signetics

HIGH SPEED 64 x 9 x 9 STATIC CHARACTER GENERATOR

2526

ADVANCE SPECIFICATION

SILICON GATE MOS 2500 SERIES

DESCRIPTION

The 2526 is a high speed 5,184-bit Static Read-Only Memory available in a 64x9x9 organization. This device has TTL compatible inputs and outputs and requires +5V and −12V power supplies. A $\overline{\text{READ}}$ input controls the entry of data from the ROM into output latches. Three-state outputs allow OR tying for implementing larger memories. OUTPUT ENABLE controls the nine output devices without affecting address circuitry.

FEATURES

- 64x9x9 ORGANIZATION
- 625ns TYPICAL ACCESS TIME
- STATIC OPERATION
- OUTPUT LATCHES
- TTL/DTL COMPATIBLE INPUTS
- TTL/DTL COMPATIBLE THREE-STATE OUTPUTS
- V_{CC} = +5V, V_{GG} = −12V
- 24-PIN SILICONE DIP
- SIGNETICS P-MOS SILICON GATE PROCESS TECHNOLOGY

APPLICATIONS

VERTICAL OR RASTER SCAN DISPLAYS (7x9 MATRIX)
PRINTER CHARACTER GENERATOR
PANEL DISPLAYS AND BILLBOARDS
MICRO-PROGRAMMING
CODE CONVERSION

BIPOLAR COMPATIBILITY

All inputs of the 2526 can be driven directly by standard bipolar integrated circuits (TTL, DTL, etc.). The data output buffers are capable of sinking a minimum of 1.6mA sufficient to drive one standard TTL load.

STANDARD TRUTH TABLES

The 2526N/CM3940 is a 7x9 matrix, ASCII character set (raster scan)* utilizing the two unused left-most columns for BCDIC-ASCII and BAUDOT-ASCII code converters. Use this device for evaluation or for suitable application. Other standards will be announced as they become available.

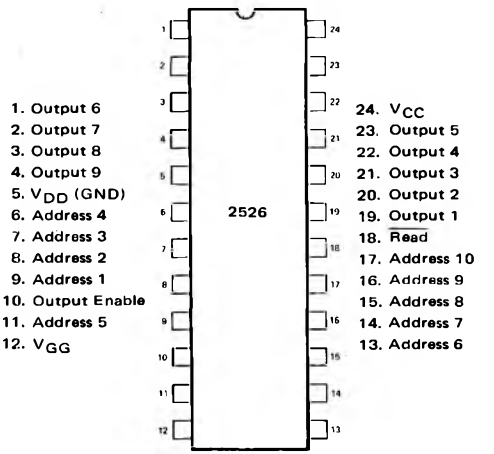
*for vertical scan specify CM3400

CUSTOM TRUTH TABLES

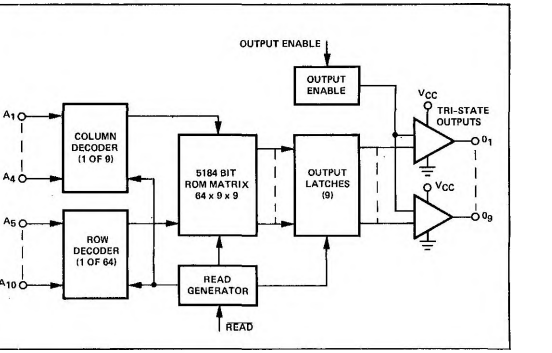
See page 7-197.

PIN CONFIGURATION (Top View)

N PACKAGE



BLOCK DIAGRAM



PART IDENTIFICATION

PART	OP. TEMP. RANGE	PACKAGE
2526N	0-70°C	24-Pin Silicone DIP
2526I	0-70°C	24-Pin Ceramic DIP

NOTE: "0" = 0V, "1" = +5V

MAXIMUM GUARANTEED RATINGS (1)

Operating Ambient Temperature	0°C to 70°C	Package Power Dissipation[2] @ 70°C	730mW
Storage Temperature	-65°C to +150°C	Input[3] and Supply Voltages with respect to V_{CC}	+0.3 to -20V

DC CHARACTERISTICS

T_A=0° to +70°C, V_{CC}= +5V; V_{GG}= −12V ±5%; unless otherwise noted. (See notes 4,5,6,7)

SYMBOL	TEST	MIN	TYP	MAX	UNIT	CONDITIONS
I_{LI}	Input Load Current		10	500	nA	V_{IN} = -5.5V T_A = 25°C
I_{LO}	Output Leakage Current		10	1000	nA	V_{OUT} = 0V T_A = 25°C V_{CE} = V_{CC}
I_{CC}	V_{CC} Power Supply Current		30	45	mA	(8)
I_{GG}	V_{GG} Power Supply Current		30	45	mA	(8)
V_{IL}	Input Logic "0"	-5		1.05	V	
V_{IH}	Input Logic "1"	3.2		5.3	V	

AC CHARACTERISTICS

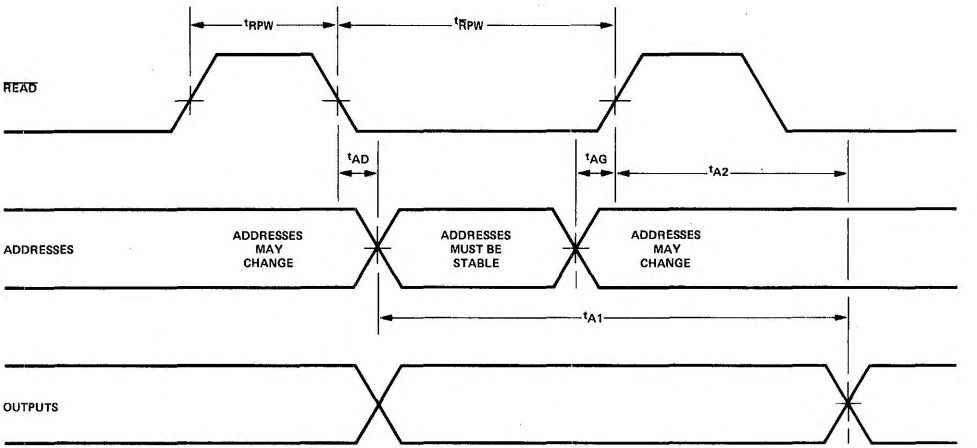
T_A=0°C to +70°C; V_{GG}=−12V ±5% unless otherwise noted.

SYMBOL	TEST	MIN	TYP	MAX	UNIT	CONDITIONS
V_{OH}	Output Logic "zero"			0.8	V	One TTL Load
V_{OH}	Output Logic "one"	3.0			V	One TTL Load
t_{RPW}[11]	Read Pulse Width	250	200		ns	
$t_{\overline{RPW}}$[10]	$\overline{\text{Read}}$ Pulse Width	500	400		ns	
t_{AD}	Address Delay Time (12)			50	ns	
t_{AG}	Address-Read Pulse Gap (12)			50	ns	
t_{A1}	Address to Output Delay		625	700	ns	(9)
t_{A2}	End of $\overline{\text{Read}}$ Pulse to Output Delay		200	250		(9)
C_{IN}	Address Input Capacitance			10	pF	f = 1MHz, V_{AC} = 25mV p-p, V_{IN} = V_{CC}
t_{OE}	Output Enable to Output Delay		100	250	ns	f = 1MHz, V_{AC} = 25mV p-p, V_{IN} = V_{CC}

NOTES:

1. Stresses above those listed under "Maximum Guaranteed Rating" 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 nominal supply voltages.
8. Outputs Open, t_{RPW} = 250ns, $t_{\overline{RPW}}$ = 500ns.
9. t_A = 0°C to +70°C
10. During t_{RPW1} data is clocked into the output latches and the address decoders are precharged in preparation for the next cycle.
11. During $t_{\overline{RPW1}}$ 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 (rising edge) of the $\overline{\text{READ}}$ pulse. After t_{A2}, data appears at the output terminals.
12. Addresses must be stable within 50ns after the $\overline{\text{READ}}$ line falls and must remain stable until at least 50ns before the $\overline{\text{READ}}$ line goes high.

TIMING DIAGRAM

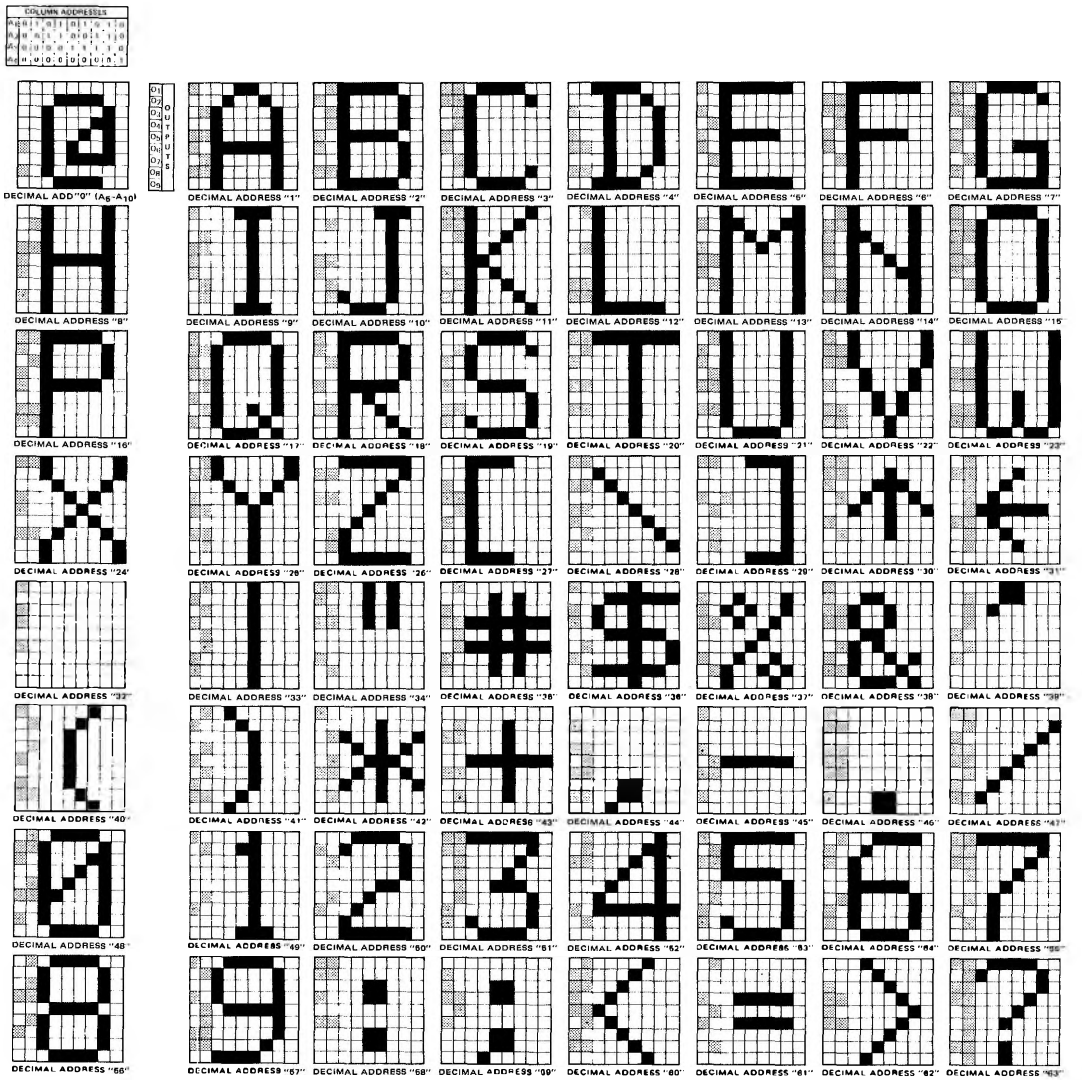


Note: All times measured from 50% points, for all input waveforms tr = t_f<10nsec.

CHARACTER FONTS

CM 3400

ASC I I SET, VERTICAL SCAN 7X9 WITH CODE CONVERSION(1)



NOTES
1. BCDIC to ASC I I in leftmost column, Baudot to ASC I I in next column to right.
2. Undefined addresses result in all outputs going low (TTL "0").
3. Blank squares in character font are high (TTL "1").

CHARACTER FONTS (Cont'd)

CM 3940

ASC I I SET, RASTER SCAN 7X9 WITH CODE CONVERSION(1)

NOTES

1. BCDIC to ASC I I in leftmost column, Baudot to ASC I I in next column to right.
2. Undefined addresses result in all outputs going low (TTL "0").
3. Blank squares in character font are high (TTL "1").