Selection Guide

		7C281A-25	7C281A-30	Unit
Maximum Access Time		25	30	ns
Maximum Operating Current	Commercial	100	100	mA

Maximum Ratings[1]

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature .....–65°C to +150°C

Ambient Temperature with Power Applied.....–55°C to +125°C

Supply Voltage to Ground Potential (Pin 24 to Pin 12).....–0.5V to +7.0V

DC Voltage Applied to Outputs in High Z State .....–0.5V to +7.0V

DC Input Voltage .....–3.0V to +7.0V

DC Program Voltage (Pins 18, 20) 13.0V

Static Discharge Voltage..... >2001V (per MIL-STD-883, Method 3015)

Latch-Up Current..... >200 mA

Operating Range

Range	Ambient Temperature	V_{CC}
Commercial	0°C to +70°C	5V ±10%

Electrical Characteristics Over the Operating Range[2,3]

Parameter	Description	Test Conditions		7C281A-25 Min.	7C281A-25 Max.	7C281A-30 Min.	7C281A-30 Max.	Unit
V_{OH}	Output HIGH Voltage	V_{CC} = Min., I_{OH} = –4.0 mA		2.4		2.4		V
V_{OL}	Output LOW Voltage	V_{CC} = Min., I_{OL} = 16.0 mA			0.4		0.4	V
V_{IH}	Input HIGH Level	Guaranteed Input Logical HIGH Voltage for All Inputs		2.0		2.0		V
V_{IL}	Input LOW Level	Guaranteed Input Logical LOW Voltage for All Inputs			0.8		0.8	V
I_{IX}	Input Current	GND ≤ V_{IN} ≤ V_{CC}		–10	+10	–10	+10	µA
I_{OZ}	Output Leakage Current	GND ≤ V_{OUT} ≤ V_{CC}, Output Disabled		–10	+10	–10	+10	µA
I_{OS}	Output Short Circuit Current[4]	V_{CC} = Max., V_{OUT} = GND		–20	–90	–20	–90	mA
I_{CC}	Power Supply Current	V_{CC} = Max., I_{OUT} = 0 mA	Commercial		100		100	mA
V_{PP}	Program Voltage			12	13	12	13	V
V_{IHP}	Program HIGH Voltage			3.0		3.0		V
V_{ILP}	Program LOW Voltage				0.4		0.4	V
I_{PP}	Program Supply Current				50		50	mA

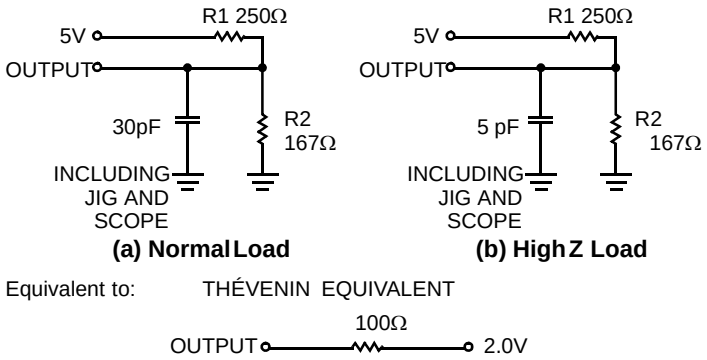
Capacitance[3]

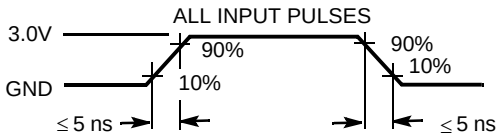
Parameter	Description	Test Conditions	Max.	Unit
C_{IN}	Input Capacitance	T_A = 25°C, f = 1 MHz, V_{CC} = 5.0V	10	pF
C_{OUT}	Output Capacitance		10	pF

Notes
1. The voltage on any input or I/O pin cannot exceed the power pin during power-up.
2. See the last page of this specification for Group A subgroup testing information.
3. See “Introduction to CMOS PROMs” in this Data Book for general information on testing.
4. For test purposes, not more than one output at a time should be shorted. Short circuit test duration should not exceed 30 seconds.

Downloaded from Arrow.com. [+] Feedback

AC Test Loads and Waveforms[3]



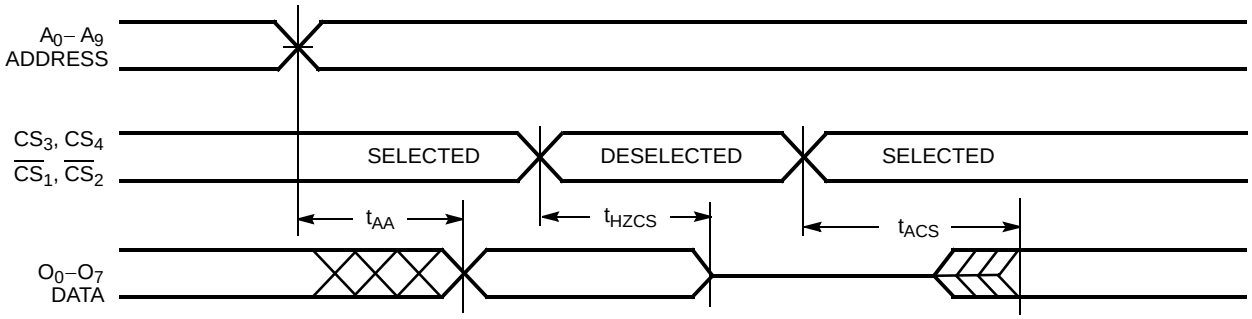


Equivalent to: THÉVENIN EQUIVALENT

Switching Characteristics Over the Operating Range[1,3]

Parameter	Description	7C281A-25		7C281A-30		Unit
		Min.	Max.	Min.	Max.	
t_{AA}	Address to Output Valid		25		30	ns
t_{HZCS}	Chip Select Inactive to High Z		15		20	ns
t_{ACS}	Chip Select Active to Output Valid		15		20	ns

Switching Waveforms



Downloaded from Arrow.com.
[+] Feedback

Programming Information

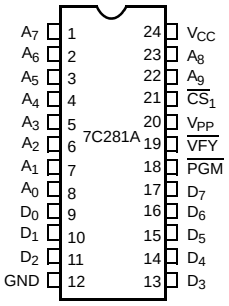
Programming support is available from Cypress as well as from a number of third party software vendors. For detailed programming information, including a listing of software packages, please see the PROM Programming Information located at the end of this section. Programming algorithms can be obtained from any Cypress representative.

Table 1. Mode Selection

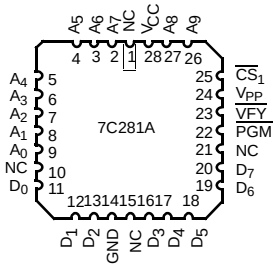
Mode	Read or Output Disable / Other	Pin Function[5] A_9–A_0	CS_4	CS_3	$\overline{CS_2}$	$\overline{CS_1}$	O_7–O_0
		A_9–A_0	PGM	VFY	V_{PP}	$\overline{CS_1}$	D_7–D_0
Read		A_9–A_0	V_{IH}	V_{IH}	V_{IL}	V_{IL}	O_7–O_0
Output Disable		A_9–A_0	X	X	V_{IH}	X	High Z
Output Disable		A_9–A_0	X	V_{IL}	X	X	High Z
Output Disable		A_9–A_0	V_{IL}	X	X	X	High Z
Output Disable		A_9–A_0	X	X	X	V_{IH}	High Z
Program		A_9–A_0	V_{ILP}	V_{IHP}	V_{PP}	V_{ILP}	D_7–D_0
Program Verify		A_9–A_0	V_{IHP}	V_{ILP}	V_{PP}	V_{ILP}	O_7–O_0
Program Inhibit		A_9–A_0	V_{IHP}	V_{IHP}	V_{PP}	V_{ILP}	High Z
Intelligent Program		A_9–A_0	V_{ILP}	V_{IHP}	V_{PP}	V_{ILP}	D_7–D_0
Blank Check		A_9–A_0	V_{IHP}	V_{ILP}	V_{PP}	V_{ILP}	Zeros

Figure 1. Programming Pinouts

DIP
Top View



PLCC
Top View



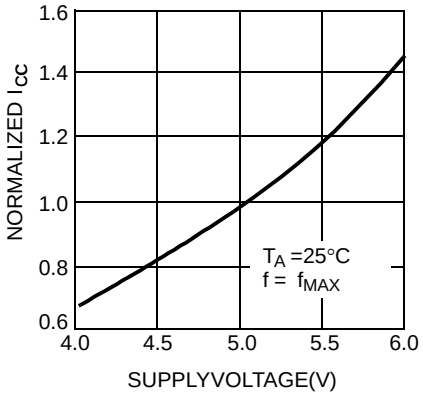
Note
5. X = “don’t care” but not to exceed V_{CC} ±5%.

Downloaded from Arrow.com.

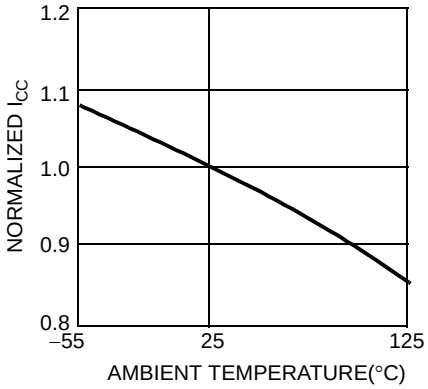
[+] Feedback

Typical DC and AC Characteristics

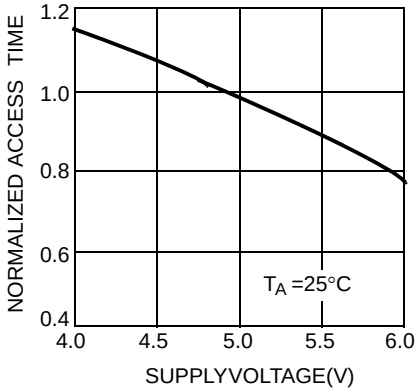
NORMALIZED SUPPLY CURRENT vs. SUPPLY VOLTAGE



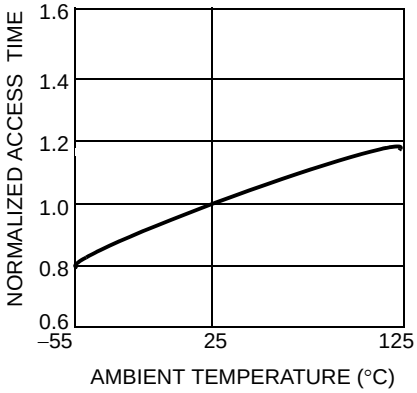
NORMALIZED SUPPLY CURRENT vs. AMBIENT TEMPERATURE



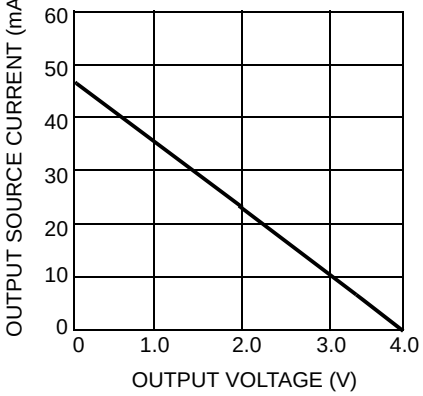
NORMALIZED ACCESS TIME vs. SUPPLY VOLTAGE



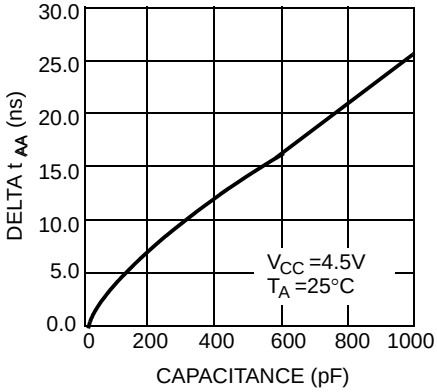
NORMALIZED ACCESSTIME vs.TEMPERATURE



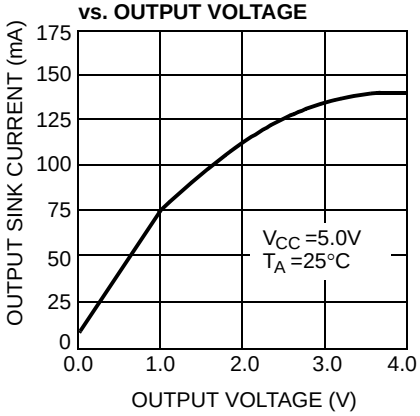
OUTPUT SOURCE CURRENT vs. VOLTAGE



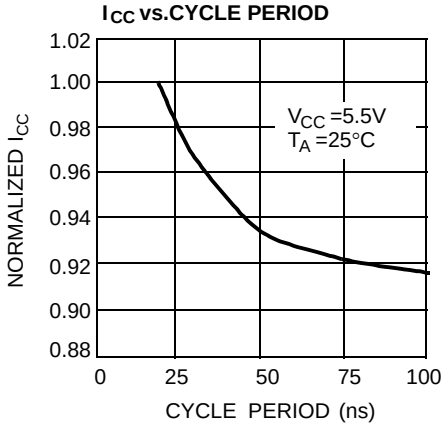
TYPICAL ACCESS TIME CHANGE vs. OUTPUT LOADING



OUTPUT SINK CURRENT vs. OUTPUT VOLTAGE



ICC vs.CYCLE PERIOD



Downloaded from Arrow.com.

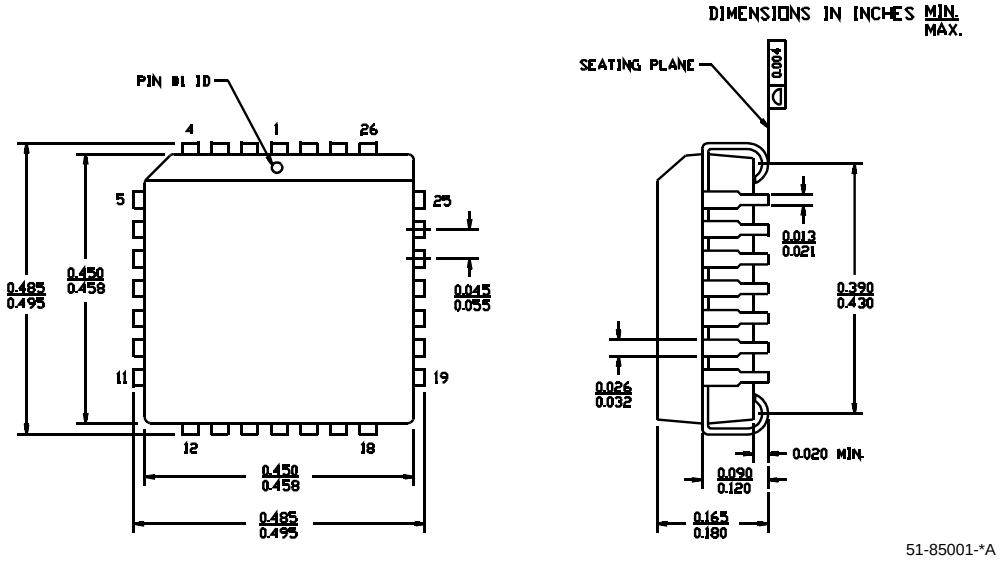
[+] Feedback

Ordering Information

Speed (ns)	Ordering Code	Package Name	Package Type	Operating Range
25	CY7C281A-25JC	J64	28-Lead Plastic Leaded Chip Carrier	Commercial
30	CY7C281A-30PC	P13	24-Lead (300-Mil) Molded DIP	Commercial

Package Diagrams

Figure 2. 28-Lead Plastic Leaded Chip Carrier J64

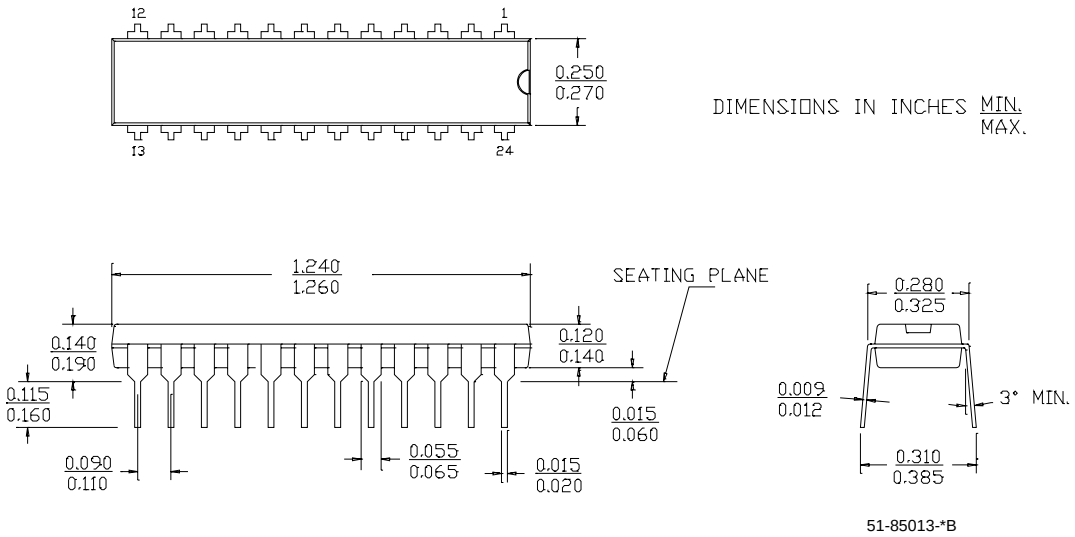


Downloaded from Arrow.com.

[+] Feedback

Package Diagrams

Figure 3. 24-Lead (300-Mil) PDIP P13



All product and company names mentioned in this document may be the trademarks of their respective holders.

© Cypress Semiconductor Corporation, 2006. The information contained herein is subject to change without notice. Cypress Semiconductor Corporation assumes no responsibility for the use of any circuitry other than circuitry embodied in a Cypress product. Nor does it convey or imply any license under patent or other rights. Cypress products are not warranted nor intended to be used for medical, life support, life saving, critical control or safety applications, unless pursuant to an express written agreement with Cypress. Furthermore, Cypress does not authorize its products for use as critical components in life-support systems where a malfunction or failure may reasonably be expected to result in significant injury to the user. The inclusion of Cypress products in life-support systems application implies that the manufacturer assumes all risk of such use and in doing so indemnifies Cypress against all charges.

Downloaded from Arrow.com.

[+] Feedback

Document History Page

Document Title: CY7C281A 1K x 8 PROM Document Number: 38-04003				
REV.	**ECN NO.**	**Issue Date**	**Orig. of Change**	**Description of Change**
**	113859	03/06/02	DSG	Changed from Spec number: 38-00227 to 38-04003
*A	118902	10/09/02	GBI	Updated ordering information
*B	122244	12/27/02	RBI	Added power up requirements to Maximum ratings information
*C	499538	See ECN	PCI	Updated ordering information

Downloaded from Arrow.com.

[+] Feedback