

8961724 TEXAS INSTR (LIN/INTFC)

91D 75043

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T-52-13-09

**SN55426B, SN55427B
AC PLASMA DISPLAY DRIVERS**

D2520, MARCH 1979—REVISED OCTOBER 1988

- 90-V Output Swing
- CMOS-Compatible Inputs
- Quad Drivers with Independent Addressing of Each Gate for Serial or Parallel Applications
- High Data Input Impedance . . . 1 MΩ Typ
- 30-mA Clamp Diodes on Output

description

The SN55426B and SN55427B are monolithic integrated-circuit plasma display drivers. The logic of the two drivers is complementary to permit controlled writing or erasing at a specified point on the display. The '426B noninverting pulser is normally near ground potential and is pulsed near VCC2; the '427B inverting pulser is normally near VCC2 potential and is pulsed near ground potential. The devices are designed to accept CMOS logic input signals and drive one display line per output.

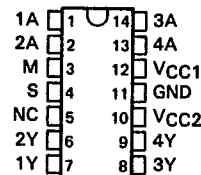
There are four gates per package with individual data inputs. Additionally, each device has a strobe and a multiplex input controlling all four gates. The devices require two power supplies: the logic section power supply VCC1, and the high-voltage bias supply VCC2. VCC2 controls the magnitude of the output swing.

Each output is designed to sustain 20-milliampere switching transients on the output. Each output is also protected by source and sink clamp diodes with 30-milliampere current capability. Each device is designed to be operated at 50 kilohertz but may be operated as high as 85 kilohertz.

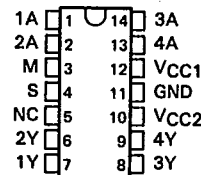
The multiplex and strobe inputs (inputs M and S, respectively) act on all four gates simultaneously and aid in plasma panel design.

The SN55426B and SN55427B are characterized for operation over the full military temperature range of -55°C to 125°C.

SN55426B . . . J
DUAL-IN-LINE PACKAGE
(TOP VIEW)



SN55427B . . . J
DUAL-IN-LINE PACKAGE
(TOP VIEW)



NC—No internal connection

FUNCTION TABLE

INPUTS			OUTPUTS	
A	M	S	'426B	'427B
L	X	X	L	H
X	L	X	L	H
X	X	L	L	H
H	H	H	H	L

H = high level, L = low level,
X = Irrelevant



Display Drivers

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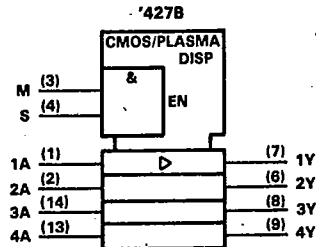
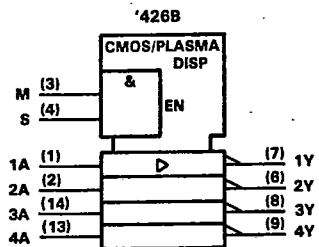
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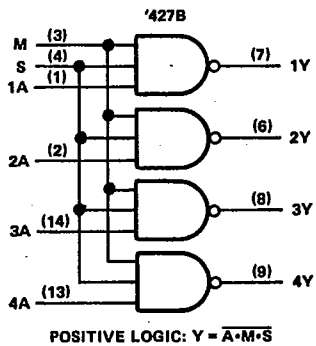
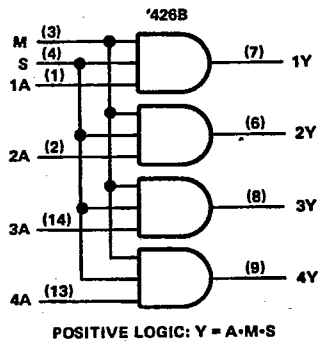
logic symbols†



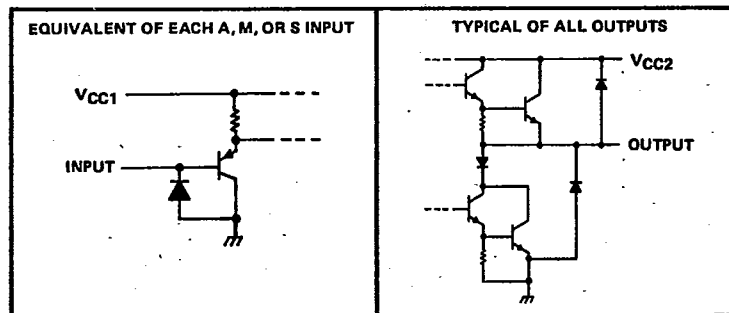
† These symbols are in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

Display Drivers

logic diagrams (positive logic)



schematics of inputs and outputs



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**SN55426B, SN55427B
AC PLASMA DISPLAY DRIVERS**

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absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, VCC1 (see Note 1)	15 V
Supply voltage, VCC2	95 V
Input voltage, VI	15 V
Continuous output current, IO	20 mA
Continuous total dissipation at (or below) 25°C free-air temperature (see Note 2)	800 mW
Operating free-air temperature range	-55°C to 125°C
Storage temperature range	-65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 60 seconds	300°C

- NOTES: 1. All voltage values are with respect to network ground terminal.
 2. For operation above 25°C free-air temperature, refer to Dissipation Derating Curves in Appendix A. In the J package, SN55426B and SN55427B chips are alloy mounted.

recommended operating conditions

	MIN	NOM	MAX	UNIT
Supply voltage for logic section, VCC1	10	12	14	V
Supply voltage for output section, VCC2	40	70	90	V
High-level input voltage, VIH	7			V
Low-level input voltage, VIL			3	V
Strobe frequency	0		85	kHz
Data input frequency	0	50	85	kHz
Duration of strobe pulse	1.5	5		µs
Operating free-air temperature, TA	-55		125	°C

electrical characteristics, VCC1 = 12 V, VCC2 = 70 V, TA = -55°C to 125°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		MIN	TYP†	MAX	UNIT
VOH	High-level output voltage	VIH = 7 V, VIL = 3 V	IO = -1 mA	VCC2-4	VCC2-1		V
			IO = -15 mA	VCC2-8	VCC2-1.8		
VOL	Low-level output voltage	VIH = 7 V, VIL = 3 V	IO = 1 mA		2	4	V
			IO = 15 mA		3.5	8	
VOK	Output clamp voltage	Output high,	IO = 30 mA	VCC2+0.8	VCC2+2		V
		Output low,	IO = -30 mA	-0.9	-2		
IIH	High-level input current	A M, S	VIH = 12 V		12	60	µA
					50	200	
ICC1	Supply current, logic section	VCC1 = 12 V, VCC2 = 90 V, No load	All inputs at 12 V		10	15	mA
ICC2	Supply current, output section		All outputs high		1.1	1.9	mA
			All outputs low		0.1	0.6	
ICC1(av)	Average supply current, logic section	tW = 5 µs, f = 50 kHz,			10		mA
ICC2(av)	Average supply current, output section	No load			1.3		mA

† All typical values are at 25°C.

switching characteristics, VCC1 = 12 V, VCC2 = 70 V, TA = 25°C

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
tPLH	Propagation delay time, low-to-high-level output CL = 20 pF, RL = 100 kΩ,		0.7	1.2	µs
tPHL	Propagation delay time, high-to-low-level output See Figure 1		0.3	0.8	µs

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Display Drivers



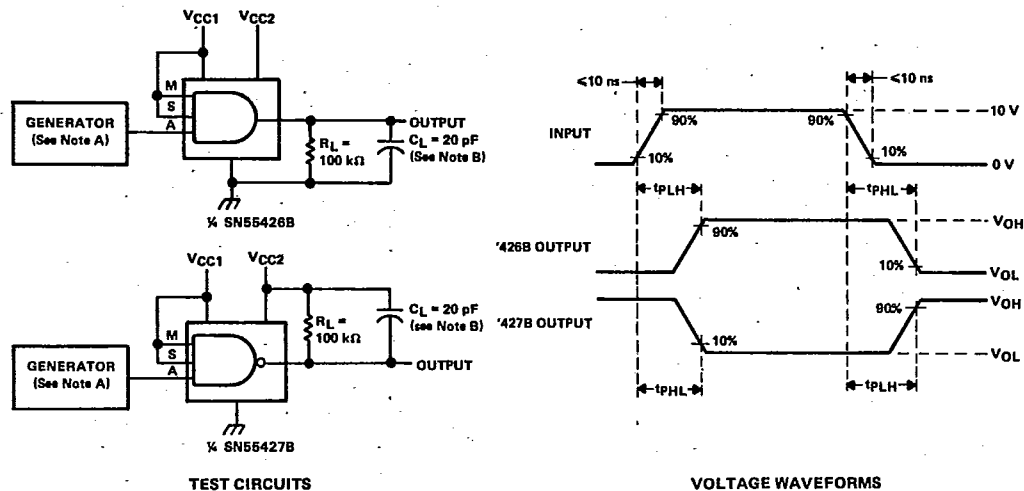
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PARAMETER MEASUREMENT INFORMATION



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Display Drivers

NOTES: A. The pulse generator has the following characteristics: $Z_0 = 50\ \Omega$, $PRR \leq 50\text{ kHz}$, $t_w = 5\ \mu\text{s}$.
B. C_L includes probe and jig capacitance.

FIGURE 1. SWITCHING TIMES