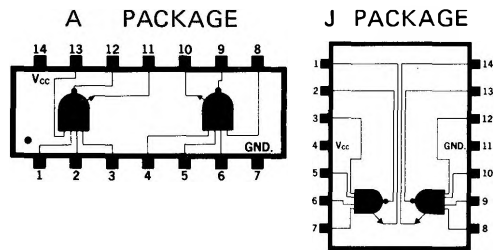


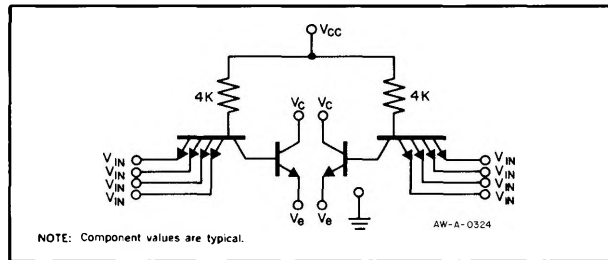
# 8806 DUAL 4-INPUT EXPANDER ELEMENT



The 8806 Dual 4-Input Expander Element is compatibly designed and characterized for use with the 8840 and 8848 AND-OR-INVERT Gates, thereby providing increased system usefulness for the 8840 and the 8848.

Applications information on the 8806 is included in Section 4 of this handbook.

## BASIC CIRCUIT SCHEMATIC



## ELECTRICAL CHARACTERISTICS (NOTES: 1, 2, 3, 4, 5, 6, 12)

ACCEPTANCE TEST SUB-GROUP	CHARACTERISTIC	LIMITS				TEST CONDITIONS							
		MIN.	TYP.	MAX.	UNITS	TEMP. S8806	TEMP. N8806	V <sub>cc</sub>	DRIVEN INPUT	OTHER INPUTS	OUTPUTS		NOTES
										V <sub>C</sub>	V <sub>E</sub>		
A-3	OUTPUT "ON" VOLTAGE AT V <sub>C</sub> (1, 2)*			1.25	V	+25°C	+25°C	4.75V	2.0V	2.0V	7.2mA	0.85V	9
A-3	OUTPUT "ON" CURRENT AT V <sub>E</sub> (2, 3)*	-2.5			mA	+25°C	+25°C	4.75V	2.0V	2.0V	2.2mA	0.85V	8, 9
A-3	OUTPUT "OFF" CURRENT AT V <sub>E</sub> (4, 5)*			-50	μA	+25°C	+25°C	5.25V	0.8V		4.75V	0.59V	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			
C-2	INPUT CAPACITANCE			3.0	pf	+25°C	+25°C	5.0V	2.0V				7
A-2	POWER CONSUMPTION OUTPUT "ON"			6.3	mW	+25°C	+25°C	5.25V				0.59V	
A-2	(Per Expander) OUTPUT "OFF"			8.9	mW	+25°C	+25°C	5.25V	0V				
C-1	INPUT LATCH VOLTAGE RATING	5.5			V	+25°C	+25°C	5.0V	10mA	0V			10
A-6	TURN-ON DELAY			20	ns	+25°C	+25°C	5.0V					13
A-6	TURN-OFF DELAY			34	ns	+25°C	+25°C	5.0V					13

\*8840 Node Test Correlation Note 11

### 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.
- Capacitance as measured on Boonton Electronic Corporation Model 75A-S8 Capacitance Bridge or equivalent.  $f = 1\text{MHz}$ ,  $V_{ac} = 25mV_{rms}$ . All pins not specifically referenced are tied to guard for capacitance tests. Output pins are left open.
- Output current is supplied through a resistor to ground.
- Output current is supplied through a resistor to V<sub>cc</sub>. For output "OFF" current at V<sub>C</sub> use 2.5K ±1% resistor.
- This test guarantees operation free of input latch-up over the specified operating power supply voltage range.
- Compatibility between the 8806, the 8840 and 8848 are proved by this series of tests for corresponding tests performed on the 8840 and 8848. Check those tests enclosed in special box on 8840 and 8848 data tables.
- Manufacturer reserves the right to make design and process changes and improvements.
- Detailed test conditions for AC testing are in Section 3.