

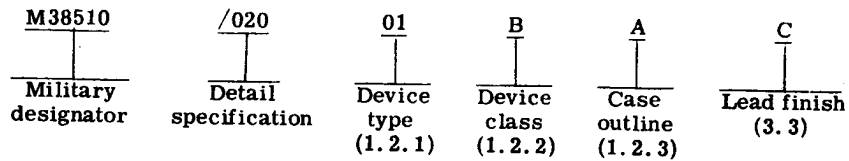
MILITARY SPECIFICATION  
 MICROCIRCUITS, DIGITAL, TTL,  
 LOW POWER, NAND GATES, MONOLITHIC SILICON

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, TTL, low power positive NAND logic gating microcircuits. Three product assurance classes and a choice of case outline/lead finish are provided for each type and are reflected in the complete part number.

1.2 Part number. The complete part number shall be as shown in the following example:



1.2.1 Device type. The device type shall be as follows:

Device type	Circuit
01	Single, 8-input positive NAND gate
02	Dual, 4-input positive NAND gate
03	Triple, 3-input positive NAND gate
04	Quadruple, 2-input positive NAND gate
05	Hex, 1-input inverter gate
06	Quadruple, 2-input positive NAND gate (open collector output)

1.2.2 Device class. The device class shall be the product assurance level as defined in MIL-M-38510.

1.2.3 Case outline. The case outline shall be designated as follows:

Letter	Case outline, MIL-M-38510, Appendix C
A	- F-1 (14-pin, 1/4" x 1/4" flat pack)
B	- F-3 (14-pin, 1/8" x 1/4" flat pack)
C	- D-1 (14-pin, 1/4" x 3/4" dual-in-line pack)
D	- F-2 (14-pin, 1/4" x 3/8" flat pack)

1.3 Absolute maximum ratings:

Supply voltage range - - - - - 0 Vdc to 8.0 Vdc  
Input voltage range - - - - - 0 Vdc to 6.0 Vdc  
Storage temperature range - - - - - -65° C to 150° C  
Maximum power dissipation,  $P_D$  <sup>1/</sup> - - - - - 4 mWdc per gate  
Lead temperature (soldering 10 seconds) - - - - - 300° C  
Thermal resistance, junction to case - - - - -  $\theta_{JC} = \begin{cases} 0.09^\circ \text{C/mW} & \text{for flat pack} \\ 0.08^\circ \text{C/mW} & \text{for dual-in-line pack} \end{cases}$   
Junction temperature - - - - -  $T_J = 175^\circ \text{C}$

1.4 Recommended operating conditions:

Supply voltage - - - - - 4.5 Vdc minimum to 5.5 Vdc maximum  
Minimum high level input voltage - - - - - 2.0 Vdc  
Maximum low level input voltage - - - - - 0.7 Vdc  
Normalized fanout (each output) <sup>2/</sup> - - - - - 10 maximum  
Ambient operating temperature range - - - - - -55° C to 125° C

2. APPLICABLE DOCUMENT

2.1 The following document, of the issue in effect on date of invitation for bids or request for proposal, forms a part of this specification to the extent specified herein.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Detail specifications. The individual item requirements shall be in accordance with MIL-M-38510, and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510, and herein.

3.2.1 Logic diagram and terminal connections. The logic diagram and terminal connections shall be as specified on figure 1.

3.2.2 Truth tables and logic equations. The truth tables and logic equations shall be as specified on figure 2.

3.2.3 Schematic circuit. The schematic circuit shall be as specified on figure 3.

3.2.4 Case outlines. The case outlines shall be in accordance with 1.2.3.

3.3 Lead material and finish. Lead material and finish shall be in accordance with MIL-M-38510.

<sup>1/</sup> Must withstand the added  $P_D$  due to short circuit conditions (e.g.,  $I_{OS}$ ) at one output for 5 seconds duration.

<sup>2/</sup> Device will fanout in both high and low levels to the specified number of inputs of the same device type as that being tested.

3.4 Electrical performance characteristics. The electrical performance characteristics are as specified in table I and apply over the full recommended ambient operating temperature range, unless otherwise specified.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions	Device type	Limits		
				Min	Max	Units
High-level output voltage (except open collector output circuits)	$V_{OH}$	$V_{CC} = 4.5V$ , $V_{IN} = 0.7V$ $I_{OH} = -100 \mu A$ <u>1/</u>	01, 02, 03, 04, 05	2.4	---	Volts
Low-level output voltage	$V_{OL}$	$V_{CC} = 4.5V$ , $I_{OL} = 2 mA$ $V_{IN} = 2.0V$ for all inputs of gate under test <u>1/</u>	All		0.3	Volts
Maximum collector cut-off current (open collector circuits only)	$I_{CEX}$	$V_{CC} = 4.5V$ , $V_{IN} = 0.6V$ $V_{OH} = 5.5V$	06		50	$\mu A$
High-level input current	$I_{IH1}$	$V_{CC} = 5.5V$ , $V_{IN} = 2.4V$ <u>2/</u>	All		10	$\mu A$
High-level input current	$I_{IH2}$	$V_{CC} = 5.5V$ , $V_{IN} = 5.5V$ <u>2/</u>	All		100	$\mu A$
Low-level input current	$I_{IL}$	$V_{CC} = 5.5V$ , $V_{IN} = 0.3V$ <u>1/</u>	All	-60	-180	$\mu A$
Short-circuit output current (except open collector circuits)	$I_{OS}$	$V_{CC} = 5.5V$ <u>2/</u> <u>3/</u>	01, 02, 03, 04, 05	-3	-15	mA
High-level supply current per gate	$I_{CCH}$	$V_{CC} = 5.5V$ <u>2/</u> $V_{IN} = 0V$	02, 03, 04, 05, 06		200	$\mu A$
			01		330	$\mu A$
Low-level supply current per gate	$I_{CCL}$	$V_{CC} = 5.5V$ <u>1/</u> $V_{IN} = 5.5V$	All		510	$\mu A$
Propagation delay time, high-to-low-level	$t_{PHL}$	$C_L = 50 pF$ , $R_L = 4K\Omega$	01	3	140	ns
			02, 03, 04, 05, 06	3	90	ns
Propagation delay time, low-to-high-level	$t_{PLH}$	$C_L = 50 pF$ , $R_L = 4K\Omega$	01, 02, 03, 04, 05	3	90	ns
			06	3	140	ns

1/ All unspecified inputs at 5.5 volts.

2/ All unspecified inputs grounded.

3/ Not more than one output should be shorted at a time.

2.5 Rebonding. Rebonding shall be in accordance with MIL-M-38510.

3.6 Electrical test requirements. Electrical test requirements shall be as specified in table III for the applicable device type and device class. The subgroups of table III which constitute the minimum electrical test requirements for screening, qualification, and quality conformance by device class are specified in table II.

3.7 Marking. Marking shall be in accordance with MIL-M-38510 and 1.2. At the option of the manufacturer, the following marking may be omitted from the body of the microcircuit, but shall be retained on the initial container:

(a) Country of origin.

TABLE II. Electrical test requirements.

MIL-STD-883 test requirement	Subgroups (see table III)		
	Class A devices	Class B devices	Class C devices
Interim electrical parameters (pre burn-in) (Method 5004)	1	1	None
Final electrical test parameters (Method 5004)	1*, 2, 3, 9	1*, 2, 3, 9	1
Group A test requirements (Method 5005)	1, 2, 3, 9, 10, 11	1, 2, 3, 9	1, 2, 3, 9
Groups B and C end point electrical parameters (Method 5005)	1, 2, 3	1, 2, 3	1
Additional electrical subgroups for group C periodic inspections	None	10, 11	None

#### 4. PRODUCT ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and Method 5005 of MIL-STD-883, except as modified herein.

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified herein for groups A, B, and C inspections (see 4.4.1, 4.4.2, and 4.4.3). After qualification of one or more electrically and structurally similar types with a single lead finish, other lead finishes of the same case outline may be qualified by submitting a single type in the qualified case outline to the group B, subgroup 3 test and the group C, subgroups 1, 3, and 4 tests.

4.3 Screening. Screening shall be in accordance with Method 5004 of MIL-STD-883, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

- (a) Test samples for the group B bond strength test specified in Method 5005 of MIL-STD-883 may, at the manufacturer's option, be randomly selected immediately following the internal visual (precap) inspection and prior to sealing (see 4.4.2(b)).
- (b) Temperature cycling (Method 1010 of MIL-STD-883).
  - (1) Omit seal test as post-test measurement.
- (c) Thermal shock (Method 1011 of MIL-STD-883), when substituted for temperature cycling.
  - (1) Omit seal test as post-test measurement.
- (d) Burn-in test (Method 1015 of MIL-STD-883).
  - (1) Test condition D or E, using the circuit shown on figure 4, or equivalent.
  - (2)  $T_A = 125^\circ\text{C}$  minimum.
- (e) Reverse bias burn-in and interim electrical test in accordance with 3.1.10 of Method 5004 of MIL-STD-883 may be omitted.
- (f) Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
- (g) External visual inspection shall not include measurement of case and lead dimensions.
- (h) Percent defective allowable (PDA) - The PDA is specified as 5 percent for class A devices and 10 percent for class B devices based on failures from group A, subgroup 1 test after cooldown as final electrical test in accordance with Method 5004 of MIL-STD-883, and with no intervening electrical measurements. If interim electrical parameter tests are performed prior to burn-in, failures resulting from pre burn-in screening may be excluded from the PDA. If interim electrical parameter tests prior to burn-in are omitted, then all screening failures shall be included in the PDA.

The verified failures of group A, subgroup 1 after burn-in divided by the total number of devices submitted for burn-in in that lot shall be used to determine the percent defective for that lot, and the lot shall be accepted or rejected based on the PDA for the applicable device class.

**4.4 Quality conformance inspection.** Quality conformance inspection shall be in accordance with MIL-M-38510.

**4.4.1 Group A inspection.** Group A inspection shall consist of the test subgroups and LTPD values shown in table I of Method 5005 of MIL-STD-883 and as follows:

- (a) Tests shall be as specified in table II.
- (b) Subgroups 4, 5, 6, 7, and 8 shall be omitted.

**4.4.2 Group B inspection.** Group B inspection shall consist of the test subgroups and LTPD values shown in table II of Method 5005 of MIL-STD-883 and as follows:

- (a) End point electrical parameters shall be as specified in table II.
- (b) Bond strength test may be conducted on samples collected prior to sealing (see 4.3(a)).

**4.4.3 Group C inspection.** Group C inspection shall consist of the test subgroups and LTPD values shown in table III of Method 5005 of MIL-STD-883 and as follows:

- (a) End point electrical parameters shall be as specified in table II.
- (b) Subgroups 7 and 8 shall be added to the group C inspection requirements for class B devices and shall consist of the tests, conditions, and limits specified for subgroups 10 and 11 of group A.
- (c) Lead bend in only one direction is required for initial conditioning prior to moisture resistance and salt atmosphere tests.
- (d) High temperature storage test (Method 1008 of MIL-STD-883) conditions:
  - (1) Temperature:  $150 \pm 10^\circ \text{C}$ .
  - (2) Duration: 1,000 hours, except as otherwise permitted by Appendix B of MIL-M-38510.
- (e) Operating life test (Method 1005 of MIL-STD-883) conditions:
  - (1) Test condition D or E, using the circuit shown on figure 4, or equivalent.
  - (2)  $T_A$   $125^\circ \text{C}$ , minimum.
  - (3) Test duration: 1,000 hours, except as permitted by Appendix B of MIL-M-38510.
- (f) Omit steady state reverse bias test.

**4.5 Methods of examination and test.** Methods of examination and test shall be as specified in the appropriate tables and as follows.

**4.5.1 Voltage and current.** All voltages given are referenced to the microcircuit ground terminal. Currents given are conventional current and positive when flowing into the referenced terminal.

**4.5.2 Life test cooldown procedure.** When devices are measured at  $25^\circ \text{C}$  following application of the operating life or burn-in test condition, they shall be cooled to room temperature prior to removal of the bias. Alternately, the bias may be removed during cooling if the case temperature is reduced to room temperature within 30 minutes after removal of the test condition.

**4.6 Inspection of preparation for delivery.** Inspection of preparation for delivery shall be in accordance with MIL-M-38510, except that the rough handling test shall not apply.

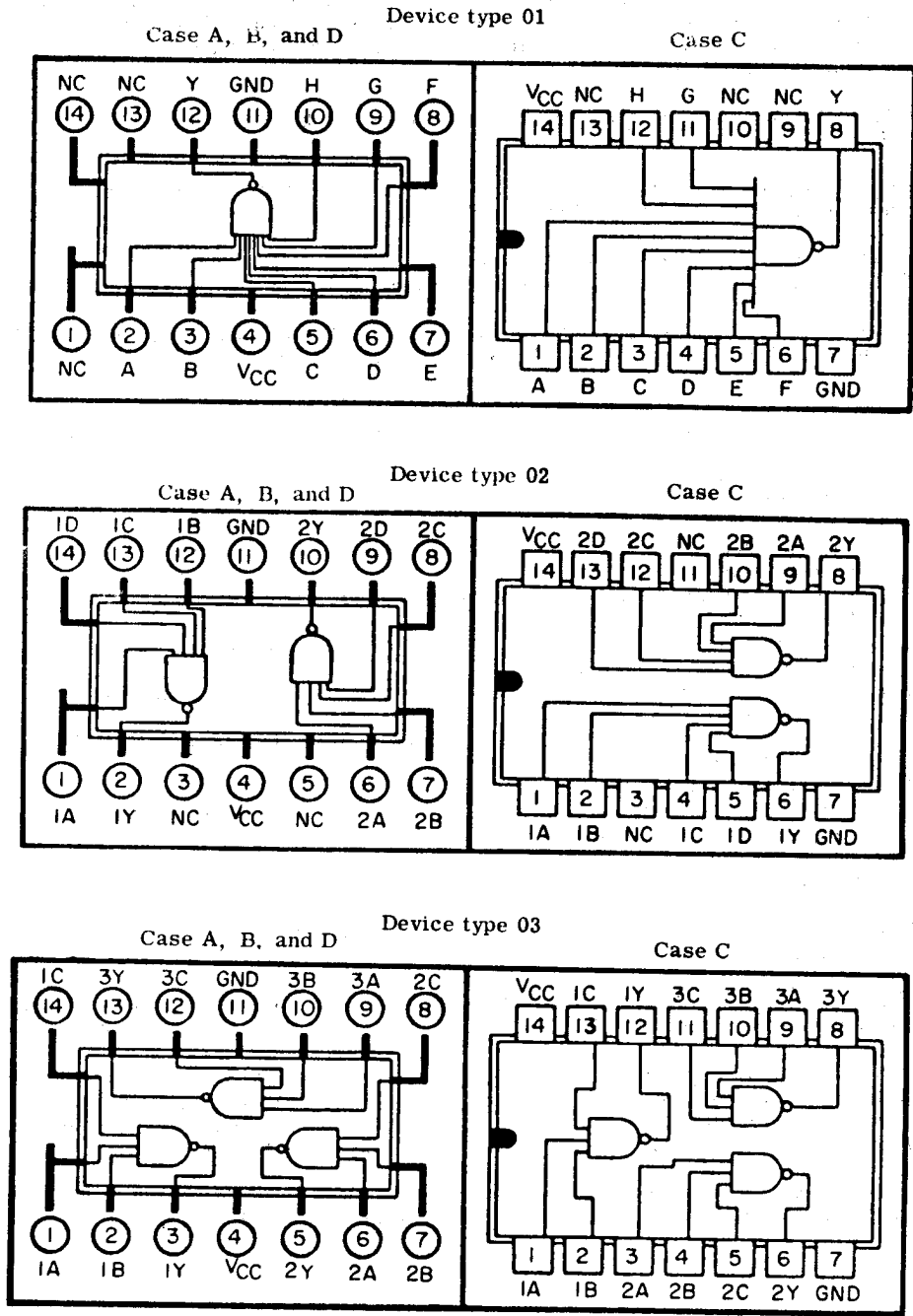
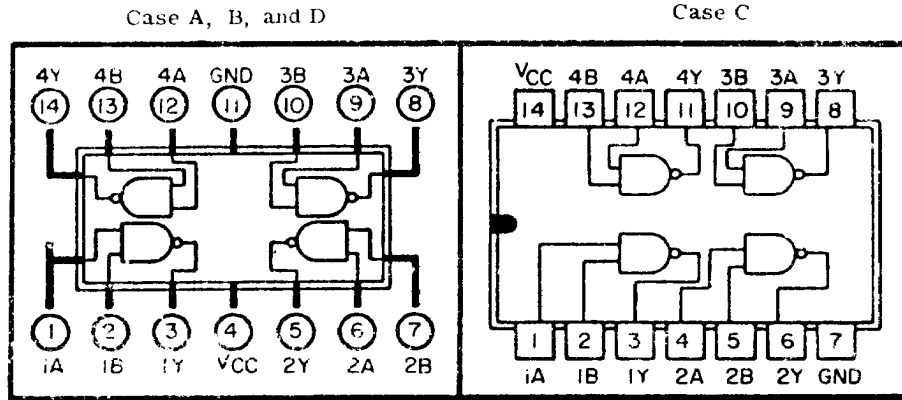


FIGURE 1. Logic diagrams and terminal connections (Top Views)

\* Device types 04 and 06



\* Device type 06 in accordance with "Case C" only.

Device type 05

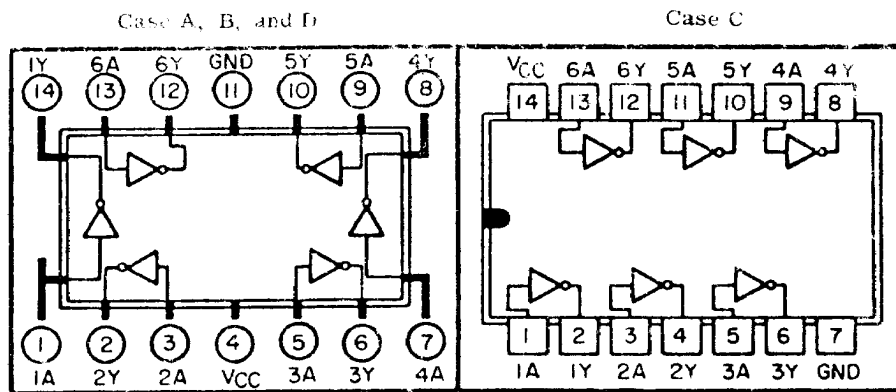


FIGURE 1. Logic diagram and terminal connections (Top Views) - Continued.

Device type 01

Truth table								
Input								Output
A	B	C	D	E	F	G	H	Y
H	H	H	H	H	H	H	H	L

All other combinations of H and L at the inputs give H output.

Positive logic  $Y = \overline{ABCDEFGH}$

Device type 05

Truth table each gate	
Input	Output
A	Y
L	H
H	L

Positive logic  $Y = \overline{A}$

Device type 03

Truth table			
Input			Output
A	B	C	Y
L	L	L	H
H	L	L	H
L	H	L	H
H	H	L	H
L	L	H	H
H	L	H	H
L	H	H	H
H	H	H	L

Positive logic  $Y = \overline{ABC}$

Device type 02

Truth table				
Input				Output
A	B	C	D	Y
L	L	L	L	H
H	L	L	L	H
L	H	L	L	H
H	H	L	L	H
L	L	H	L	H
H	L	H	L	H
L	H	H	L	H
H	H	H	L	H
L	L	L	H	H
H	L	L	H	H
L	H	L	H	H
H	H	L	H	H
L	L	H	H	H
H	L	H	H	H
L	H	H	H	H
H	H	H	H	L

Positive logic  $Y = \overline{ABCD}$

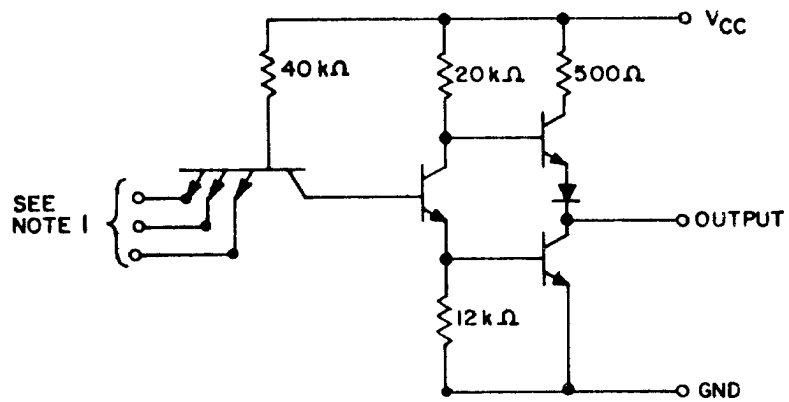
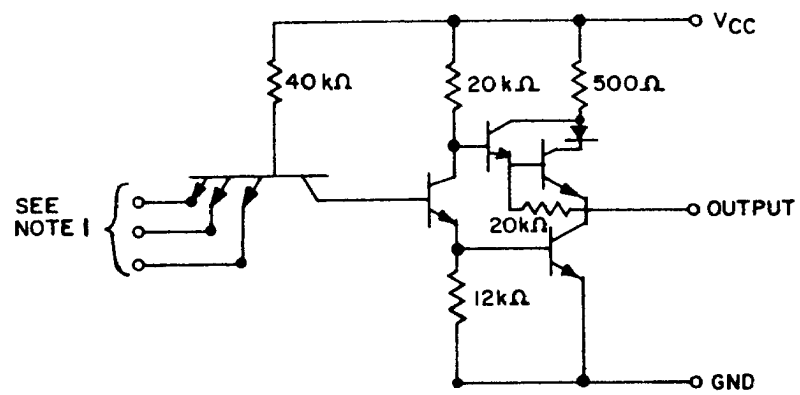
Device types 04 and 06

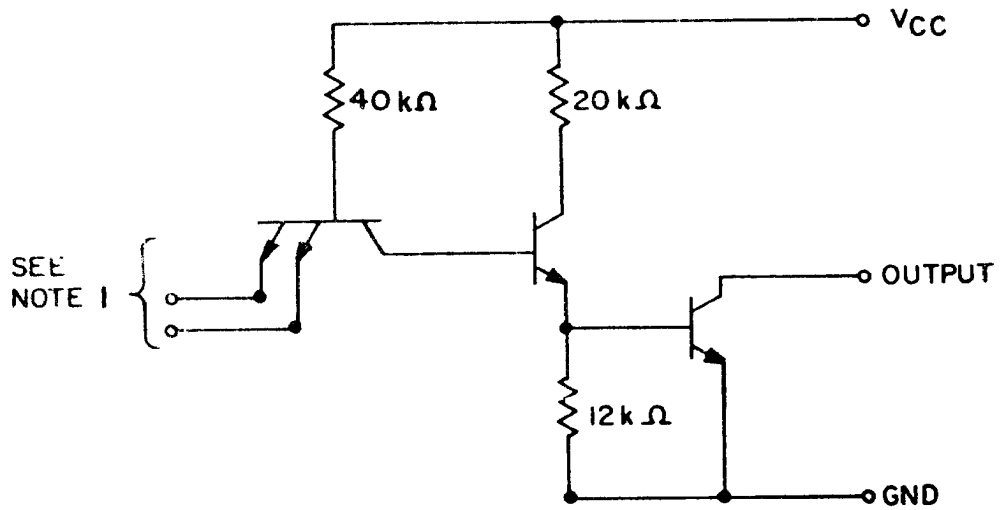
Truth table each gate		
Input		Output
A	B	Y
L	L	H
H	L	H
L	H	H
H	H	L

Positive logic  $Y = \overline{AB}$

FIGURE 2. Truth tables and logic equations.



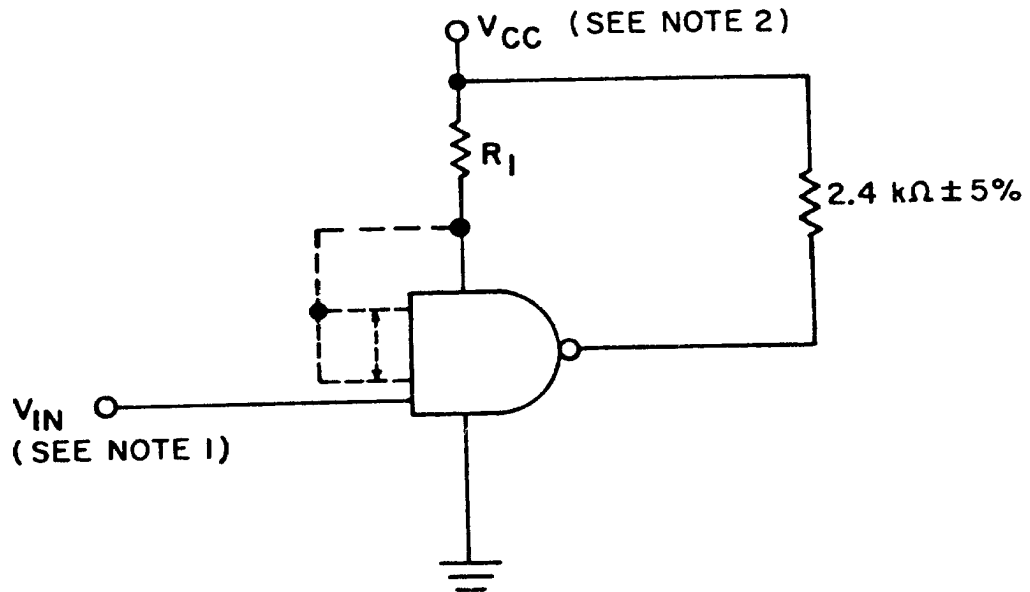
SCHEMATIC ASCHEMATIC BFIGURE 3. Schematic circuit for device types 01, 02, 03, 04 and 05.



NOTES:

1. Number of inputs is determined by logic configuration shown in figure 1.
2. All resistance values shown are nominal.

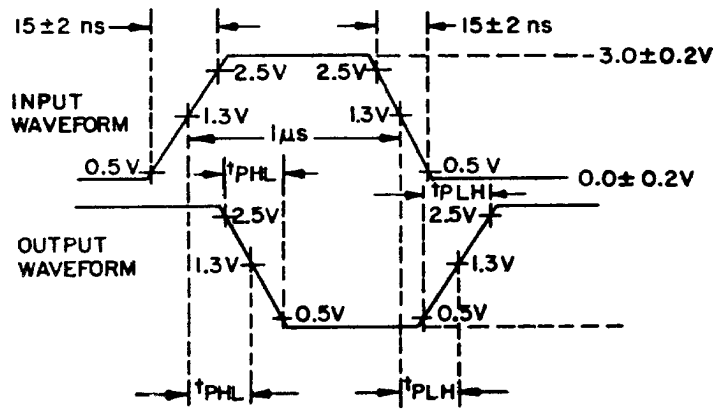
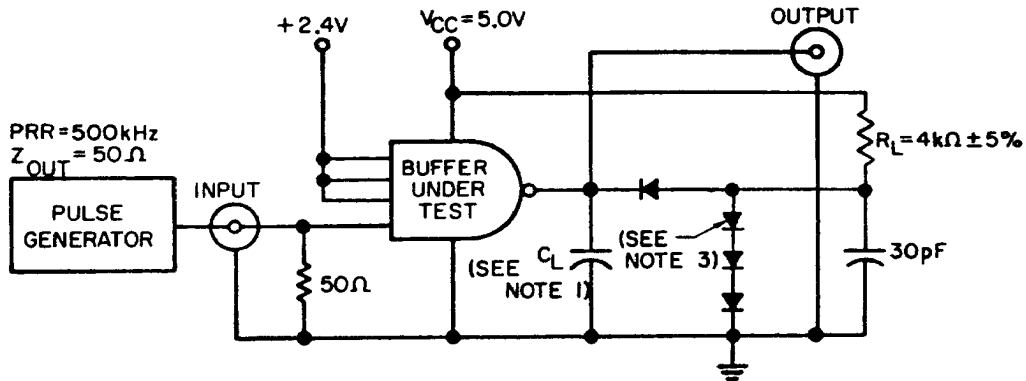
FIGURE 3. Schematic circuit for device type 06-Continued.



## NOTES:

1. One input of each gate shall be driven. The remaining inputs of each gate shall be connected to  $V_{CC}$  through the appropriate current limiting resistors.
2.  $V_{CC}$  and  $R_1$  are such that the minimum voltage at the device terminals is 5 volts.
3. If parallel excitation is used, the clock frequency shall be 100kHz with  $V_{IN} = 3$  volts minimum and minimum duty cycle of 50%.

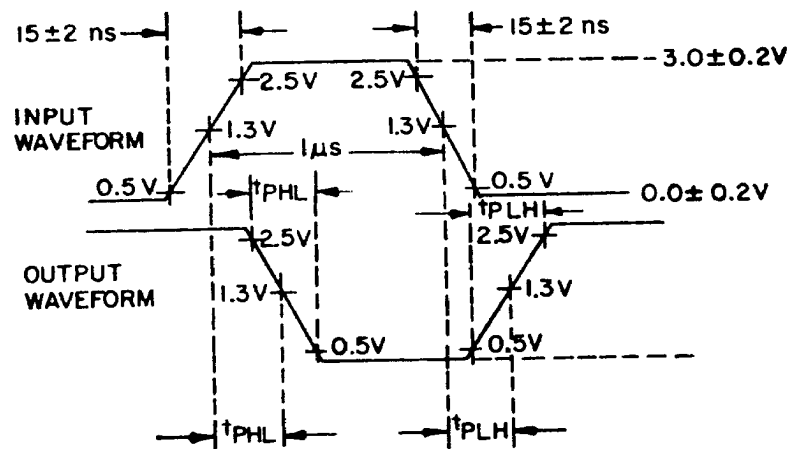
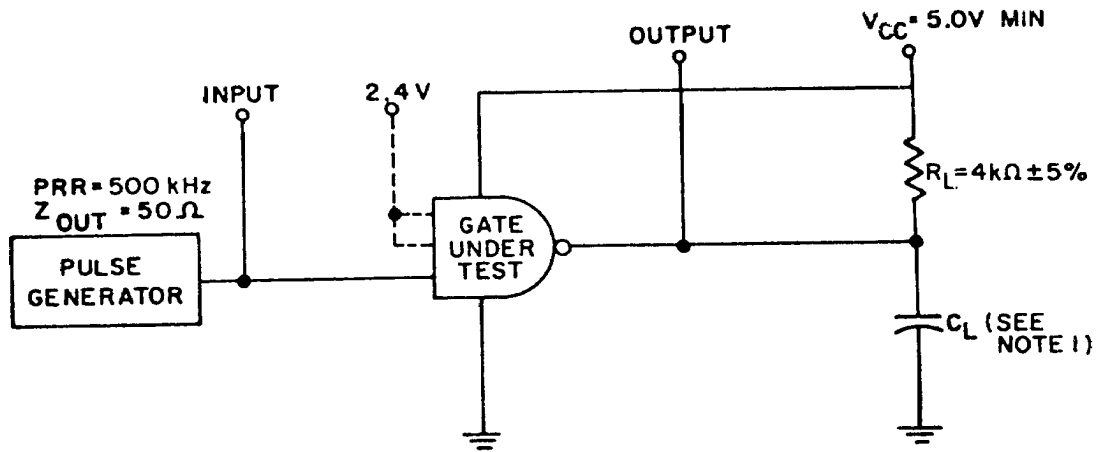
FIGURE 4. Burn-in and life test circuit.



NOTES:

1.  $C_L = 50\text{pF}$  minimum, including scope probe, wiring, and stray capacitance, without package in test fixture.
2. Voltage measurements are to be made with respect to network ground terminal.
3. All diodes are 1N3064 or equivalent.

FIGURE 5. Switching time test circuit except for open collector circuits (types 01, 02, 03, 04, and 05).



## NOTES:

- $C_L = 50\text{pF}$  minimum, including scope probe, wiring, and stray capacitance, without package in test fixture.
- Voltage measurements are to be made with respect to network ground terminal.

FIGURE 6. Switching time test circuit (type 06).



TABLE III. Group A inspection for device type 02.  
Terminal condition (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D														Test limits			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	Mean terminal	Min	Max	Unit
1 T <sub>A</sub> = 25° C	V <sub>OL</sub>	3007	1A	1Y	NC	VCC	NC	2A	2B	2C	2D	2Y	2	IC	ID	1Y				
	V <sub>OL</sub>	3007	2.0 v	2 mA	4.5 v		5.5 v	2.0 v	5.5 v	5.5 v	5.5 v	2 mA	2.0 v	5.5 v	5.5 v	2Y				.3
	V <sub>OH</sub>	3008	0.7 v	+100 μA			5.5 v	5.5 v	5.5 v	5.5 v	5.5 v		5.5 v	0.7 v	5.5 v	1Y				2.4
																1Y				
																1Y				
																1Y				
																1Y				
																1Y				
																1Y				
																1Y				
2	I <sub>OS</sub>	3011	GND	GND	5.5 v											GND				
	I <sub>OS</sub>	3011														GND				
	I <sub>IH1</sub>	3010	2.4 v	GND												GND				
																GND				
																GND				
																GND				
																GND				
																GND				
																GND				
																GND				
3	I <sub>IH2</sub>		5.5 v	GND												GND				
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2	I <sub>CLL</sub>	3005	GND													GND				
	I <sub>CCH</sub>	3005														GND				
3																GND				
																GND				

Same tests, terminal conditions and limits as for subgroup 1, except T<sub>A</sub> = 125° C.

Same tests, terminal conditions and limits as for subgroup 1, except T<sub>A</sub> = -55° C.

TABLE III. Group A inspection for device type 02 - Continued.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D														Test limits					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Min	Max	Unit		
9 T <sub>A</sub> = 25°C	t <sub>PHL</sub>	3003 (Fig. 5)	1A	1Y	NC	VCC	14	11	NC	2A	2B	2C	2D	2Y	GND	1B	1C	1D	1A to 1Y	3	60	ns
			IN	OUT		5.0 v		IN	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		50	
			IN	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		60	
			IN	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		50	
10 T <sub>A</sub> = 125°C	t <sub>PLH</sub>		41 CKT A	OUT					IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		60	
			41 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		45		
			42 CKT A	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		60		
			42 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		45		
11	t <sub>PHL</sub>		43 CKT A	OUT					IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		90	
			43 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		60		
			44 CKT A	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		90		
			44 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		60		
11	t <sub>PLH</sub>		45 CKT A	OUT					IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		90	
			45 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	1A to 1Y		55		
			46 CKT A	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		90		
			46 CKT B	OUT				IN	2.4 v	2.4 v	2.4 v	2.4 v	OUT		2.4 v	2.4 v	2.4 v	2A to 2Y		55		

Same tests, terminal conditions and limits as for subgroup 10, except T<sub>A</sub> = -55°C.



TABLE III. Group A inspection for device type 03.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL - STD-883 method	Case A, B, D														Meas. terminal	Test limits		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14		Min	Max	Unit
1 T <sub>A</sub> = 25° C	V <sub>OL</sub>	3007	1A	1B	1Y	2A	2E	2C	3A	3B	GND	3C	3Y	IC	1Y			0.3	V	
			2	2.0 v	2.0 v	2 mA	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	GND	5.5 v	2.0 v	2.0 v	2Y			
			3	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2.0 v	5.5 v	5.5 v	3Y			
	V <sub>OH</sub>	3006	4	0.7 v	-100µA											1Y			2.4	V
			5	5.5 v	0.7 v											1Y				
			6	5.5 v	0.7 v											1Y				
			7	5.5 v	0.7 v											1Y				
			8	5.5 v	0.7 v											2Y				
			9	5.5 v	0.7 v											2Y				
			10	5.5 v	0.7 v											3Y				
			11	5.5 v	0.7 v											3Y				
			12	5.5 v	0.7 v											3Y				
I <sub>OS</sub>	3011	13	GND	GND	5.5 v										1Y			-3	-15	mA
		14	GND	GND	5.5 v										2Y					
		15	GND	GND	5.5 v										3Y					
		16	2.4 v	GND											1A					
		17	GND	2.4 v											1B					
I <sub>IH1</sub>	3010	18	GND	2.4 v											1C			10	µA	
		19	GND	2.4 v											2A					
		20	GND	2.4 v											2B					
		21	GND	2.4 v											2C					
		22	GND	2.4 v											3A					
		23	GND	2.4 v											3B					
		24	GND	2.4 v											3C					
		25	5.5 v	GND											1A					
		26	GND	5.5 v											1B					
		27	GND	5.5 v											1C					
I <sub>IH2</sub>	3009	28	GND	5.5 v											2A			100	V	
		29	GND	5.5 v											2B					
		30	GND	5.5 v											2C					
		31	GND	5.5 v											3A					
		32	GND	5.5 v											3B					
		33	GND	5.5 v											3C					
		34	0.3 v	5.5 v											1A					
		35	5.5 v	0.3 v											1B					
		36	5.5 v	5.5 v											1C					
		I <sub>IHL</sub>	3005	37	0.3 v	5.5 v										2A				
38	5.5 v			0.3 v										2B						
39	5.5 v			5.5 v										2C						
40	0.3 v			5.5 v										3A						
41	5.5 v			0.3 v										3B						
42	5.5 v			5.5 v										3C						
2	I <sub>CCH</sub>	3005	GND	GND										GND			0.60	mA		
	I <sub>CCL</sub>	3005	5.5 v	5.5 v										5.5 v						
3	Same tests, terminal conditions and limits as for subgroup 1, except T <sub>A</sub> = 125° C.																			
3	Same tests, terminal conditions and limits as for subgroup 1, except T <sub>A</sub> = -55° C.																			

TABLE III. Group A inspection for device type 03 - Continued.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D										Test limits											
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Min	Max	Unit				
9 T <sub>A</sub> = 25°C	t <sub>PHL</sub>	3003 (Fig. 5)	Case C	1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	2.4 v	3	60	ns			
			Test No.	45 CKT A	2.4 v	OUT	5.0 v	OUT	IN	2.4 v	2.4 v	2.4 v	IN	2.4 v	GND			2.4 v	1A to 1Y	50				
				45 CKT B	2.4 v	OUT			IN	2.4 v	2.4 v	2.4 v	IN	2.4 v					2.4 v	1A to 1Y	50			
				46 CKT A																	2A to 2Y	60		
				46 CKT B																	2A to 2Y	50		
				47 CKT A																	3A to 3Y	60		
10 T <sub>A</sub> = 125°C	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	2.4 v	3	60	ns			
			Test No.	48 CKT A	2.4 v	OUT		OUT	IN	2.4 v	2.4 v	2.4 v	IN	2.4 v					2.4 v	1A to 1Y	60			
				48 CKT B	2.4 v	OUT			IN	2.4 v	2.4 v	2.4 v	IN	2.4 v						2.4 v	1A to 1Y	45		
				49 CKT A																	2A to 2Y	60		
				49 CKT B																	2A to 2Y	45		
				50 CKT A																	3A to 3Y	60		
11	Same tests, terminal conditions and limits as for subgroup 10, except T <sub>A</sub> = -55°C.		Case C	1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	2.4 v	3	60	ns			
			Test No.	51 CKT A	2.4 v	OUT		OUT	IN	2.4 v	2.4 v	2.4 v	IN	2.4 v					2.4 v	1A to 1Y	90			
				51 CKT B	2.4 v	OUT			IN	2.4 v	2.4 v	2.4 v	IN	2.4 v						2.4 v	1A to 1Y	60		
				52 CKT A																	2A to 2Y	90		
				52 CKT B																	2A to 2Y	60		
				53 CKT A																	3A to 3Y	90		
11	Same tests, terminal conditions and limits as for subgroup 10, except T <sub>A</sub> = -55°C.		Case C	1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	2.4 v	3	60	ns			
			Test No.	54 CKT A	2.4 v	OUT		OUT	IN	2.4 v	2.4 v	2.4 v	IN	2.4 v					2.4 v	1A to 1Y	90			
				54 CKT B	2.4 v	OUT			IN	2.4 v	2.4 v	2.4 v	IN	2.4 v						2.4 v	1A to 1Y	55		
				55 CKT A																	2A to 2Y	90		
				55 CKT B																	2A to 2Y	55		
				56 CKT A																	3A to 3Y	90		

TABLE III. Group A inspection for device type 04.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, E, D														Test limits				
			Case C														Min	Max	Unit		
T <sub>A</sub> = 25°C	V <sub>OL</sub>	3007	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Min	Max	Unit	
			1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	4A	4B	4Y						
			2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	1Y				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	2Y				
			0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	3Y				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	4Y				
			-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	-100 μA	1Y				
			0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	2Y				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	3Y				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	4Y				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	1Y				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	2Y				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	3Y				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	4Y				
			2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	1A				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	1B				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	2A				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	2B				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	3A				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	3B				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	4A				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	4B				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	1A				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	1B				
			0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	2A				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	2B				
			0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	3A				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	3B				
			0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	0.3 V	4A				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	4B				
			GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VCC				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	VCC				

Same tests, terminal conditions and limits as for subgroup 1, except T<sub>A</sub> = 125°C.

Same tests, terminal conditions and limits as for subgroup 1, except T<sub>A</sub> = -55°C.

TABLE III. Group A inspection for device type 04 - Continued.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL - STD-883 method	Case A, B, D	Terminal conditions														Test limits		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	Min	Max	Unit
9 T <sub>A</sub> = 25°C	t <sub>PHL</sub>	3003 (Fig. 5)	Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT	GND			1A to 1Y		50	
			43 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		60	
			44 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		50	
			44 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		60	
			45 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		50	
			45 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		60	
			46 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		50	
			46 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		60	
			47 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		45	
10 T <sub>A</sub> = 125°C	t <sub>PHL</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		60	
			48 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		60	
			48 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		45	
			49 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		60	
			49 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		45	
			50 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		60	
			50 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		45	
			51 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		90	
			51 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		60	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		90	
			52 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		90	
			52 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		60	
			53 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		90	
			53 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		60	
			54 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		90	
			54 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		60	
			55 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		90	
			55 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		55	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				1A to 1Y		90	
			56 CKT A	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		90	
			56 CKT B	IN	2.4 v	OUT		IN	2.4 v	OUT	IN	2.4 v	OUT				2A to 2Y		55	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		90	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				3A to 3Y		55	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		90	
11	t <sub>PLH</sub>		Case C	1A	1B	1Y	VCC	2A	2B	3A	3B	GND	4A	4B	4Y	1A to 1Y	3	60	ns	
			Test No.	IN	2.4 v	OUT	5.0 v	IN	2.4 v	OUT	IN	2.4 v	OUT				4A to 4Y		55	

Same tests, terminal conditions and limits as for subgroup 10, except T<sub>A</sub> = -55°C.

TABLE III. Group A inspection for device type 05.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL - STD-883 method	Case A, B, D														Test limits			
			Case C														Min	Max	Unit	
		Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
1 $T_A = 25^\circ\text{C}$	$V_{OL}$	3007	1A	2Y	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	6Y	6A	1Y	0.3	V		
			1	4	3	14	5	5	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2 mA			
			2		3		5	5	2.0 v	2.0 v	2.0 v	2 mA	2 mA							
			3		3		5	5	5.5 v	5.5 v	5.5 v	2 mA	2 mA							
			4		3		5	5	2.0 v	2.0 v	2.0 v	2 mA	2 mA							
			5		3		5	5	5.5 v	5.5 v	5.5 v	2 mA	2 mA							
	$V_{OH}$	3006	7														1Y	2.4		
			8														2Y			
			9														3Y			
			10														4Y			
			11														5Y			
			12														6Y			
	$I_{OS}$	3011	13														1Y	-3	-15	
			14														2Y			
			15														3Y			
			16														4Y			
			17														5Y			
			18														6Y			
2	$I_{IH1}$	3010	19														1A	10	$\mu\text{A}$	
			20														2A			
			21														3A			
			22														4A			
	$I_{IH2}$	3010	23															5A		
			24														6A			
			25														1A	100		
			26														2A			
3	$I_{IL}$	3009	27														1A	-60	-180	
			28														2A			
			29														3A			
			30														4A			
			31														5A			
			32														6A			
2	$I_{CCL}$	3005	33														VCC	3.10	mA	
			34														VCC	1.20	mA	
3	$I_{CCH}$	3005	35														VCC	3.10	mA	
			36														VCC	1.20	mA	

Same tests, terminal conditions and limits as for subgroup 1, except  $T_A = 125^\circ\text{C}$ .

Same tests, terminal conditions and limits as for subgroup 1, except  $T_A = -55^\circ\text{C}$ .

TABLE III. Group A inspection for device type 05 - Continued.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A,B,D	Terminal conditions (pins not designated are open)														Test limits					
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	Meas. terminal	Min	Max	Unit		
9 T <sub>A</sub> = 25°C	t <sub>PHL</sub>	3003 (Fig. 5)	Case C	1	4	3	14	5	6	9	8	11	10	7	12	13	2						
			Test No.	1A	2Y	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	GND	6Y	6A	1Y	1A to 1Y	3	60	ns	
			39 CKT A	IN	OUT	IN	5.0 v												OUT	1A to 1Y		50	
			39 CKT B	IN	OUT	IN		OUT											OUT	1A to 1Y		60	
			40 CKT A																	2A to 2Y		50	
			40 CKT B																	2A to 2Y		50	
			41 CKT A				IN													3A to 3Y		60	
			41 CKT B				IN													3A to 3Y		50	
			42 CKT A					OUT												4A to 4Y		60	
			42 CKT B					OUT												4A to 4Y		50	
			43 CKT A																	5A to 5Y		60	
			43 CKT B																	5A to 5Y		50	
			44 CKT A																	6A to 6Y		60	
			44 CKT B																	6A to 6Y		50	
10 T <sub>A</sub> = 125°C	t <sub>PLH</sub>		Case C	1	4	3	14	5	6	9	8	11	10	7	12	13	2						
			Test No.	1A	2Y	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	GND	6Y	6A	1Y	1A to 1Y	3	90		
			51 CKT A	IN	OUT	IN													OUT	1A to 1Y		60	
			51 CKT B	IN	OUT	IN													OUT	1A to 1Y		60	
			52 CKT A																	2A to 2Y		90	
			52 CKT B																	2A to 2Y		90	
			53 CKT A				IN													3A to 3Y		90	
			53 CKT B				IN													3A to 3Y		90	
			54 CKT A																	4A to 4Y		90	
			54 CKT B																	4A to 4Y		90	
			55 CKT A																	5A to 5Y		90	
			55 CKT B																	5A to 5Y		90	
			56 CKT A																	6A to 6Y		90	
			56 CKT B																	6A to 6Y		60	
11 Same tests, terminal conditions and limits as for subgroup 10, except T <sub>A</sub> = -55°C.	t <sub>PLH</sub>		Case C	1	4	3	14	5	6	9	8	11	10	7	12	13	2						
			Test No.	1A	2Y	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	GND	6Y	6A	1Y	1A to 1Y	3	90		
			57 CKT A	IN	OUT	IN													OUT	1A to 1Y		90	
			57 CKT B	IN	OUT	IN														1A to 1Y		55	
			58 CKT A																	2A to 2Y		90	
			58 CKT B																	2A to 2Y		55	
			59 CKT A				IN													3A to 3Y		90	
			59 CKT B				IN													3A to 3Y		55	
			60 CKT A																	4A to 4Y		90	
			60 CKT B																	4A to 4Y		55	
			61 CKT A																	5A to 5Y		90	
			61 CKT B																	5A to 5Y		55	
			62 CKT A																	6A to 6Y		90	
			62 CKT B																	6A to 6Y		55	

TABLE III. Group A inspection for device type 06.  
Terminal conditions (pins not designated are open).

Subgroup	Symbol	MIL-STD-883 method	Case C Test No.	Case C														Test limits			
				1	2	3	14	6	4	5	8	9	10	7	12	13	11	Meas. terminal	Min	Max	Unit
1 T <sub>A</sub> = 25° C	V <sub>OL</sub>	3007	1	1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	7	4A	4B	1Y	0.3	V		
			2	2.0 v	2.0 v	2 mA	4.5 v	2 mA	5.5 v	5.5 v	2.0 v	5.5 v	5.5 v	5.5 v	GND	5.5 v	5.5 v	2Y	→		
			3	5.5 v	5.5 v	→	→	→	→	→	→	→	→	→	→	→	→	→	3Y	→	
			4	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4Y	→	
	I <sub>CEX</sub>			5	0.6 v	4.5 v	5.5 v	→	→	→	→	→	→	→	→	→	→	1Y	50	μA	
				6	4.5 v	0.6 v	5.5 v	→	→	→	→	→	→	→	→	→	→	→	2Y	→	
				7	5.5 v	5.5 v	→	→	→	→	→	→	→	→	→	→	→	→	3Y	→	
				8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4Y	→	
				9	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
				10	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
				11	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
				12	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
2	I <sub>IH1</sub>	3010	13	2.4 v	GND	→	5.5 v	→	GND	GND	→	GND	→	GND	→	GND	1A	10			
			14	GND	2.4 v	→	→	→	→	→	→	→	→	→	→	→	→	1B	→		
			15	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2A	→		
			16	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2B	→		
			17	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3A	→	
			18	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3B	→	
			19	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4A	→	
			20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4B	→	
			21	5.5 v	GND	→	GND	→	GND	→	GND	GND	→	GND	→	GND	→	GND	1A	100	
			22	GND	5.5 v	→	→	→	→	→	→	→	→	→	→	→	→	→	1B	→	
3	I <sub>IH2</sub>		23	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2A	→		
			24	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2B	→		
			25	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3A	→		
			26	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3B	→	
			27	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4A	→	
			28	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4B	→	
			29	0.3 v	→	→	→	→	→	→	→	→	→	→	→	→	→	→	1A	-60	-180
			30	5.5 v	0.3 v	→	→	→	→	→	→	→	→	→	→	→	→	→	1B	→	
9 T <sub>A</sub> = 25° C	t <sub>PHL</sub>	3009	31	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2A	→		
			32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2B	→		
			33	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3A	→		
			34	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3B	→	
			35	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4A	→	
			36	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4B	→	
			37	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	VCC	2.04	mA
			38	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	VCC	0.80	mA
2	I <sub>CCL</sub>	3005	39	GND	GND	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			40	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			41	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			42	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			43	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
3	t <sub>PLH</sub>	3003 (Fig. 6)	39	IN	2.4 v	OUT	5.0 v	OUT	IN	2.4 v	OUT	IN	2.4 v	GND	→	→	1A to 1Y	3	60	ns	
			40	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2A to 2Y	→		
			41	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3A to 3Y	→		
			42	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4A to 4Y	→		
			43	IN	2.4 v	OUT	→	→	→	→	→	→	→	→	→	→	→	→	1A to 1Y	90	
9	t <sub>PLH</sub>		44	→	→	→	→	→	→	→	→	→	→	→	→	→	→	2A to 2Y	→		
			45	→	→	→	→	→	→	→	→	→	→	→	→	→	→	3A to 3Y	→		
			46	→	→	→	→	→	→	→	→	→	→	→	→	→	→	4A to 4Y	→		

TABLE III. Group A inspection for device type 06 - Continued.  
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case C Test No.	1	2	3	14	6	4	5	8	9	10	7	12	13	11	Test limits			
																		Meas. terminal	Unit		
10 $T_A = 125^\circ\text{C}$	$t_{PHL}$	3003 (Fig. 6)	47	1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	3	90		
			48	IN	2.4 v	OUT	5.0 v	OUT	IN	2.4 v	OUT	IN	2.4 v		IN	2.4 v	OUT	1A to 1Y	ns		
			49																		
11	$t_{PLH}$		51	IN	2.4 v	OUT		OUT	IN	2.4 v	OUT	IN	2.4 v		IN	2.4 v	OUT	3	140		
			52																		
			53																		
54																					
Same tests, terminal conditions and limits as for subgroup 10, except $T_A = -55^\circ\text{C}$ .																					



## 5. PREPARATION FOR DELIVERY

5.1 Preservation-packaging and packing. Microcircuits shall be prepared for delivery in accordance with MIL-M-38510.

## 6. NOTES

6.1 Notes. The notes specified in MIL-M-38510 are applicable to this specification.

6.2 Intended use. Microcircuits conforming to this specification are intended for use for Government microcircuit applications (original equipment) and logistic purposes.

6.3 Ordering data. The contract or order should specify the following:

- (a) Complete part number (see 1.2).
- (b) Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- (c) Requirements for certificate of compliance, if applicable.
- (d) Requirements for notification of change of product or process to procuring activity in addition to notification to the qualifying activity, if applicable.
- (e) Requirements for packaging and packing.
- (f) Requirements for failure analysis (including required test condition of Method 5003), corrective action and reporting of results, if applicable.
- (g) Requirements for product assurance options.
- (h) Requirements for carriers, special lead lengths or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.

6.4 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-STD-1313, MIL-STD-1331, and as follows:

GND - - - - - Electrical ground (common terminal)  
 V<sub>IN</sub> - - - - - Voltage level at an input terminal

6.5 Logistic support. Lead materials and finishes (see 3.3), are interchangeable. Unless otherwise specified, microcircuits procured for Government logistic support will be procured to device class B (see 1.2.2), lead material and finish C (see 3.3), and case outline A (see 1.2.3). There is no substitute for case outline C. Longer length leads and lead forming shall not affect the part number.

6.6 Substitutability. Microcircuits covered by this specification unilaterally supersede the following commercial device types:

<u>Device type</u>	<u>Commercial type</u>
01	54L30
02	54L20
03	54L10
04	54L00
05	54L04
06	54L03 (case C only) and 54L01 (case A, B, and D)

Custodians:

Army - EL  
Navy - EC  
Air Force - 17  
NASA - NA

Review activities:

Army - MI  
Navy -  
Air Force - 11, 70, 80  
DSA - ES

User activities:

Army - SM, MU, WC  
Navy - AS, OS, CG, MC  
Air Force - 13, 15, 19

Preparing activity:  
Air Force - 17

Agent:  
DSA - ES

(Project 5962-T041)