

MILITARY SPECIFICATION
MICROCIRCUITS, DIGITAL, TTL, LOW POWER DECODERS,
MONOLITHIC SILICON

INACTIVE FOR NEW DESIGN AFTER DATE OF THIS REVISION

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 microcircuits decoders. One product assurance class and a choice of case outlines, and lead finishes are provided for each type and are reflected in the complete part number.

1.2 Part number. The complete part number shall be as specified in MIL-M-38510, with the exception that the "JAN" or "J" certification shall not be used.

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

<u>Device type</u>	<u>Circuit</u>
01	BCD-to-decimal decoder
02	Excess-3-to-decimal decoder
03	Excess-3-gray-to-decimal decoder
04	BCD-to-seven-segment decoder/driver (30-volt, open collector output)
05	BCD-to-seven-segment decoder/driver (15-volt, open collector output)
06	BCD-to-decimal decoder
07	One-of-ten decoder

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>Outline letter</u>	<u>Case outline (see MIL-M-38510, appendix C)</u>
E	D-2 (16-lead, 1/4" x 7/8"), dual-in-line package
F	F-5 (16-lead, 1/4" x 3/8"), flat package

1.3 Absolute maximum ratings.

Supply voltage range - - - - -	-0.5 V dc to +7.0 V dc
Input voltage range:	
Device types 01 through 05 - - - - -	-1.5 V dc at -12 mA to 5.5 V dc
Device type 06 - - - - -	0.0 to 5.5 V dc
Device type 07 - - - - -	-1.5 V dc at -10 mA to 5.5 V dc
Storage temperature range - - - - -	-65°C to +150°C

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.

1.3 Absolute maximum ratings. - Continued

Maximum power dissipation (P_D) ^{1/} :	
Device types 01, 02 and 03 - - - - -	121 mWdc
Device types 04 and 05 - - - - -	237 mWdc
Device type 06 - - - - -	30 mWdc
Device type 07 - - - - -	72 mWdc
Lead temperature (soldering, 10 seconds)- - -	+300°C
Thermal resistance, junction-to-case (θ_{JC}):	
Case E - - - - -	0.08°C/mW
Case F - - - - -	0.15°C/mW
Junction temperature (T_J) - - - - -	+175°C
Maximum current into any output (output off):	
Device types 04 and 05- - - - -	1 mA

1.4 Recommended operating conditions.

Supply voltage (V_{CC}) - - - - -	4.5 V dc minimum to 5.5 V dc maximum
Minimum high-level input voltage (V_{IH}) - - -	2.0 V dc
Maximum low-level input voltage (V_{IL}) - - -	0.8 V dc
Sink-current capability by device type:	
Device types 01, 02, and 03 - - - - -	8 mA
Device types 04 and 05 output a-g - - -	20 mA
BI/RBO mode - - - - -	4 mA
Device type 06- - - - -	2 mA
Device type 07- - - - -	4 mA
Case operating temperature range (T_C) - - -	-55°C 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.

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

TABLE I. Electrical performance characteristics, device types 01, 02, and 03.

Test	Symbol	Conditions	Limits		Units
			Min	Max	
High-level output voltage	V_{OH}	$V_{CC} = 4.5 \text{ V}$, $I_{OH} = -0.4 \text{ mA}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	2.4	---	Volts
Low-level output voltage	V_{OL}	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 8 \text{ mA}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	---	0.4	Volts
Input clamp voltage	V_{IC}	$V_{CC} = 4.5 \text{ V}$, $I_{IN} = -12 \text{ mA}$	---	-1.5	Volts
Low-level input current	I_{IL}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 0.4 \text{ V}$ <u>1/</u>	-0.4	-0.8	mA
High-level input current	I_{IH1}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 2.4 \text{ V}$ <u>2/</u>	---	20	μA
High-level input current	I_{IH2}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 5.5 \text{ V}$ <u>2/</u>	---	100	μA
Short-circuit output current	I_{OS}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 0 \text{ V}$ and 4.5 V <u>3/</u>	-9	-28	mA
Supply current	I_{CC}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 0 \text{ V}$ <u>3/</u>	---	22	mA
Propagation delay time through two logic levels	t_{PHL}	$C_L = 50 \text{ pF}$ minimum $R_L = 800 \Omega \pm 5\%$ (Figure 5)	10	70	ns
Propagation delay time through two logic levels	t_{PLH}		10	70	ns
Propagation delay time through three logic levels	t_{PHL}		10	85	ns
Propagation delay time through three logic levels	t_{PLH}		10	85	ns

1/ All unspecified inputs at 5.5 volts.2/ All unspecified inputs grounded.3/ Not more than one output should be shorted at one time.

TABLE I. Electrical performance characteristics, device types 04 and 05.

Test	Symbol	Conditions	Limits		Units
			Min	Max	
Low-level output voltage <u>4/</u>	V_{OL1}	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 20 \text{ mA}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	---	0.4	Volts
Low-level output voltage <u>5/</u>	V_{OL2}	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 4 \text{ mA}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	---	0.4	Volts
Input clamp voltage	V_{IC}	$V_{CC} = 4.5 \text{ V}$, $I_{IN} = -12 \text{ mA}$	---	-1.5	Volts
High-level output voltage <u>5/</u>	V_{OH}	$V_{CC} = 4.5 \text{ V}$, $I_{OH} = -0.1 \text{ mA}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	2.4	---	Volts
Maximum collector cut-off current <u>4/</u>	I_{CEX}	$V_{CC} = 4.5 \text{ V}$, $V_{OH} = \text{max } \underline{3/}$ $V_{IN} = 0.8 \text{ V}$ and 2.0 V	---	250	μA
Low-level input current <u>6/</u>	I_{IL1}	$V_{CC} = 5.0 \text{ V } \underline{1/}$ $V_{IN} = 0.4 \text{ V}$	-0.4	-0.8	mA
Low-level input current <u>5/</u>	I_{IL2}	$V_{CC} = 5.0 \text{ V } \underline{1/}$ $V_{IN} = 0.4 \text{ V}$	-1.0	-2.1	mA
High-level input current <u>6/</u>	I_{IH1}	$V_{CC} = 5.0 \text{ V } \underline{2/}$ $V_{IH} = 2.4 \text{ V}$	---	20	μA
High-level input current <u>6/</u>	I_{IH2}	$V_{CC} = 5.0 \text{ V } \underline{2/}$ $V_{IN} = 5.5 \text{ V}$	---	100	μA
Short-circuit output current <u>5/</u>	I_{OS}	$V_{CC} = 5.0 \text{ V } \underline{2/}$	---	-4	mA
Supply current	I_{CC}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 5.5 \text{ V}$	---	43	mA
Propagation delay time from any input except RBI to any output	t_{PLH}	$C_L = 50 \text{ pF}$ minimum $R_L = 280 \Omega \pm 5\%$ (Figure 5)	15	250	ns
Propagation delay time from RBI to any output	t_{PLH}		15	250	ns
Propagation delay time from any input except RBI to any output	t_{PHL}		15	250	ns
Propagation delay time from RBI to any output	t_{PHL}		15	250	ns

1/ All unspecified inputs at 5.5 volts.

2/ All unspecified inputs grounded.

3/ Device type 04 maximum $V_{OH} = 30 \text{ V}$.Device type 05 maximum $V_{OH} = 15 \text{ V}$.

4/ Outputs a through g only.

5/ BI/RBU mode only.

6/ Any input except BI/RBU mode.

TABLE I. Electrical performance characteristics, device type 06.

Test	Symbol	Conditions	Limits		Units
			Min	Max	
High-level output voltage	V_{OH}	$V_{CC} = 4.5 \text{ V}$, $I_{OH} = -0.2 \text{ mA}$ $V_{IN} = 2.0 \text{ V}$	2.4	---	Volts
Low-level output voltage	V_{OL}	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 2 \text{ mA}$ $V_{IN} = 0.7 \text{ V}$ and 2.0 V	---	0.3	Volts
Low-level input current	I_{IL}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 0.3 \text{ V}$ 1/	-60	-180	μA
High-level input current	I_{IH1}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 2.4 \text{ V}$ 2/	---	10	μA
High-level input current	I_{IH2}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 5.5 \text{ V}$ 2/	---	100	μA
Short-circuit output current	I_{OS}	$V_{CC} = 5.0 \text{ V}$ 3/	-3	-15	mA
Supply current	I_{CC}	$V_{CC} = 5.0 \text{ V}$, $V_{IN} = 0 \text{ V}$	---	5.3	mA
Propagation delay time through two logic levels	t_{PHL}	$C_L = 50 \text{ pF}$ minimum $R_L = 3.9 \text{ k}\Omega \pm 5\%$ (Figure 5)	30	160	ns
Propagation delay time through two logic levels	t_{PLH}		10	90	ns
Propagation delay time through three logic levels	t_{PHL}		30	160	ns
Propagation delay time through three logic levels	t_{PLH}		10	90	ns

1/ All unspecified inputs at 5.5 volts.

2/ All unspecified inputs grounded.

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

TABLE I. Electrical performance characteristics, device type 07.

Test	Symbol	Conditions	Limits		Units
			Min	Max	
High-level output voltage	V_{OH}	$V_{CC} = 4.5 \text{ V}$, $I_{OH} = -0.4 \text{ mA}$ $V_{IN} = 0.7 \text{ V}$ and 2.0 V	2.4	---	Volts
Low-level output voltage	V_{OL}	$V_{CC} = 4.5 \text{ V}$, $I_{OL} = 4.8 \text{ mA}$ $V_{IN} = 0.7 \text{ V}$ and 2.0 V	---	0.3	Volts
Input clamp voltage	V_{IC}	$V_{CC} = 4.5 \text{ V}$, $I_{IN} = -10 \text{ mA}$	---	-1.5	Volts
Low-level input current	I_{IL}	$V_{CC} = 5.5 \text{ V}$, $V_{IN} = 0.3 \text{ V}$	-176	-400	μA
High-level input current	I_{IH1}	$V_{CC} = 5.5 \text{ V}$, $V_{IN} = 2.4 \text{ V}$	---	20	μA
High-level input current	I_{IH2}	$V_{CC} = 5.5 \text{ V}$, $V_{IN} = 5.5 \text{ V}$	---	100	μA
Short-circuit output current	I_{OS}	$V_{CC} = 5.5 \text{ V}$ 1/	-2.5	-25	mA
Supply current	I_{CC}	$V_{CC} = 5.5 \text{ V}$	---	13	mA
Propagation delay time, high-to-low level	t_{PHL}	$C_L = 50 \text{ pF}$ minimum $R_L = 1.7 \text{ k}\Omega \pm 5\%$ (Figure 5)	10	50	ns
Propagation delay time, low-to-high level	t_{PLH}		10	50	ns

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

3.2.1 Logic diagrams. The logic diagrams shall be as specified on figure 1.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Truth tables. The truth tables shall be as specified on figure 3.

3.2.4 Case outlines. Case outlines shall be as specified in MIL-M-38510 and in 1.2.3 herein.

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.

TABLE II. Electrical test requirements.

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

PDA applies to subgroup 1 (see 4.2c).

3.5 Electrical test requirements. Electrical test requirements 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, the country of origin may be omitted from the body of the microcircuit, but shall be retained on the initial container. The "JAN" or "J" certification mark shall not be used.

3.7 Manufacturer eligibility. To be eligible to supply microcircuits to this specification, a manufacturer shall have a manufacturer certification in accordance with MIL-M-38510 for at least one line. Not necessarily the line producing the device type described herein.

3.8 Certification. Certification in accordance with MIL-M-38510 is not required for this device.

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 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 4, or equivalent.
 - (2) $T_A = +125^{\circ}\text{C}$ minimum.
- b. 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.
- c. The percent defective allowable (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 is not required.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510, and as specified herein. 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). Generic test data (see 6.6) may be used to satisfy the requirements for groups C and D inspections. Quality conformance inspection shall be completed on the specific devices covered by this specification before they are shipped.

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:

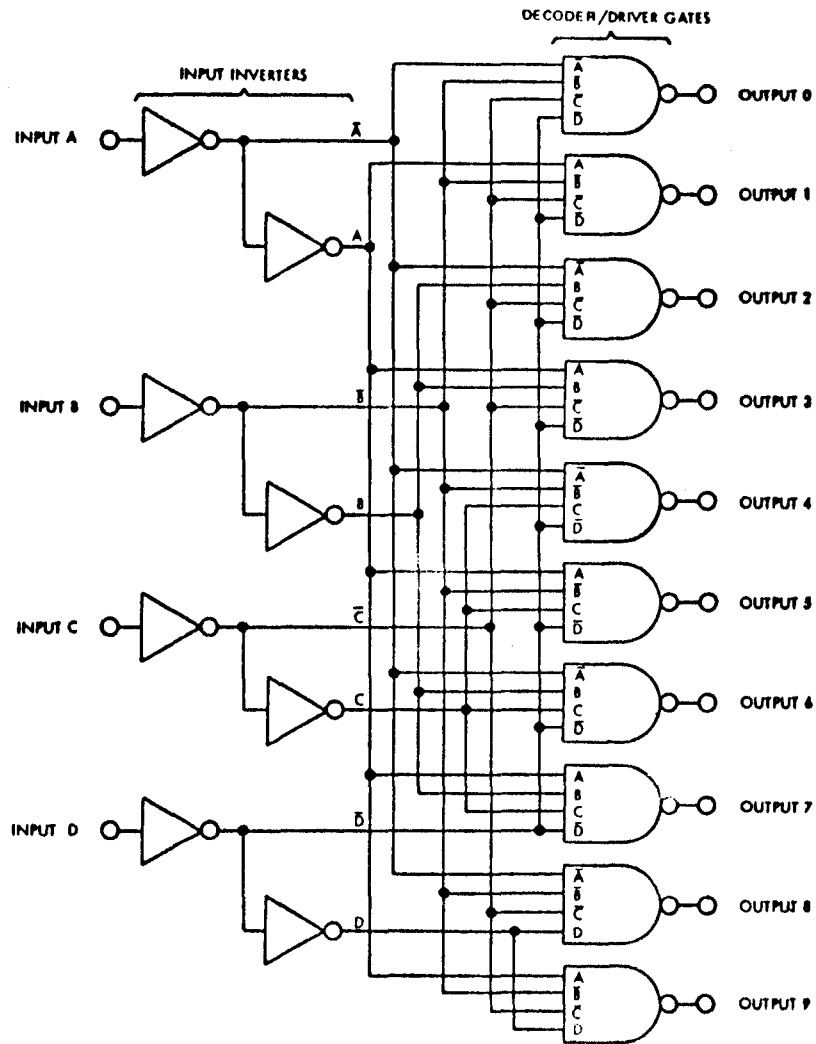
- a. Tests shall be as specified in table II herein.
- b. Subgroups 4, 5, 6, 7, and 8 of table I of method 5005 of MIL-STD-883 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883.

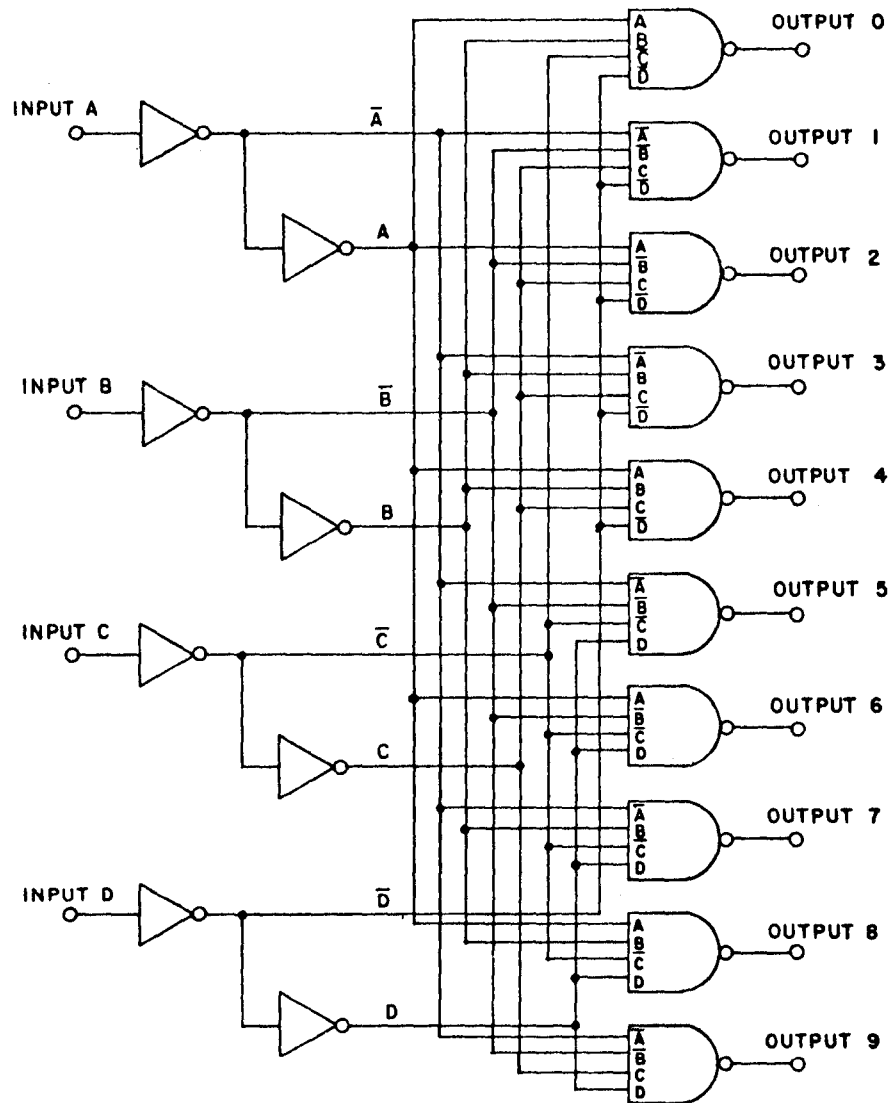
4.4.3 Group C inspection. Group C inspection shall be in accordance with table III of method 5005 of MIL-STD-883 and as follows:

- 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 requirements for class B devices and shall consist of the tests, conditions, and limits specified for subgroups 10 and 11 of group A.
- c. Steady-state 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.

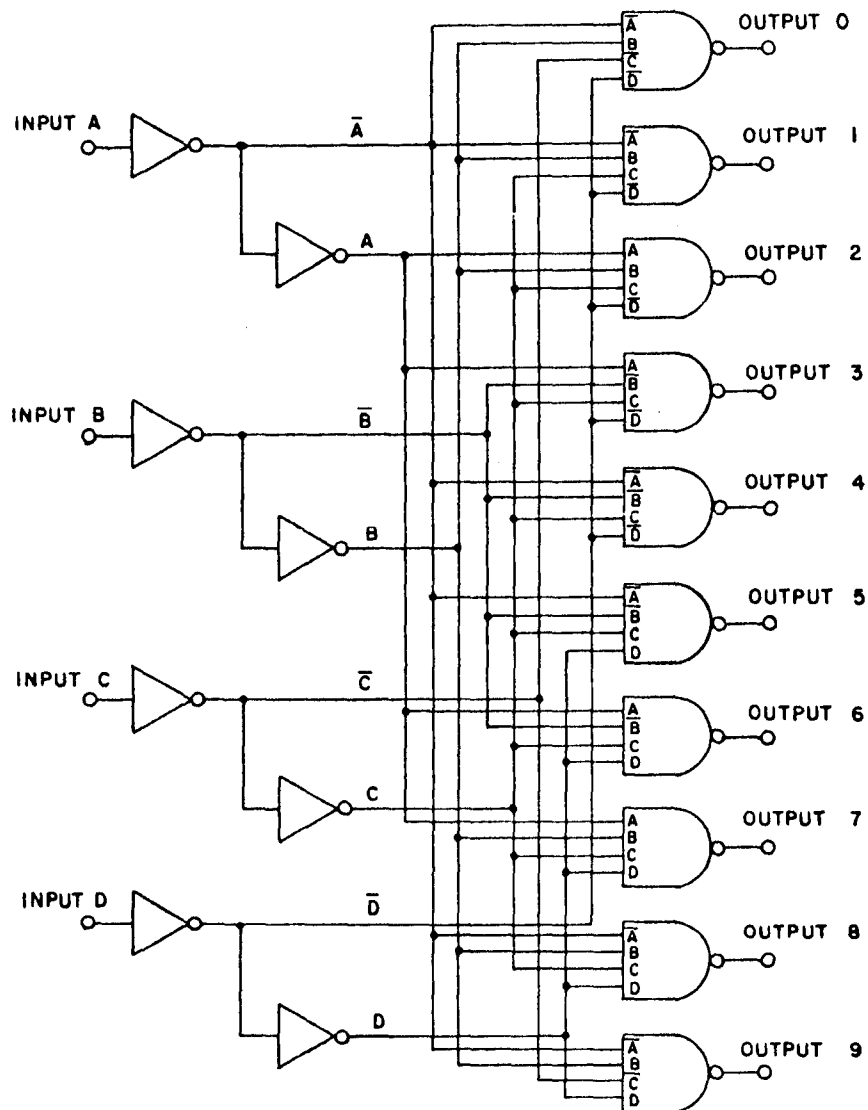
Device types 01 and 06

FIGURE 1. Logic diagrams.

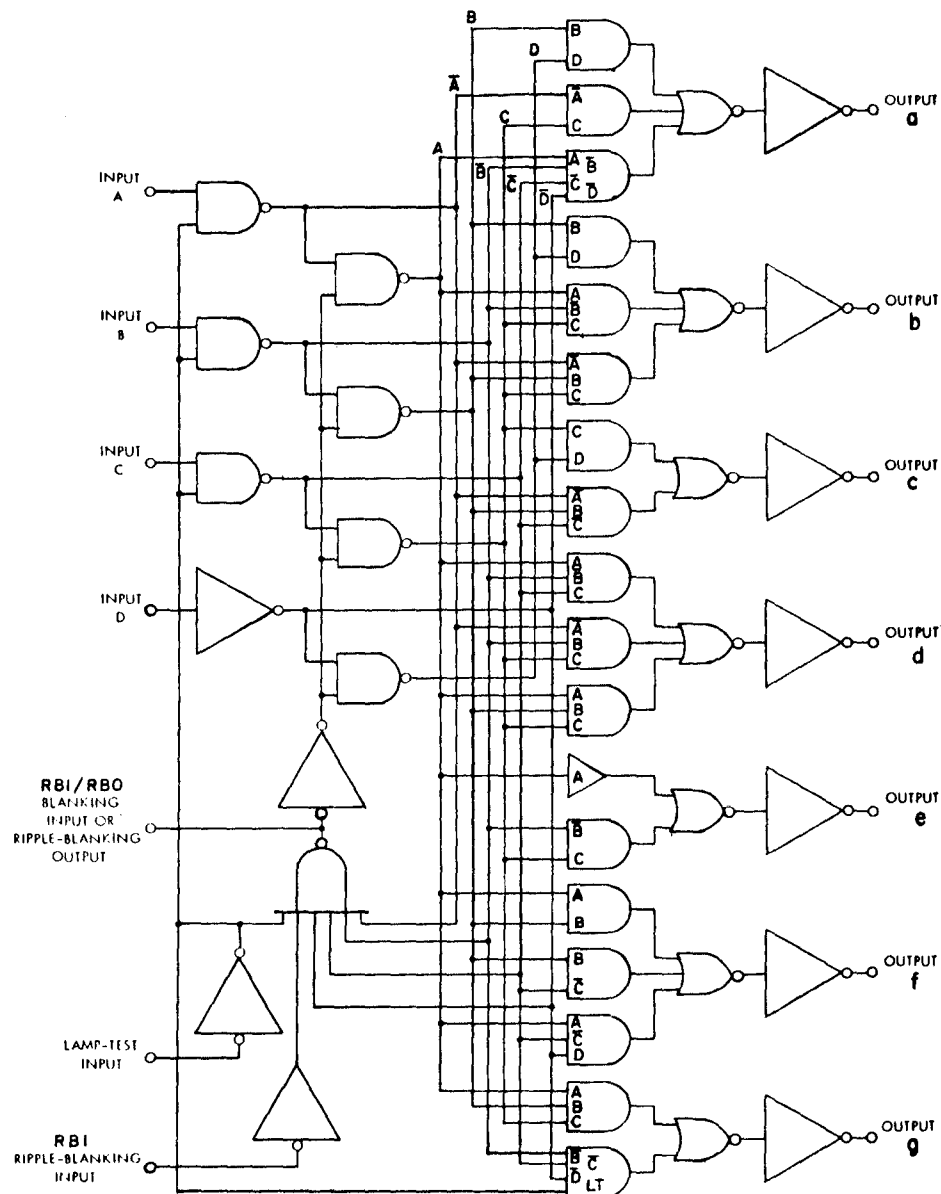
Device type 02

FIGURE 1. Logic diagrams - Continued.

Device type 03

FIGURE 1. Logic diagrams - Continued.

Device types 04 and 05

FIGURE 1. Logic diagrams - Continued.

Device type 07

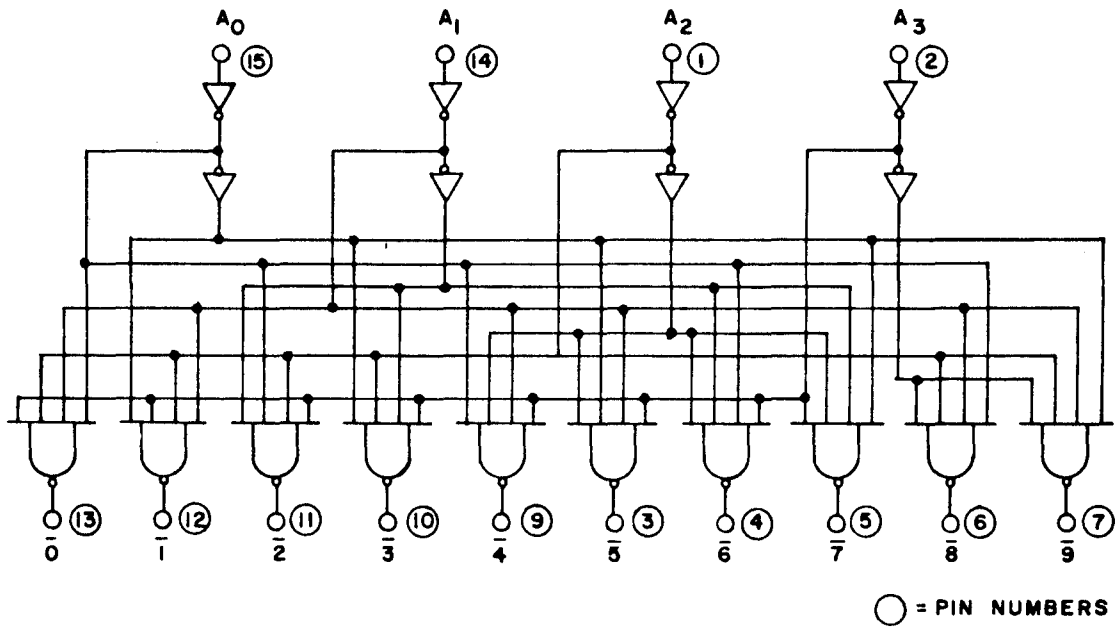
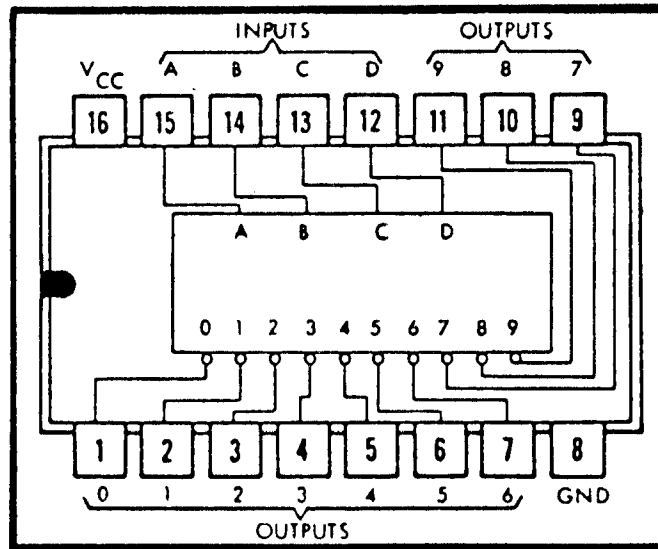


FIGURE 1. Logic diagrams - Continued.

Device types 01, 02, 03, and 06

Case E



Device types 04 and 05

Case E

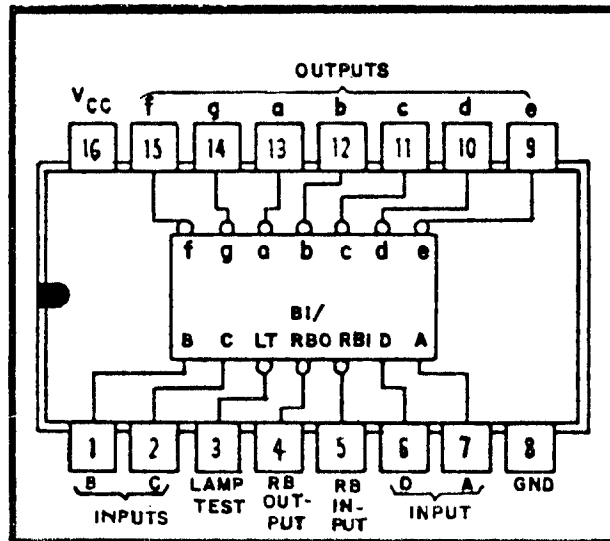


FIGURE 2. Terminal connections.

Device type 07

Cases E and F

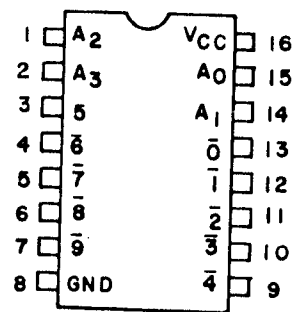


FIGURE 2. Terminal connections - Continued.

Device types 01 and 06

INPUTS				OUTPUTS									
D	C	B	A	0	1	2	3	4	5	6	7	8	9
L	L	L	L	L	H	H	H	H	H	H	H	H	H
L	L	L	H	H	L	H	H	H	H	H	H	H	H
L	L	H	L	H	H	L	H	H	H	H	H	H	H
L	L	H	H	H	H	L	H	H	H	H	H	H	H
L	H	L	L	H	H	H	L	H	H	H	H	H	H
L	H	L	H	H	H	H	L	H	H	H	H	H	H
L	H	H	L	H	H	H	H	L	H	H	H	H	H
L	H	H	H	H	H	H	H	L	H	H	H	H	H
H	L	L	L	H	H	H	H	H	H	H	L	H	H
H	L	L	H	H	H	H	H	H	H	H	H	L	H
H	L	H	L	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
H	H	L	L	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	H	L	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

FIGURE 3. Truth tables.

Device type 07

Truth table

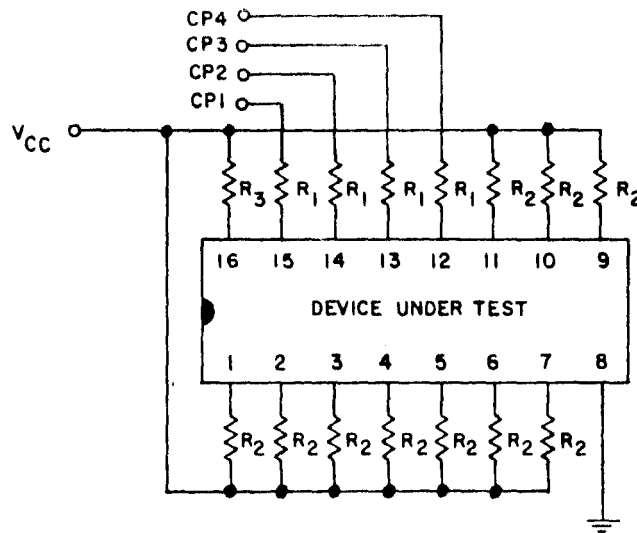
A ₀	A ₁	A ₂	A ₃	$\bar{0}$	$\bar{1}$	$\bar{2}$	$\bar{3}$	$\bar{4}$	$\bar{5}$	$\bar{6}$	$\bar{7}$	$\bar{8}$	$\bar{9}$
L	L	L	L	L	H	H	H	H	H	H	H	H	H
H	L	L	L	H	L	H	H	H	H	H	H	H	H
L	H	L	L	H	H	L	H	H	H	H	H	H	H
H	H	L	L	H	H	H	L	H	H	H	H	H	H
L	L	H	L	H	H	H	H	L	H	H	H	H	H
H	L	H	L	H	H	H	H	H	L	H	H	H	H
L	H	H	L	H	H	H	H	H	H	L	H	H	H
H	H	H	L	H	H	H	H	H	H	H	L	H	H
L	L	L	H	H	H	H	H	H	H	H	H	L	H
H	L	L	H	H	H	H	H	H	H	H	H	H	L
L	H	L	H	H	H	H	H	H	H	H	H	H	H
H	H	L	H	H	H	H	H	H	H	H	H	H	H
L	L	H	H	H	H	H	H	H	H	H	H	H	H
H	L	H	H	H	H	H	H	H	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	H
H	H	H	H	H	H	H	H	H	H	H	H	H	H

H = HIGH voltage level

L = LOW voltage level

FIGURE 3. Truth tables - Continued.

Device types 01, 02, 03, and 06

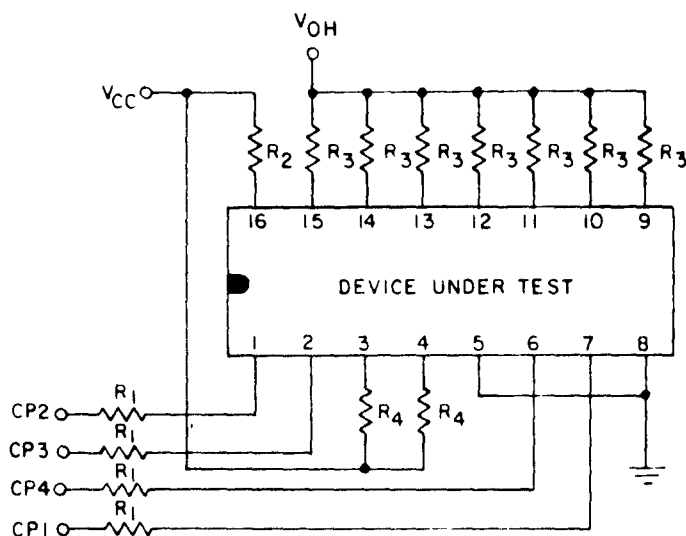


NOTES:

1. R_1 and R_3 are such that $CP = 3$ volts minimum and $V_{CC} = 5$ volts minimum at the device terminals.
2. $R_2 = 2.43 \text{ k}\Omega \pm 5\%$.
3. $CP1 = 100\text{KHz}$, 50% duty cycle.
 $CP2 = 50\text{KHz}$, 50% duty cycle.
 $CP3 = 25\text{KHz}$, 50% duty cycle.
 $CP4 = 12.5\text{KHz}$, 50% duty cycle.

FIGURE 4. Burn-in and life test circuit.

Device types 04 and 05

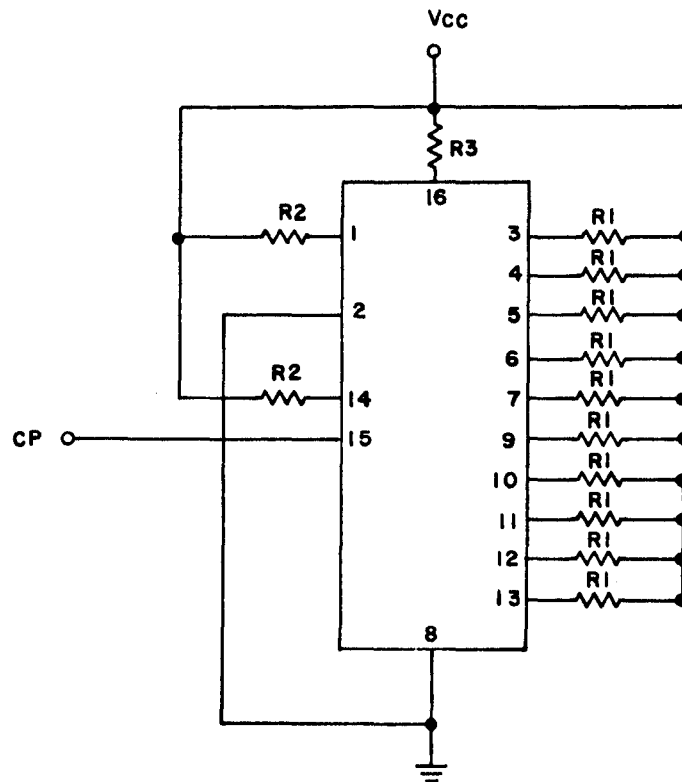


NOTES:

1. R_1 and R_2 are such that $CP = 3$ volts minimum and $V_{CC} = 5$ volts minimum at the device terminals.
2. $R_3 = 240\Omega \pm 5\%$.
 $R_4 = 1\text{ k}\Omega \pm 5\%$.
3. V_{OH} is such that the minimum voltage at the device terminals is 30 volts for device type 04 and 15 volts for device type 05.
4. $CP1 = 100\text{ kHz}$, 0-3 V, 50% duty cycle.
 $CP2 = 50\text{ kHz}$, 0-3 V, 50% duty cycle.
 $CP3 = 25\text{ kHz}$, 0-3 V, 50% duty cycle.
 $CP4 = 12.5\text{ kHz}$, 0-3 V, 50% duty cycle.

FIGURE 4. Burn-in and life test circuit - Continued.

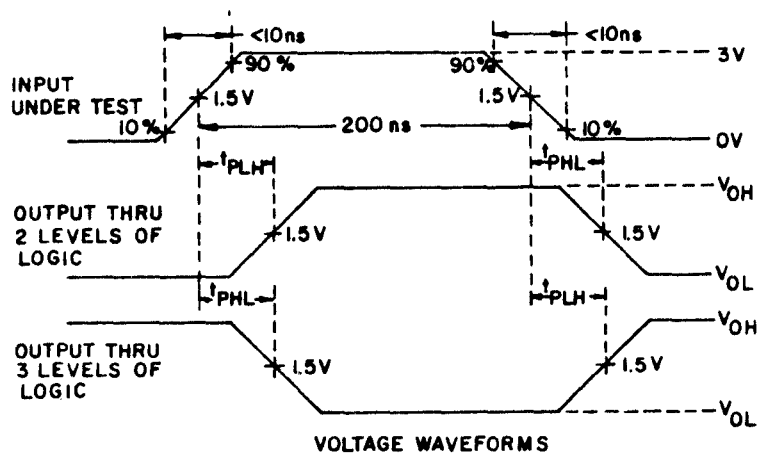
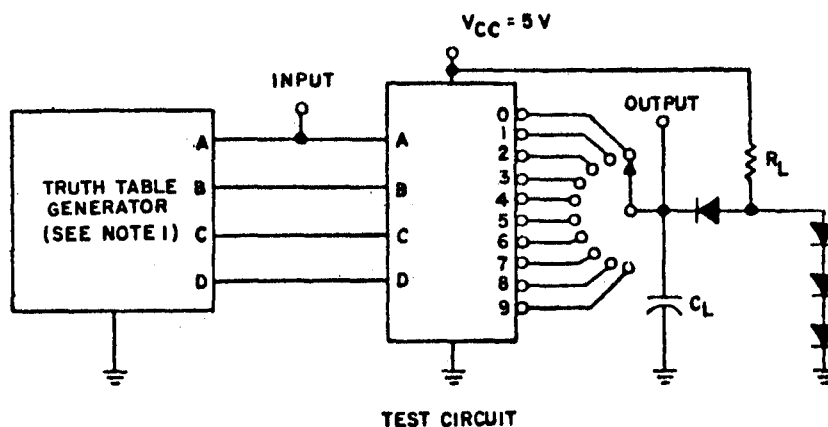
Device type 07



NOTES:

1. CP = 1 MHz, 0-3 V, 50% duty cycle.
2. $R_1 = 325\Omega \pm 5\%$.
3. $R_2 = 16\text{ k}\Omega \pm 5\%$.
4. R_3 shall be of such a value as to insure 5.0 volts at the device VCC terminal.

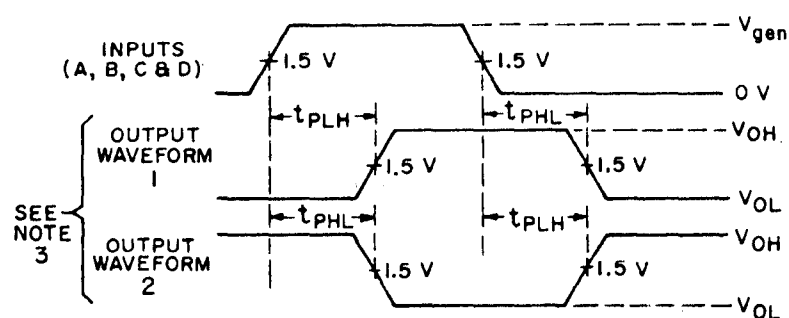
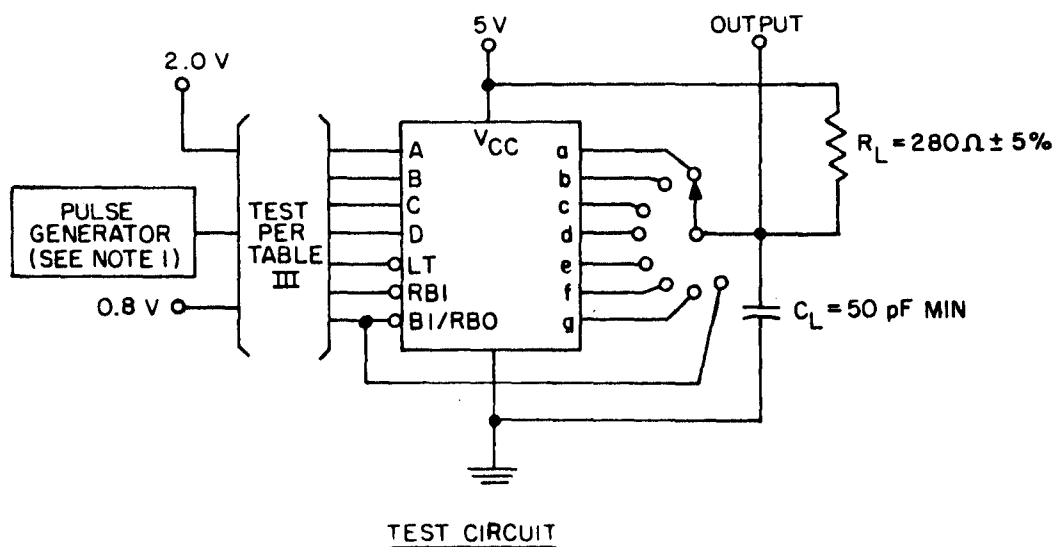
FIGURE 4. Burn-in and life test circuit - Continued.



NOTES:

1. The truth table generator has the following characteristics: $PRR < 1\text{ MHz}$, $Z_{out} \approx 50\Omega$. Transition of the input under test shall occur simultaneously with or following the transition of the other inputs.
2. C_L includes probe and jig capacitance.
3. All diodes are 1N914 or equivalent.
4. $C_L = 50\text{ pF}$ minimum and $R_L = 800\Omega \pm 5\%$ for device types 01, 02 and 03.
5. $C_L = 50\text{ pF}$ minimum and $R_L = 3.9\text{ k}\Omega \pm 5\%$ for device type 06.

FIGURE 5. Switching time for device types 01, 02, 03 and 06.

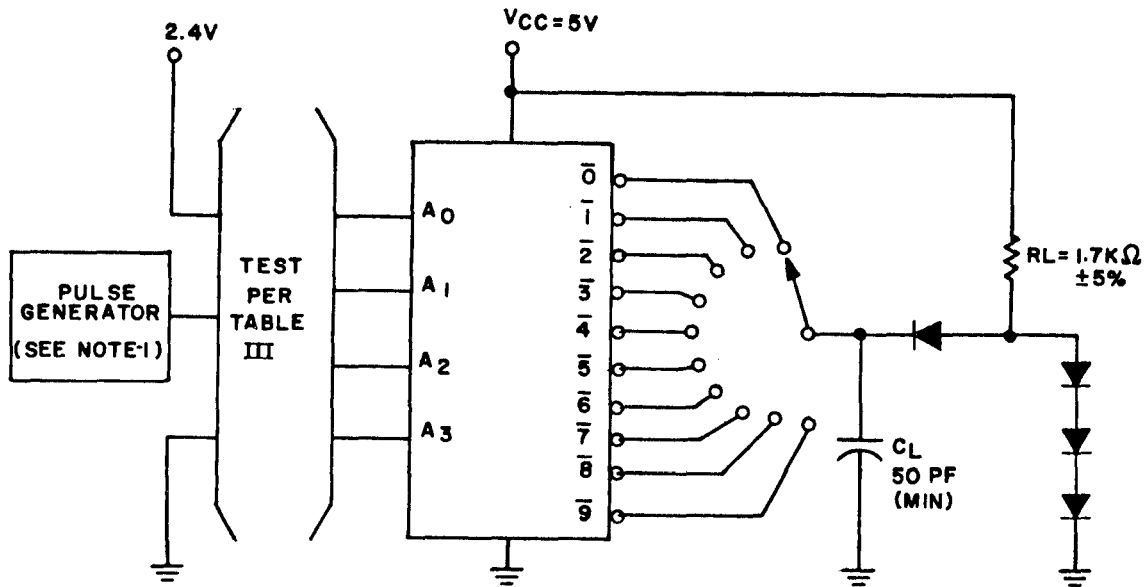


NOTES:

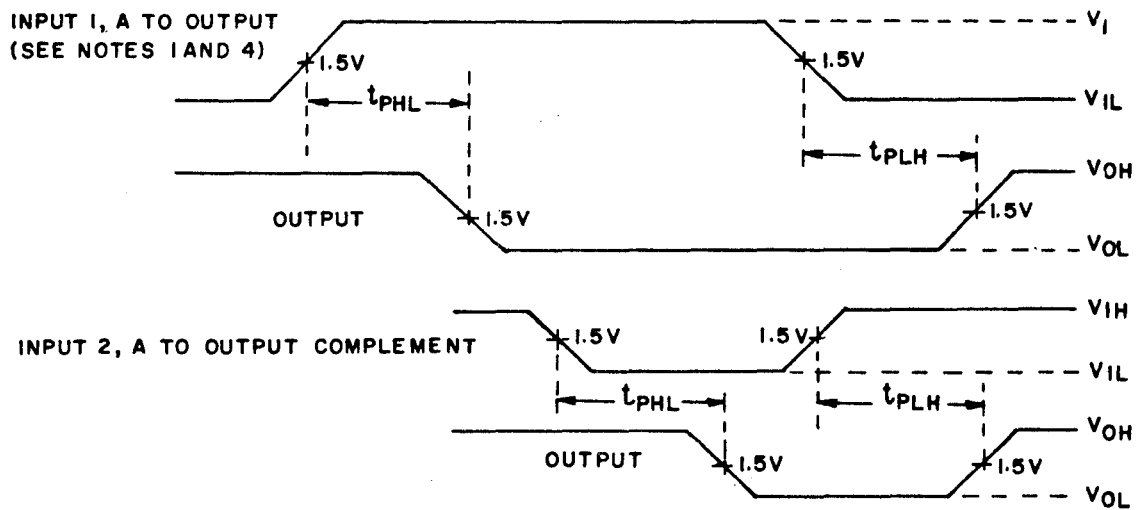
1. The pulse generator has the following characteristics: $V_{gen} = 3 \text{ V}$ minimum, $t_r = t_f \leq 10 \text{ ns}$, $PRR = 1 \text{ MHz}$, and minimum duty cycle = 50%.
2. C_L includes probe and jig capacitance.
3. Input - output waveform combination in accordance with the truth tables (see figure 3).

FIGURE 5. Switching time for device types 04 and 05.

Device type 07



TEST CIRCUIT



NOTES:

1. The pulse generator has the following characteristics: $V_{gen} = 3.0 \text{ V min.}$, $t_r = t_f \leq 10 \text{ ns}$, $PRR = 1 \text{ MHz}$, and min. duty cycle = 50%.
2. CL includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. For each A input five outputs are tested using input 1, the remaining five are tested using input 2.

FIGURE 5. Switching time for device type 07.

TABLE III. Group A inspection for device type 01 1/.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	VCC		Min	Max	Unit
1 $T_C = 25^\circ\text{C}$	V_{OH}	3006	1	- .4 mA							GND				2.0 V	2.0 V	2.0 V	2.0 V	4.5 V	0	2.4		V
			2		- .4 mA															1			
			3			- .4 mA														2			
			4				- .4 mA													3			
			5					- .4 mA												4			
			6						- .4 mA											5			
			7							- .4 mA										6			
			8									- .4 mA								7			
			9										- .4 mA							8			
			10											- .4 mA						9			
	V_{OL}	3007	11	8 mA											0.8 V	0.8 V	0.8 V	0.8 V		0		0.4	V
			12		8 mA												0.8 V	2.0 V		1			
			13			8 mA											2.0 V	0.8 V		2			
			14				8 mA										0.8 V	2.0 V		3			
			15					8 mA									0.8 V	2.0 V		4			
			16						8 mA								0.8 V	2.0 V		5			
			17							8 mA							2.0 V	0.8 V		6			
			18								8 mA						2.0 V	2.0 V		7			
			19									8 mA					0.8 V	0.8 V		8			
			20										8 mA				0.8 V	2.0 V		9			
	V_{IC}		21															-12 mA		A		-1.5	V
			22																	B			
			23																	C			
			24												-12 mA	-12 mA	-12 mA			D			
	I_{IH1}	3010	25												GND	GND	GND	2.4 V	5.0 V	A		20	μA
			26												GND	GND	2.4 V	GND		B			
			27												2.4 V	2.4 V	GND			C			
			28													GND				D			
	I_{IH2}	3010	29												GND			5.5 V		A		100	μA
			30														5.5 V	GND		B			
			31													5.5 V	GND			C			
			32												5.5 V	GND	GND			D			
	I_{IL}	3009	33													5.5 V	5.5 V	0.4 V		A	- .4	- .8	mA
			34													5.5 V	0.4 V	5.5 V		B			
			35													0.4 V	5.5 V			C			
			36													5.5 V	5.5 V			D			
	I_{OS}	3011	37	GND											4.5 V	4.5 V	4.5 V	4.5 V	5.0 V	0	-9	-28	mA
			38		GND															1			
			39			GND														2			
			40				GND													3			
			41					GND												4			
			42						GND											5			
			43							GND										6			
			44								GND									7			
			45									GND								8			
			46										GND							9			
	I_{CC}	3005	47												GND	GND	GND	GND		VCC		22	mA

See footnote at end of device type 01.

TABLE III. Group A inspection for device type 01 ^{1/} - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits				
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit		
2	Same tests, terminal conditions and limits as for subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																								
3	Same tests, terminal conditions and limits as for subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																								
T _C = 25°C	t _{PHL} t _{PLH}	3003 (Fig. 5)	48	OUT							GND					0.8 V	0.8 V	0.8 V	IN	5.0 V	A to 0	10	55	ns	
			49														↓	0.8 V	2.0 V	↓		A to 2			↓
			50														2.0 V	0.8 V	0.8 V			A to 4			↓
			51														0.8 V	2.0 V	0.8 V			A to 6			↓
			52														2.0 V	0.8 V	0.8 V			A to 8	↓	↓	↓
			53														0.8 V	0.8 V	0.8 V			A to 1	10	66	ns
			54														↓	0.8 V	2.0 V	↓		A to 3			↓
			55														2.0 V	0.8 V	0.8 V			A to 5			↓
			56														2.0 V	2.0 V	2.0 V			A to 7			↓
			57													OUT	2.0 V	0.8 V	0.8 V			A to 9	↓	↓	↓
	t _{PHL} t _{PLH}	3003 (Fig. 5)	58	OUT												0.8 V	0.8 V	IN	0.8 V		B to 0	10	55	ns	
			59		OUT												↓	0.8 V	2.0 V	↓		B to 1			↓
			60														2.0 V	0.8 V	0.8 V			B to 4			↓
			61														↓	2.0 V	2.0 V	↓		B to 5			↓
			62														2.0 V	0.8 V	0.8 V			B to 8			↓
			63														0.8 V	0.8 V	2.0 V			B to 9	↓	↓	↓
			64														0.8 V	0.8 V	0.8 V			B to 2	10	66	ns
			65														↓	0.8 V	2.0 V	↓		B to 3			↓
			66														2.0 V	0.8 V	0.8 V			B to 6			↓
			67													OUT	2.0 V	2.0 V	2.0 V			B to 7	↓	↓	↓
	t _{PHL} t _{PLH}	3003 (Fig. 5)	68	OUT												0.8 V	IN	0.8 V	0.8 V		C to 0	10	55	ns	
			69		OUT												↓	0.8 V	2.0 V	↓		C to 1			↓
			70														2.0 V	2.0 V	0.8 V			C to 2			↓
			71														↓	0.8 V	2.0 V	↓		C to 3			↓
			72														2.0 V	0.8 V	0.8 V			C to 8			↓
			73														0.8 V	2.0 V	2.0 V			C to 9			↓
			74														2.0 V	0.8 V	0.8 V			C to 4	10	66	ns
			75														↓	2.0 V	2.0 V	↓		C to 5			↓
			76														2.0 V	0.8 V	0.8 V			C to 6			↓
			77													OUT	2.0 V	2.0 V	2.0 V			C to 7	↓	↓	↓
	t _{PHL} t _{PLH}	3003 (Fig. 5)	78	OUT												IN	0.8 V	0.8 V	0.8 V		D to 0	10	55	ns	
			79		OUT												↓	0.8 V	2.0 V	↓		D to 1			↓
			80														2.0 V	0.8 V	2.0 V			D to 2			↓
			81														↓	2.0 V	2.0 V	↓		D to 3			↓
			82														2.0 V	0.8 V	0.8 V			D to 4			↓
			83														↓	0.8 V	2.0 V	↓		D to 5			↓
			84														2.0 V	0.8 V	0.8 V			D to 6			↓
			85														↓	2.0 V	2.0 V	↓		D to 7			↓
			86														0.8 V	0.8 V	0.8 V			D to 8	10	66	ns
			87														↓	0.8 V	2.0 V	↓		D to 9	10	66	ns

See footnote at end of device type 01.

TABLE III. Group A inspection for device type 01 ^{1/} - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	VCC		Min	Max	Unit
10 $T_C = 125^\circ\text{C}$	t_{PHL} t_{PLH}	3003 (Fig. 5)	88	OUT		OUT		OUT		OUT	GND				0.8 V	0.8 V	0.8 V	IN	5.0 V	A to 0	10	70	ns
			89												↓	0.8 V	2.0 V	↓		A to 2	↓	↓	↓
			90												2.0 V	0.8 V	0.8 V			A to 4	↓	↓	↓
			91												↓	2.0 V	2.0 V			A to 6	↓	↓	↓
			92												0.8 V	0.8 V	0.8 V			A to 8	↓	↓	↓
			93		OUT		OUT					OUT			↓	0.8 V	0.8 V			A to 1	10	85	ns
			94												2.0 V	0.8 V	2.0 V			A to 3	↓	↓	↓
			95								OUT			OUT	↓	2.0 V	0.8 V			A to 5	↓	↓	↓
			96												2.0 V	2.0 V	2.0 V			A to 7	↓	↓	↓
			97											OUT	2.0 V	0.8 V	0.8 V	↓		A to 9	↓	↓	↓
	t_{PHL} t_{PLH}	3003 (Fig. 5)	98	OUT	OUT			OUT						0.8 V	0.8 V	IN	0.8 V		B to 0	10	70	ns	
99													↓	0.8 V	2.0 V	↓		B to 1	↓	↓	↓		
100							OUT	OUT					2.0 V	2.0 V		0.8 V		B to 4	↓	↓	↓		
101												OUT	↓	2.0 V		2.0 V		B to 5	↓	↓	↓		
102													2.0 V	0.8 V		0.8 V		B to 8	↓	↓	↓		
	t_{PHL} t_{PLH}	3003 (Fig. 5)	103									OUT	OUT	2.0 V	0.8 V		2.0 V		B to 9	↓	↓	↓	
104					OUT	OUT							0.8 V	0.8 V		0.8 V		B to 2	10	85	ns		
105													↓	0.8 V		2.0 V		B to 3	↓	↓	↓		
106										OUT			↓	2.0 V		0.8 V		B to 6	↓	↓	↓		
107												OUT	↓	2.0 V	↓	2.0 V		B to 7	↓	↓	↓		
	t_{PHL} t_{PLH}	3003 (Fig. 5)	108	OUT	OUT										IN	0.8 V	0.8 V		C to 0	10	70	ns	
109														↓	0.8 V	2.0 V	↓		C to 1	↓	↓	↓	
110					OUT	OUT								2.0 V	2.0 V	2.0 V	0.8 V		C to 2	↓	↓	↓	
111							OUT	OUT						↓	2.0 V	2.0 V	2.0 V		C to 3	↓	↓	↓	
112														0.8 V	0.8 V	0.8 V			C to 8	↓	↓	↓	
113														2.0 V	2.0 V	2.0 V	2.0 V		C to 9	↓	↓	↓	
114								OUT					OUT	0.8 V	↓	0.8 V			C to 4	10	85	ns	
115									OUT					↓	↓	2.0 V	2.0 V		C to 5	↓	↓	↓	
116										OUT			OUT	↓	↓	0.8 V	0.8 V		C to 6	↓	↓	↓	
117															IN	0.8 V	0.8 V		D to 0	10	70	ns	
	t_{PHL} t_{PLH}	3003 (Fig. 5)	118	OUT	OUT										↓	0.8 V	0.8 V	0.8 V		D to 1	↓	↓	↓
119					OUT	OUT								↓	2.0 V	2.0 V	2.0 V		D to 2	↓	↓	↓	
120							OUT							↓	0.8 V	0.8 V	0.8 V		D to 3	↓	↓	↓	
121								OUT						↓	0.8 V	2.0 V	2.0 V		D to 4	↓	↓	↓	
122									OUT					↓	0.8 V	0.8 V	2.0 V		D to 5	↓	↓	↓	
123										OUT				↓	2.0 V	2.0 V	0.8 V		D to 6	↓	↓	↓	
124											OUT			↓	2.0 V	2.0 V	2.0 V		D to 7	↓	↓	↓	
125															↓	2.0 V	2.0 V						
	t_{PHL} t_{PLH}	3003 3003	126								↓		OUT		↓	0.8 V	0.8 V	0.8 V	↓	D to 8	10	85	ns
127													OUT	↓	0.8 V	0.8 V	2.0 V	↓	D to 9	10	85	ns	
11 Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.																							

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^{1/} Terminal conditions (pins not designated may be H ≥ 2.0V, or L ≤ 0.8V, or open).

TABLE III. Group A inspection for device type 02 $\frac{1}{2}$.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	VCC		Min	Max	Unit
1 $T_C = 25^\circ C$	VOH	3006	1	- .4 mA	- .4 mA						GND				2.0 V	2.0 V	2.0 V	2.0 V	4.5 V	0	2.4		V
			2																	1			
			3			- .4 mA														2			
			4				- .4 mA													3			
			5					- .4 mA												4			
			6						- .4 mA											5			
			7							- .4 mA										6			
			8									- .4 mA								7			
			9										- .4 mA							8			
			10											- .4 mA						9			
	VOL	3007	11	8 mA	8 mA										0.8 V	0.8 V	2.0 V	2.0 V		0		0.4	
			12													2.0 V	0.8 V	0.8 V		1			
			13			8 mA											0.8 V	2.0 V		2			
			14				8 mA										2.0 V	0.8 V		3			
			15					8 mA									2.0 V	2.0 V		4			
			16						8 mA								0.8 V	0.8 V		5			
			17							8 mA							0.8 V	2.0 V		6			
			18								8 mA						2.0 V	0.8 V		7			
			19									8 mA					2.0 V	2.0 V		8			
			20										8 mA				0.8 V	0.8 V		9			
	VIC		21														-12 mA	-12 mA		A		-1.5	
			22																	B			
			23												-12 mA	-12 mA				C			
			24																	D			
	IIH1	3010	25												GND	GND	GND	2.4 V	5.0 V	A		20	μA
			26													GND	2.4 V	GND		B			
			27												2.4 V	GND				C			
			28																	D			
	IIH2	3010	29												GND			5.5 V		A		100	μA
			30														5.5 V	GND		B			
			31												5.5 V	GND	GND			C			
			32													GND				D			
	IIL	3009	33													5.5 V	5.5 V	0.4 V		A	- .4	- .8	mA
			34													5.5 V	0.4 V	5.5 V		B			
			35													0.4 V	5.5 V			C			
			36												0.4 V	5.5 V	5.5 V			D			
	IOS	3011	37	GND	GND										GND	GND	GND	GND		0	-9	-28	mA
			38																	1			
			39			GND														2			
			40				GND													3			
			41					GND												4			
			42						GND											5			
			43							GND										6			
			44								GND									7			
			45									GND								8			
			46										GND							9			
	ICC	3005	47												GND	GND	GND	GND		VCC		22	mA

See footnote at end of device type 02.

TABLE III. Group A inspection for device type 02 1/ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit
2 Same tests, terminal conditions and limits as for subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																							
3 Same tests, terminal conditions and limits as for subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																							
T _C = 25°C	t _{PHL} t _{PLH}	3003 (Fig. 5)	48	OUT	OUT	OUT	OUT	OUT	GND	OUT	OUT	OUT	0.8 V 0.8 V 2.0 V ↓ 0.8 V ↓ 2.0 V 2.0 V	2.0 V 2.0 V 0.8 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V	0.8 V 2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 2.0 V 2.0 V	IN	5.0 V	A to 1 A to 3 A to 5 A to 7 A to 9 A to 0 A to 2 A to 4 A to 6 A to 8	10 ↓ 10 ↓ ↓ ↓ ↓ ↓ ↓ ↓	55 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ns ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		
			49																				
			50																				
			51																				
			52																				
			53																				
			54																				
			55																				
			56																				
			57																				
	t _{PHL} t _{PLH}	3003 (Fig. 5)	58	OUT	OUT	OUT	OUT	OUT			OUT	OUT	0.8 V 0.8 V 2.0 V ↓ 0.8 V ↓ 2.0 V 2.0 V	2.0 V 2.0 V 0.8 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V	IN	0.8 V 2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V 2.0 V		B to 1 B to 2 B to 5 B to 6 B to 9 B to 0 B to 3 B to 4 B to 7 B to 8	10 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	55 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ns ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		
			59																				
			60																				
			61																				
			62																				
			63																				
			64																				
			65																				
			66																				
			67																				
	t _{PHL} t _{PLH}	3003 (Fig. 5)	68	OUT	OUT	OUT	OUT	OUT			OUT	OUT	0.8 V 2.0 V ↓ 0.8 V ↓ 2.0 V 2.0 V	IN	2.0 V 0.8 V 0.8 V 2.0 V 0.8 V 2.0 V 2.0 V 0.8 V	2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 2.0 V		C to 0 C to 5 C to 6 C to 7 C to 8 C to 1 C to 2 C to 3 C to 4 C to 9	10 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	55 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ns ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		
			69																				
			70																				
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			76																				
			77																				
	t _{PHL} t _{PLH}	3003 (Fig. 5)	78	OUT	OUT	OUT	OUT	OUT			OUT	OUT	IN	0.8 V 2.0 V ↓ 0.8 V ↓ 2.0 V 2.0 V	2.0 V 0.8 V 0.8 V 2.0 V 0.8 V 2.0 V 2.0 V 0.8 V	2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V 2.0 V 0.8 V		D to 0 D to 1 D to 2 D to 3 D to 4 D to 5 D to 6 D to 7 D to 8 D to 9	10 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	55 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	ns ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓		
			79																				
			80																				
			81																				
			82																				
			83																				
			84																				
			85																				
			86																				
			87																				

See footnote at end of device type 02.

TABLE III. Group A inspection for device type 02 ^{1/} - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	VCC		Min	Max	Unit
10 T _C = 125°C	t _{PHL} t _{PLH}	3003 (Fig. 5)	88		OUT		OUT		OUT		GND				0.8 V	2.0 V	0.8 V	IN	5.0 V	A to 1	10	70	ns
			89											0.8 V	2.0 V	2.0 V			A to 3				
			90											2.0 V	0.8 V	0.8 V			A to 5				
			91									OUT			0.8 V	2.0 V	2.0 V			A to 7			
			92											OUT	↓	2.0 V	0.8 V			A to 9	↓	↓	↓
			93	OUT		OUT									0.8 V	0.8 V	2.0 V			A to 0	10	85	ns
			94												↓	2.0 V	0.8 V			A to 2			
			95						OUT						2.0 V	2.0 V	2.0 V			A to 4			
			96									OUT			2.0 V	0.8 V	0.8 V			A to 6			
			97											OUT	2.0 V	0.8 V	2.0 V	↓		A to 8	↓	↓	↓
	t _{PHL} t _{PLH}	3003 (Fig. 5)	98		OUT				OUT					0.8 V	2.0 V	IN	0.8 V		B to 1	10	70	ns	
99										OUT			0.8 V	2.0 V		2.0 V		B to 2					
100										OUT			2.0 V	0.8 V		0.8 V		B to 5					
101													0.8 V		2.0 V		2.0 V		B to 6				
	t _{PHL} t _{PLH}	3003 (Fig. 5)	102								OUT			↓	2.0 V		0.8 V		B to 9	↓	↓	↓	
103			OUT										0.8 V	0.8 V		2.0 V		B to 0	10	85	ns		
104						OUT							↓	2.0 V		0.8 V		B to 3					
105								OUT					2.0 V	2.0 V		2.0 V		B to 4					
	t _{PHL} t _{PLH}	3003 (Fig. 5)	106									OUT		2.0 V	0.8 V		0.8 V		B to 7				
107											OUT		2.0 V	0.8 V	↓	2.0 V		B to 8	↓	↓	↓		
108			OUT										0.8 V	IN	2.0 V	2.0 V		C to 0	10	70	ns		
109									OUT				2.0 V		0.8 V	0.8 V		C to 5					
	t _{PHL} t _{PLH}	3003 (Fig. 5)	110											↓		0.8 V	2.0 V		C to 6				
111											OUT			2.0 V	0.8 V		2.0 V		C to 7				
112													OUT		2.0 V	2.0 V		C to 8	↓	↓	↓		
113				OUT										0.8 V	0.8 V	0.8 V		C to 1	10	85	ns		
114					OUT									↓	0.8 V	2.0 V		C to 2					
115								OUT						2.0 V	2.0 V	0.8 V		C to 3					
116									OUT					2.0 V	2.0 V	2.0 V		C to 4					
117													OUT	2.0 V		0.8 V	0.8 V		C to 9				
	t _{PHL} t _{PLH}	3003 (Fig. 5)	118	OUT										IN	0.8 V	2.0 V	2.0 V		D to 0	10	70	ns	
119				OUT										↓	2.0 V	0.8 V	0.8 V		D to 1				
120					OUT									↓		0.8 V	2.0 V		D to 2				
121														↓	2.0 V	0.8 V	2.0 V		D to 3				
122														↓	0.8 V	2.0 V	2.0 V		D to 4	↓	↓	↓	
123								OUT						↓	0.8 V	0.8 V	0.8 V		D to 5	10	85	ns	
124											OUT			↓	0.8 V	2.0 V	2.0 V		D to 6				
125														↓	2.0 V	0.8 V		D to 7					
126														↓	2.0 V	2.0 V	2.0 V		D to 8				
127													↓	2.0 V	0.8 V	0.8 V	↓		D to 9	↓	↓	↓	

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

^{1/} Terminal conditions (pins not designated may be H ≥ 2.0V, or L ≤ 0.8V, or open).

TABLE III. Group A inspection for device type 03 ^{1/}.

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits				
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit		
1 T _C = 25 °C	V _{OH} ↓	3006 ↓	1	-.4mA	-.4mA	-.4mA	-.4mA	-.4mA	-.4mA	-.4mA	GND				0.8V	0.8V	0.8V	0.8V	4.5V	0	2.4		V		
			2																	1					
			3																	2					
			4																	3					
			5																	4					
			6																	5					
			7																	6					
			8																	7					
			9																	8					
			10																	9					
	V _{OL} ↓	3007 ↓	11	8 mA	8 mA	8 mA	8 mA	8 mA	8 mA	8 mA					0.8V	0.8V	2.0V	0.8V		0		0.4	V		
			12													2.0V	2.0V	↓	0.8V		1				
			13															0.8V	2.0V		2				
			14															↓	2.0V		3				
			15															↓	0.8V		4				
			16															↓	0.8V		5				
			17															2.0V	2.0V		6				
			18															↓	2.0V		7				
			19																0.8V	0.8V		8			
			20																↓	0.8V		9			
	V _{IC} ↓		21															-12mA		A		-1.5	V		
			22																	B					
			23																	C					
			24																	D					
	I _{IH1} ↓	3010 ↓	25												GND	GND	GND	2.4V	5.0V	A		20	μA		
			26													↓	GND	GND	↓	B					
			27														2.4V	2.4V		C					
			28															GND	↓	D					
	I _{IH2} ↓	3010 ↓	29												GND	↓	↓	5.5V		A		100	μA		
			30														↓	5.5V	GND	B					
			31														5.5V	GND	↓	C					
			32															GND	GND	D					
	I _{IL} ↓	3009 ↓	33														5.5V	5.5V		A		-.4	mA		
			34														5.5V	0.4V	5.5V	B		-.8	mA		
			35														0.4V	5.5V	↓	C					
			36															5.5V	5.5V	D					
	I _{OS} ↓	3011 ↓	37	GND	GND	GND	GND	GND	GND	GND					GND	GND	GND	GND		0	-9	-28	mA		
			38																	1					
			39																	2					
			40																	3					
			41																	4					
			42																	5					
			43																	6					
			44																	7					
			45																	8					
			46																	9					
	I _{CC} ↓	3005 ↓	47												GND	GND	GND	GND		V _{CC}		22	mA		
2 Same tests, terminal conditions and limits as for subgroup 1, except T _C = 125° C and V _{IC} tests are omitted.																									
3 Same tests, terminal conditions and limits as for subgroup 1, except T _C = -55° C and V _{IC} tests are omitted.																									

See footnote at end of device type 03.

TABLE III. Group A inspection for device type 03 ^{1/} - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	VCC		Min	Max	Unit
9 T _C = 25 °C	t _{PLH} t _{PHL}	3003 (Fig. 5)	48	OUT							GND				0.8V	0.8V	2.0V	IN	5.0V	A to 0	10	55	ns
			49		OUT			OUT							↓	2.0V	2.0V	↓		A to 1	↓	↓	↓
			50						OUT						2.0V	↓	0.8V	↓		A to 4	↓	↓	↓
			51												↓	0.8V	0.8V	↓		A to 5	↓	↓	↓
			52											OUT	↓	0.8V	2.0V	↓		A to 8	↓	↓	↓
			53											OUT						A to 9	↓	↓	↓
			54			OUT									0.8V	2.0V	↓			A to 2	10	66	ns
			55				OUT								0.8V	↓	0.8V	↓		A to 3	↓	↓	↓
			56							OUT				OUT	2.0V	↓	0.8V	↓		A to 6	↓	↓	↓
			57									OUT			2.0V	↓	2.0V	↓		A to 7	↓	↓	↓
	t _{PLH} t _{PHL}	3003 (Fig. 5)	58				OUT								0.8V	2.0V	IN	2.0V		B to 3	10	55	ns
			59					OUT							0.8V	↓	↓	0.8V		B to 4	↓	↓	↓
			60						OUT						2.0V	↓	↓	0.8V		B to 5	↓	↓	↓
			61							OUT					2.0V	↓	2.0V	↓		B to 6	↓	↓	↓
	t _{PLH} t _{PHL}	3003 (Fig. 5)	62	OUT											0.8V	0.8V	↓	0.8V		B to 0	10	66	ns
			63		OUT										2.0V	↓	↓	0.8V		B to 1	↓	↓	↓
			64			OUT									↓	↓	2.0V	↓		B to 2	↓	↓	↓
			65									OUT			2.0V	↓	2.0V	↓		B to 7	↓	↓	↓
			66										OUT		↓	↓	0.8V	↓		B to 8	↓	↓	↓
			67											OUT	↓	0.8V	↓	0.8V		B to 9	↓	↓	↓
			68	OUT											0.8V	IN	2.0V	0.8V		C to 0	10	55	ns
			69											OUT	2.0V	↓	↓	↓		C to 9	10	55	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	70		OUT										0.8V	↓	↓	↓		C to 1	10	66	ns
			71			OUT									↓	↓	2.0V	↓		C to 2	↓	↓	↓
			72				OUT								↓	↓	0.8V	↓		C to 3	↓	↓	↓
			73					OUT							2.0V	↓	↓	0.8V		C to 4	↓	↓	↓
			74						OUT						↓	↓	2.0V	↓		C to 5	↓	↓	↓
			75							OUT					↓	↓	2.0V	↓		C to 6	↓	↓	↓
			76								OUT				↓	↓	2.0V	↓		C to 7	↓	↓	↓
			77									OUT			↓	↓	0.8V	↓		C to 8	↓	↓	↓
			78	OUT											IN	0.8V	2.0V	0.8V		D to 0	10	55	ns
10 T _C = 125 °C	t _{PLH} t _{PHL}	3003 (Fig. 5)	79		OUT										↓	2.0V	↓	0.8V		D to 1	↓	↓	↓
			80			OUT									↓	↓	↓	2.0V		D to 2	↓	↓	↓
			81				OUT								↓	↓	0.8V	↓		D to 3	↓	↓	↓
			82					OUT							↓	↓	0.8V	↓		D to 4	↓	↓	↓
			83						OUT						↓	↓	↓	0.8V		D to 5	10	66	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	84							OUT					↓	↓	2.0V	↓		D to 6	↓	↓	↓
			85								OUT				↓	↓	2.0V	↓		D to 7	↓	↓	↓
			86									OUT			↓	↓	0.8V	↓		D to 8	↓	↓	↓
			87										OUT		↓	0.8V	↓	0.8V		D to 9	↓	↓	↓
			88	OUT											0.8V	0.8V	2.0V	IN		A to 0	10	70	ns
			89		OUT										↓	2.0V	2.0V	↓		A to 1	↓	↓	↓
			90					OUT							2.0V	↓	0.8V	↓		A to 4	↓	↓	↓
			91						OUT						↓	↓	0.8V	↓		A to 5	↓	↓	↓
			92											OUT	↓	↓	2.0V	↓		A to 8	↓	↓	↓
			93											OUT	↓	0.8V	2.0V	↓		A to 9	↓	↓	↓

See footnote at end of device type 03.

TABLE III. Group A inspection for device type 03 ^{1/} - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit
10 T _C = 125 °C	t _{PLH} t _{PHL}	3003 (Fig. 5)	94			OUT	OUT								0.8V	2.0V	2.0V	IN	5.0V	A to 2	10	85	ns
			95							OUT		OUT			0.8V	2.0V	0.8V	IN		A to 3	10	70	ns
			96												2.0V	2.0V	0.8V	IN		A to 6	10	70	ns
			97												2.0V	2.0V	2.0V	IN		A to 7	10	70	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	98				OUT	OUT	OUT						0.8V	2.0V	IN	2.0V		B to 3	10	70	ns
			99							OUT					0.8V	2.0V	IN	0.8V		B to 4	10	70	ns
			100						OUT						2.0V	2.0V	IN	0.8V		B to 5	10	70	ns
			101							OUT					2.0V	2.0V	IN	2.0V		B to 6	10	70	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	102	OUT	OUT										0.8V	0.8V	IN	0.8V		B to 0	10	85	ns
			103												0.8V	2.0V	IN	0.8V		B to 1	10	70	ns
			104			OUT									2.0V	2.0V	IN	2.0V		B to 2	10	70	ns
			105									OUT	OUT		2.0V	2.0V	IN	0.8V		B to 7	10	70	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	106											OUT	2.0V	0.8V	IN	0.8V		B to 8	10	70	ns
			107											OUT	2.0V	0.8V	IN	0.8V		B to 9	10	70	ns
			108	OUT											0.8V	IN	2.0V	0.8V		C to 0	10	70	ns
			109											OUT	2.0V	IN	2.0V	0.8V		C to 9	10	70	ns
			110		OUT										0.8V	IN	2.0V	2.0V		C to 1	10	85	ns
			111			OUT									2.0V	2.0V	IN	0.8V		C to 2	10	70	ns
			112				OUT	OUT	OUT						2.0V	2.0V	IN	0.8V		C to 3	10	70	ns
			113					OUT							2.0V	2.0V	IN	0.8V		C to 4	10	70	ns
			114						OUT						2.0V	2.0V	IN	0.8V		C to 5	10	70	ns
			115							OUT					2.0V	2.0V	IN	0.8V		C to 6	10	70	ns
			116								OUT				2.0V	2.0V	IN	0.8V		C to 7	10	70	ns
			117									OUT	OUT		2.0V	2.0V	IN	0.8V		C to 8	10	70	ns
	t _{PLH} t _{PHL}	3003 (Fig. 5)	118	OUT	OUT										IN	0.8V	2.0V	0.8V		D to 0	10	70	ns
			119												2.0V	2.0V	IN	0.8V		D to 1	10	70	ns
			120			OUT									2.0V	2.0V	IN	0.8V		D to 2	10	70	ns
			121				OUT	OUT							2.0V	2.0V	IN	0.8V		D to 3	10	70	ns
			122					OUT							2.0V	2.0V	IN	0.8V		D to 4	10	70	ns
			123						OUT	OUT					2.0V	2.0V	IN	0.8V		D to 5	10	85	ns
			124									OUT	OUT		2.0V	2.0V	IN	0.8V		D to 6	10	70	ns
			125											OUT	2.0V	2.0V	IN	0.8V		D to 7	10	70	ns
			126										OUT	OUT	2.0V	0.8V	IN	0.8V		D to 8	10	70	ns
			127												OUT	2.0V	0.8V	IN	0.8V		D to 9	10	70
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55 °C																						

1. Terminal conditions (pins not designated may be H ≥ 2.0V, or L ≤ 0.8V, or open).

TABLE III. Group A inspection for device types 04 and 05 ^{1/}.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				B	C	LT	RBO	RBI	D	A	GND	e	d	c	b	a	g	f	VCC		Min	Max	Unit
1 $T_C = 25^\circ C$	VOL1	3007	1	X	X	0.8 v	2.0 v	X	X	X	GND	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	20 mA	4.5 v	e		0.4	V
			2																	d			
			3																	c			
			4																	b			
			5																	a			
			6																	g			
			7																	f			
	VOL2	3007	8	0.8 v	0.8 v	2.0 v	4 mA	0.8 v	0.8 v	0.8 v								20 mA		RBO		0.4	V
	ICEX		9									Y								e		250	μA
			10										Y							d			
			11											Y						c			
			12												Y					b			
			13													Y				a			
			14														Y			g			
			15															Y		f			
	VOH	3006	16	0.8 v	0.8 v	2.0 v	-1 mA	2.0 v	0.8 v	0.8 v										RBO	2.4		V
	VIC		17	-12 mA																B		-1.5	V
			18		-12 mA															C			
			19			-12 mA														LT			
			20					-12 mA												RBI			
			21						-12 mA											D			
			22							-12 mA										A			
	IIL1	3009	23	0.4 v	5.5 v	5.5 v		5.5 v	5.5 v	5.5 v									5.0 v	B	-0.4	-0.8	mA
			24	5.5 v		5.5 v														C			
			25		0.4 v	5.5 v														LT			
			26		5.5 v															RBI			
			27			5.5 v		0.4 v	5.5 v	0.4 v										D			
			28					5.5 v		0.4 v										A			
	IIL2	3009	29				0.4 v		5.5 v	5.5 v										RBO	-1.0	-2.1	mA
	I _{IH1}	3010	30	2.4 v	GND	GND		GND	GND	GND										B		20	μA
			31	GND	2.4 v	GND														C			
			32		GND	2.4 v														LT			
			33			GND		2.4 v												RBI			
			34					GND												D			
			35							2.4 v										A			
	I _{IH2}	3010	36	5.5 v	GND	GND		GND	GND	GND										B		100	μA
			37	GND		GND														C			
			38		5.5 v	GND														LT			
			39			5.5 v														RBI			
			40			GND		5.5 v												D			
			41					GND		5.5 v										A			
	I _{OS}	3011	42				GND		GND	GND										RBO		-4	mA
	I _{CC}	3005	43	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v	5.5 v										VCC		43	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.																						

See footnote at end of device types 04 and 05.

TABLE III. Group A inspection for device types 04 and 05 $\frac{1}{2}$ - Continued.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				B	C	LT	RBO	RBI	D	A	GND	e	d	c	b	a	g	f	VCC		Min	Max	Unit
9 $T_C = 25^\circ C$	t_{PLH} t_{PHL}	3003 (Fig. 5)	44	0.8 v	0.8 v	2.0 v		2.0 v	0.8 v	IN	GND					OUT			5.0 v	A to a	15	200	ns
			45																	A to d			
			46																	A to e			
			47									OUT								A to f			
			48	2.0 v										OUT				OUT		A to c			
			49	0.8 v	2.0 v										OUT					A to b			
			50	2.0 v	2.0 v											OUT				A to g			
			51	0.8 v	0.8 v		OUT	0.8 v									OUT			A to RBO			
			52	IN	0.8 v	2.0 v		2.0 v	0.8 v	0.8 v										B to c	15	200	ns
			53														OUT			B to f			
	t_{PLH} t_{PHL}	3003 (Fig. 5)	54		2.0 v										OUT		OUT			B to g			
			55																	B to b			
			56																	B to d			
			57									OUT	OUT							B to e			
			58		0.8 v		OUT		2.0 v							OUT				B to a			
			59		0.8 v			0.8 v	0.8 v											B to RBO			
			60	0.8 v	IN	2.0 v		2.0 v	0.8 v	0.8 v						OUT				C to a	15	200	ns
			61														OUT			C to d			
			62																	C to e			
			63									OUT	OUT				OUT			C to g			
	t_{PLH} t_{PHL}	3003 (Fig. 5)	64							2.0 v					OUT					C to b			
			65							2.0 v										C to f			
			66	2.0 v						0.8 v					OUT					C to c			
			67	0.8 v			OUT	0.8 v		0.8 v										C to RBO			
			68	0.8 v	0.8 v	2.0 v		2.0 v	IN	2.0 v						OUT				D to a	15	200	ns
			69														OUT			D to f			
			70																	D to g			
			71	2.0 v													OUT			D to b			
			72	0.8 v	2.0 v															D to c			
			73		0.8 v			0.8 v												D to d			
	t_{PLH} t_{PHL}	3003 (Fig. 5)	74							0.8 v										D to e			
			75				OUT					OUT	OUT							D to RBO			
			76	0.8 v	0.8 v	IN		0.8 v	0.8 v	0.8 v						OUT				LT to a	15	200	ns
			77																	LT to b			
			78																	LT to c			
			79																	LT to d			
			80																	LT to e			
			81									OUT	OUT							LT to f			
			82														OUT			LT to g			
			83				OUT													LT to RBO			
	t_{PLH} t_{PHL}	3003 (Fig. 5)	84	0.8 v	0.8 v	2.0 v	IN	2.0 v	0.8 v	0.8 v						OUT				RBO to a	15	200	ns
			85																	RBO to b			
			86																	RBO to c			
			87																	RBO to d			
			88									OUT	OUT							RBO to e			
			89															OUT		RBO to f			
			90														OUT			RBO to g			

See footnote at end of device types 04 and 05.

TABLE III. Group A inspection for device types 04 and 05 ^{1/} - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	B	C	LT	RBO	RBI	D	A	GND	e	d	c	b	a	g	f	V _{CC}		Min	Max	Unit
9 T _C = 25° C	t _{PLH} t _{PHL}	3003 (Fig. 5)	91	0.8 v	0.8 v	2.0 v		IN	0.8 v	0.8 v	GND				OUT	OUT			5.0 v	RBI to a	15	200	ns
			92																	RBI to b			
			93																	RBI to c			
			94																	RBI to d			
			95																	RBI to e			
			96																	RBI to f			
			97				OUT						OUT	OUT				OUT		RBI to RBO			
			98	0.8 v	0.8 v	2.0 v		2.0 v	0.8 v	IN						OUT				A to a	15	250	ns
			99																	A to d			
			100										OUT	OUT						A to e			
10 T _C = 125° C	t _{PLH} t _{PHL}	3003 (Fig. 5)	101																	A to f			
			102	2.0 v														OUT		A to g			
			103	0.8 v	2.0 v										OUT					A to b			
			104	2.0 v	2.0 v												OUT			A to c			
			105	0.8 v	0.8 v		OUT	0.8 v												A to RBO			
			106	IN	0.8 v	2.0 v		2.0 v	0.8 v	0.8 v					OUT					B to c	15	250	ns
			107																	B to f			
			108															OUT		B to g			
			109		2.0 v															B to b			
			110																	B to d			
			111										OUT	OUT						B to e			
			112		0.8 v				2.0 v							OUT				B to a			
			113		0.8 v		OUT	0.8 v	0.8 v											B to RBO			
			114	0.8 v	IN	2.0 v		2.0 v	0.8 v	0.8 v						OUT				C to a	15	250	ns
			115																	C to d			
			116											OUT	OUT					C to e			
			117																	C to g			
			118							2.0 v							OUT			C to b			
			119							2.0 v										C to f			
			120	2.0 v						0.8 v								OUT		C to c			
			121	0.8 v			OUT	0.8 v		0.8 v										C to RBO			
			122	0.8 v	0.8 v	2.0 v		2.0 v	IN	2.0 v						OUT				D to a	15	250	ns
			123																	D to f			
			124																	D to g			
			125	2.0 v						0.8 v										D to b			
			126	0.8 v	2.0 v															D to c			
			127		0.8 v			0.8 v												D to d			
			128																	D to e			
			129				OUT							OUT	OUT					D to RBO			
			130	0.8 v	0.8 v	IN		0.8 v	0.8 v	0.8 v						OUT				LT to a	15	250	ns
			131																	LT to b			
			132																	LT to c			
			133																	LT to d			
			134																	LT to e			
			135																	LT to f			
			136																	LT to g			
			137				OUT													LT to RBO			

See footnote at end of device types 04 and 05.

TABLE III. Group A inspection for device types 04 and 05 ^{1/}. - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				B	C	LT	RBO	RBI	D	A	GND	e	d	c	b	a	g	f	VCC		Min	Max	Unit
10 T _C = 125° C	t ^{PHL} t ^{PLH}	3003 (Fig. 5)	138	0.8 v	0.8 v	2.0 v	IN	2.0 v	0.8 v	0.8 v	GND				OUT	OUT			5.0 v	RBO to a	15	250	ns
			139																	RBO to b			
			140																	RBO to c			
			141																	RBO to d			
			142										OUT	OUT						RBO to e			
			143															OUT		RBO to f			
			144														OUT		RBO to g				
	t ^{PLH} t ^{PHL}	3003 (Fig. 5)	145	0.8 v	0.8 v	2.0 v		IN	0.8 v	0.8 v					OUT	OUT				RBI to a			
146																			RBI to b				
147																			RBI to c				
148												OUT	OUT						RBI to d				
149																	OUT		RBI to e				
150																			RBI to f				
			151				OUT												RBI to RBO				
11 Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55° C.																							

NOTES:

x = Input may be high or low.

y = 30 volts for device type 04 and 15 volts for device type 05.

^{1/} Terminal conditions (pins not designated may be H ≥ 2.0, or L ≤ 0.8V, or open).

TABLE III. Group A inspection for device type 06 ^{1/}.

Subgroup	Symbol	MIL-STD-883 method	Case E Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit
1 T _C = 25° C	V _{OH}	3006	1	- .2 mA							GND				2.0 v	2.0 v	2.0 v	2.0 v	4.5 v	0	2.4		V
			2		- .2 mA															1			
			3			- .2 mA														2			
			4				- .2 mA													3			
			5					- .2 mA												4			
			6						- .2 mA											5			
			7							- .2 mA										6			
			8									- .2 mA								7			
			9										- .2 mA							8			
			10											- .2 mA						9			
	V _{OL}	3007	11	2 mA	2 mA										0.7 v	0.7 v	0.7 v	0.7 v		0		0.3	V
			12			2 mA											0.7 v	2.0 v		1			
			13				2 mA										2.0 v	0.7 v		2			
			14					2 mA									2.0 v	2.0 v		3			
			15						2 mA								0.7 v	0.7 v		4			
			16							2 mA							0.7 v	2.0 v		5			
			17								2 mA						2.0 v	0.7 v		6			
			18									2 mA					2.0 v	2.0 v		7			
			19										2 mA				0.7 v	0.7 v		8			
			20											2 mA			0.7 v	2.0 v		9			
	I _{IH1}	3010	21												GND	GND	GND	2.4 v	5.0 v	A		10	μA
			22													GND	2.4 v	GND		B			
			23														GND	GND		C			
			24												2.4 v	GND	GND	GND		D			
	I _{IH2}	3010	25												GND	GND	GND	5.5 v		A		100	μA
			26													GND	5.5 v	GND		B			
			27														GND	GND		C			
			28												5.5 v	GND	GND	GND		D			
	I _{IL}	3009	29												5.5 v	5.5 v	5.5 v	0.3 v		A	-60	-180	μA
			30													5.5 v	0.3 v	5.5 v		B			
			31													0.3 v	5.5 v			C			
			32												0.3 v	5.5 v	5.5 v			D			
	I _{OS}	3011	33	GND	GND										4.5 v	4.5 v	4.5 v	4.5 v	5.0 v	0	-3	-15	mA
			34																	1			
			35																	2			
			36			GND														3			
			37				GND													4			
			38					GND												5			
			39						GND											6			
			40							GND										7			
			41								GND									8			
			42									GND								9			
	I _{CC}	3005	43												GND	GND	GND	GND	5.0 v	V _{CC}		5.3	mA
2	Same tests, terminal conditions and limits as for subgroup 1, except T _C = 125° C.																						
3	Same tests, terminal conditions and limits as for subgroup 1, except T _C = -55° C.																						

See footnote at end of device type 06.

TABLE III. Group A inspection for device type 06 ^{1/} - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits			
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit	
⁹ T _C = 25°C	t _{PHL}	3003 (Fig. 5)	44	OUT							GND				0.8 v	0.8 v	0.8 v	IN	5.0 v	A to 0	35	140	ns	
			45												0.8 v	0.8 v	2.0 v			A to 2				
			46												2.0 v	0.8 v	0.8 v			A to 4				
			47			OUT									2.0 v	2.0 v	2.0 v			A to 6				
			48									OUT			0.8 v	0.8 v	0.8 v			A to 8				
			49		OUT										0.8 v	0.8 v	0.8 v			A to 1				
			50				OUT								0.8 v	2.0 v	2.0 v			A to 3				
			51						OUT						2.0 v	0.8 v	0.8 v			A to 5				
			52								OUT				2.0 v	2.0 v	2.0 v			A to 7				
	53										OUT			OUT	2.0 v	0.8 v	0.8 v			A to 9				
	t _{PLH}		54	OUT												0.8 v	0.8 v	0.8 v	IN		A to 0	15	70	
			55				OUT									0.8 v	2.0 v	2.0 v			A to 2			
			56							OUT						2.0 v	0.8 v	0.8 v			A to 4			
			57									OUT				2.0 v	2.0 v	2.0 v			A to 6			
			58												OUT	2.0 v	0.8 v	0.8 v			A to 8			
			59		OUT										0.8 v	0.8 v	0.8 v			A to 1				
			60				OUT								0.8 v	2.0 v	2.0 v			A to 3				
			61						OUT						2.0 v	0.8 v	0.8 v			A to 5				
			62								OUT				OUT	2.0 v	2.0 v	2.0 v			A to 7			
	63													OUT	2.0 v	0.8 v	0.8 v			A to 9				
	t _{PHL}		64	OUT												0.8 v	0.8 v	IN	0.8 v		B to 0	35	140	
			65		OUT											0.8 v	0.8 v	2.0 v	2.0 v		B to 1			
			66							OUT						2.0 v	2.0 v	0.8 v	0.8 v		B to 4			
			67								OUT					2.0 v	2.0 v	2.0 v	2.0 v		B to 5			
			68												OUT	0.8 v	0.8 v	0.8 v	0.8 v		B to 8			
			69												OUT	2.0 v	0.8 v	2.0 v	2.0 v		B to 9			
			70													0.8 v	0.8 v	0.8 v	0.8 v		B to 2			
			71					OUT	OUT							0.8 v	0.8 v	2.0 v	2.0 v		B to 3			
			72									OUT				2.0 v	2.0 v	0.8 v	0.8 v		B to 6			
	73											OUT			2.0 v	2.0 v	2.0 v	2.0 v		B to 7				
	t _{PLH}		74	OUT												0.8 v	0.8 v	IN	0.8 v		B to 0	15	70	
			75		OUT											0.8 v	0.8 v	2.0 v	2.0 v		B to 1			
			76			OUT										2.0 v	2.0 v	0.8 v	0.8 v		B to 4			
			77													2.0 v	2.0 v	2.0 v	2.0 v		B to 5			
			78												OUT	2.0 v	0.8 v	0.8 v	0.8 v		B to 8			
			79												OUT	2.0 v	0.8 v	2.0 v	2.0 v		B to 9			
			80					OUT	OUT							0.8 v	0.8 v	0.8 v	0.8 v		B to 2			
			81													0.8 v	0.8 v	2.0 v	2.0 v		B to 3			
			82									OUT				2.0 v	2.0 v	0.8 v	0.8 v		B to 6			
	83											OUT			2.0 v	2.0 v	2.0 v	2.0 v		B to 7				
	t _{PHL}		84	OUT												0.8 v	IN	0.8 v	0.8 v		C to 0	35	140	
			85		OUT											0.8 v	0.8 v	2.0 v	2.0 v		C to 1			
			86													2.0 v	2.0 v	0.8 v	0.8 v		C to 2			
			87				OUT									2.0 v	2.0 v	2.0 v	2.0 v		C to 3			
			88					OUT							OUT	2.0 v	0.8 v	0.8 v	0.8 v		C to 8			
			89													2.0 v	2.0 v	2.0 v	2.0 v		C to 9			
			90							OUT						0.8 v	0.8 v	0.8 v	0.8 v		C to 4			
			91								OUT					2.0 v	2.0 v	2.0 v	2.0 v		C to 5			
			92									OUT				2.0 v	2.0 v	0.8 v	0.8 v		C to 6			
			93										OUT			2.0 v	2.0 v	2.0 v	2.0 v		C to 7			

See footnote at end of device type 06.

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TABLE III. Group A inspection for device type 06 ^{1/} - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits				
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit		
9 T _C = 25° C	t _{PLH}	3003 (Fig. 5)	94	OUT	OUT	OUT	OUT				GND				0.8 v	IN	0.8 v	0.8 v	5.0 v	C to 0	15	70	ns		
			95													0.8 v	2.0 v		C to 1						
			96			OUT										2.0 v	0.8 v		C to 2						
			97				OUT									2.0 v	2.0 v		C to 3						
			98										OUT			2.0 v	0.8 v		C to 8						
			99											OUT		0.8 v	2.0 v		C to 9						
			100						OUT	OUT						2.0 v	0.8 v		C to 4						
			101													2.0 v	2.0 v		C to 5						
			102								OUT					0.8 v	0.8 v		C to 6						
			103									OUT				2.0 v	2.0 v		C to 7						
			t _{PHL}	104	OUT	OUT	OUT	OUT	OUT	OUT				OUT			IN	0.8 v	0.8 v	0.8 v		D to 0	35	140	
				105															0.8 v	2.0 v		D to 1			
				106			OUT											2.0 v	0.8 v		D to 2				
107					OUT			OUT							2.0 v	2.0 v		D to 3							
108														2.0 v	0.8 v	0.8 v		D to 4							
109								OUT							0.8 v	2.0 v		D to 5							
110										OUT					2.0 v	0.8 v		D to 6							
111											OUT				2.0 v	2.0 v		D to 7							
112												OUT		0.8 v	0.8 v	0.8 v		D to 8							
113													OUT	0.8 v	0.8 v	2.0 v		D to 9							
t _{PLH}	114	OUT	OUT	OUT	OUT	OUT	OUT	OUT						IN	0.8 v	0.8 v	0.8 v		D to 0	15	70				
	115		OUT													0.8 v	2.0 v		D to 1						
	116				OUT											2.0 v	0.8 v		D to 2						
	117					OUT										2.0 v	2.0 v		D to 3						
	118						OUT								2.0 v	0.8 v	0.8 v		D to 4						
	119							OUT							0.8 v	2.0 v		D to 5							
	120									OUT					2.0 v	0.8 v		D to 6							
	121										OUT				2.0 v	2.0 v		D to 7							
	122											OUT		0.8 v	0.8 v	0.8 v		D to 8							
	123												OUT	0.8 v	0.8 v	2.0 v		D to 9							
10 T _C = 125° C	t _{PHL}	124	OUT		OUT		OUT								0.8 v	0.8 v	0.8 v	IN		A to 0	30	160			
		125													0.8 v	2.0 v			A to 2						
		126				OUT									2.0 v	0.8 v			A to 4						
		127													2.0 v	2.0 v			A to 6						
		128													2.0 v	0.8 v	0.8 v		A to 8						
		129		OUT											0.8 v	0.8 v	0.8 v		A to 1						
		130				OUT									0.8 v	2.0 v			A to 3						
		131						OUT							2.0 v	0.8 v			A to 5						
		132										OUT			2.0 v	2.0 v			A to 7						
		133											OUT		2.0 v	0.8 v	0.8 v		A to 9						
		t _{PLH}	134	OUT		OUT										0.8 v	0.8 v	0.8 v	IN		A to 0	10	90		
			135														0.8 v	2.0 v			A to 2				
			136														2.0 v	0.8 v			A to 4				
137															2.0 v	2.0 v			A to 6						
138														2.0 v	0.8 v	0.8 v		A to 8							
139			OUT											0.8 v	0.8 v	0.8 v		A to 1							
140					OUT									0.8 v	2.0 v	2.0 v		A to 3							
141								OUT						2.0 v	0.8 v			A to 5							
142										OUT				2.0 v	2.0 v			A to 7							
143													OUT	2.0 v	0.8 v	0.8 v		A to 9							

See footnote at end of device type 06.

TABLE III. Group A inspection for device type 06 ^{1/} - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit
10 T _C = 125° C	t _{PHL}	3003 (Fig. 5)	144	OUT							GND				0.8 v	0.8 v	IN	0.8 v	5.0 v	B to 0	30	160	μA
			145		OUT										↓	0.8 v	↓	2.0 v		B to 1			
			146												↓	2.0 v	↓	0.8 v		B to 4			
			147												↓	2.0 v	↓	2.0 v		B to 5			
			148						OUT		OUT				↓	0.8 v	↓	0.8 v		B to 8			
			149											OUT	↓	0.8 v	↓	2.0 v		B to 9			
			150				OUT								↓	0.8 v	↓	0.8 v		B to 2			
			151					OUT							↓	0.8 v	↓	2.0 v		B to 3			
			152								OUT				↓	2.0 v	↓	0.8 v		B to 6			
			153									OUT			↓	2.0 v	↓	2.0 v		B to 7			
	t _{PLH}		154	OUT											0.8 v	0.8 v	IN	0.8 v		B to 0	10	90	
			155		OUT										↓	0.8 v	↓	2.0 v		B to 1			
			156						OUT		OUT				↓	2.0 v	↓	0.8 v		B to 4			
			157							OUT					↓	2.0 v	↓	2.0 v		B to 5			
			158										OUT		↓	0.8 v	↓	0.8 v		B to 8			
			159											OUT	↓	0.8 v	↓	2.0 v		B to 9			
			160				OUT								↓	0.8 v	↓	0.8 v		B to 2			
			161					OUT							↓	0.8 v	↓	2.0 v		B to 3			
			162								OUT				↓	2.0 v	↓	0.8 v		B to 6			
		163										OUT			↓	2.0 v	↓	2.0 v		B to 7			
	t _{PHL}		164	OUT											0.8 v	IN	0.8 v	0.8 v		C to 0	30	160	
			165		OUT										↓	↓	0.8 v	2.0 v		C to 1			
			166			OUT									↓	2.0 v	↓	0.8 v		C to 2			
			167				OUT								↓	2.0 v	↓	2.0 v		C to 3			
			168										OUT		↓	0.8 v	↓	0.8 v		C to 8			
			169											OUT	↓	2.0 v	↓	2.0 v		C to 9			
			170												↓	0.8 v	↓	0.8 v		C to 4			
			171						OUT		OUT				↓	2.0 v	↓	2.0 v		C to 5			
			172								OUT				↓	↓	2.0 v	0.8 v		C to 6			
		173										OUT			↓	2.0 v	↓	2.0 v		C to 7			
	t _{PLH}		174	OUT											0.8 v	IN	0.8 v	0.8 v		C to 0	10	90	
			175		OUT										↓	↓	0.8 v	2.0 v		C to 1			
			176			OUT									↓	2.0 v	↓	0.8 v		C to 2			
			177				OUT								↓	2.0 v	↓	2.0 v		C to 3			
			178										OUT		↓	0.8 v	↓	0.8 v		C to 8			
			179											OUT	↓	2.0 v	↓	2.0 v		C to 9			
			180						OUT						↓	0.8 v	↓	0.8 v		C to 4			
			181							OUT					↓	↓	2.0 v	2.0 v		C to 5			
			182								OUT				↓	2.0 v	↓	0.8 v		C to 6			
		183										OUT			↓	2.0 v	↓	2.0 v		C to 7			
	t _{PHL}		184	OUT											IN	0.8 v	0.8 v	0.8 v		D to 0	30	160	
			185		OUT										↓	↓	0.8 v	2.0 v		D to 1			
			186			OUT									↓	2.0 v	↓	0.8 v		D to 2			
			187				OUT								↓	2.0 v	↓	2.0 v		D to 3			
			188						OUT						↓	0.8 v	↓	0.8 v		D to 4			
			189							OUT					↓	0.8 v	↓	2.0 v		D to 5			
			190												↓	2.0 v	↓	0.8 v		D to 6			
			191								OUT				↓	2.0 v	↓	2.0 v		D to 7			
			192									OUT			↓	0.8 v	↓	0.8 v		D to 8			
		193											OUT		↓	0.8 v	↓	2.0 v		D to 9			

See footnote at end of device type 06.

TABLE III. Group A inspection for device type 06 1/ - Continued

Subgroup	Symbol	MIL-STD-883 method	Case E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	0	1	2	3	4	5	6	GND	7	8	9	D	C	B	A	V _{CC}		Min	Max	Unit
10 T _C = 125° C	t _{PLH}	3003 (Fig. 5)	194	OUT	OUT	OUT	OUT	OUT	OUT	OUT	GND				IN	0.8 v	0.8 v	0.8 v	5.0 v	D to 0	10	90	μA
			195														0.8 v	2.0 v					
			196														2.0 v	0.8 v					
			197														2.0 v	2.0 v		D to 2			
			198														0.8 v	0.8 v		D to 3			
			199				OUT	OUT	OUT	OUT						2.0 v	0.8 v	2.0 v		D to 4			
			200														0.8 v	2.0 v		D to 5			
			201									OUT					2.0 v	0.8 v		D to 6			
			202														2.0 v	2.0 v		D to 7			
			203										OUT	OUT		0.8 v	0.8 v	0.8 v		D to 8			
																		0.8 v	0.8 v	2.0 v		D to 9	
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55° C.																						

1/ Terminal conditions (pins not designated may be H ≥ 2.0V, or L ≤ 0.8V, or open).

TABLE III. Group A inspection for device type 07. 1/

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits			
				A2	A3	5	6	7	8	9	GND	4	3	2	1	0	A1	A0	V _{CC}		Min	Max	Unit	
1 T _C = 25°C	V _{OL}	3007	1	0.7 V	0.7 V						GND					4.8 mA	0.7 V	0.7 V	4.5 V	0		0.3	V	
			2														0.7 V	2.0 V		1				
			3														2.0 V	0.7 V		2				
			4														2.0 V	2.0 V		3				
			5	2.0 V													0.7 V	0.7 V		4				
			6			4.8 mA						4.8 mA					0.7 V	2.0 V		5				
			7														2.0 V	0.7 V		6				
			8														2.0 V	2.0 V		7				
			9	0.7 V	2.0 V				4.8 mA								0.7 V	0.7 V		8				
			10	0.7 V	2.0 V					4.8 mA							0.7 V	2.0 V		9				
	V _{OH}	3006	11	GND	2.0 V												-4 mA	GND	0.7 V		0	2.4		
			12	GND													GND	2.0 V		1				
			13	0.7 V													4.5 V	GND		2				
			14	GND													2.0 V	4.5 V		3				
			15	2.0 V													GND	GND		4				
			16	4.5 V	0.7 V	-4 mA											2.0 V	4.5 V		5				
			17	4.5 V	GND		-4 mA										0.7 V	GND		6				
			18	4.5 V	GND			-4 mA									0.7 V	4.5 V		7				
			19	GND	4.5 V				-4 mA								2.0 V	GND		8				
			20	GND	4.5 V					-4 mA							2.0 V	4.5 V		9				
	V _{IC}		21	-10mA																	A2		-1.5	
			22		-10mA																A3			
			23																		A1			
			24														-10 mA				A0			
	I _{IH1}	3010	25	2.4 V																	A2		20	μA
			26		2.4 V																A3			
			27															2.4 V			A1			
			28																2.4 V		A0			
	I _{IH2}		29	5.5 V																	A2		100	
			30		5.5 V																A3			
			31															5.5 V			A1			
			32																5.5 V		A0			
	I _{IL}	3009	33	0.3 V																	A2	-176	-400	
			34		0.3 V																A3			
			35															0.3 V			A1			
			36																0.3 V		A0			
	I _{CC}	3005	37	GND	GND													GND	GND		V _{CC}		13	mA
			38			GND															5	-2.5	-25	
			39				GND														6			
			40					GND													7			
	I _{OS}	3011	41						GND												8			
			42							GND											9			
			43								GND										4			
			44									GND									3			
			45											GND							2			
			46												GND						1			
			47													GND					0			
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																							
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																							

See footnote at end of device type 07.

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TABLE III. Group A inspection for device type 07 - Continued. 1/

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				A2	A3	5	6	7	8	9	GND	4	3	2	1	0	A1	A0	VCC		Min	Max	Unit
9 T _C = 25°C	t _{PHL}	3003 (Fig 5)	48	GND	GND						GND				OUT		GND	IN	5.0 V	A0 to 1	12	42	ns
			49	GND	GND								OUT				5.0 V			A0 to 3			
			50	5.0 V	GND												GND			A0 to 5			
			51	5.0 V	GND	OUT											5.0 V			A0 to 7			
			52	GND	5.0 V			OUT									GND			A0 to 9			
			53	GND	GND					OUT							GND		OUT	A0 to 0			
			54	GND	GND									OUT			5.0 V			A0 to 2			
			55	5.0 V	GND												GND			A0 to 4			
			56	5.0 V	GND												5.0 V			A0 to 6			
			57	GND	5.0 V					OUT							GND			A0 to 8			
			58	GND	GND									OUT			IN	↓ GND		A1 to 2			
			59	GND	GND													5.0 V		A1 to 3			
			60	5.0 V	GND													GND		A1 to 6			
			61	5.0 V	GND			OUT										5.0 V		A1 to 7			
			62	GND	GND													5.0 V		A1 to 0			
			63	GND	GND													5.0 V		A1 to 1			
			64	5.0 V	GND													5.0 V		A1 to 4			
			65	5.0 V	GND	OUT												5.0 V		A1 to 5			
			66	GND	5.0 V													GND		A1 to 8			
			67	GND	5.0 V					OUT								5.0 V		A1 to 9			
			68	IN	GND												↓ GND			A2 to 4			
			69	GND	GND	OUT											GND	5.0 V		A2 to 5			
			70	GND	GND			OUT									5.0 V	GND		A2 to 6			
			71	GND	GND			OUT									5.0 V	5.0 V		A2 to 7			
			72	GND	GND												5.0 V	5.0 V		A2 to 1			
			73	GND	GND												5.0 V	GND		A2 to 2			
			74	GND	GND									OUT			5.0 V	5.0 V		A2 to 3			
			75	5.0 V													GND	GND		A2 to 8			
			76	5.0 V													GND	5.0 V		A2 to 9			
			77	↓ GND	GND												GND	GND		A2 to 0			
			78	GND	IN												GND	GND		A3 to 8			
			79	GND													GND	5.0 V		A3 to 9			
			80	GND													GND	GND		A3 to 0			
			81	GND													GND	5.0 V		A3 to 1			
			82	GND													5.0 V	GND		A3 to 2			
			83	GND													5.0 V	5.0 V		A3 to 3			
			84	5.0 V													GND	GND		A3 to 4			
			85	5.0 V		OUT											GND	5.0 V		A3 to 5			
			86	5.0 V				OUT									5.0 V	GND		A3 to 6			
			87	5.0 V				OUT									5.0 V	5.0 V		A3 to 7			
	t _{PLH}	3003 (Fig 5)	88	GND	GND										OUT		GND	IN		A0 to 1			
			89	GND	GND												5.0 V			A0 to 3			
			90	5.0 V	GND	OUT								OUT			GND			A0 to 5			
			91	5.0 V	GND												5.0 V			A0 to 7			
			92	GND	5.0 V			OUT									GND			A0 to 9			
			93	GND	GND												GND		OUT	A0 to 0			
			94	GND	GND												5.0 V			A0 to 2			
			95	5.0 V	GND												GND			A0 to 4			
			96	5.0 V	GND												5.0 V			A0 to 6			
			97	GND	5.0 V												GND			A0 to 8			

See footnote at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued. 1/

Subgroup	Symbol	MIL-STD-883 method	Cases E, F		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test Limits				
			Test No.	A2	A3	5	6	7	8	9	GND	4	3	2	1	0	A1	A0	VCC	Min		Max	Unit			
9 T _C = 25°C	t _{PLH}	3003 (Fig 5)	98	GND	GND							GND			OUT					5.0 V	A1 to 2	12	42	ns		
			99	GND	GND																	A1 to 3				
			100	5.0 V	GND			OUT							OUT					GND			A1 to 6			
			101	5.0 V	GND					OUT										5.0 V			A1 to 7			
			102	GND	GND															5.0 V			A1 to 0			
			103	GND	GND															5.0 V			A1 to 1			
			104	5.0 V	GND										OUT					5.0 V			A1 to 4			
			105	5.0 V	GND			OUT												5.0 V			A1 to 5			
			106	GND	5.0 V						OUT									GND			A1 to 8			
			107	GND	5.0 V							OUT								5.0 V			A1 to 9			
			108	IN	GND			OUT							OUT					GND			A2 to 4			
			109	IN	GND			OUT												GND			A2 to 5			
			110	IN	GND					OUT										5.0 V			A2 to 6			
			111	IN	GND															5.0 V			A2 to 7			
			112	IN	GND						OUT									5.0 V			A2 to 1			
			113	IN	GND												OUT			5.0 V			A2 to 2			
			114	IN	GND															5.0 V			A2 to 3			
			115	5.0 V	5.0 V							OUT								GND			A2 to 8			
			116	5.0 V	5.0 V								OUT							GND			A2 to 9			
			117	IN	GND															GND			A2 to 0			
			118	GND	IN								OUT							GND			A3 to 8			
			119	GND	IN								OUT							GND			A3 to 9			
			120	GND	IN															GND			A3 to 0			
			121	GND	IN															GND			A3 to 1			
			122	GND	IN															5.0 V			A3 to 2			
			123	GND	IN											OUT				5.0 V			A3 to 3			
			124	5.0 V	5.0 V											OUT				GND			A3 to 4			
125	5.0 V	5.0 V			OUT												GND			A3 to 5						
126	5.0 V	5.0 V			OUT												5.0 V			A3 to 6						
127	5.0 V	5.0 V			OUT				OUT								5.0 V			A3 to 7						
10 T _C = 125°C	t _{PHL}	3003 (Fig 5)	128	GND	GND											OUT		GND	IN		A0 to 1	10	50			
			129	GND	GND														5.0 V			A0 to 3				
			130	5.0 V	GND			OUT											GND			A0 to 5				
			131	5.0 V	GND					OUT									5.0 V			A0 to 7				
			132	GND	5.0 V								OUT						GND			A0 to 9				
			133	GND	GND														GND			A0 to 0				
			134	GND	GND														5.0 V			A0 to 2				
			135	5.0 V	GND														GND			A0 to 4				
			136	5.0 V	GND										OUT				5.0 V			A0 to 6				
			137	GND	5.0 V									OUT					GND			A0 to 8				
			138	GND	GND														IN			A1 to 2				
			139	GND	GND														5.0 V			A1 to 3				
			140	5.0 V	GND														GND			A1 to 6				
			141	5.0 V	GND														5.0 V			A1 to 7				
			142	GND	GND														5.0 V			A1 to 0				
			143	GND	GND														5.0 V			A1 to 1				
			144	5.0 V	GND														5.0 V			A1 to 4				
			145	5.0 V	GND			OUT							OUT				5.0 V			A1 to 5				
			146	GND	5.0 V							OUT							GND			A1 to 8				
			147	GND	5.0 V														5.0 V			A1 to 9				

See footnote at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued. 1/

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				A2	A3	5	6	7	8	9	GND	4	3	2	1	0	A1	A0	V _{CC}		Min	Max	Unit
10 T _C =125°C	t _{PHL}	3003 (Fig 5)	148	IN	GND	OUT	OUT	OUT			GND	OUT					GND	GND	5.0 V	A2 to 4	10	50	ns
			149	↓	GND												GND	5.0 V		A2 to 5			
			150		GND												5.0 V	GND		A2 to 6			
			151		GND		OUT	OUT									5.0 V	5.0 V		A2 to 7			
			152		GND												5.0 V	5.0 V		A2 to 1			
			153		GND									OUT	OUT		5.0 V	GND		A2 to 2			
			154		GND								OUT				5.0 V	5.0 V		A2 to 3			
			155		5.0 V				OUT	OUT							GND	GND		A2 to 8			
			156		5.0 V												GND	5.0 V		A2 to 9			
			157	↓	GND												GND	GND		A2 to 0			
			158	IN	IN				OUT	OUT							GND	GND		A3 to 8			
			159	GND													GND	5.0 V		A3 to 9			
			160	GND													GND	GND		A3 to 0			
			161	GND													GND	5.0 V		A3 to 1			
			162	GND										OUT	OUT		5.0 V	GND		A3 to 2			
			163	GND									OUT				5.0 V	5.0 V		A3 to 3			
			164	5.0 V		OUT	OUT					OUT					GND	GND		A3 to 4			
			165	5.0 V													GND	5.0 V		A3 to 5			
			166	5.0 V													5.0 V	GND		A3 to 6			
			167	5.0 V	↓			OUT									5.0 V	5.0 V		A3 to 7			
	t _{PLH}	3003 (Fig 5)	168	GND	GND								OUT		OUT		GND	IN		A0 to 1			
			169	GND	GND												5.0 V			A0 to 3			
			170	5.0 V	GND	OUT											GND			A0 to 5			
			171	5.0 V	GND												5.0 V			A0 to 7			
			172	GND	5.0 V			OUT		OUT							GND			A0 to 9			
			173	GND	GND												GND			A0 to 0			
			174	GND	GND												5.0 V			A0 to 2			
			175	5.0 V	GND												GND			A0 to 4			
			176	5.0 V	GND		OUT					OUT					5.0 V			A0 to 6			
			177	GND	5.0 V				OUT								GND	↓		A0 to 8			
			178	GND	GND												IN	5.0 V		A1 to 2			
			179	GND	GND								OUT		OUT			GND		A1 to 3			
			180	5.0 V	GND		OUT											5.0 V		A1 to 6			
			181	5.0 V	GND			OUT										5.0 V		A1 to 7			
			182	GND	GND													5.0 V		A1 to 0			
			183	GND	GND													5.0 V		A1 to 1			
			184	5.0 V	GND								OUT					5.0 V		A1 to 4			
			185	5.0 V	GND	OUT												5.0 V		A1 to 5			
			186	GND	5.0 V				OUT									GND		A1 to 8			
			187	GND	5.0 V					OUT								5.0 V		A1 to 9			
			188	IN	GND							OUT					↓	GND		A2 to 4			
			189	↓	GND	OUT											GND	5.0 V		A2 to 5			
			190		GND		OUT										5.0 V	GND		A2 to 6			
			191		GND			OUT									5.0 V	5.0 V		A2 to 7			
			192		GND												5.0 V	5.0 V		A2 to 1			
			193		GND									OUT	OUT		5.0 V	GND		A2 to 2			
			194		GND								OUT				5.0 V	5.0 V		A2 to 3			
			195		5.0 V												GND	GND		A2 to 8			
			196		5.0 V			OUT									GND	5.0 V		A2 to 9			
			197		GND											OUT	GND	GND		A2 to 0			

See footnote at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued. 1/

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
			Test No.	A2	A3	5	6	7	8	9	GND	4	3	2	1	0	A1	A0	V _{CC}		Min	Max	Unit
10 T _C = 125° C	t _{PLH}	3003 (Fig 5)	198	GND	IN				OUT		GND						GND	GND	5.0 V	A3 to 8	10	50	ns
			199	GND						OUT							GND	5.0 V		A3 to 9			
			200	GND													GND	GND		A3 to 0			
			201	GND													GND	5.0 V		A3 to 1			
			202	GND										OUT	OUT		5.0 V	GND		A3 to 2			
			203	GND									OUT				5.0 V	5.0 V		A3 to 3			
			204	5.0 V								OUT					GND	GND		A3 to 4			
			205	5.0 V		OUT											GND	5.0 V		A3 to 5			
			206	5.0 V			OUT										5.0 V	GND		A3 to 6			
			207	5.0 V				OUT									5.0 V	5.0 V		A3 to 7			
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55° C.																						

1/ Terminal conditions (pins not designated may be H ≥ 2.0 V, or L ≤ 0.8 V, or open).

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.

4.5 Methods of inspection. Methods of inspection shall be specified as follows:

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 of microcircuits shall be as specified in 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 logistic support of existing equipment.

6.3 Ordering data. The acquisition document 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, if applicable.
- e. Requirements for packaging and packing.
- f. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements shall not affect the part number. Unless otherwise specified, these requirements shall 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-M-38510, MIL-STD-1331, and as follows:

GND	- - - - -	Electrical ground (common terminal)
I _{IN}	- - - - -	Current flowing into an input terminal
T _C	- - - - -	Case temperature
V _{IN}	- - - - -	Voltage level at 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 material and finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.6 Generic test data. Generic test data may be used to satisfy the requirements of 4.4.3. Group C generic test data shall be on date codes no more than one year old and on a die in the same microcircuit group (see appendix E of MIL-M-38510) with the same material, design and process and from the same plant as the die represented. Group D (see 4.4.4) generic data shall be on date codes no more than one year old and on the same package type (see terms, definitions, and symbols of MIL-M-38510) and from the same plant as the package represented. The vendor is required to retain the generic data for a period of not less than 36 months from the date of shipment.

6.7 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-38510 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-38510 types or as a waiver of any of the provisions of MIL-M-38510.

<u>Military device type</u>	<u>Generic-industry type</u>
01	54L42
02	54L43
03	54L44
04	54L46
05	54L47
06	76L42A
07	93L01

6.8 Ordering guidance. Since the qualification and certification requirements have been removed from the specification, orders may be placed immediately.

6.9 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 5962-0674-1)

Review activities:

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

User activities:

Army - SM
Navy - AS, CG, MC

Agent:

DLA - ES