

DUAL COMMUNICATIONS EIA/MIL LINE DRIVER

8T15

PRODUCT AVAILABLE IN 0°C TO +75°C TEMPERATURE RANGE ONLY

DIGITAL 8000 SERIES TTL/MSI

DESCRIPTION

The 8T15 Dual Communications Line Driver provides line driving capability for data transmission between Data Communication and Terminal Equipment. The device meets or exceeds the requirements of EIA Standard RS-232B and C, MIL STD-188B and CCITT V 24.

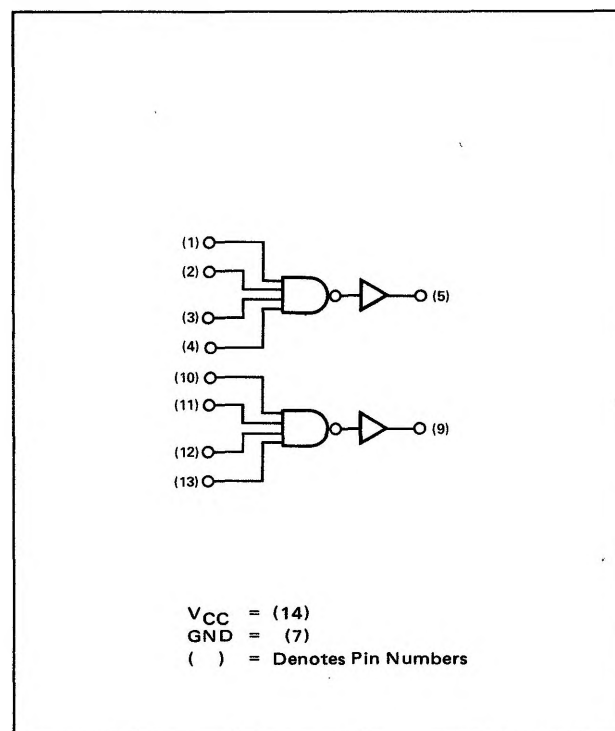
This dual 4-input NAND driver will accept standard TTL logic level inputs and will drive interface lines with nominal data levels of +6V and -6V. Output slew rate may be adjusted by attaching an external capacitor from the output terminal to ground. The outputs are protected against damage caused by accidental shorting to as high as $\pm 25V$.

ABSOLUTE MAXIMUM RATINGS *

Input Voltage	+5.5V
Output Voltage	$\pm 25V$
V _{CC}	+15V
V _{EE}	-15V
Storage Temperature	-65°C to +150°C
Operating Temperature	0°C to +75°C

*Limiting values above which serviceability may be impaired.

LOGIC DIAGRAM



ELECTRICAL CHARACTERISTICS (Over Recommended Operating Temperature And Voltage)

CHARACTERISTICS	LIMITS				TEST CONDITIONS			NOTES
	MIN.	TYP.	MAX.	UNITS	INPUTS		OUTPUTS	
					DRIVEN	OTHER		
"1" Output Voltage	+5.0	+6.0	+7.0	V	0.8V	0.0V	-4.0mA	
"0" Output Voltage	-5.0	-6.0	-7.0	V	2.0V		4.0mA	
"0" Input Current	-0.1	-0.8	-1.6	mA	0.4V			
"1" Input Current			40	μA	4.5V			

SIGNETICS DIGITAL 8000 SERIES TTL/MSI – 8T15

T_A = 25°C, V_{CC} = +12.0V, V_{EE} = -12.0V

CHARACTERISTICS	LIMITS				TEST CONDITIONS			NOTES
	MIN.	TYP.	MAX.	UNITS	INPUTS		OUTPUTS	
					DRIVEN	OTHER		
Output Rise Time	200		4	μs			Load A	8
Output Fall Time			4	μs			Load B	8
Output Rise Time				ns			Load C	8
Output Fall Time				ns			Load D	8
Power Consumption (per driver)	5.5		275	mW	10mA	0.0V		10
Current from Positive Supply			16	mA				10
Current from Negative Supply			28	mA				10
Input Latch Voltage Rating				V				7
Output Short Circuit Current	300		-25	mA	0.0V		-25V	9, 10
			+25	mA			+25V	9, 10
Output Impedance (Power on)			95	ohms			0.0V	-3.5±1mA
(Power on)			95	ohms			0.0V	+3.5±1mA
(Power off)		2.5M	ohms			±2V		
Input Clamp Voltage			-1.5	V	-12.0mA			

NOTES:

1. All voltage measurements are referenced to the ground terminal. Terminals not specifically referenced are left electrically open.

2. All measurements are taken with ground pin tied to zero volts.

3. Positive current is defined as into the terminal referenced.

4. Positive logic definition:
"UP" Level = "1", "DOWN" Level = "0".

5. Precautionary measures should be taken to ensure current
6. limiting in accordance with Absolute Maximum Ratings should the isolation diodes become forward biased.

7. Manufacturer reserves the right to make design and process changes and improvements.

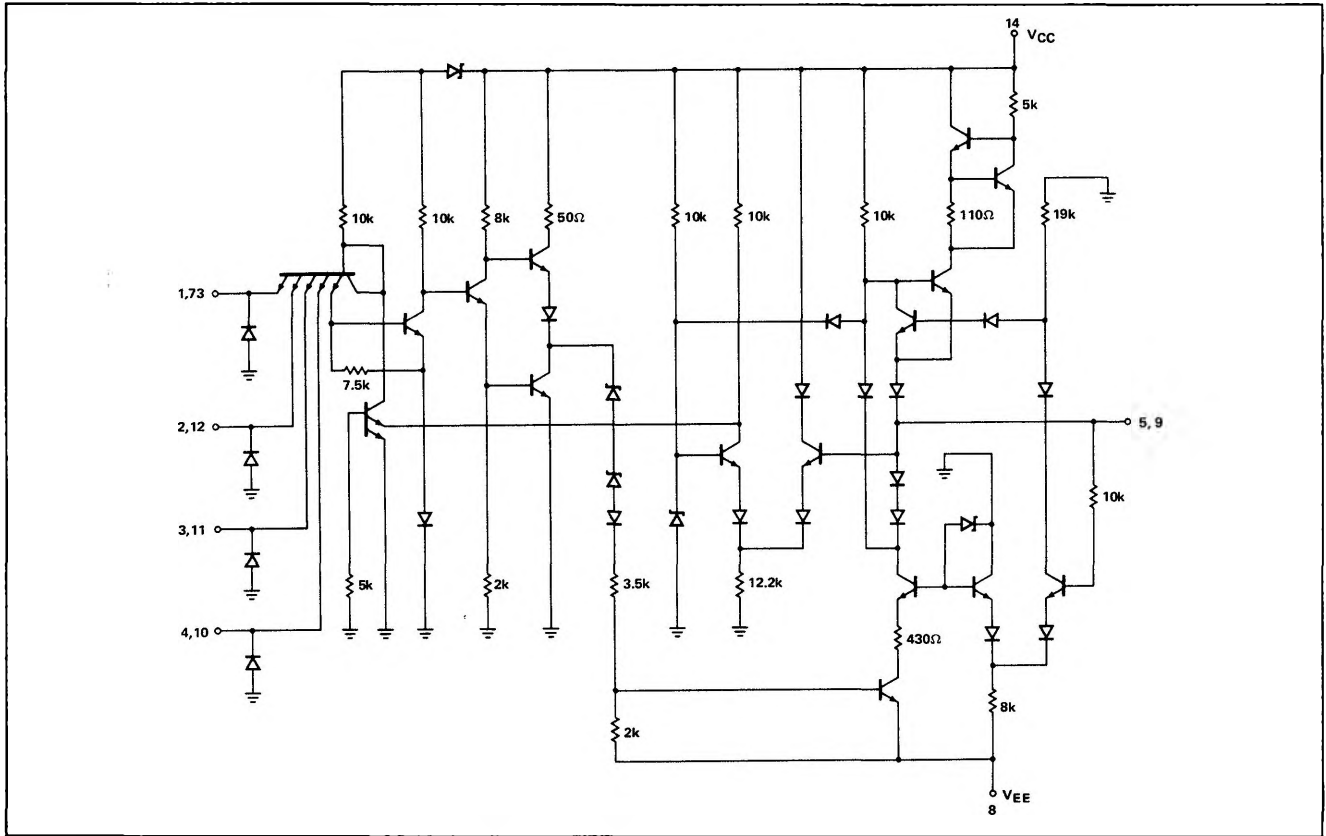
8. This test guarantees operation free of input latch-up over the specified operating supply voltage range.

9. Rise and fall times are measured between the +3V and -3V points on the output waveform.

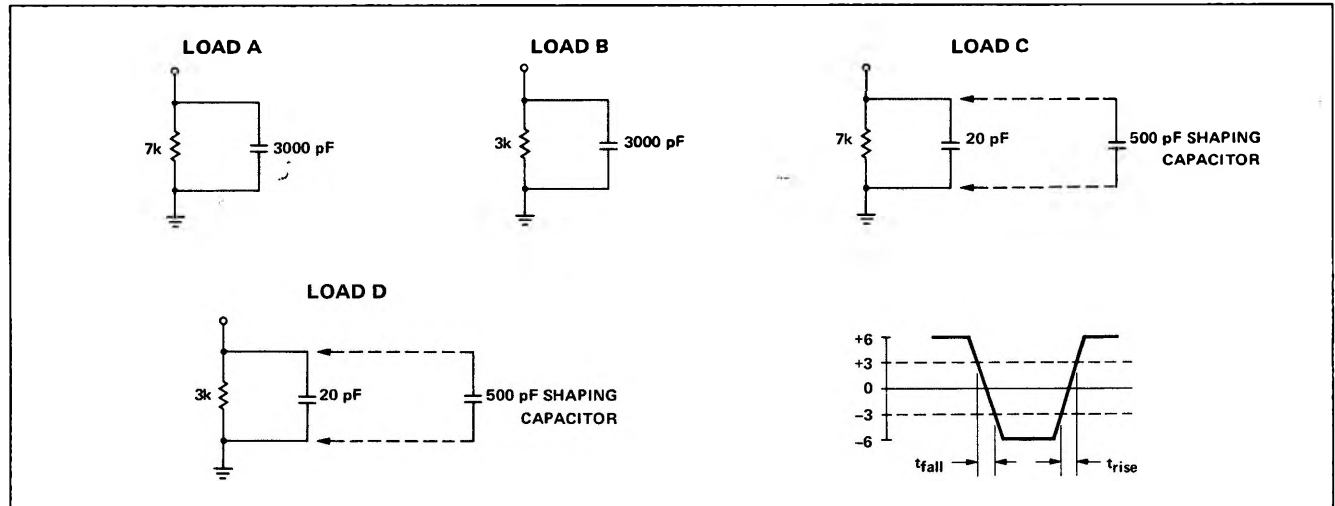
10. Test each driver separately.

11. V_{CC} = +12.6V, V_{EE} = -12.6V

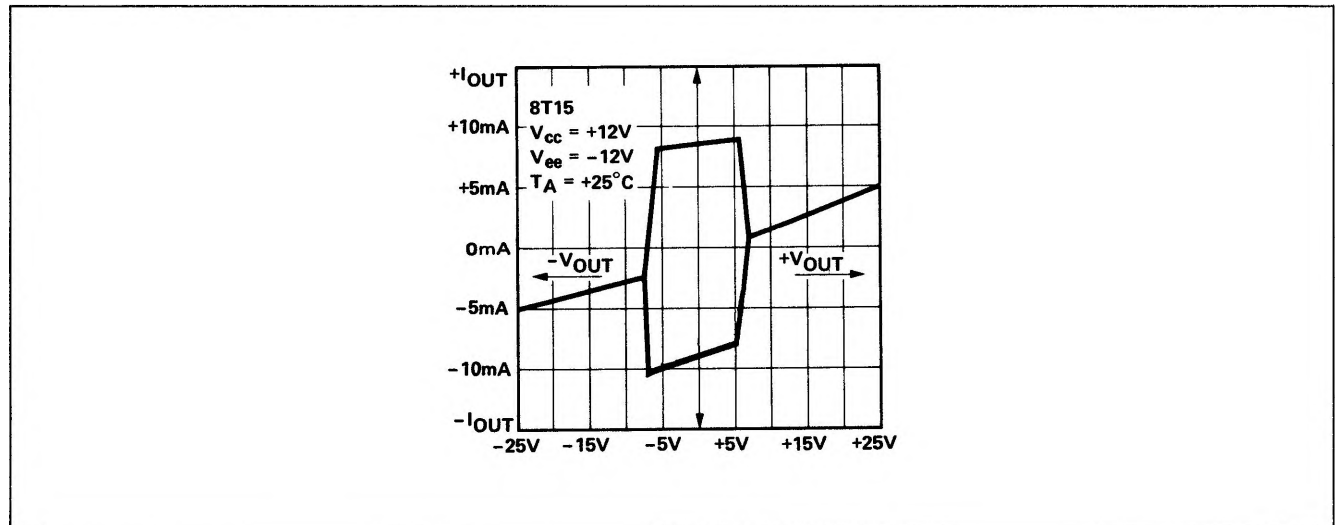
SCHEMATIC DIAGRAM



AC TEST FIGURES & WAVEFORMS



TYPICAL OUTPUT CHARACTERISTIC CURVE



TYPICAL APPLICATIONS

