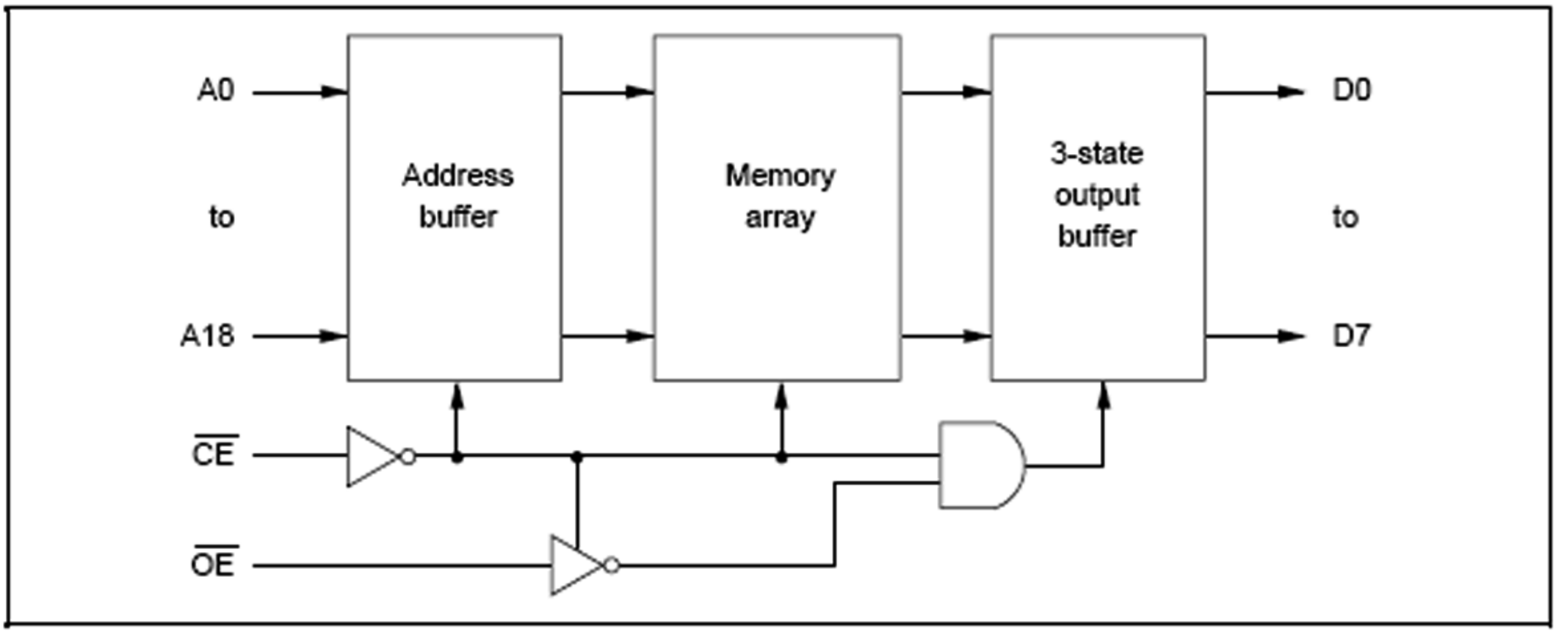
Type No.	Access Time	Package
HN62334BP-15	150 ns	600 mil 32-pin plastic DIP (DP-32)
HN62334BF-15	150 ns	32-pin plastic SOP (FP-32D)
HN62334BTT-15	150 ns	32-pin plastic TSOP-II (TTP-32DB)

Pin Arrangement



(Top view)

Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Note
Supply voltage	V_{CC}	–0.3 to +7.0	V	1
All input and output voltage	V_T	–0.3 to V_{CC} + 0.3	V	1
Operating temperature range	Topr	0 to +70	°C	
Storage temperature range	Tstg	–55 to +125	°C	
Temperature under bias	Tbias	–20 to +85	°C	

Note: 1. With respect to V_{SS}.

Recommended Operating Conditions (V_{SS} = 0 V, Ta = 0 to +70°C)

Parameter	Symbol	Min	Typ	Max	Unit
Supply voltage	V_{CC}	4.5	5.0	5.5	V
Input voltage	V_{IH}	2.2	—	V_{CC} + 0.3	V
	V_{IL}	–0.3	—	0.8	V

DC Characteristics (V_{CC} = 5 V ± 10%, V_{SS} = 0 V, Ta = 0 to +70°C)

Parameter		Symbol	Min	Max	Unit	Test Conditions
Supply current	Active	I_{CC}	—	50	mA	V_{CC} = 5.5 V, I_{DOUT} = 0 mA, t_{RC} = min
	Standby	I_{SB}	—	30	µA	V_{CC} = 5.5 V, $\overline{CE} \geq V_{CC} - 0.2$ V
Input leakage current		$\|I_{IL}\|$	—	10	µA	Vin = 0 to V_{CC}
Output leakage current		$\|I_{OL}\|$	—	10	µA	$\overline{CE}$ = 2.4 V, V_{OUT} = 0 to V_{CC}
Output voltage		V_{OH}	2.4	—	V	I_{OH} = –205 µA
		V_{OL}	—	0.4	V	I_{OL} = 1.6 mA

Capacitance (V_{CC} = 5 V ± 10%, V_{SS} = 0 V, Ta = 25°C, V_{IN} = 0 V, f = 1 MHz)

Parameter	Symbol	Min	Max	Unit
Input capacitance	Cin	—	15	pF
Output capacitance	Cout	—	15	pF

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

AC Characteristics (V_{CC} = 5 V ± 10%, V_{SS} = 0 V, Ta = 0 to +70°C)

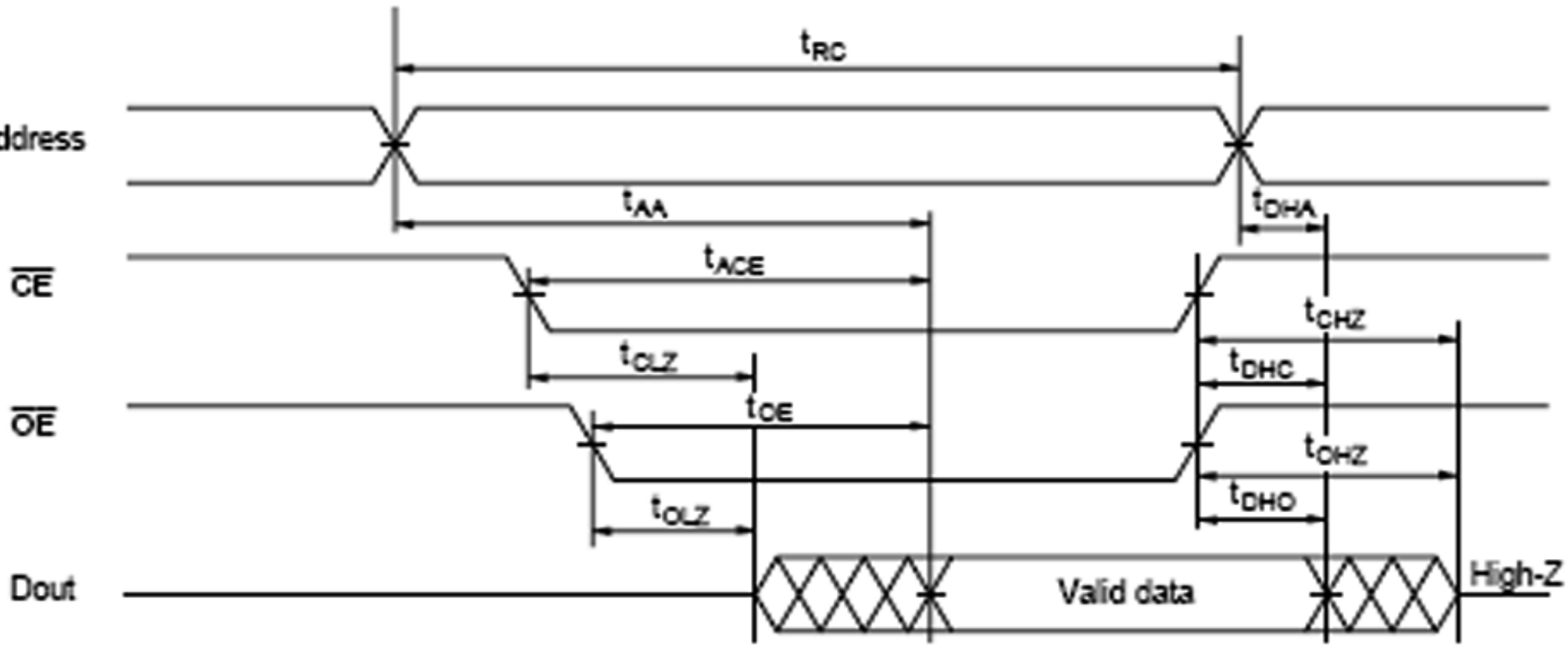
- Output load: 1TTL gate + C_L = 100 pF (including jig capacitance)
- Input pulse level: 0.8 to 2.4 V
- Input and output timing reference levels: 1.5 V
- Input rise and fall time: 10 ns

Parameter	Symbol	HN62334B Min	HN62334B Max	Unit
Read cycle time	t_{RC}	150	—	ns
Address access time	t_{AA}	—	150	ns
$\overline{CE}$ access time	t_{ACE}	—	150	ns
$\overline{OE}$ access time	t_{OE}	—	70	ns
Output hold time from address change	t_{DHA}	0	—	ns
Output hold time from $\overline{CE}$	t_{DHC}	0	—	ns
Output hold time from $\overline{OE}$	t_{DHO}	0	—	ns
$\overline{CE}$ to output in high-Z	t_{CHZ} *1	—	70	ns
$\overline{OE}$ to output in high-Z	t_{OHZ} *1	—	70	ns
$\overline{CE}$ to output in low-Z	t_{CLZ}	10	—	ns
$\overline{OE}$ to outpu in low-Z	t_{OLZ}	10	—	ns

Note: 1. t_{CHZ} and t_{OHZ} are defined as the time at which the output achieves the open circuit conditions and are not referred to output voltage levels.

Timing Waveforms

Normal Mode

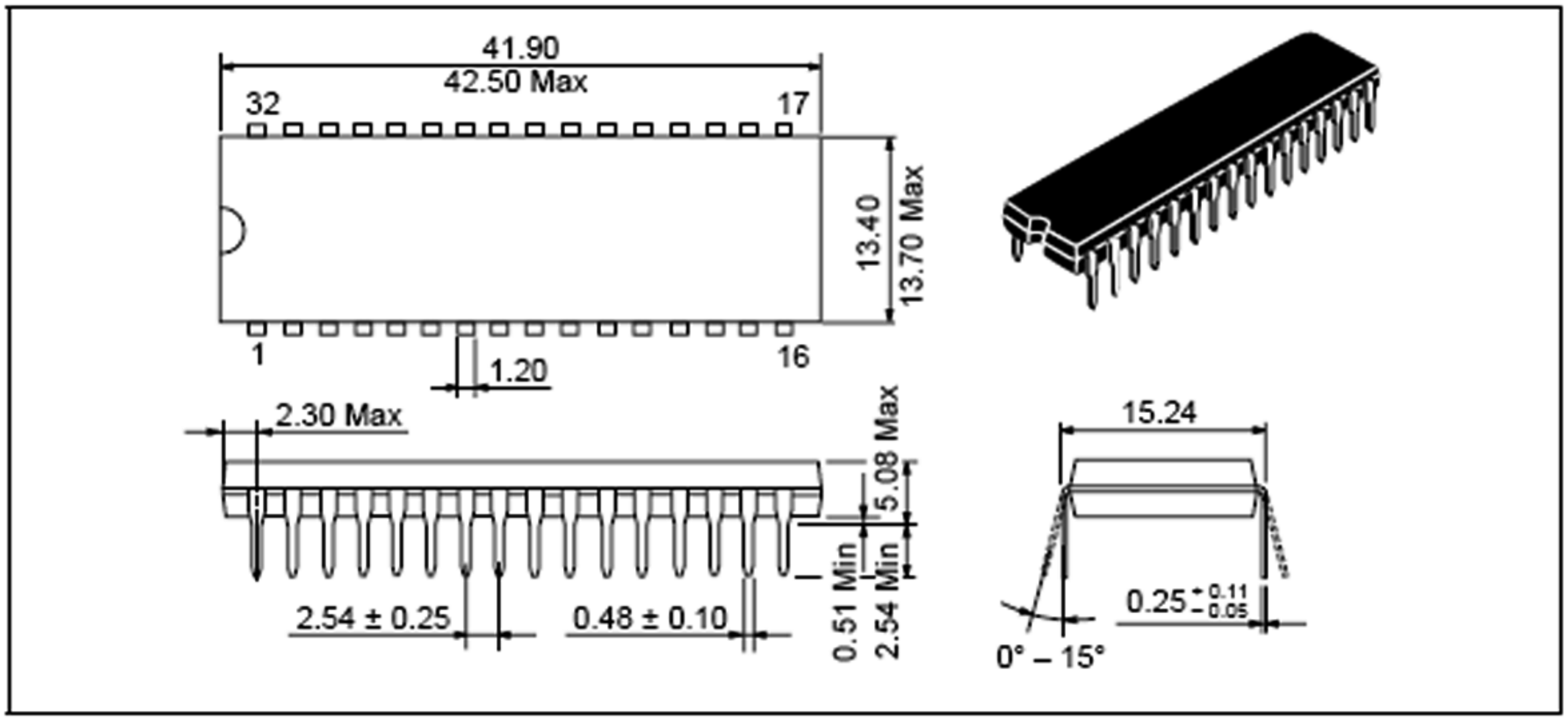


Notes: 1. t_{DHA}, t_{DHC}, t_{DHO}: Determined by faster.
2. t_{AA}, t_{ACE}, t_{OE}: Determined by slower.
3. t_{CLZ}, t_{OLZ}: Determined by slower.

Package Dimensions

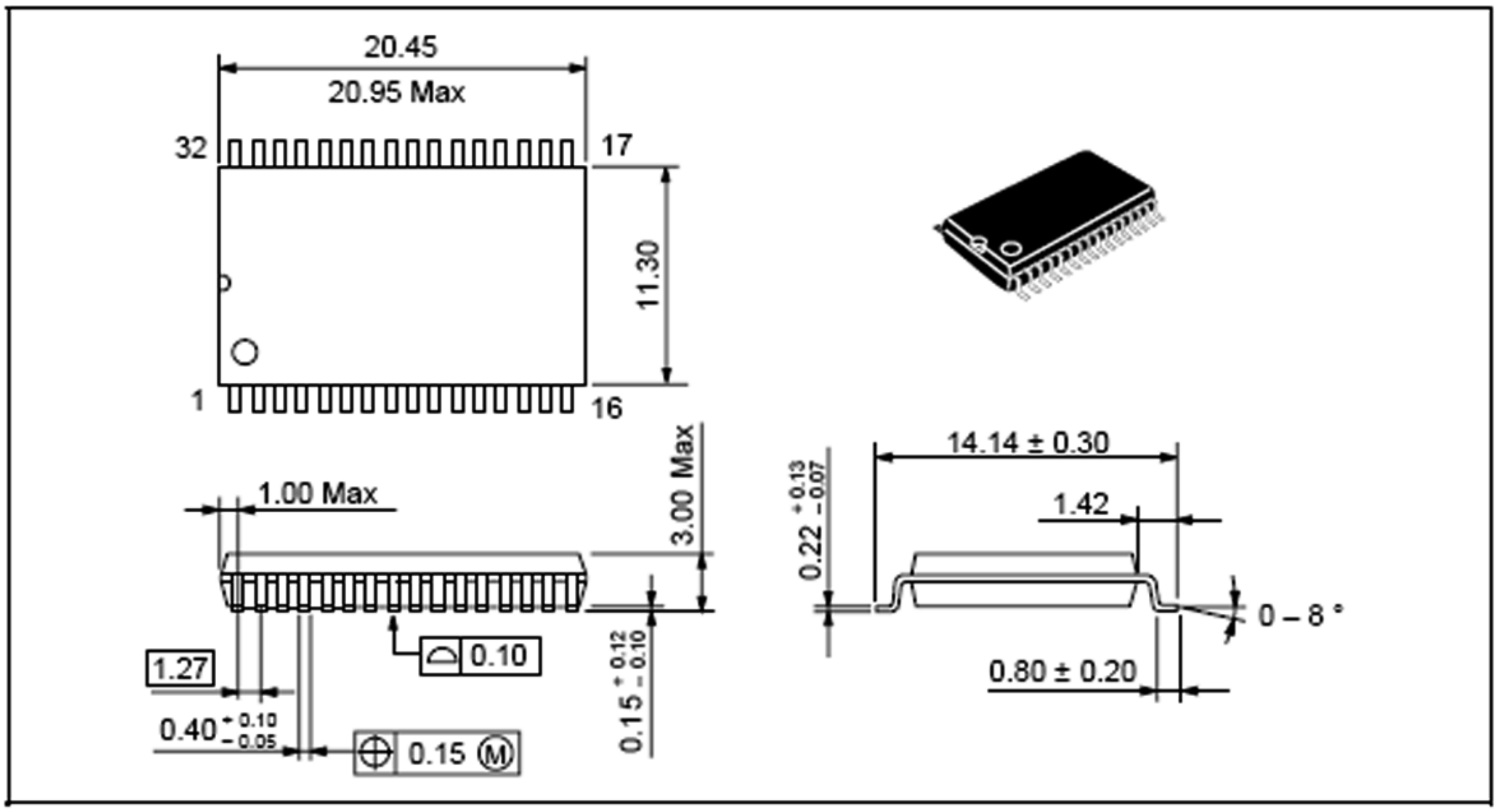
HM62334BP Series (DP-32)

Unit: mm



HM62334BF Series (FP-32D)

Unit: mm



HM62334BTT Series (TTP-32DB)

Unit: mm