



DC and AC Operating Range

		AT49HLV010-55	AT49HBV/ HLV010-70	AT49HBV/ HLV010-90	AT49BV/ LV010-12	AT49BV010-15
Operating Temperature (Case)	Com.	0°C - 70°C	0°C - 70°C	0°C - 70°C	0°C - 70°C	0°C - 70°C
	Ind.	-40°C - 85°C	-40°C - 85°C	-40°C - 85°C	-40°C - 85°C	-40°C - 85°C
V _{CC} Power Supply	AT49LV010	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	3.0V to 3.6V	N/A
	AT49BV010	N/A	2.7V to 3.6V	2.7V to 3.6V	2.7V to 3.6V	2.7V to 3.6V

Operating Modes

Mode	\overline{CE}	\overline{OE}	\overline{WE}	Ai	I/O
Read	V _{IL}	V _{IL}	V _{IH}	Ai	D _{OUT}
Program ⁽²⁾	V _{IL}	V _{IH}	V _{IL}	Ai	D _{IN}
Standby/Write Inhibit	V _{IH}	X ⁽¹⁾	X	X	High Z
Program Inhibit	X	X	V _{IH}		
Program Inhibit	X	V _{IL}	X		
Output Disable	X	V _{IH}	X		High Z
Product Identification					
Hardware	V _{IL}	V _{IL}	V _{IH}	A1 - A16 = V _{IL} , A9 = V _H , ⁽³⁾ A0 = V _{IL}	Manufacturer Code ⁽⁴⁾
				A1 - A16 = V _{IL} , A9 = V _H , ⁽³⁾ A0 = V _{IH}	Device Code ⁽⁴⁾
Software ⁽⁵⁾				A0 = V _{IL} , A1 - A16 = V _{IL}	Manufacturer Code ⁽⁴⁾
				A0 = V _{IH} , A1 - A16 = V _{IL}	Device Code ⁽⁴⁾

- Notes:
1. X can be V_{IL} or V_{IH}.
 2. Refer to AC Programming Waveforms.
 3. V_H = 12.0V ± 0.5V.
 4. Manufacturer Code: 1FH, Device Code: 17H.
 5. See details under Software Product Identification Entry/Exit.

DC Characteristics

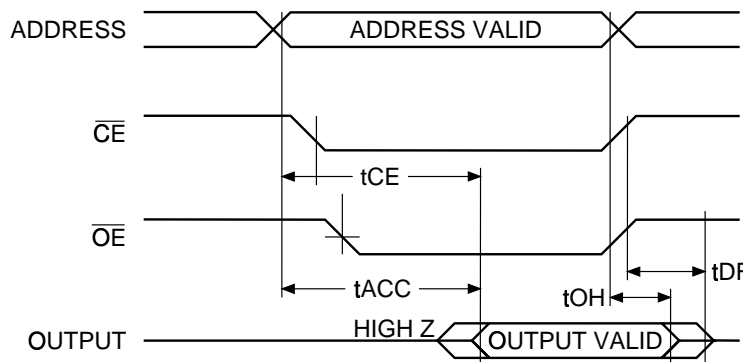
Symbol	Parameter	Condition	Min	Max	Units
I _{LO}	Output Leakage Current	V _{I/O} = 0V to V _{CC}		10	μA
I _{SB1}	V _{CC} Standby Current CMOS	$\overline{CE} = V_{CC} - 0.3V$ to V _{CC}		50	μA
I _{SB2}	V _{CC} Standby Current TTL	$\overline{CE} = 2.0V$ to V _{CC}		1	mA
I _{CC} ⁽¹⁾	V _{CC} Active Current	f = 5 MHz; I _{OUT} = 0 mA		25	mA
V _{IL}	Input Low Voltage			0.6	V
V _{IH}	Input High Voltage		2.0		V
V _{OL}	Output Low Voltage	I _{OL} = 2.1 mA		0.45	V
V _{OH}	Output High Voltage	I _{OH} = -100 μA; V _{CC} = 3.0V	2.4		V

- Note: 1. In the erase mode, I_{CC} is 50 mA.

AC Read Characteristics

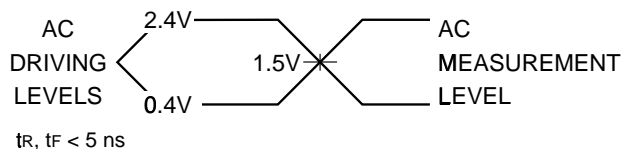
Symbol	Parameter	AT49HLV 010-55		AT49HBV/ HLV010-70		AT49HBV/ HLV010-90		AT49BV/ LV010-12		AT49BV 010-15		Units
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
t_{ACC}	Address to Output Delay		55		70		90		120		150	ns
$t_{CE}^{(1)}$	\overline{CE} to Output Delay		55		70		90		120		150	ns
$t_{OE}^{(2)}$	\overline{OE} to Output Delay		30		35		40		50	0	70	ns
$t_{DF}^{(3,4)}$	\overline{CE} or \overline{OE} to Output Float	0	25	0	25	0	25	0	30	0	40	ns
t_{OH}	Output Hold from \overline{OE} , \overline{CE} or Address, whichever occurred first	0		0		0		0		0		ns

AC Read Waveforms⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾

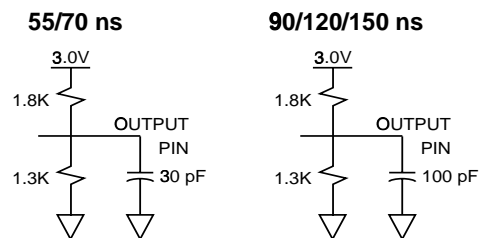


- Notes:
- \overline{CE} may be delayed up to $t_{ACC} - t_{CE}$ after the address transition without impact on t_{ACC} .
 - \overline{OE} may be delayed up to $t_{CE} - t_{OE}$ after the falling edge of \overline{CE} without impact on t_{CE} or by $t_{ACC} - t_{OE}$ after an address change without impact on t_{ACC} .
 - t_{DF} is specified from \overline{OE} or \overline{CE} whichever occurs first (CL - 5 pF).
 - This parameter is characterized and is not 100% tested.

Input Test Waveforms and Measurement Level



Output Test Load



Pin Capacitance

$f = 1 \text{ MHz}$, $T = 25^\circ \text{ C}^{(1)}$

Symbol	Typ	Max	Units	Conditions
C_{IN}	4	6	pF	$V_{IN} = 0V$
C_{OUT}	8	12	pF	$V_{OUT} = 0V$

- Note: 1. This parameter is characterized and is not 100% tested.