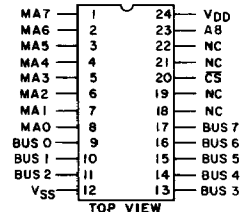


CDP1832/3, CDP1832C/3

High-Reliability CMOS 512-Word x 8-Bit Static Read-Only Memory

Features:

- Compatible with CDP1800 and CD4000-series devices
- Functional replacement for industry type 2704 512 x 8 EPROM
- Three-state outputs



TERMINAL ASSIGNMENT

Package Specifications

See Section 11, Fig. 6, b1

The RCA-CDP1832/3 and CDP1832C/3 types are high-reliability 4096-bit mask-programmable CMOS read-only memories organized as 512 words x 8 bits and designed for use in CDP1800-series microprocessor systems.

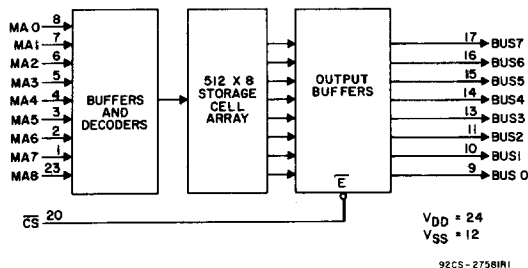
The CDP1832/3 ROMs are completely static; no clocks are required.

A Chip-Select input (\overline{CS}) is provided for memory expansion. Outputs are enabled when $\overline{CS}=0$.

The CDP1832/3 is a pin-for-pin compatible replacement for the industry type 2704 EPROM.

The CDP1832C/3 is functionally identical to the CDP1832/3. The CDP1832/3 has an operating voltage range of 4 to 10.5 volts, and the CDP1832C/3 has an operating voltage range of 4 to 6.5 volts.

The CDP1832/3 and the CDP1832C/3 are supplied in 24-lead, hermetic, dual-in-line, side-brazed ceramic packages (D suffix).



Functional diagram.

CDP1832/3, CDP1832C/3

MAXIMUM RATINGS, Absolute-Maximum Values:
DC SUPPLY-VOLTAGE RANGE (V_{DD}):
(All voltages referenced to V_{SS} terminal)

CDP1832/3 -0.5 to +11 V

CDP1832C/3 -0.5 to +7 V

INPUT VOLTAGE RANGE, ALL INPUTS -0.5 to $V_{DD} + 0.5$ VDC INPUT CURRENT, ANY ONE INPUT ± 10 mA
POWER DISSIPATION PER PACKAGE (P_D):
For $T_A = -55$ to $+100^\circ\text{C}$ (PACKAGE TYPE D) 500 mWFor $T_A = +100$ to $+125^\circ\text{C}$ (PACKAGE TYPE D) Derate Linearly at 12 mW/ $^\circ\text{C}$ to 200 mW
DEVICE DISSIPATION PER OUTPUT TRANSISTOR
FOR $T_A = \text{FULL PACKAGE-TEMPERATURE RANGE}$ 100 mW
OPERATING-TEMPERATURE RANGE (T_A):
PACKAGE TYPE D -55 to $+125^\circ\text{C}$ STORAGE TEMPERATURE RANGE (T_{stg}) -65 to $+150^\circ\text{C}$
LEAD TEMPERATURE (DURING SOLDERING):
At distance $1/16 \pm 1/32$ in. (1.59 ± 0.79 mm) from case for 10 s max. $+265^\circ\text{C}$
RECOMMENDED OPERATING CONDITIONS at $T_A = \text{Full Package-Temperature Range}$.

For maximum reliability, operating conditions should be selected so that operation is always within the following ranges:

CHARACTERISTIC	LIMITS				UNIT
	CDP1832/3		CDP1832C/3		
	MIN.	MAX.	MIN.	MAX.	
DC Operating Voltage Range	4	10.5	4	6.5	V
Input Voltage Range	V_{SS}	V_{DD}	V_{SS}	V_{DD}	

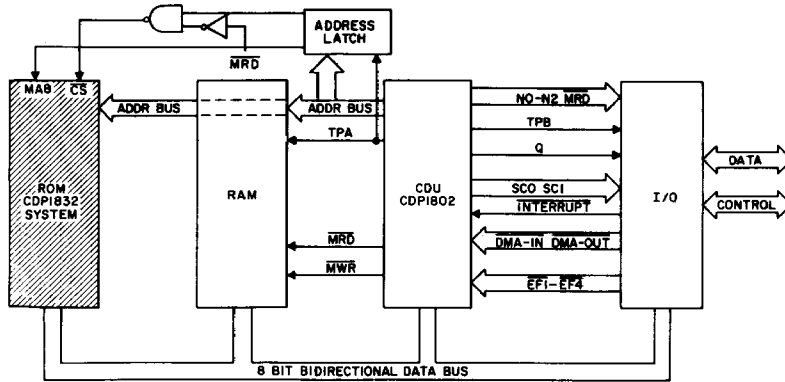
STATIC ELECTRICAL CHARACTERISTICS

CHARACTERISTIC		CONDITIONS			LIMITS				UNITS
		V_O	V_{IN}	V_{DD}	$-55^\circ\text{C}, +25^\circ\text{C}$		$+125^\circ\text{C}$		
		(V)	(V)	(V)	Min.	Max.	Min.	Max.	
Quiescent Device Current,	I_{DD}^\dagger	—	5	5	—	100	—	500	μA
		—	10	10	—	500	—	1000	
Output Low Drive (Sink) Current,	I_{OL}	0.4	0, 5	5	0.6	—	0.35	—	mA
		0.5	0, 10	10	1.5	—	0.9	—	
Output High Drive (Source) Current,	I_{OH}	4.6	0, 5	5	—	-0.5	—	-0.3	mA
		9.5	0, 10	10	—	-1	—	-0.65	
Output Voltage Low-Level,	V_{OL}^*	—	0, 5	5	—	0.1	—	0.2	V
		—	0, 10	10	—	0.1	—	0.2	
Output Voltage High Level,	V_{OH}^*	—	0, 5	5	4.9	—	4.8	—	V
		—	0, 10	10	9.9	—	9.8	—	
Input Low Voltage,	V_{IL}	0.5, 4.5	—	5	—	1.5	—	1.5	V
		1, 9	—	10	—	3	—	3	
Input High Voltage,	V_{IH}	0.5, 4.5	—	5	3.5	—	3.5	—	V
		1, 9	—	10	7	—	7	—	
Input Leakage Current,	I_{IN}	Any	0, 5	5	—	± 1	—	± 5	μA
		Input	0, 10	10	—	± 2	—	± 5	
3-State Output Leakage Current,	I_{OUT}	0, 5	0, 5	5	—	± 1	—	± 5	μA
		0, 10	0, 10	10	—	± 2	—	± 5	
Input Capacitance,	C_{IN}^*	—	—	—	—	10	—	10	pF
Output Capacitance,	C_{OUT}^*	—	—	—	—	15	—	15	

*Guaranteed but not tested.

†CDP1832C/3 meets all 5-volt static electrical characteristics of the CDP1832/3 except for quiescent device current for which the limit is $I_{DD} = 500 \mu\text{A}$ @ $-55^\circ\text{C}/+25^\circ\text{C}$ and $I_{DD} = 1000 \mu\text{A}$ @ $+125^\circ\text{C}$.

CDP1832/3, CDP1832C/3



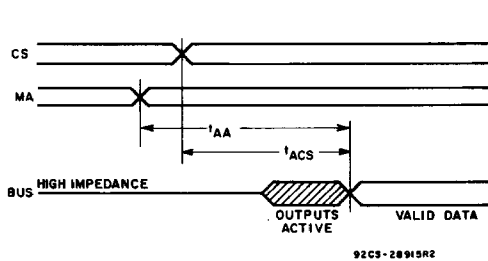
92CS-27590R3

Typical CDP1802 microprocessor system.

DYNAMIC ELECTRICAL CHARACTERISTICS, Input $t_r, t_f = 15 \text{ ns}$, $C_L = 50 \text{ pF}$

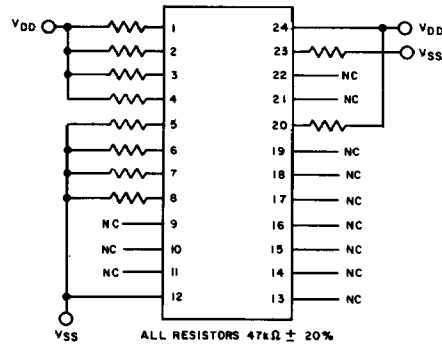
CHARACTERISTIC		TEST CONDITIONS V_{DD} (V)	LIMITS				UNITS
			-55° C, +25° C		+125° C		
			Min.	Max.	Min.	Max.	
Access Time From Address Change,	t_{AA}	5	—	840	—	1160	ns
		10	—	435	—	600	
Access Time From Chip Select,	t_{ACS}	5	—	455	—	635	ns
		10	—	210	—	290	

7



Timing waveforms.

92CS-28915R2



ALL RESISTORS $47k\Omega \pm 20\%$
92CS-39109

Type No.	V_{DD}	Temp.	Time
CDP1832/3	11 V	125° C	160 hrs. min.
CDP1832C/3	7 V	125° C	160 hrs. min.

Static burn-in circuit.