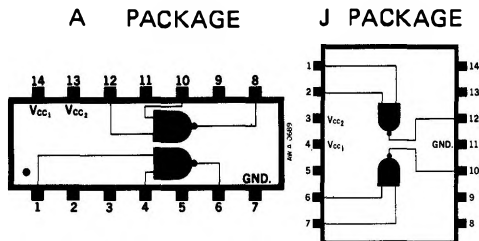


8T18 DUAL 2-INPUT NAND INTERFACE GATE



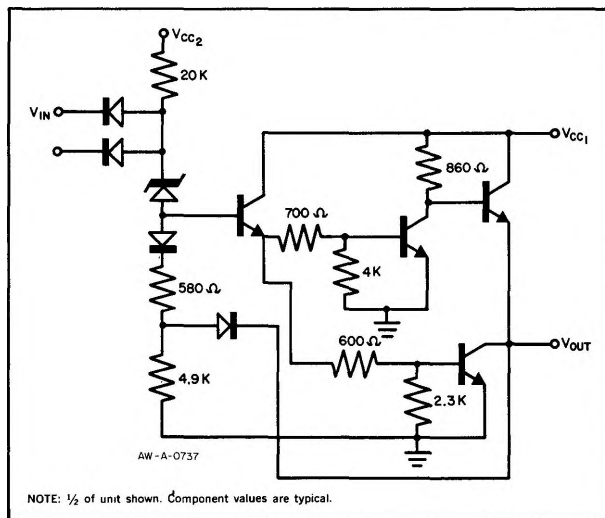
BASIC CIRCUIT SCHEMATIC

The 8T18 is a Dual 2-Input NAND Interface Gate. It is a high to low voltage interface gate which provides translation from up to 30-volt logic levels to standard logic levels of 5 volts.

The basic gate operates from two power supplies. The input structure functions from a high voltage supply between 20V and 30V and the second stage transistors and output structure operate from a standard 5V power supply.

The output structure features active pull-up and pull-down, providing a low impedance driving source in both "1" and "0" output states. This configuration is particularly suited for driving the high capacitance loads encountered in high fan-out and line driving applications.

Section 4 provides usage rules and applications information for the 8T18.



ELECTRICAL CHARACTERISTICS (NOTES: 1, 2, 3, 4, 5, 6)

ACCEPTANCE TEST SUB-GROUP	CHARACTERISTIC	LIMITS				TEST CONDITIONS								
		MIN.	TYP.	MAX.	UNITS	TEMP. 88T18	TEMP. N8T18	V _{cc1}	V _{cc2}	DRIVEN INPUT	OTHER INPUTS	OUTPUTS	NOTES	
A-5 A-3 A-4	"1" OUTPUT VOLTAGE	3.4 3.6 3.4			V	-55°C +25°C +125°C	0°C +25°C +75°C	4.75V 5.00V 4.75V	24.0V 24.0V 24.0V	6.5V 6.5V 6.5V			-225µA -225µA -225µA	7 7 7
A-5 A-3 A-4	"0" OUTPUT VOLTAGE			0.35 0.35 0.35	V	-55°C +25°C +125°C	0°C +25°C +75°C	4.75V 5.00V 4.75V	20.0V 20.0V 20.0V	9.0V 9.0V 9.0V	9.0V 9.0V 9.0V		7.2mA 7.2mA 7.2mA	8 8 8
A-5 A-3 C-1	"0" INPUT CURRENT	-0.1 -0.1 -0.1		-1.8 -1.8 -1.8	mA	-55°C +25°C +125°C	0°C +25°C +75°C	5.25V 5.25V 5.25V	24.0V 24.0V 24.0V	0.35V 0.35V 0.35V	30V 30V 30V			
A-4	"1" INPUT CURRENT			50	µA	+125°C	+75°C	5.00V	24.0V	30V	0V			
A-6	TURN-ON DELAY		12	20	ns	+25°C	+25°C	5.00V	24.0V				D.C. F.O. = 9	9, 11
A-6	TURN-OFF DELAY		35	70	ns	+25°C	+25°C	5.00V	24.0V				D.C. F.O. = 9	9, 11
C-2	OUTPUT FALL TIME			75	ns	-55°C	0°C	4.75V	24.0V				A.C. F.O. = 2	10, 11
A-2	POWER CONSUMPTION (V _{cc1} OUTPUT "0") (Per Gate) (V _{cc1} OUTPUT "1") (V _{cc2} OUTPUT "0") (V _{cc2} OUTPUT "1")			44.0 1.0 38.4 37.2	mW	+25°C +25°C +25°C +25°C	+25°C +25°C +25°C +25°C	5.25V 5.25V 5.25V 5.25V	24.0V 24.0V 24.0V 24.0V		0V			
A-2	INPUT VOLTAGE RATING	50			V	+25°C	+25°C	5.00V	24.0V	100µA	0V			
	OUTPUT SHORT CIRCUIT CURRENT			-75	mA	+25°C	+25°C	5.00V	24.0V	0V			0V	

Notes:

- All voltage and capacitance measurements are referenced to the ground terminal. Terminals not specifically referenced are left electrically open.
- All measurements are taken with ground pin tied to zero volts.
- Positive current flow is defined as into the terminal referenced.
- Positive NAND Logic definition: "UP" Level = "1", "DOWN" Level = "0".
- Precautionary measures should be taken to ensure current limiting in accordance with Absolute Maximum Ratings should the isolation diodes become forward biased.
- Measurements apply to each gate element independently.
- Output source current is supplied through a resistor to ground.
- Output sink current is supplied through a resistor to V_{cc}.
- One DC fan-out is defined as 0.8mA.
- One AC fan-out is defined as 50pf.
- Detailed test conditions for AC testing are in Section 3.