SIGNETICS DCL INTEGRATED CIRCUITS

8855 DUAL 4-INPUT DRIVER

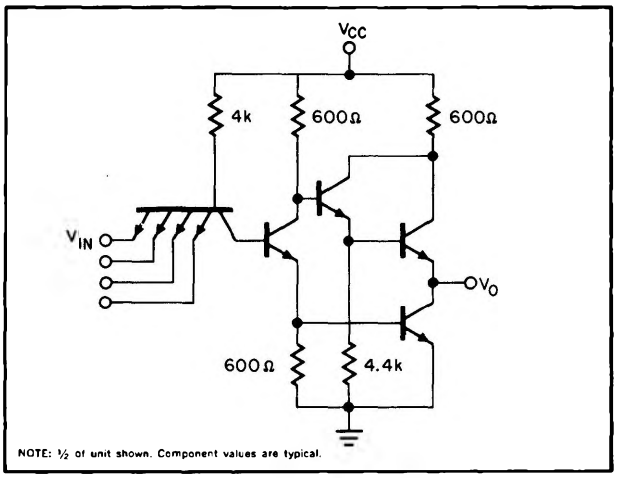
The 8855 is a Dual 4-Input Driver designed specifically for use in applications requiring high fan-out to either AC or DC loads. This device implements the NAND function for positive logic (highest voltage level = "1") and the NOR function for negative logic (lowest voltage level = "1").

An active output structure provides high AC noise immunity due to its low output impedance in both the "1" and "0" output states. This output configuration is particularly suited for driving high capacitive loads such as those encountered in high fan-out situations and line driving applications.

Output short circuit protection is provided by a current limiting resistor.

Section 4 of this handbook provides usage rules and applications information for this element.

BASIC CIRCUIT SCHEMATIC



NOTE: ½ of unit shown. Component values are typical.

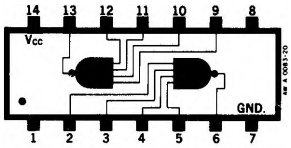
ELECTRICAL CHARACTERISTICS (NOTES: 1, 2, 3, 4, 5, 6, 13)

ACCEPTANCE TEST SUB-GROUP	CHARACTERISTIC	LIMITS				TEST CONDITIONS						
		MIN.	TYP.	MAX.	UNITS	TEMP. S8855	TEMP. N8855	V_{cc}	DRIVEN INPUT	OTHER INPUTS	OUTPUTS	NOTES
A-5	"1" OUTPUT VOLTAGE	2.6			V	-55°C	0°C	4.75V	0.8V		-1.5mA	8
A-3		2.8			V	+25°C	+25°C	5.0V	0.8V		-1.5mA	8
A-4		2.6			V	+125°C	+75°C	4.75V	0.8V		-1.5mA	8
A-5	"0" OUTPUT VOLTAGE			0.40	V	-55°C	0°C	4.75V	2.0V	2.0V	48mA	9
A-3				0.40	V	+25°C	+25°C	5.0V	2.0V	2.0V	48mA	9
A-4				0.40	V	+125°C	+75°C	4.75V	2.0V	2.0V	48mA	9
C-1	"0" INPUT CURRENT	-0.1		-1.6	mA	-55°C	0°C	5.25V	0.40V	5.25V		
A-3		-0.1		-1.6	mA	+25°C	+25°C	5.25V	0.40V	5.25V		
C-1		-0.1		-1.6	mA	+125°C	+75°C	5.25V	0.40V	5.25V		
A-4	"1" INPUT CURRENT			25	μA	+125°C	+75°C	5.0V	4.5V	0V		
A-6	TURN-ON DELAY			15	ns	+25°C	+25°C	5.0V			D.C. F.O.=60	10,14
A-6	TURN-OFF DELAY			15	ns	+25°C	+25°C	5.0V			D.C. F.O. = 60	10,14
C-2	OUTPUT FALL TIME			50	ns	-55°C	0°C	4.75V			A.C. F.O.=10	11,14
C-2	INPUT CAPACITANCE			3.0	pf	+25°C	+25°C	5.0V	2.0V			7
A-2	POWER CONSUMPTION "0"			56.8	mW	+25°C	+25°C	5.25V				
A-2	(Per Gate) "1"			14.7	mW	+25°C	+25°C	5.25V	0V			
C-1	INPUT LATCH VOLTAGE RATING	6.0			V	+25°C	+25°C	5.0V	10mA	0V		12
A-2	OUTPUT SHORT CIRCUIT CURRENT	-20		-80	mA	+25°C	+25°C	5.0V	0V		0V	

Notes:

1. All voltage and capacitance 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 flow is defined as into the terminal referenced.
4. Positive NAND Logic definition: "UP" Level = "1", "DOWN" Level = "0".
5. Precautionary measures should be taken to ensure current limiting in accordance with Absolute Maximum Ratings should the isolation diodes become forward biased.
6. Measurements apply to each gate element independently.
7. Capacitance as measured on Boonton Electronic Corporation Model 75A-S8 Capacitance Bridge or equivalent. f = 1MHz, V_{ac} = 25mV_{rms}. All pins not specifically referenced are tied to guard for capacitance tests. Output pins are left open.
8. Output source current is supplied through a resistor to ground.
9. Output sink current is supplied through a resistor to V_{cc}.
10. One DC fan-out is defined as 0.8mA.
11. One AC fan-out is defined as 50pf.
12. This test guarantees operation free of input latch-up over the specified operating supply voltage range.
13. Manufacturer reserves the right to make design and process changes and improvements.
14. Detailed test conditions for AC testing are in Section 3.

A PACKAGE



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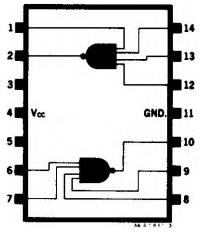

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