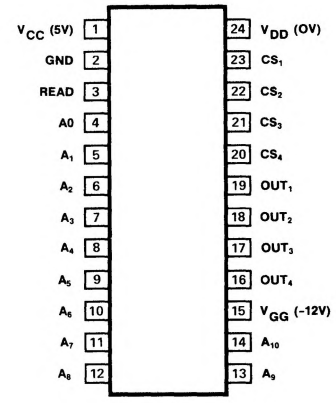
2580-I,N

DESCRIPTION

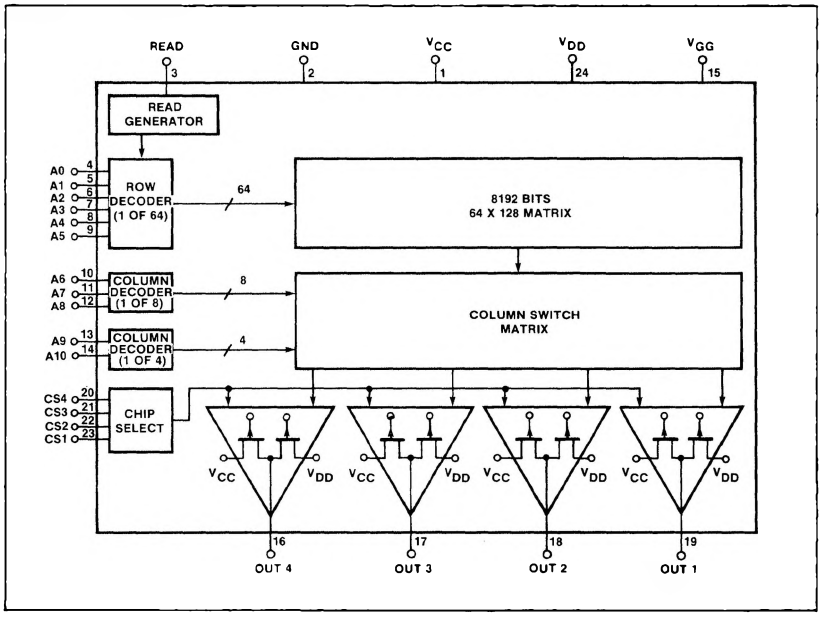
The 2580 has a Read input which controls the entry of data from the ROM into output latches. Three-state outputs allow OR-tying for implementing larger memories. The outputs are enabled by a programmable 4-bit select code applied to 4 binary chip select terminals.

PIN CONFIGURATION

I,N PACKAGE



BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS[1]

	PARAMETER	RATING	UNIT
	Temperature range		°C
T_A	Operating	0 to 70	
T_{STG}	Storage	-65 to 150	
P_D	Power dissipation at 70°C[2]	730	mW
	Input and supply voltages with respect to V_{CC}[3]	0.3 to -20	V

DC ELECTRICAL CHARACTERISTICS

T_A = 0°C to 70°C, V_{CC} = 5V ± 5%, V_{DD} = OV, V_{GG} = -12V ± 5% unless otherwise noted.[4,5,6,7]

PARAMETER		TEST CONDITIONS	LIMITS			UNIT
			Min	Typ	Max	
	Input voltage[8]					V
V_{IL}	Low				0.6	
V_{IH}	High		3.4		5.3	
	Output voltage					V
V_{OL}	Low	I_{OL} = 1.6mA			0.5	
V_{OH}	High	I_{OH} = 100μA	3.8			
I_{LI}	Input load current	V_{IN} = -5.5V, T_A = 25°C		10	500	nA
I_{LO}	Output leakage current	V_{OUT} = OV, T_A = 25°C		10	1000	nA
	Supply current[9]					mA
I_{CC}	V_{CC}			23	35	
I_{GG}	V_{GG}			23	35	
C_{IN}	Input capacitance	f = 1MHz, V_{AC} = 25m p-p, V_{IN} = V_{CC}			10	pF

AC ELECTRICAL CHARACTERISTICS

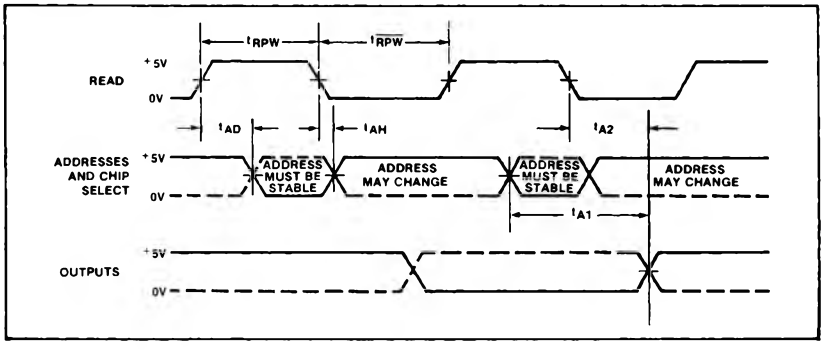
T_A = 25°C, V_{CC} = 5V ± 5%, V_{DD} = OV, V_{GG} = -12V ± 5% unless otherwise specified.

PARAMETER		TO	FROM	LIMITS			UNIT
				Min	Typ	Max	
	Pulse width						ns
t_{RPW}	Read[10]			650	500		
$t_{\overline{RPW}}$	$\overline{\text{Read}}$[11]			500	400		
	Address time						ns
t_{AD}	Delay[12]					50	
t_{AH}	Hold			0			
	Delay time						ns
t_{A1}		Output	Address		625	950	
t_{A2}		Output	End of read pulse		250	350	

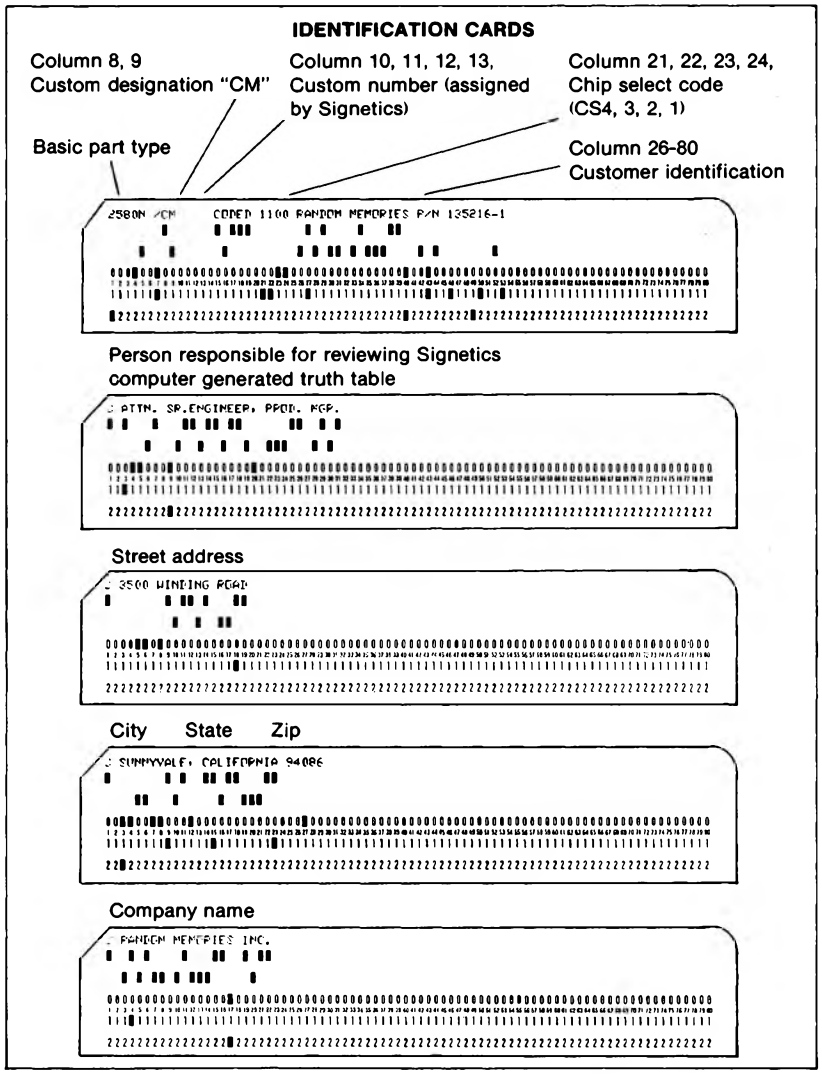
NOTES

1. Stresses above those listed under Absolute Maximum Ratings may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.
2. For operating at elevated temperatures the device must be derated based on a +150°C maximum junction temperature and a thermal resistance of 110°C/W junction to ambient.
3. All inputs are protected against static charge.
4. Parameters are valid over operating temperature range unless specified.
5. All voltage measurements are referenced to ground.
6. Manufacturer reserves the right to make design and process changes and improvements.
7. Typical values are at +25°C and typical supply voltages.
8. Guaranteed input levels are stated for worst case conditions including a ±5% variation in V_{CC} and a temperature variation of 0°C to 70°C. Actual input requirements with respect to V_{CC} are V_{IH} = V_{CC} -1.85 and V_{IL} = V_{CC} -4.15V.
9. Outputs open, t_{RPW} = 500ns, $t_{\overline{RPW}}$ = 500ns.
10. During t_{RPW} addresses are decoded and sent to the memory matrix, and the stored memory data is moved to the data inputs of the output RS latches. This data is clocked into the output latches at the end (falling edge) of the read pulse. After t_{A2}, data appears at the output terminals.
11. During $t_{\overline{RPW}}$ data is clocked into the output latches and the address decoders are precharged in preparation for the next cycle.
12. Addresses must be stable within 50ns after the read line rises and must remain stable until the read line falls.

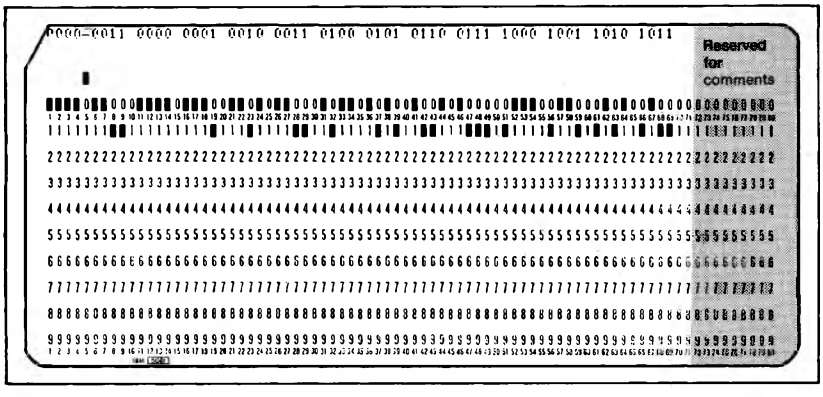
TIMING DIAGRAM



CARD FORMAT



EXAMPLE



CODING FORMAT

Coding data for the 2580 may be sent to Signetics via punched cards or via a written truth table. Cards are preferred since errors are essentially eliminated.

On receipt of a card deck, Signetics will translate the card deck to a truth table using the Signetics Computer Aided Design (CAD) facility. The truth table will then be sent to the customer requesting engineer for final approval. On receipt of final approval, Signetics will cut the rubylith mask and proceed with manufacture.

DATA CARD FORMAT

Columns

1-4	Decimal equivalent of first data word location Example: 0124 Note: Leading zeros must be used for addresses from 0000 to 0999
5	Dash (—) to separate numbers
6-9	Address of last word on card
10	Blank
11-14	First data word (O_4, O_3, O_2, O_1)
15	Blank
16-19	Second data word
Etc. thru 71	
72-80	Reserved for comments (these columns are ignored by the computer)

Up to twelve (12) data words can be coded on one card. Less than 12 may be used as long as the first and last addresses are given in columns 1-9.