

MIL-M-38510/1E
1 June 1982
~~SUPERSEDED~~
MIL-M-38510/1B
23 December 1971
MIL-M-0038510/1D(USAF)
1 December 1975

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL, 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, 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 part number shall be in accordance with MIL-M-38510, and as specified herein.

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

<u>Device type</u>	<u>Circuit</u>
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	Triple, 3-input positive NAND gate (open collector output)
07	Quadruple, 2-input positive NAND gate (open collector output)
08	Hex, 1-input inverter gate (open collector output)
09	Same as device type 07, except different pin connections

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:

<u>Letter</u>	<u>Case outline (see MIL-M-38510, appendix C)</u>
A	F-1 (14-lead, 1/4" x 1/4"), flat package
B	F-3 (14-lead, 3/16" x 1/4"), flat package
C	D-1 (14-lead, 1/4" x 3/4"), dual-in-line package
D	F-2 (14-lead, 1/4" x 3/8"), flat package

1.3 Absolute maximum ratings.

Supply voltage range - - - - -	-0.5 to +7.0 V
Input voltage range - - - - -	-1.5 at -12 mA to 5.5 V
Storage temperature range - - - - -	-65° to +150°C
Maximum power dissipation per gate (P_D) 1/-	40 mW
Lead temperature (soldering, 10 seconds) - -	300°C
Thermal resistance, junction-to-case (θ_{JC}):	
Case A, B, and D - - - - -	0.09°C/mW
Case C - - - - -	0.08°C/mW
Junction temperature (T_J) - - - - -	175°C

1/ Must withstand the added P_D due to short-circuit test (e.g., I_{OS}).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Rome Air Development Center (RBE-2), Griffiss AFB, NY 13441 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

1.4 Recommended operating conditions.

Supply voltage- - - - - 4.5 minimum to 5.5 V maximum
Minimum high level input voltage- - - - - 2.0 V
Maximum low level input voltage - - - - - 0.8 V
Normalized fanout (each output) 2/- - - - 10 maximum
Case operating temperature range- - - - - -55° to +125°C

2. APPLICABLE DOCUMENTS

2.1 Government specifications and standards. Unless otherwise specified, the following specifications and standards, of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATION

MILITARY

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

STANDARD

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

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

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Detail specification. 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. Logic diagrams 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 Case outlines. The case outlines shall be in accordance with 1.2.3.

3.2.4 Schematic circuits. Schematic circuits shall be submitted to the preparing activity prior to inclusion of a manufacturer's device in this specification and shall be submitted to the qualifying activity as a prerequisite for qualification. All manufacturer's schematics shall be maintained and available upon request.

3.3 Lead material and finish. The lead material and finish shall be in accordance with MIL-M-38510 (see 6.5).

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

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

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions	Device type	Limits	Unit
				Min	Max
High-level output voltage	V _{OH}	V _{CC} = 4.5 V, V _{IN} = 0.8 V I _{OH} = -400 μ A <u>1/</u>	01,02, 03,04, 05	2.4	--- Volts
Low-level output voltage	V _{OL}	V _{CC} = 4.5 V, I _{OL} = 16 mA V _{IN} = 2.0 V for all inputs of gate under test <u>1/</u>	All		0.4 Volts
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V, I _{IN} = -12 mA T _C = 25°C	All		-1.5 Volts
Maximum collector cut-off current	I _{CEX}	V _{CC} = 4.5 V, V _{IN} = 0.8 V V _{OH} = 5.5 V	06,07, 08,09,		250 μ A
High-level input current	I _{IH1}	V _{CC} = 5.5 V, V _{IN} = 2.4 V <u>2/</u>	All		40 μ A
High-level input current	I _{IH2}	V _{CC} = 5.5 V, V _{IN} = 5.5 V <u>2/</u>	All		100 μ A
Low-level input current	I _{IL}	V _{CC} = 5.5 V, V _{IN} = 0.4 V <u>1/</u>	All	-0.7	-1.6 mA
Short-circuit output current	I _{OS}	V _{CC} = 5.5 V <u>2/</u> <u>3/</u>	01,02, 03,04, 05	-20	-55 mA
High-level supply current per gate	I _{CCH}	V _{CC} = 5.5 V <u>2/</u> V _{IN} = 0 V	All		1.65 mA
Low-level supply current per gate	I _{CCL}	V _{CC} = 5.5 V <u>1/</u> V _{IN} = 5.5 V	All		5.0 mA
Propagation delay time, high-to-low-level	t _{PHL}	C _L = 50 pF, R _L = 390 Ω	01,02, 03,04, 05 06,07, 08,09	3	24 ns
Propagation delay time, low-to-high-level	t _{PLH}	C _L = 50 pF, R _L = 390 Ω	01,02, 03,04, 05 06,07, 08,09	3	27 ns
				3	35 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.

3.5 Electrical test requirements. The electrical test requirements for each device class shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table III.

3.6 Marking. Marking shall be in accordance with MIL-M-38510. At the option of the manufacturer, marking the country of origin may be omitted from the body of the microcircuit, but shall be retained on the initial container.

3.7 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 1 (see MIL-M-38510, appendix E).

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (see table III)		
	Class S 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, 10, 11	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
Group B test requirements (method 5005, subgroup 5)	1, 2, 3, 9, 10, 11	N/A	N/A
Group C end-point electrical parameters (method 5005)	N/A	1, 2, 3	1
Additional electrical parameters for group C periodic inspections	N/A	10, 11	10, 11
Group D end-point electrical parameters (method 5005)	1, 2, 3	1, 2, 3	1

*PDA applies to subgroup 1 (see 4.2c).

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and methods 5005 and 5007, as applicable, of MIL-STD-883, except as modified herein.

4.2 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. Burn-in test (method 1015 of MIL-STD-883).
 - (1) Test condition D or E, using the circuit shown on figure 3, or equivalent.
 - (2) $T_A = 125^\circ\text{C}$ minimum.
- b. Interim and final electrical test parameters shall be as specified in table II; interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.
- c. The percent defective allowable (PDA) for class S devices shall be as specified in MIL-M-38510. The PDA for class B devices shall be 10 percent 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.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table I of method 5005 of MIL-STD-883 and as follows:

- a. Test requirements shall be as specified in table II herein.
- b. Subgroups 4, 5, 6, 7, and 8 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883. Electrical parameters shall be as specified in table II herein.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table III of method 5005 of MIL-STD-883 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. Subgroups 3 and 4 shall be added to the group C inspection for class B and C devices and shall consist of the tests, conditions, and limits specified for subgroups 10 and 11 of group A inspection.
- c. Steady state life test (method 1005 of MIL-STD-883).
 - (1) Test condition D or E, using the circuit shown on figure 3, 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.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table IV of method 5005 of MIL-STD-883. End-point electrical parameters shall be as specified in table II herein.

4.4.5 Inspection of packaging. The inspection of packaging shall be in accordance with MIL-M-38510.

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables and as specified herein.

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

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

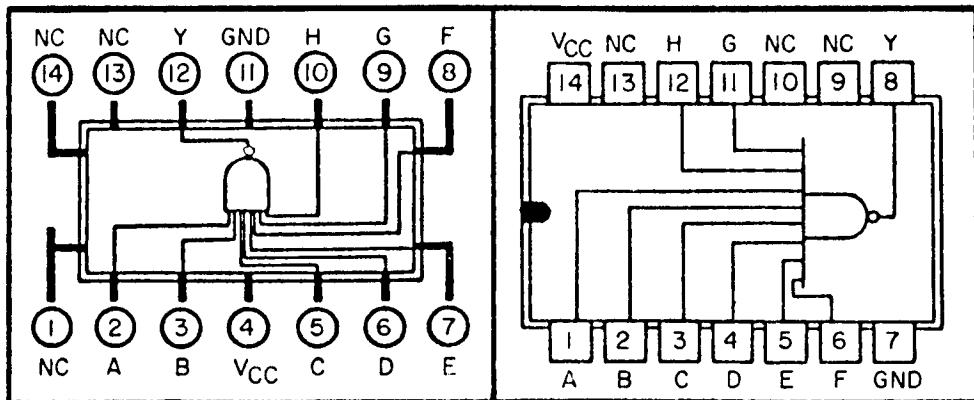
6.1 Notes. The notes specified in MIL-M-38510 are applicable to this specification.

6.2 Intended use. Microcircuits conforming to this specification are intended for original equipment design applications and logistic support of existing equipment.

Device type 01

Case A, B and D

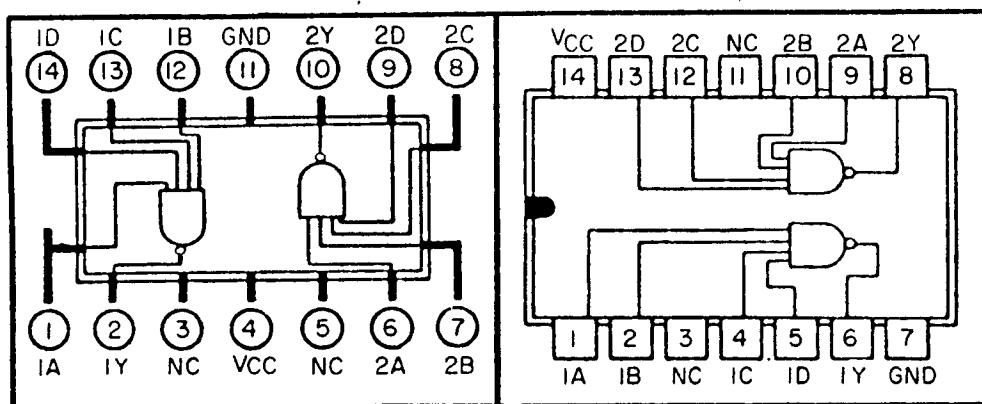
Case C



Device type 02

Case A, B and D

Case C



Device type 03

Case A, B and D

Case C

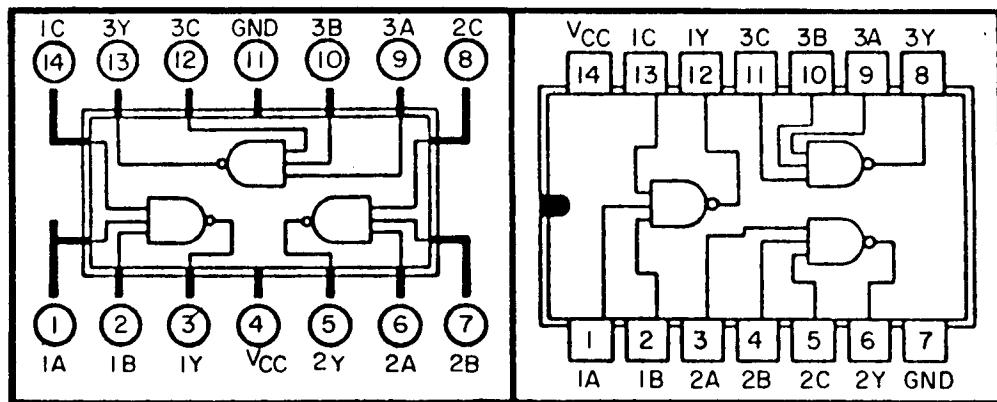
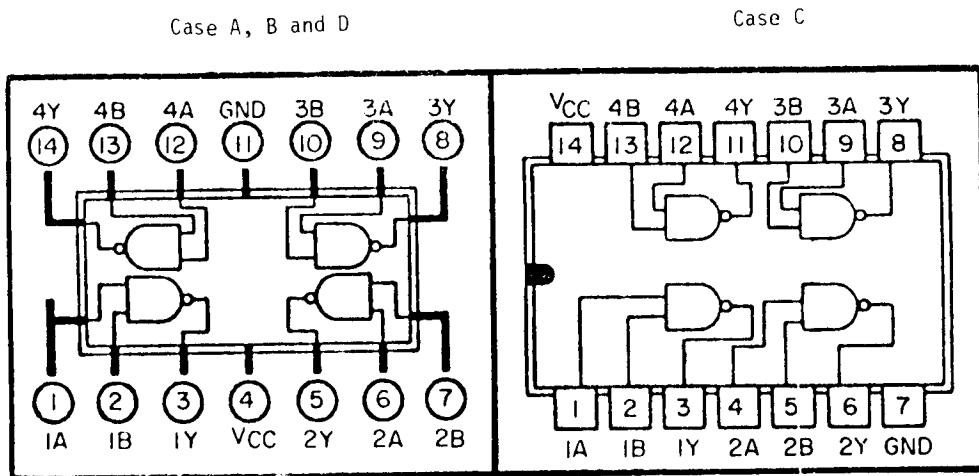


FIGURE 1. Logic diagram and terminal connections (top view).

Device type 04



Device type 05 and 08

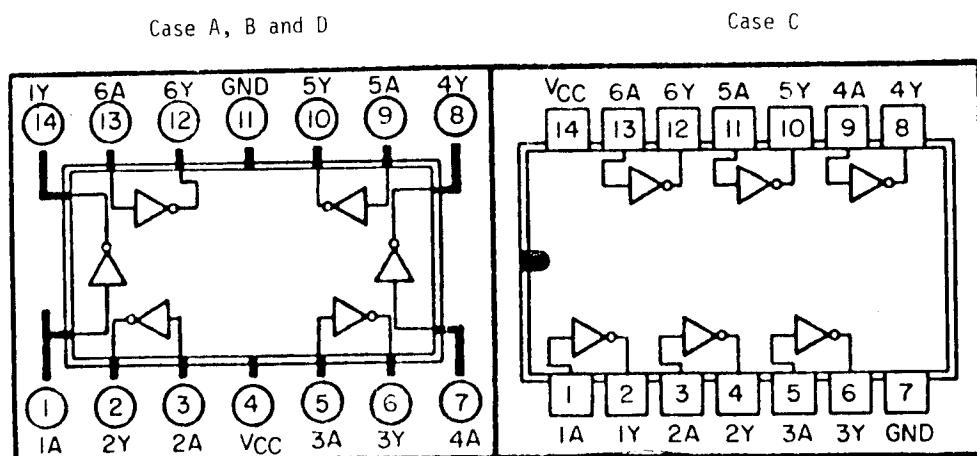
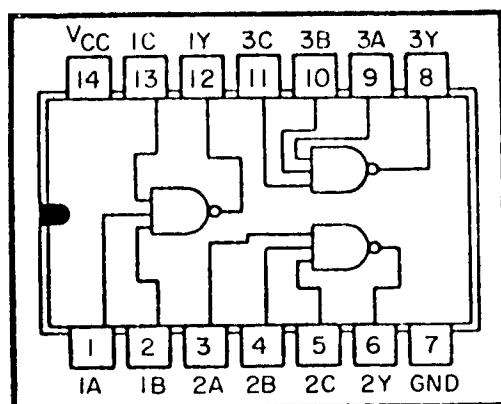


FIGURE 1. Logic diagram and terminal connections (top view) - Continued.

Device type 06

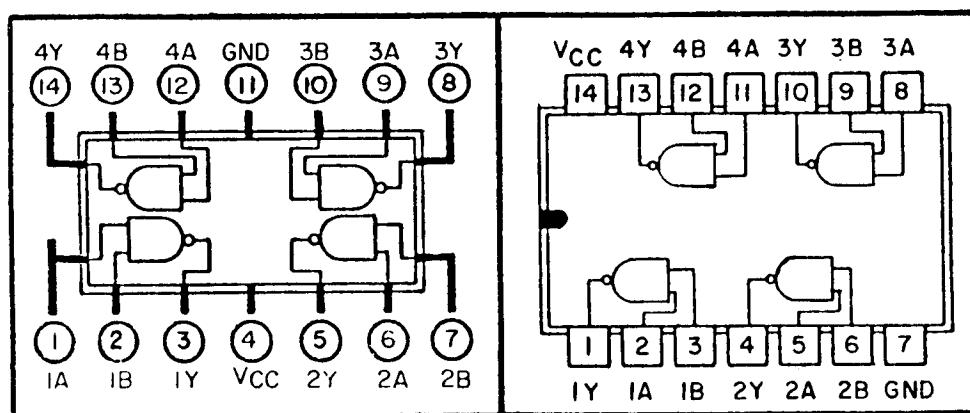
Case A, B, C, and D



Device type 07

Case A, B and D

Case C



Device type 09

Case C

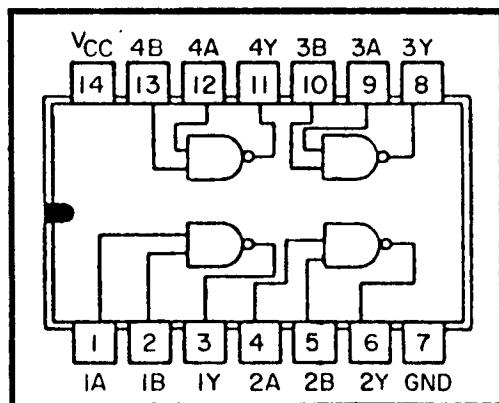


FIGURE 1. Logic diagram and terminal connections (Top Views) - Continued.

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 and 08

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

Positive logic $Y = \overline{A}$

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 03 and 06

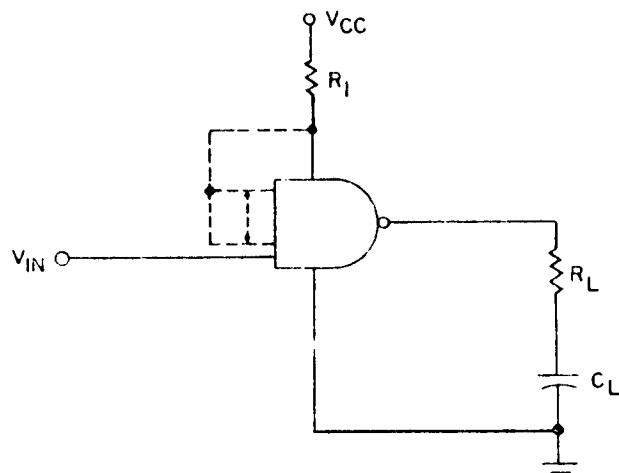
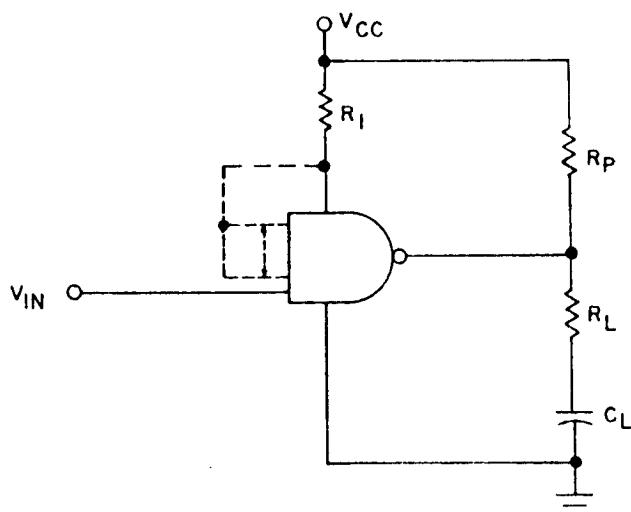
Truth table			
Input		Output	
A	B	C	Y
L	L	L	H
H	L	L	H
L	H	L	H
H	H	L	H
L	L	H	H
H	L	H	H
L	H	H	H
H	H	H	L

Positive logic $Y = \overline{ABC}$

Device type 04, 07 and 09

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.

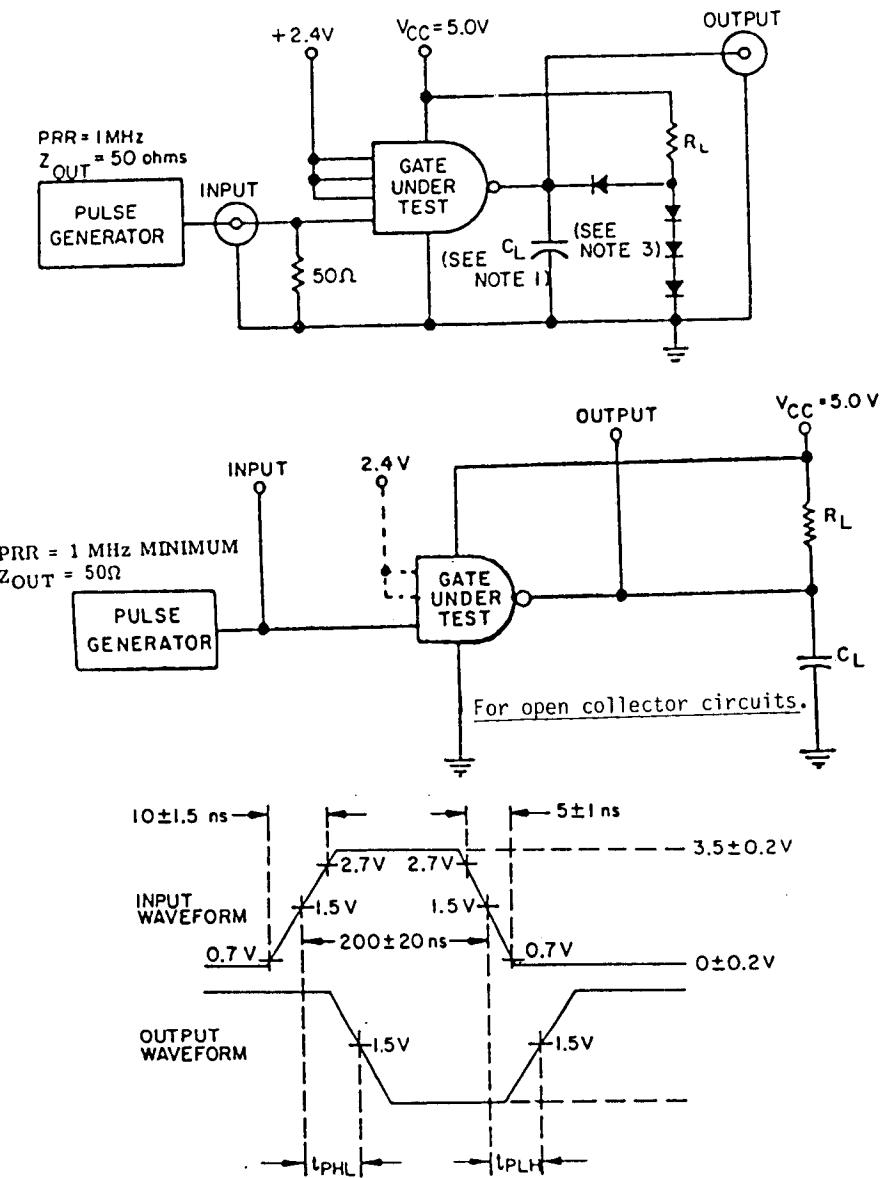
CIRCUIT ACIRCUIT B

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_I are such that the minimum voltage at the device terminals is 5 volts.
3. If parallel excitation is used, the clock frequency shall be 100 KHz with V_{IN} = 3 volts minimum and minimum duty cycle of 50%.
4. R_L = 120Ω ±5%; C_L = .05 μF ±10%; R_P = 300Ω ±5%.
5. Circuit A shall be used for device types 01, 02, 03, 04, and 05. Circuit B shall be used for device types 06, 07, 08, and 09.

FIGURE 3. Burn-in and life test circuits.

Test circuit except for open collector circuits.



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.
4. $R_L = 390\text{ ohms} \pm 5\%$.

FIGURE 4. Switching time test circuit and waveforms.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D		Case C		Test No.		VCC		V		F		G		H		GND		Y		NC		NC		Measured terminal		Test limits		Unit
			1	2	3	4	5	6	7	8	9	10	11	12	7	8	9	10	11	12	13	14	9	10	11	12	13	14	Min	Max	
$T_C = 25^\circ\text{C}$	VOL	3007	1	2.0 v	2.0 v	4.5 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	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	0.4	v	
	VOH	3006	2	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	0.8 v	5.5 v	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		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	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		4																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		5																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		6																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		7																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	VOH		8																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	LOS	3011	9																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	IH1	3010	10																	16 mA	- .4 mA	Y	Y	Y	Y	Y	Y	2.4	2.4	v	
	IH1		11																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		12																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		13																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		14																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		15																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		16																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		17																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH1		18																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		19																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		20																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		21																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		22																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		23																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		24																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		25																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IH2		26																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL	3009	27																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		28																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		29																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		30																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		31																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		32																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		33																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA
	IL		34																	16 mA	- .4 mA	A	B	C	D	E	F	G	H	40	μA

TABLE III. Group A inspection for device type 01 - Continued.
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883	Case A, B, D		Case C		Test No.		VCC		VCC		GND		GND		GND		GND		Measured		Test limits				
			1	2	1	2	14	3	4	5	6	7	8	9	10	11	12	7	8	9	10	NC	Terminal NC	Min	Max	Unit	
1	ICCL	3005	35				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	VCC	1.65	mA			
	ICCH	3005	36				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VCC	VCC	-1.5	v			
	VIC		37				-12 mA	4.5 v													A	B	-1.5	v			
	VIC		38					-12 mA													C	D	-1.5	v			
	VIC		39						-12 mA												E	F	-1.5	v			
	VIC		40							-12 mA											G	H	-1.5	v			
	VIC		41								-12 mA													-1.5	v		
	VIC		42									-12 mA													-1.5	v	
	VIC		43										-12 mA													-1.5	v
	VIC		44											-12 mA												-1.5	v
2	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ\text{C}$ and VIC tests are omitted.																										
3	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = -55^\circ\text{C}$ and VIC tests are omitted.																										
9	tPHL	3003	45				in	2.4 v	5.0 v	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	A to Y	3	20	ns								
$T_C = 25^\circ\text{C}$	tPLH	(Fig. 4)	46																			A to Y	3	25	ns		
10	tPHL	3003	47				in	2.4 v	5.0 v	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	2.4 v	A to Y	3	24	ns								
$T_C = 125^\circ\text{C}$	tPLH	(Fig. 4)	48																		A to Y	3	27	ns			
11	Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.																										

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

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Test limits	Min	Max	Unit		
			Case C	Test No.	1A	1Y	NC	V _{C/C}	NC	2A	2B	2C	2D	2Y	GND	1B	1C	1D	4	5				
T _C =25°C	V _{OOL}	3007	1	2.0 v	16 mA		4.5 v		5.5 v	GND	2.0 v	1Y	0.4 v	v										
	V _{OOL}	3006	2	5.5 v				0.8 v	-4 mA	5.5 v	GND	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2Y	0.4 v	v					
	V _{OHH}	4	5.5 v	-4 mA				5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	1Y	2.4 v	v	
	V _{OHH}	5	5.5 v	-4 mA				5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	1Y	2.4 v	v
	V _{OHH}	6	5.5 v	-4 mA				5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	1Y	2.4 v	v
	V _{OHH}	7	5.5 v					0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	-4 mA	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2Y	2.4 v	v	
	V _{OHH}	8	5.5 v					5.5 v	0.8 v	5.5 v	-4 mA	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2Y	2.4 v	v					
	V _{OHH}	9	5.5 v					5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	-4 mA	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2Y	2.4 v	v	
	V _{OHH}	10	5.5 v					5.5 v	5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	-4 mA	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	2Y	2.4 v	v	
	I _{SOS}	3011	11	GND					5.5 v					GND	GND	GND	GND	GND	GND	1Y	-20	-65	mA	
	I _{SOS}	12												GND	GND	GND	GND	GND	GND	2Y	-20	-65	mA	
	I _{HH1}	3010	13	2.4 v										GND	GND	GND	GND	GND	GND	1A		40	μA	
	I _{HH1}	14		GND										2.4 v	GND	GND	GND	GND	GND	1B		40	μA	
	I _{HH1}	15												2.4 v	GND	GND	GND	GND	GND	1C		40	μA	
	I _{HH1}	16												2.4 v	GND	GND	GND	GND	GND	1D		40	μA	
	I _{HH1}	17												2.4 v	GND	GND	GND	GND	GND	2A		40	μA	
	I _{HH1}	18												2.4 v	GND	GND	GND	GND	GND	2B		40	μA	
	I _{HH1}	19												2.4 v	GND	GND	GND	GND	GND	2C		40	μA	
	I _{HH1}	20												2.4 v	GND	GND	GND	GND	GND	2D		40	μA	
	I _{HH2}		21	5.5 v										GND						1A		100	μA	
	I _{HH2}		22		GND									5.5 v	GND					1B		100	μA	
	I _{HH2}		23											5.5 v	GND					1C		100	μA	
	I _{HH2}		24											5.5 v	GND					1D		100	μA	
	I _{HH2}		25											5.5 v	GND					2A		100	μA	
	I _{HH2}		26											5.5 v	GND					2B		100	μA	
	I _{HH2}		27											5.5 v	GND					2C		100	μA	
	I _{HH2}		28											5.5 v	GND					2D		100	μA	

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

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D												Case C												Test limits									
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	5	Measured terminal	Min	Max	Unit	1A	6	3	14	11	9	10	11	12	13	14	5	1D		
$T_C = 25^\circ\text{C}$	IIL	3009	29	0.4 v	5.5 v	GND	5.5 v	5.5 v	5.5 v	5.5 v	1A	-0.7	-1.6 mA																							
		30	31															0.4 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	5.5 v	5.5 v			
		32																	0.4 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	5.5 v	5.5 v		
		33																	0.4 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	5.5 v	5.5 v		
		34																	0.4 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	5.5 v	5.5 v		
		35																	0.4 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	5.5 v	5.5 v		
		36																	0.4 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	5.5 v	5.5 v		
		37																	0.4 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	5.5 v	5.5 v		
		38																	0.4 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	5.5 v	5.5 v		
		39																	0.4 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	5.5 v	5.5 v		
$T_C = 125^\circ\text{C}$	VIC	40																																		
	VIC	41																																		
	VIC	42																																		
	VIC	43																																		
	VIC	44																																		
	VIC	45																																		
	VIC	46																																		

2 Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ\text{C}$ and VIC tests are omitted.

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

$T_C = 25^\circ\text{C}$	t_{PHL}	3003	47	in	out	5.0 v		in	2.4 v	2.4 v	2.4 v	out		GND	2.4 v	2.4 v	2.4 v	2.4 v	1A to 1Y	3	20 ns
	t_{PLH}	(Fig. 4)	48	in	out			in	2.4 v	2.4 v	2.4 v	out			2.4 v	2.4 v	2.4 v	2.4 v	1A to 2Y	3	20 ns
$T_C = 125^\circ\text{C}$	t_{PHL}	3003	51	in	out	5.0 v		in	2.4 v	2.4 v	2.4 v	out		GND	2.4 v	2.4 v	2.4 v	2.4 v	1A to 1Y	3	24 ns
	t_{PLH}	(Fig. 4)	52	in	out			in	2.4 v	2.4 v	2.4 v	out			2.4 v	2.4 v	2.4 v	2.4 v	1A to 2Y	3	24 ns
$T_C = 125^\circ\text{C}$	t_{PHL}	3003	53	in	out			in	2.4 v	2.4 v	2.4 v	out			2.4 v	2.4 v	2.4 v	2.4 v	1A to 1Y	3	27 ns
	t_{PLH}	(Fig. 4)	54	in	out			in	2.4 v	2.4 v	2.4 v	out			2.4 v	2.4 v	2.4 v	2.4 v	1A to 2Y	3	27 ns

11 Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Test limits	
			Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13			Unit
$T_C = 25^\circ\text{C}$	VOL	3007	1	2.0 v	2.0 v	16 mA	4.5 v	5.5 v	5.5 v	5.5 v	5.5 v	GND	5.5 v	2.0 v	5.5 v	5.5 v	5.5 v	5.5 v	0.4 v	
	VOL	3006	2	5.5 v	5.5 v	16 mA	4.5 v	2.0 v	2.0 v	5.5 v	5.5 v	GND	5.5 v	2.0 v	5.5 v	5.5 v	5.5 v	5.5 v	0.4 v	
	VOL	3006	3	5.5 v	5.5 v	16 mA	4.5 v	5.5 v	5.5 v	5.5 v	5.5 v	GND	5.5 v	2.0 v	5.5 v	5.5 v	5.5 v	5.5 v	0.4 v	
	VOH	5	0.8 v	5.5 v	-4 mA	4.5 v	5.5 v	GND	5.5 v	2.4 v										
	VOH	6	5.5 v	0.8 v	-4 mA	4.5 v	5.5 v	GND	5.5 v	2.4 v										
	VOH	7	5.5 v	5.5 v	-4 mA	4.5 v	5.5 v	GND	5.5 v	2.4 v										
	VOH	8																		v
	VOH	9																		v
	VOH	10																		v
	VOH	11																		v
$T_C = 25^\circ\text{C}$	VOH	12																		v
	IOS	13	GND	GND	5.5 v	GND	5.5 v	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	2.4 v	
	IOS	14																		v
	IOS	15																		v
	IH1	16	2.4 v	GND	2.4 v	GND	5.5 v	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	2.4 v	
	IH1	17																		v
	IH1	18																		v
	IH1	19																		v
	IH1	20																		v
	IH1	21																		v
$T_C = 25^\circ\text{C}$	IH1	22																		v
	IH1	23																		v
	IH1	24																		v
	IH2	25	5.5 v	GND	5.5 v	GND	5.5 v	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	5.5 v	
	IH2	26																		v
	IH2	27																		v
	IH2	28																		v
	IH2	29																		v
	IH2	30																		v
	IH2	31																		v
$T_C = 25^\circ\text{C}$	IH2	32																		v
	IH2	33																		v

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

Subgroup	Symbol	MIL-STD-883 method	Measured												Test limits							
			Case A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	terminal	Min.	Max.	Unit	
1 $T_C = 25^\circ C$	I_{IL}	3009	1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	1A	-0.7	-1.6	mA		
		34	0.4 v 5.5 v	0.4 v 5.5 v	0.4 v 5.5 v	5.5 v	GND	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v								
		35																0.4 v	0.4 v	0.4 v	0.4 v	
		36																5.5 v	5.5 v	5.5 v	5.5 v	
		37																0.4 v	0.4 v	0.4 v	0.4 v	
		38																5.5 v	5.5 v	5.5 v	5.5 v	
		39																0.4 v	0.4 v	0.4 v	0.4 v	
		40																5.5 v	5.5 v	5.5 v	5.5 v	
		41																0.4 v	0.4 v	0.4 v	0.4 v	
		42																5.5 v	5.5 v	5.5 v	5.5 v	
		43																GND	GND	GND	GND	
	I_{CCH}	3005	44															VCC	VCC	VCC	4.95 mA	
	I_{CCI}	3005	45																	5.5 v	5.5 v	5.5 mA
	V_{IC}	46																				-1.5 V
		47																				-12 mA
		48																				1A
		49																				1B
		50																				1C
		51																				2A
		52																				2B
		53																				2C
2																						
3																						
9 $T_C = 25^\circ C$	t_{PHL}	3003 (Fig. 4)	54															GND	2.4 v	1A to 1Y	3	20 ns
	t_{PHL}	55																	2A to 2Y	3	20 ns	
	t_{PHL}	56																	3A to 3Y	3	20 ns	
	t_{PLH}	57																				
	t_{PLH}	58																				
	t_{PLH}	59																				
	t_{PLH}	60																				
10 $T_C = 125^\circ C$	t_{PHL}	3003 (Fig. 4)	61															OUT	2.4 v	1A to 1Y	3	25 ns
	t_{PHL}	62																	2A to 2Y	3	25 ns	
	t_{PLH}	63																	3A to 3Y	3	25 ns	
	t_{PLH}	64																	2A to 2Y	3	24 ns	
	t_{PLH}	65																	3A to 3Y	3	24 ns	
11																						

Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ C$ and V_{IC} tests are omitted.

Same tests, terminal conditions and limits as for subgroup 1, except $T_C = -55^\circ C$ and V_{IC} tests are omitted.

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

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Test limits		
			Case C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Min Max Unit	
1		Test No.	1A	1B	1Y	VCC	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	1Y 2Y 3Y 4Y	0.4 V 0.4 V 0.4 V 0.4 V		
T _C =25°C		3007	1	2.0 v	2.0 v	16 mA	4.5 v	16 mA	2.0 v	2.0 v	5.5 v	5.5 v	GND	5.5 v	5.5 v	5.5 v	1Y 2Y 3Y 4Y	0.4 V 0.4 V 0.4 V 0.4 V		
	V _{OL}		2	5.5 v	5.5 v						5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OL}		3								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OL}		4								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		5	0.8 v	5.5 v	-.4 mA					5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		6	5.5 v	5.5 v						5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		7								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		8								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		9								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		10								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		11								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	V _{OH}		12								5.5 v	5.5 v		5.5 v	5.5 v	5.5 v				
	I _{OS}		13								5.5 v			5.5 v	5.5 v	5.5 v				
	I _{OS}		14									GND		GND	GND	GND	1Y 2Y 3Y 4Y	0.4 V 0.4 V 0.4 V 0.4 V		
	I _{OS}		15										GND	GND	GND	GND		1Y 2Y 3Y 4Y	-20 mA -20 mA -20 mA -20 mA	
	I _{OS}		16										GND	GND	GND	GND		1A 1B 2A 2B 3A 3B 4A 4B	-55 mA -55 mA -55 mA -55 mA -55 mA -55 mA -55 mA -55 mA	
	I _{H1}		17	2.4 v	GND								GND	GND	GND	GND		1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		18		2.4 v	GND							GND	2.4 v	GND			1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		19											2.4 v	GND			1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		20												2.4 v	GND		1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		21												2.4 v	GND		1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		22													2.4 v	GND	1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		23													2.4 v	GND	1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H1}		24													2.4 v	GND	1A 1B 2A 2B 3A 3B 4A 4B	40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA 40 μA	
	I _{H2}		25	5.5 v	GND	5.5 v											GND	1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		26		5.5 v	GND	5.5 v											1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		27															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		28															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		29															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		30															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		31															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _{H2}		32															1A 1B 2A 2B 3A 3B 4A 4B	100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA 100 μA	
	I _L		33	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	1A 1B 2A 2B 3A 3B 4A 4B	-0.7 mA -0.7 mA -0.7 mA -0.7 mA -0.7 mA -0.7 mA -0.7 mA -0.7 mA	
	I _L		34	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA
	I _L		35															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	
	I _L		36															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	
	I _L		37															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	
	I _L		38															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	
	I _L		39															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	
	I _L		40															1A 1B 2A 2B 3A 3B 4A 4B	-1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA -1.6 mA	

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				Case C				Test No.				Measured limits					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	terminal	Min	Max	Unit
1 $T_C = 25^\circ\text{C}$	ICCH	3005	41	GND	GND	5.5 v	5.5 v	GND	GND	5.5 v	5.5 v	GND	GND	GND	VCC	VCC	6.6 mA			
	ICCL	3005	42	5.5 v	5.5 v	5.5 v	5.5 v	VCC	VCC	20 mA	-1.5 V									
	VIC		43	-12 mA	-12 mA	-12 mA	-12 mA	1A	1B	2A	2B									
			44	45	46	47	48	49	50								3A	3B		
																	4A	4B		
2	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ\text{C}$ and VIC tests are omitted.																			
3 $T_C = 25^\circ\text{C}$	tPHL	3003 (Fig. 4)	51	in	2.4 v	out	5.0 v	out	5.0 v	out	2.4 v	out	in	2.4 v	GND		1A to 1Y	3	20 ns	
	tPLH		52														2A to 2Y	3	20 ns	
			53														3A to 3Y	3	20 ns	
			54														4A to 4Y	3	20 ns	
			55	in	2.4 v	out											1A to 1Y	3	25 ns	
			56														2A to 2Y	3	25 ns	
			57														3A to 3Y	3	25 ns	
			58														4A to 4Y	3	25 ns	
4 $T_C = 125^\circ\text{C}$	tPHL	3003 (Fig. 4)	59	in	2.4 v	out	5.0 v	out	5.0 v	out	2.4 v	out	in	2.4 v	GND		1A to 1Y	3	24 ns	
	tPLH		60														2A to 2Y	3	24 ns	
			61														3A to 3Y	3	24 ns	
			62														4A to 4Y	3	24 ns	
			63	in	2.4 v	out											1A to 1Y	3	27 ns	
			64														2A to 2Y	3	27 ns	
			65														3A to 3Y	3	27 ns	
			66														4A to 4Y	3	27 ns	

11 Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.

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		Case C		Test No.		1		2		3		4		5		6		7		8		9		10		11		12		13		14		Measured terminal		Test limits	
			1A	2Y	1A	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	6Y	6A	1Y	7	10	8	9	11	10	12	13	11	12	13	14	Min	Max	Unit								
$T_C = 25^\circ\text{C}$	VOL	3007	1	2.0 v	5.5 v	16 mA	2.0 v	5.5 v	4.5 v	5.5 v	16 mA	2.0 v	5.5 v	5.5 v	5.5 v	16 mA	5.5 v	16 mA	5.5 v	16 mA	1Y	2Y	0.4 V																	
	VOL		2	5.5 v																																				
	VOL		3																																					
	VOL		4																																					
	VOL		5																																					
	VOL		6																																					
	VOH	3006	7	0.8 v	5.5 v	-4 mA	0.8 v	5.5 v	5.5 v	0.8 v	5.5 v	-4 mA	0.8 v	GND	1Y	2Y	0.4 V																							
	VOH		8																																					
	VOH		9																																					
	VOH		10																																					
$T_C = 25^\circ\text{C}$	VOH		11																																					
	VOH		12																																					
	IOS	3011	13	GND																																				
	IOS		14																																					
	IOS		15																																					
	IOS		16																																					
	IOS		17																																					
	IOS		18																																					
	IH1	3010	19	2.4 v	GND																																			
	IH1		20																																					
$T_C = 25^\circ\text{C}$	IH1		21																																					
	IH1		22																																					
	IH1		23																																					
	IH1		24																																					
	IH2		25	5.5 v	GND																																			
	IH2		26																																					
	IH2		27																																					
	IH2		28																																					
	IH2		29																																					
	IH2		30																																					
$T_C = 25^\circ\text{C}$	IL	3009	31	0.4 v	5.5 v																																			
	IL		32																																					
	IL		33																																					
	IL		34																																					
	IL		35																																					
	IL		36																																					

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												Test limits					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured	Terminal Min.	Max.	Unit
1	<u>I_{CCL}</u> <u>I_{CCH}</u> V _{IC}	3005 3005	1A 2Y GND	4 3 GND	1A 2A GND	3A 3Y 5.5 v 5.5 v 4.5 v	14 4A 5.5 v 5.5 v 4.5 v	5 6 5A GND	7 9 5A GND	8 8 5.5 v 5.5 v	9 11 6A GND	10 10 7 6A	11 12 12 6A	13 13 12 6A	14 14 13 13	2	Measured	Terminal Min.	Max.	Unit
T _C = 25°C																V _{CC}	30 mA			
																V _{CC}	9.9 mA			
																1A	-1.5 V			
																2A				
																3A				
																4A				
																5A				
																6A				
2																				
3																				
T _C = 25°C	t _{PHL}	3003 (Fig. 4)	45 46 47 48 49 50	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	5.0 v 5.0 v 5.0 v 5.0 v 5.0 v 5.0 v	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	GND	OUT	1A to 1Y 2A to 2Y 3A to 3Y 4A to 4Y 5A to 5Y 6A to 6Y	3	20 ns		
	t _{PLH}		51 52 53 54 55 56	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	5.0 v 5.0 v 5.0 v 5.0 v 5.0 v 5.0 v	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	GND	OUT	1A to 1Y 2A to 2Y 3A to 3Y 4A to 4Y 5A to 5Y 6A to 6Y	3	25 ns		
T _C = 125°C	t _{PHL} t _{PLH}	3003 (Fig. 4)	57 58 59 60 61 62	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	5.0 v 5.0 v 5.0 v 5.0 v 5.0 v 5.0 v	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	GND	OUT	1A to 1Y 2A to 2Y 3A to 3Y 4A to 4Y 5A to 5Y 6A to 6Y	3	24 ns		
	t _{PHL} t _{PLH}		63 64 65 66 67 68	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	5.0 v 5.0 v 5.0 v 5.0 v 5.0 v 5.0 v	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	IN IN IN IN IN IN	OUT OUT OUT OUT OUT OUT	GND	OUT	1A to 1Y 2A to 2Y 3A to 3Y 4A to 4Y 5A to 5Y 6A to 6Y	3	24 ns		
11																				

Same tests, terminal conditions and limits as for subgroup 10, except T_C = -55°C.

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

Subgroup	Symbol	MIL-STD-883 Cases A, B, C, and D	Test No.	Measured terminal												Test limits				
				1A	1B	1Y	VCC	2Y	2A	2B	2C	3A	3B	3C	3Y	1C	Min	Max	Unit	
$T_C = 25^\circ\text{C}$	V_{OL}	3007	1	2.0 v	16 mA	4.5 v	5.5 v	12.0 v	16 mA	0.4 v	0.4 v	μA								
	V_{OL}	3007	2	5.5 v	16 mA	5.5 v	2.0 v	2.0 v	5.5 v	12.0 v	16 mA	0.4 v	0.4 v	μA						
	V_{OL}	3007	3	5.5 v	16 mA	5.5 v	12.0 v	16 mA	0.4 v	0.4 v	μA									
	ICEX		4	0.8 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	250 μA	250 μA	
			5	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	250 μA	250 μA										
			6	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	250 μA	250 μA	
			7															250 μA		
			8															250 μA		
			9															250 μA		
			10															250 μA		
			11															250 μA		
			12															250 μA		
	VIC		13	-12 mA													1A	-1.5 v	μA	
			14	-12 mA													1B	-1.5 v	μA	
			15	-12 mA													1C	-1.5 v	μA	
			16														2A	-1.5 v	μA	
			17														2B	-1.5 v	μA	
			18														2C	-1.5 v	μA	
			19														3A	-1.5 v	μA	
			20														3B	-1.5 v	μA	
			21														3C	-1.5 v	μA	
	I1H1	3010	22	2.4 v	GND	5.5 v	GND	GND	1A	40 μA										
			23	GND	2.4 v	GND											1B	40 μA		
			24														1C	40 μA		
			25														2A	40 μA		
			26														2B	40 μA		
			27														2C	40 μA		
			28														3A	40 μA		
			29														3B	40 μA		
			30														3C	40 μA		
	I1H2	3010	31	5.5 v	GND	5.5 v	GND	GND	1A	100 μA										
			32	GND	5.5 v	GND											1B	100 μA		
			33														1C	100 μA		
			34														2A	100 μA		
			35														2B	100 μA		
			36														2C	100 μA		

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

Subgroup	Symbol	MIL-STD-883C method	Cases A, B, C, and D	Test No.	1A	1B	1Y	V _{CC}	2Y	2A	2B	3A	3B	GND	3Y	IC terminal	Measured		Test limits			
																	Min	Max	Min	Max		
$T_C = 25^\circ\text{C}$	I _{IL}	3010	37	GND	GND	GND	5.5 v			GND	GND	GND	GND	GND	GND	3A	100 μA	100 μA	100 μA			
	I _{IL}	3010	38	GND	GND	GND				GND	GND	GND	GND	GND	GND	3B	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA		
	I _{IL}	3010	39	GND	GND	GND				GND	GND	GND	GND	GND	GND	3C	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA		
	I _{CL}	3009	40	0.4 v	5.5 v	5.5 v				5.5 v	1A	-0.7 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	41	5.5 v	0.4 v	5.5 v				5.5 v	1B	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	42		5.5 v	0.4 v				5.5 v	1C	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	43			5.5 v				0.4 v	2A	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	44							5.5 v	2B	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	45							0.4 v	2C	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
	I _{CL}	3009	46							5.5 v	3A	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA							
2	I _{CCH}	3005	49													3B	-1.6 mA	-1.6 mA	-1.6 mA	-1.6 mA		
	I _{CCH}	3005	50	GND	GND	GND				GND	GND	GND	GND	GND	GND	V _{CC}	15 mA	15 mA	15 mA	15 mA		
$T_C = 125^\circ\text{C}$	t _{PHL}	3003	51	IN	2.4 v	OUT	5.0 v			IN	2.4 v	2.4 v	IN	2.4 v	2.4 v	GND	V _{CC}	4.95 mA	4.95 mA	4.95 mA		
	t _{PHL}	(Fig 4)	52							OUT							2A to 1Y	3 ns	23 ns	23 ns	23 ns	
	t _{PHL}	3003	53	IN	2.4 v	OUT				IN	2.4 v	2.4 v	IN	2.4 v	2.4 v	GND	V _{CC}	2A to 2Y	23 ns	23 ns	23 ns	23 ns
	t _{PLH}	3003	54	IN	2.4 v	OUT				OUT							3A to 3Y	28 ns	28 ns	28 ns	28 ns	
	t _{PLH}	3003	55							IN	2.4 v	2.4 v	IN	2.4 v	2.4 v	GND	V _{CC}	2A to 1Y	28 ns	28 ns	28 ns	28 ns
	t _{PLH}	3003	56														2A to 2Y	28 ns	28 ns	28 ns	28 ns	
	t _{PLH}	3003	57	IN	2.4 v	OUT				OUT							3A to 3Y	28 ns	28 ns	28 ns	28 ns	
	t _{PLH}	(Fig 4)	58							IN	2.4 v	2.4 v	IN	2.4 v	2.4 v	GND	V _{CC}	2A to 1Y	29 ns	29 ns	29 ns	29 ns
	t _{PLH}	3003	59	IN	2.4 v	OUT				OUT							3A to 2Y	35 ns	35 ns	35 ns	35 ns	
	t _{PLH}	3003	60							IN	2.4 v	2.4 v	IN	2.4 v	2.4 v	GND	V _{CC}	1A to 1Y	35 ns	35 ns	35 ns	35 ns
11	t _{PLH}	3003	61							OUT							2A to 2Y	35 ns	35 ns	35 ns	35 ns	
	t _{PLH}	3003	62														3A to 3Y	35 ns	35 ns	35 ns	35 ns	

2 Same tests, terminal conditions and limits as for subgroup 1, except $T_C = -55^\circ\text{C}$ and V_{IC} tests are omitted.

3 Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ\text{C}$ and V_{IC} tests are omitted.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated are open).

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D		Case C		Test No.		Measured		Test limits			
			1	2	3	4	5	6	7	8	9	10	11	12
$T_C = 25^\circ\text{C}$	V_{OL}	3007	1	2.0 v	16 mA	4.5 v	2Y	2A	2B	3Y	3A	GND	4A	4B
	I_{CEX}		2	5.5 v	5.5 v	5.5 v								
			3	5.5 v	5.5 v	5.5 v								
			4	5.5 v	5.5 v	5.5 v								
			5	0.8 v	4.5 v	5.5 v								
			6	4.5 v	0.8 v	5.5 v								
			7	5.5 v	5.5 v									
			8											
			9											
			10											
			11											
			12											
	I_{IH1}	3010	13	2.4 v	GND	5.5 v								
			14	GND	2.4 v	GND								
			15											
			16											
			17											
			18											
			19											
			20											
	I_{IH2}	3010	21	5.5 v	GND	5.5 v								
			22	GND										
			23											
			24											
			25											
			26											
			27											
			28											
	I_{IL}	3009	29	0.4 v	5.5 v									
			30	5.5 v	0.4 v	5.5 v								
			31											
			32											
			33											
			34											
			35											
			36											

TABLE III. Group A inspection for device type 07. -Continued
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D												Measured											
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Max	Unit		
1 $T_C = 25^\circ C$	I _{CCL} I _{CCH}	3005 3005	37	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	V _{CC}	20	mA		
	V _{IC}		39	-12 mA	GND	4.5 v																	V _{CC}	6.6	mA	
			40	-12 mA	-12 mA																	1A	-1.5	v		
			41																			1B	-1.5	v		
			42																			2A	-1.5	v		
			43																			2B	-1.5	v		
			44																			3A	-1.5	v		
			45																			3B	-1.5	v		
			46																			4A	-1.5	v		
																						4B	-1.5	v		
2																										
3																										
9 $T_C = 25^\circ C$	t _{PHL} (Fig. 4)	3003	47	IN	2.4 v	OUT	5.0 v	OUT	IN	2.4 v	OUT	IN	2.4 v	OUT	IN	2.4 v	OUT	IN	2.4 v	OUT	IN	2.4 v	OUT	1A to 1Y	3	ns
			48																					2A to 2Y		ns
			49																					3A to 3Y		ns
			50																					4A to 4Y		ns
			51	IN	2.4 v	OUT			OUT	IN	2.4 v	OUT														
			52																							
			53																							
			54																							
10 $T_C = 125^\circ C$	t _{PHL} (Fig. 4)	3003	55	IN	2.4 v	OUT			OUT	IN	2.4 v	OUT														
			56																							
			57																							
			58																							
			59	IN	2.4 v	OUT			OUT	IN	2.4 v	OUT														
			60																							
			61																							
			62																							
11																										

Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ C$.

TABLE III. Group A inspection for device type 08.

Subgroup	Symbol	MIL-STD-883 method	Terminal conditions (pins not designated are open)												Test limits					
			Case A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Min	Max
$T_C = 25^\circ C$	V _{OL}	3007	1	2.0 v	5.5 v	4.5 v	5.5 v	16 mA	16 mA	1 Y	0.4 V	0.4 V								
			2	5.5 v	16 mA	2.0 v	5.5 v	2.0 v	16 mA	16 mA	16 mA	2 Y	0.4 V	0.4 V						
			3															3 Y	0.4 V	0.4 V
			4															4 Y	0.4 V	0.4 V
			5															5 Y	0.4 V	0.4 V
			6															6 Y	0.4 V	0.4 V
	I _{CEx}		7	0.8 v	5.5 v	5.5 v	0.8 v	5.5 v	5.5 v	5.5 v	5.5 v	250 μ A								
			8	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	5.5 v	5.5 v	250 μ A
			9															3 Y	250 μ A	250 μ A
			10															4 Y	250 μ A	250 μ A
			11															5 Y	250 μ A	250 μ A
			12															6 Y	250 μ A	250 μ A
	V _{IC}		13	-12 mA														1 A	-1.5 V	-1.5 V
			14															2 A	-1.5 V	-1.5 V
			15															3 A	-1.5 V	-1.5 V
			16															4 A	-1.5 V	-1.5 V
			17															5 A	-1.5 V	-1.5 V
			18															6 A	-1.5 V	-1.5 V
	I _{HI1}		19	2.4 v	GND	5.5 v	GND	GND	2.4 v	GND	2.4 v	GND	1 A	40 μ A						
			20															2 A	40 μ A	40 μ A
			21															3 A	40 μ A	40 μ A
			22															4 A	40 μ A	40 μ A
			23															5 A	40 μ A	40 μ A
			24															6 A	40 μ A	40 μ A
	I _{HI2}		25	5.5 v	GND				5.5 v	GND	5.5 v	GND	5.5 v	GND	5.5 v	GND	5.5 v	GND	1 A	100 μ A
			26															2 A	100 μ A	100 μ A
			27															3 A	100 μ A	100 μ A
			28															4 A	100 μ A	100 μ A
			29															5 A	100 μ A	100 μ A
			30															6 A	100 μ A	100 μ A
	I _{IL}		31	0.4 v	5.5 v	5.5 v	0.4 v	5.5 v	5.5 v	0.4 v	5.5 v	5.5 v	0.4 v	5.5 v	0.4 v	5.5 v	5.5 v	1 A	-0.7 V	1.6 mA
			32															2 A	-1.6 mA	-1.6 mA
			33															3 A	-1.6 mA	-1.6 mA
			34															4 A	-1.6 mA	-1.6 mA
			35															5 A	-1.6 mA	-1.6 mA
			36															6 A	-1.6 mA	-1.6 mA

TABLE III. Group A inspection for device type 08. -Continued
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case A, B, D												Measured		Test limits		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	2	Min	Max
1 $T_C = 25^\circ C$	ICCL ICCH	Test No.	1A	2Y	2A	VCC	3A	3Y	4A	4Y	5A	5Y	GND	6A	1Y	terminal	Min	Max	mA
			37	5.5 v GND	5.5 v GND	5.5 v GND	5.5 v GND			5.5 v GND		5.5 v GND				VCC	30	30	mA
			38												VCC	9.9	9.9	mA	
2	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ C$ and VIC tests are omitted.																		
3	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = -55^\circ C$ and VIC tests are omitted.																		
9 $T_C = 25^\circ C$	tPHL (Fig. 4)	39	IN	OUT	5.0 v	IN	OUT	IN	OUT	IN	OUT	IN	OUT	OUT	OUT	1A to 1Y	3	23	ns
		40														2A to 2Y		ns	
		41														3A to 3Y		ns	
		42														4A to 4Y		ns	
		43														5A to 5Y		ns	
		44														6A to 6Y		ns	
		45																	
		46																	
		47																	
		48																	
		49																	
		50																	
10 $T_C = 125^\circ C$	tPHL	51	IN	OUT	IN	IN	OUT	IN	OUT	IN	OUT	IN	OUT	OUT	OUT	1A to 1Y	29	ns	
		52														2A to 2Y		ns	
		53														3A to 3Y		ns	
		54														4A to 4Y		ns	
		55														5A to 5Y		ns	
		56														6A to 6Y		ns	
		57																	
		58																	
		59																	
		60																	
		61																	
		62																	
11	Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ C$.																		

TABLE III. Group A inspection for device type 09.
Terminal conditions (pins not designated are open)

Subgroup	Symbol	MIL-STD-883 method	Case C		1		2		3		4		5		6		7		8		9		10		11		12		13		14		Measured		Test limits	
			Test No.	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	3B	4Y	4A	4B	V _{CC}	terminal	Min	Max	Unit															
1 $T_C = 25^\circ C$	V_{OL}	3007	1	2.0 v	2.0 v	16 mA	5.5 v	5.5 v	2.0 v	GND	5.5 v	5.5 v	5.5 v	4.5 v	5.5 v	5.5 v	4.5 v	1Y	2Y	3Y	4Y	0.4 v	0.4 v	250 μA	250 μA											
	I_{CEX}		2	5.5 v	5.5 v																															
			3																																	
			4																																	
			5	0.8 v	4.5 v	5.5 v																														
			6	4.5 v	0.8 v	5.5 v																														
			7	5.5 v	5.5 v																															
			8																																	
			9																																	
			10																																	
			11																																	
			12																																	
			13																																	
			14																																	
			15																																	
			16																																	
			17																																	
			18																																	
			19																																	
			20																																	
			21																																	
			22																																	
			23																																	
			24																																	
			25																																	
			26																																	
			27																																	
			28																																	
			29																																	
			30																																	
			31																																	
			32																																	
			33																																	
			34																																	
			35																																	
			36																																	

TABLE III. Group A inspection for device type 09. -Continued

Subgroup	Symbol	ML-STD-883 method	Case C	Terminal conditions (pins not designated are open)												Measured terminal	Test limits
				1	2	3	4	5	6	7	8	9	10	11	12		
1 $T_C = 25^\circ C$	I_{IL}	3009	37	0.4 v 5.5 v	5.5 v 0.4 v	5.5 v 5.5 v	5.5 v 0.4 v	5.5 v 5.5 v	5.5 v 0.4 v	5.5 v 5.5 v	5.5 v 0.4 v	5.5 v 5.5 v	5.5 v 0.4 v	5.5 v 5.5 v	5.5 v 0.4 v	1A 1B	-0.7 to 1.6 mA
		38	39													1B	
		40	41													2A	
		42	43													3A	
		44														4A	
																4B	
	$ICCL$	3005	45														20 mA
	$ICCH$	3005	46	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	6.6 mA
2	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = 125^\circ C$, and V_{IC} tests are omitted.																
3	Same tests, terminal conditions and limits as for subgroup 1, except $T_C = -55^\circ C$, and V_{IC} tests are omitted.																
9	t_{PHL} (Fig. 4)	3003	47	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	5.0 v
		48	49													2A to 2Y	
		50	51	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	3A to 3Y	
		52	53													4A to 4Y	
		54	55	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	1A to 1Y	
		56	57													2A to 2Y	
		58	59	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	3A to 3Y	
		60	61													4A to 4Y	
		62														29	
10 $T_C = 125^\circ C$	t_{PLH}	55	56														35
		57	58														
		59	60	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	IN 2.4 v	OUT	1A to 1Y	
		61	62													2A to 2Y	
																3A to 3Y	
																4A to 4Y	
11	Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ C$.																

6.3 Ordering data. The contract or purchase 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 the contracting activity in addition to notification to the qualifying activity, if applicable.
- e. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.
- f. Requirements for product assurance options.
- g. Requirements for special carriers, 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.
- h. Requirements for "JAN" marking.

6.4 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-M-38510, MIL-STD-1331, and as follows:

GND	- - - - -	Electrical ground (common terminal)
V _{IN}	- - - - -	Voltage level at an input terminal
V _{IC}	- - - - -	Input clamp voltage
I _{IN}	- - - - -	Current flowing into an input terminal

6.5 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2) and lead finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.6 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-35810 device types and may have slight physical variations in relation to case size. The presence of this information shall not be deemed as permitting substitution of generic-industry types for MIL-M-35810 types or as a waiver of any of the provisions of MIL-M-38510.

Military device type	Generic-industry type
01	5430
02	5420
03	5410
04	5400
05	5404
06	5412
07	5401
08	5405
09	5403

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

Custodians:

Army - ER
Navy - EC
Air Force - 17

Preparing activity:

Air Force - 17

(Project 5962-0456)

Review activities:

Army - AR, MI
Navy - SH, OS
Air Force - 11, 19, 85, 99
DLA - ES

User activities:

Army - SM
Navy - CG, MC, AS
Air Force - 19

Agent:

DLA - ES

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS: This form is provided to solicit beneficial comments which may improve this document and enhance its use. DoD contractors, government activities, manufacturers, vendors, or other prospective users of the document are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity. A response will be provided to the submitter, when name and address is provided, within 30 days indicating that the 1426 was received and when any appropriate action on it will be completed.

NOTE: This form shall not be used to submit requests for waivers, deviations or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

DOCUMENT IDENTIFIER (Number) AND TITLE MIL-M-38510/1E Microcircuits, Digital, TTL,
NAND GATES, Monolithic Silicon.

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

VENDOR USER MANUFACTURER

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT
USE? IS ANY PART OF IT TOO RIGID, RESTRICTIVE, LOOSE OR AMBIGUOUS? PLEASE EXPLAIN BELOW.

A. GIVE PARAGRAPH NUMBER AND WORDING

B. RECOMMENDED WORDING CHANGE

C. REASON FOR RECOMMENDED CHANGE(S)

2. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

TELEPHONE NO.

DATE

FOLD

RBE-2
Griffiss AFB, NY 13441

POSTAGE AND FEES PAID
DEFENSE LOGISTICS AGENCY
DoD-304



OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

Commander
Rome Air Development Center
ATTN: RBE-2
Griffiss AFB, NY 13441

FOLD
