

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, ADVANCED SCHOTTKY TTL DATA  
 SELECTORS/MULTIPLEXERS WITH THREE-STATE OUTPUTS,  
 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, advanced Schottky TTL, data selectors and multiplexers (three-state) microcircuits. Two product assurance classes and a choice of case outlines and lead finish are provided and are reflected in the 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 types. The device types shall be as follows:

<u>Device type</u>	<u>Circuit</u>
01	9-input, data selector/multiplexer.
02	Dual, 4-input, data selector/multiplexer.
03	Quad, 2-input, data selector/multiplexer.
04	Quad, 2-input, data selector/multiplexer with inverted output.
05	8-input, data selector/multiplexer with 3-state outputs.
06	Quad, 2-input, data selector/multiplexer with 3-state outputs.
07	Quad, 2-input, data selector/multiplexer with 3-state inverted output.
08	Dual, 4-input, data selector/multiplexer with 3-state outputs.
09	Dual, 4-input, data selector/multiplexer with inverted outputs.
10	Dual, 4-input, data selector/multiplexer with 3-state inverted outputs.

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

1.2.3 Case outlines. The case outlines 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
Z	C-2 (20-terminal, .350" x .350"), square chip carrier package

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.

AMSC N/A

DISTRIBUTION STATEMENT A.

Approved for public release; distribution is unlimited.

FSC 5962

1.3 Absolute maximum ratings.

Supply voltage range - - - - -	-0.5 to +7.0 V
Input voltage range- - - - -	-1.2 V at -18 mA to +7.0 V .
Storage temperature range- - - - -	-65°C to +150°C
Maximum power dissipation (P <sub>D</sub> ) per device <u>1/</u>	
Device type 01 - - - - -	116 mW
Device type 02 - - - - -	110 mW
Device type 03 - - - - -	127 mW
Device type 04 - - - - -	83 mW
Device type 05 - - - - -	132 mW
Device type 06 - - - - -	127 mW
Device type 07 - - - - -	127 mW
Device type 08 - - - - -	121 mW
Device type 09 - - - - -	110 mW
Device type 10 - - - - -	127 mW
Lead temperature (soldering, 10 seconds) - - -	300°C
Thermal resistance, junction to case (θ <sub>JC</sub> ): <u>2/</u>	
Cases E, F - - - - -	(See MIL-M-38510, appendix C)
Case 2 - - - - -	60°C/W
Junction temperature (T <sub>J</sub> ) <u>3/</u> - - - - -	175°C

1.4 Recommended operating conditions.

Supply voltage (V <sub>CC</sub> ) - - - - -	4.5 minimum to 5.5 V dc maximum
Minimum high level input voltage (V <sub>IH</sub> ) - - - -	2.0 V dc
Maximum low level input voltage (V <sub>IL</sub> ) - - - -	0.8 V dc
Case operating temperature range (T <sub>C</sub> ) - - - -	-55°C to +125°C

## 2. APPLICABLE DOCUMENTS

2.1 Specification and standard. The following specification and standard, form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

## SPECIFICATIONS

## MILITARY

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

## STANDARDS

## MILITARY

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

(Copies of the specification and standard required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

- 
- 1/ Must withstand the added P<sub>D</sub> due to short-circuit test (e.g., I<sub>OS</sub>).
  - 2/ When a thermal resistance value is included in MIL-M-38510, appendix C, it shall supersede the value stated herein.
  - 3/ Maximum junction temperature shall not be exceeded except for allowable short duration burn-in screening conditions per method 5004 of MIL-STD-883.

## 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 Case outlines. The case outlines shall be as specified in 1.2.3.

3.2.2 Terminal connections and pin assignments. The terminal connections and pin assignments shall be as specified on figure 1.

3.2.3 Logic diagrams. The logic diagrams shall be as specified on figure 2.

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

3.2.5 Schematic circuits. Schematic circuits shall be submitted to the preparing activity prior to inclusion of a manufacturer's device in the specification and shall be submitted to the qualifying activity and agent activity (DESC-ECS) as a prerequisite for qualification. All qualified manufacturers schematics shall be maintained by the agent activity and will be available upon request.

3.3 Lead material and finish. The lead material and finish shall be in accordance with MIL-M-38510 (see 6.4).

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 I. Electrical performance characteristics.

Tests	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$	Device type	Limits		Unit
				Min	Max	
High-level output voltage	V <sub>OH</sub>	V <sub>CC</sub> = 4.5 V	101,02,03, 04, 09	2.5		V
		V <sub>IL</sub> = 0.8 V, V <sub>IH</sub> = 2.0 V				
Low-level output voltage	V <sub>OL</sub>	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 20.0 mA, V <sub>IL</sub> = 0.8 V, V <sub>IH</sub> = 2.0 V	A11		0.5	V
Input clamp voltage	V <sub>IC</sub>	V <sub>CC</sub> = 4.5 V, I <sub>IN</sub> = -18.0 mA, T <sub>C</sub> = 25°C	A11		-1.2	V
High-level input current	I <sub>IH1</sub>	V <sub>CC</sub> = 5.5 V, V <sub>IH</sub> = 2.7 V	A11		20	μA
	I <sub>IH2</sub>	V <sub>CC</sub> = 5.5 V, V <sub>IH</sub> = 7.0 V	A11		100	μA
Low-level input current	I <sub>IL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>IL</sub> = 0.5 V	A11	-.03	-.60	mA
Short-circuit output current <sup>1/</sup>	I <sub>OS</sub>	V <sub>CC</sub> = 5.5 V, V <sub>OS</sub> = 0.0 V	A11	-60	-150	mA

<sup>1/</sup> Not more than one output should be shorted at a time.

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions $-55^{\circ}\text{C} \leq T_c \leq +125^{\circ}\text{C}$	Device type	Limits		Unit
				Min	Max	
Output drive	I <sub>OD</sub>	V <sub>CC</sub> = 4.5 V	01,02,03, 04,09	60	---	mA
			05,06,07, 08,10	35	---	mA
Supply current	I <sub>CC</sub>	V <sub>CC</sub> = 5.5 V, V <sub>OS</sub> = 0.0 V	01		21	mA
			02		20	mA
			03		23	mA
			04		15	mA
			05		22	mA
High level supply current	I <sub>CCH</sub>	V <sub>CC</sub> = 5.5 V	06		15	mA
			07		9.5	mA
			08		16	mA
			09		14	mA
			10		14	mA
Low level supply current	I <sub>CCL</sub>	V <sub>CC</sub> = 5.5 V	06		22	mA
			07		23	mA
			08		23	mA
			09		20	mA
			10		20	mA

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$	Device type	Limits		Unit
				Min	Max	
Off state supply current	$I_{CCZ}$	$V_{CC} = 5.5 \text{ V}$ Outputs disabled	05		.24	mA
			06		23	mA
			07		17	mA
			08		23	mA
			10		23	mA
Off state output leakage current	$I_{OZH}$	$V_{CC} = 5.5 \text{ V}, V_{ZH} = 2.7 \text{ V}$	05,06,07, 08,10		50	$\mu\text{A}$
	$I_{OZL}$	$V_{CC} = 5.5 \text{ V}, V_{ZL} = 0.5 \text{ V}$			-50	$\mu\text{A}$
Propagation delay time, low to high level, data to Z output	$t_{PLH1}$	$V_{CC} = 5.0 \text{ V}$ (see figure 5)	01	2.5	8.5	ns
			02	2.0	9.0	ns
			03	2.5	7.5	ns
			05	2.5	9.0	ns
			06	2.0	7.0	ns
			08	3.0	9.0	ns
Propagation delay time, low to high level, data to Z output	$t_{PLH2}$		01	2.5	7.5	ns
			04	2.5	8.5	ns
			05	2.5	8.5	ns
			07	2.0	7.5	ns
			09	2.0	9.0	ns
			10	1.5	9.0	ns
Propagation delay time, low to high level, select to Z output	$t_{PLH3}$		01	4.5	13.5	ns
			02	4.5	14.0	ns
			03	4.0	12.0	ns
			05	3.5	14.0	ns
			06	3.5	11.5	ns
			08	4.5	15.0	ns
Propagation delay time, low to high level, select to Z output	$t_{PLH4}$		01	3.5	11.5	ns
			04	3.0	10.5	ns
			05	3.5	11.5	ns
			07	3.0	9.5	ns
			09	3.5	14.5	ns
			10	4.0	16.0	ns
Propagation delay time, low to high level, enable to Z output	$t_{PLH5}$		01	4.0	12.0	ns
			02	4.5	11.5	ns
			03	5.0	13.0	ns
Propagation delay time, low to high level, enable to Z output	$t_{PLH6}$		01	3.0	7.5	ns
			04	2.5	8.0	ns
			09	3.5	17.0	ns

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$	Device type	Limits		Unit
				Min	Max	
Propagation delay time, high to low level, data to Z output	t <sub>PHL1</sub>	V <sub>CC</sub> = 5.0 V (see figure 5)	01	3.5	9.0	ns
			02	2.5	8.0	ns
			03	1.5	7.5	ns
			05	3.5	9.0	ns
			06	1.5	7.0	ns
			08	2.5	8.0	ns
Propagation delay time, low to high level, data to Z output	t <sub>PHL2</sub>		01	1.5	6.0	ns
			04	1.5	5.0	ns
			05	1.5	6.0	ns
			07	1.0	6.0	ns
			09	1.5	7.5	ns
			10	1.5	7.5	ns
Propagation delay time, high to low level, select to Z output	t <sub>PHL3</sub>		01	4.0	9.5	ns
			02	3.5	11.0	ns
			03	3.0	9.0	ns
			05	3.0	10.5	ns
			06	2.5	9.0	ns
			08	2.5	11.0	ns
Propagation delay time, high to low level, select to Z output	t <sub>PHL4</sub>		01	3.0	8.0	ns
			04	2.5	8.0	ns
			05	3.2	8.0	ns
			07	2.5	9.0	ns
			09	3.5	15.0	ns
			10	4.0	14.0	ns
Propagation delay time, high to low level, enable to Z output	t <sub>PHL5</sub>		01	3.0	8.0	ns
			02	2.5	9.0	ns
			03	2.5	7.5	ns
Propagation delay time, high to low level, enable to Z output	t <sub>PHL6</sub>		01	2.5	6.5	ns
			04	2.0	7.0	ns
			09	3.0	13.0	ns
Propagation delay time, low level to off state, output enable to Z output	t <sub>PLZ5</sub>		05	1.5	5.5	ns
			06	2.0	8.5	ns
			08	2.0	8.0	ns
Propagation delay time, low level to off state, output enable to Z output	t <sub>PLZ6</sub>		05	1.5	5.0	ns
			07	2.0	8.5	ns
			10	2.0	8.5	ns
Propagation delay time, high level to off state, out- put enable to Z output	t <sub>PHZ5</sub>		05	2.0	5.5	ns
			06	2.0	7.0	ns
			08	2.0	6.5	ns
Propagation delay time, high level to off state, out- put enable to Z output	t <sub>PHZ6</sub>		05	2.5	6.0	ns
			07	1.5	7.0	ns
			10	2.0	6.5	ns

TABLE I. Electrical performance characteristics - Continued.

Tests	Symbol	Conditions $-55^{\circ}\text{C} \leq T_C \leq +125^{\circ}\text{C}$	Device type	Limits		Unit
				Min	Max	
Propagation delay time, off state to low level out- put enable to Z output	tpZL5	VCC = 5.0 V (see figure 5)	05	3.5	9.0	ns
			06	2.5	9.0	ns
			08	2.5	10.0	ns
Propagation delay time, off state to low level out- put enable to Z output	tpZL6		05	2.5	7.5	ns
			07	2.5	9.0	ns
			10	3.0	15.5	ns
Propagation delay time, off state to high level out- put enable to Z output	tpZH5		05	3.0	8.5	ns
			06	2.0	8.0	ns
			08	3.0	10.0	ns
Propagation delay time, off state to high level out- put enable to Z output	tpZH6		05	2.0	7.0	ns
			07	2.0	8.0	ns
			10	3.0	11.0	ns

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

3.6 Marking. Marking shall be in accordance with MIL-M-38510.

3.7 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 11 (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
Interim electrical parameters (method 5004)	1	1
Final electrical test parameters (method 5004)	1*,2,3,7, 9,10,11	1*,2,3,7,9
Group A test requirements (method 5005)	1,2,3,7,8, 9,10,11	1,2,3,7,8, 9,10,11
Group B test requirements (method 5005) subgroup 5	1,2,3,7,8, 9,10,11	N/A
Group C end-point electrical parameters (method 5005)	N/A	1, 2, 3
Additional electrical subgroups for group C periodic inspections	N/A	N/A
Group D end-point electrical parameters (method 5005)	1, 2, 3	1, 2, 3

\*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, method 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 (method 1015 of MIL-STD-883).
  - (1) Test condition D, E, or F 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) shall be as specified in MIL-M-38510.



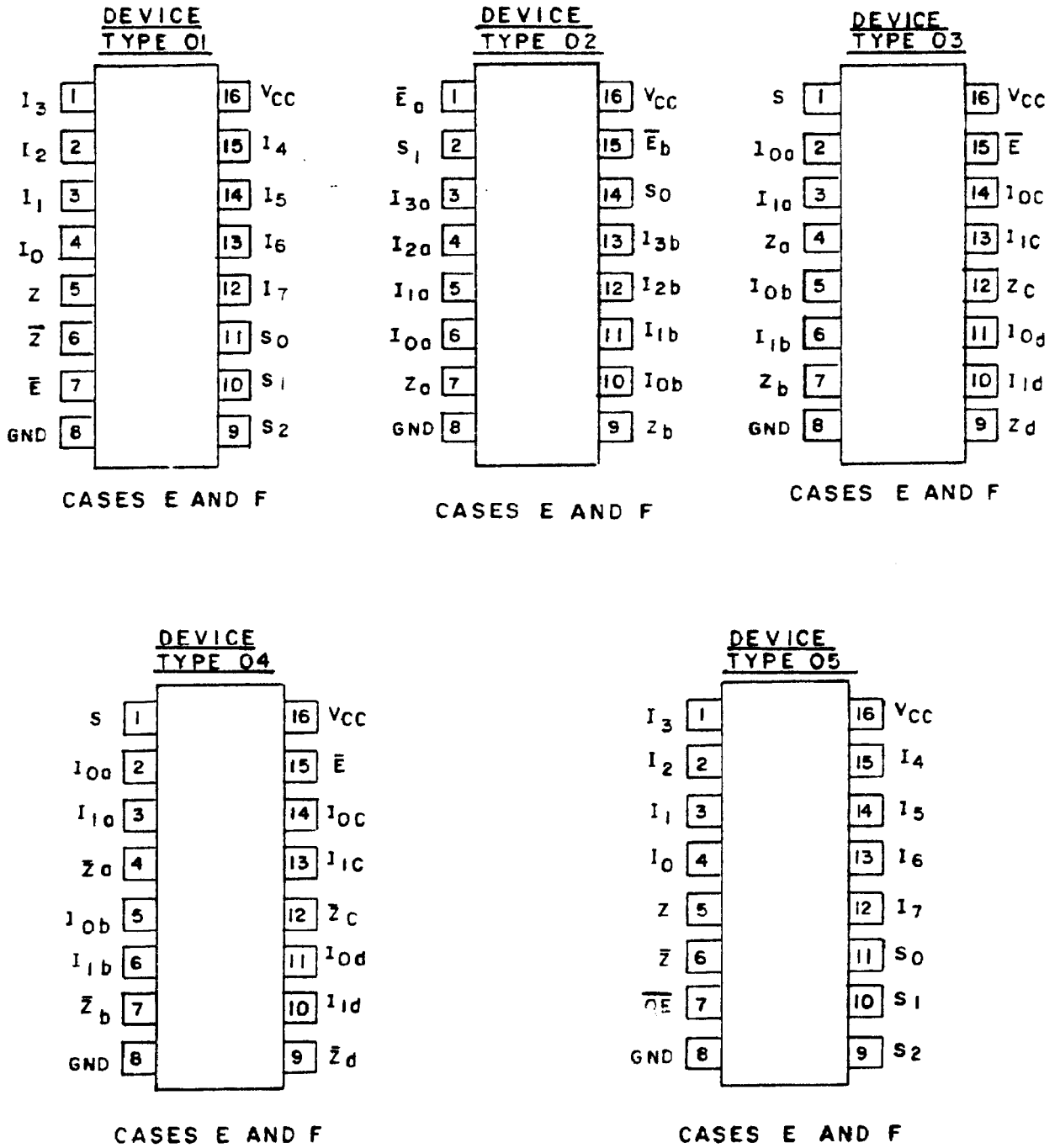


FIGURE 1. Terminal connections.

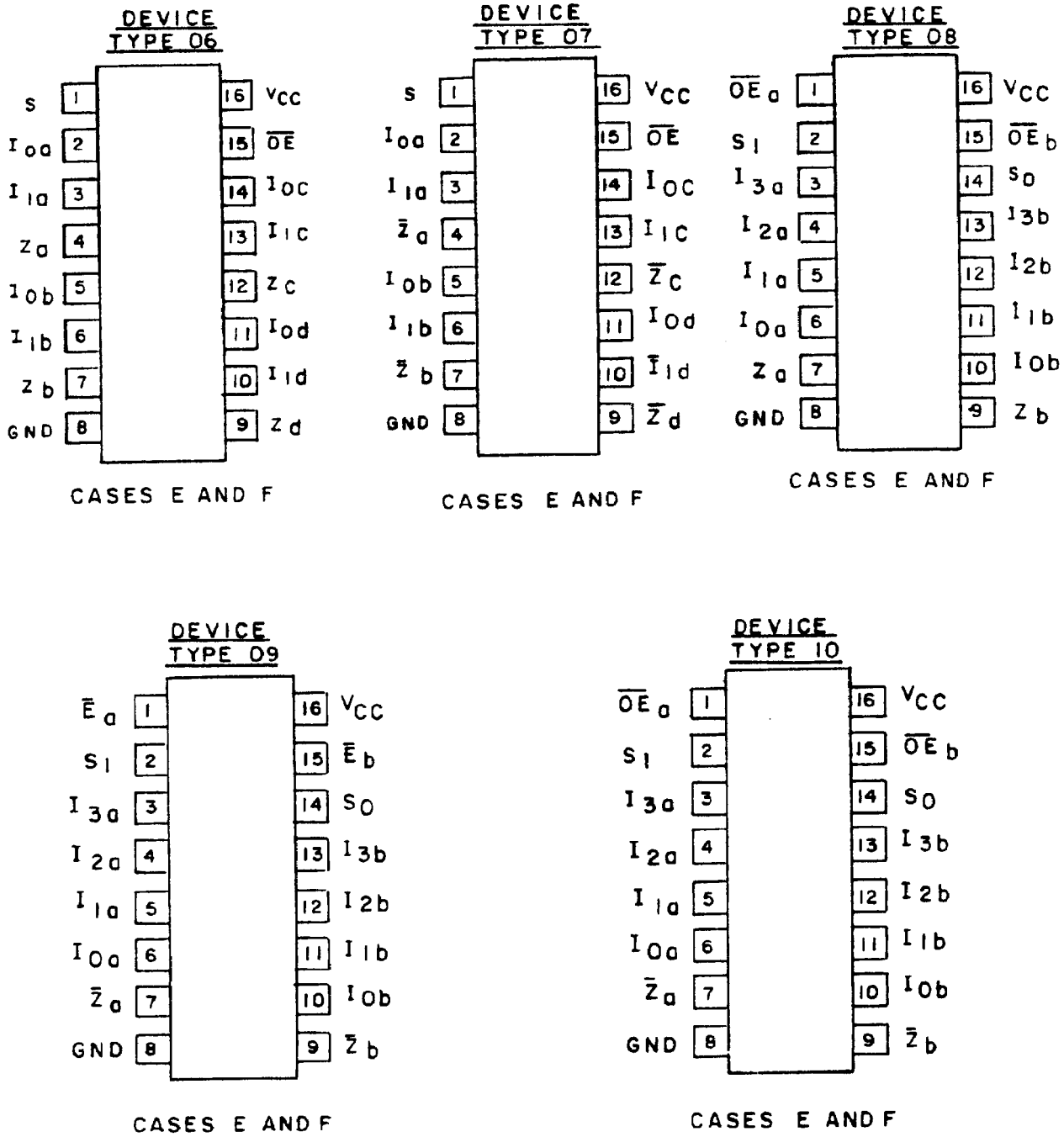
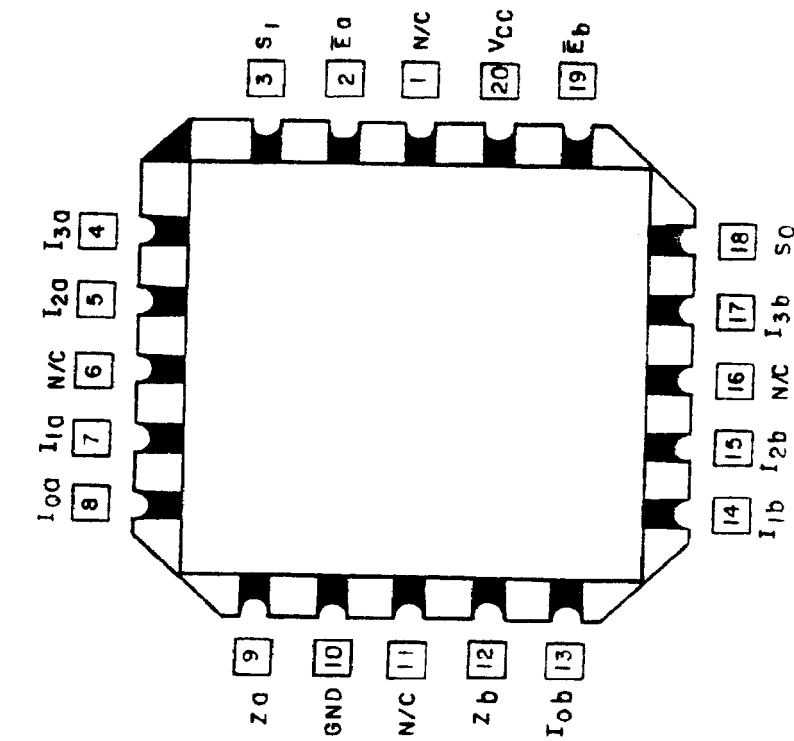


FIGURE 1. Terminal connections - Continued.

Device type 02  
Case 2



Device type 01  
Case 2

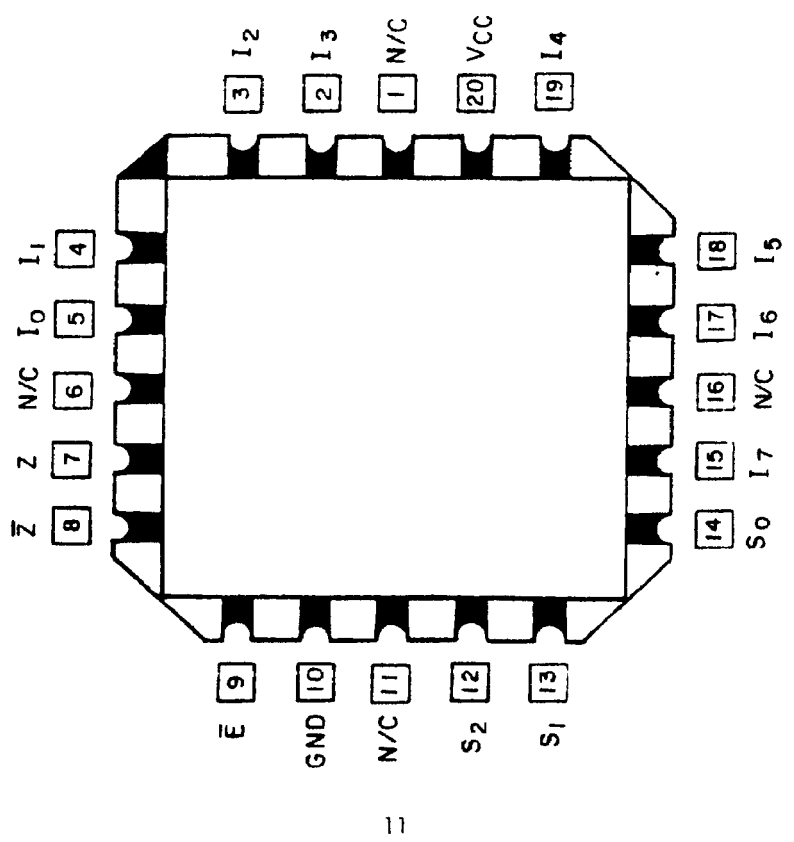
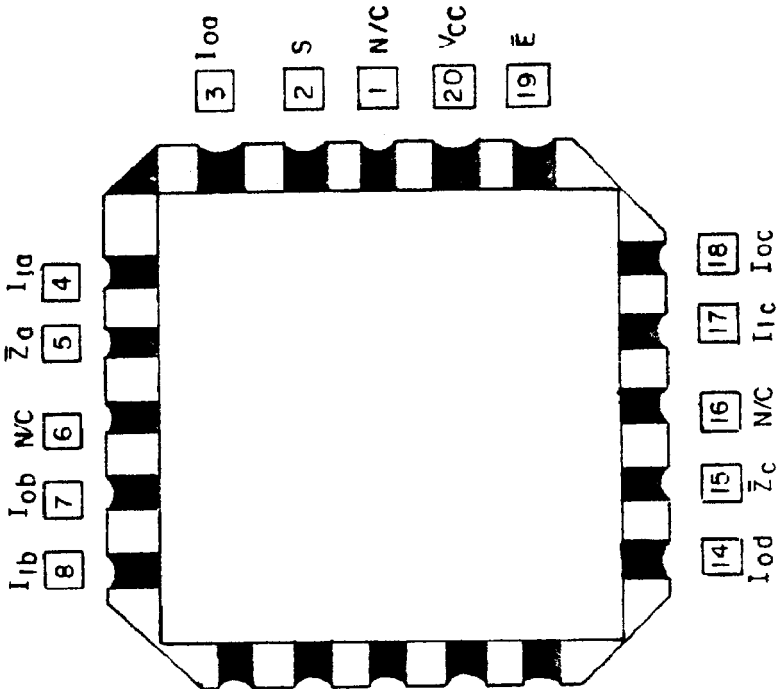


FIGURE 1. Terminal connections - Continued.

Device type 04  
Case 2



Device type 03  
Case 2

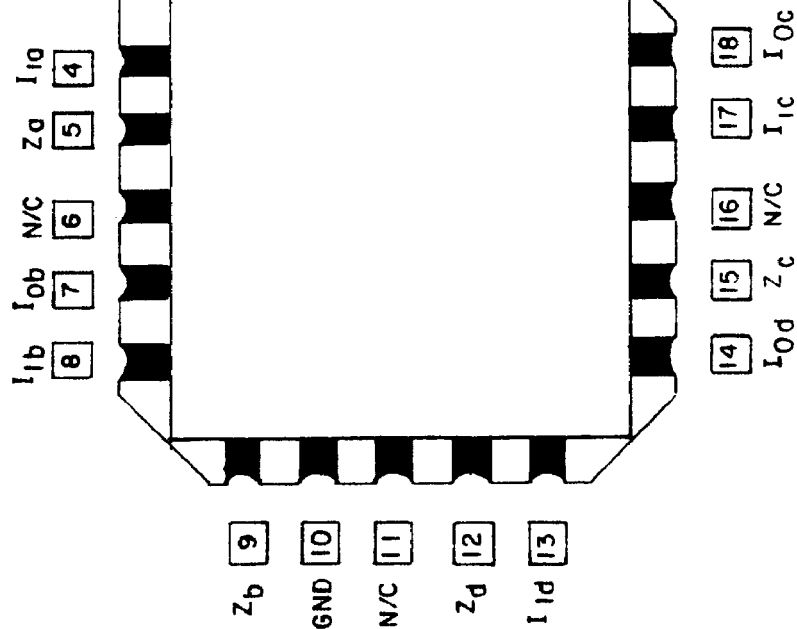
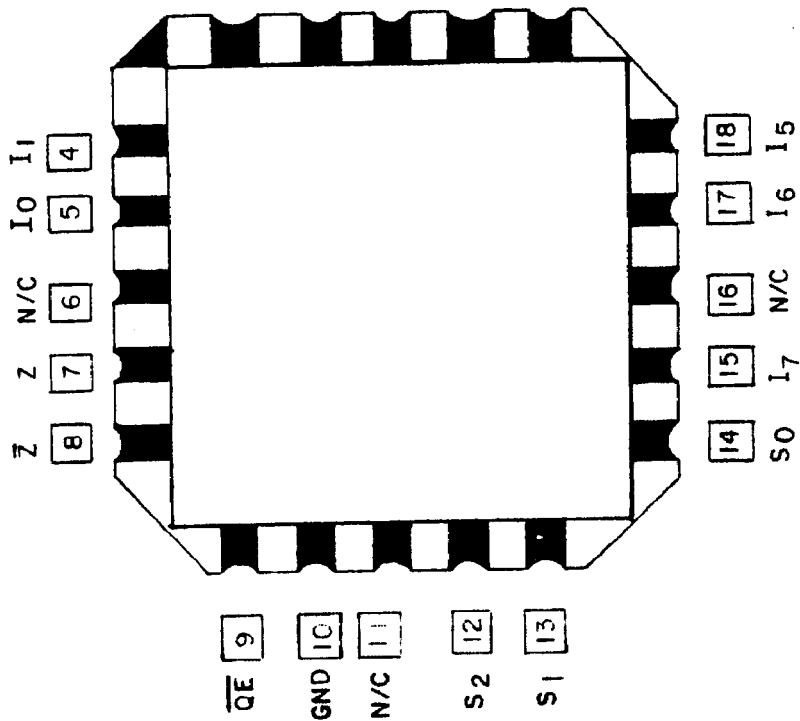


FIGURE 1. Terminal connections - Continued.

Device type 05

Case 2



Device type 06

Case 2

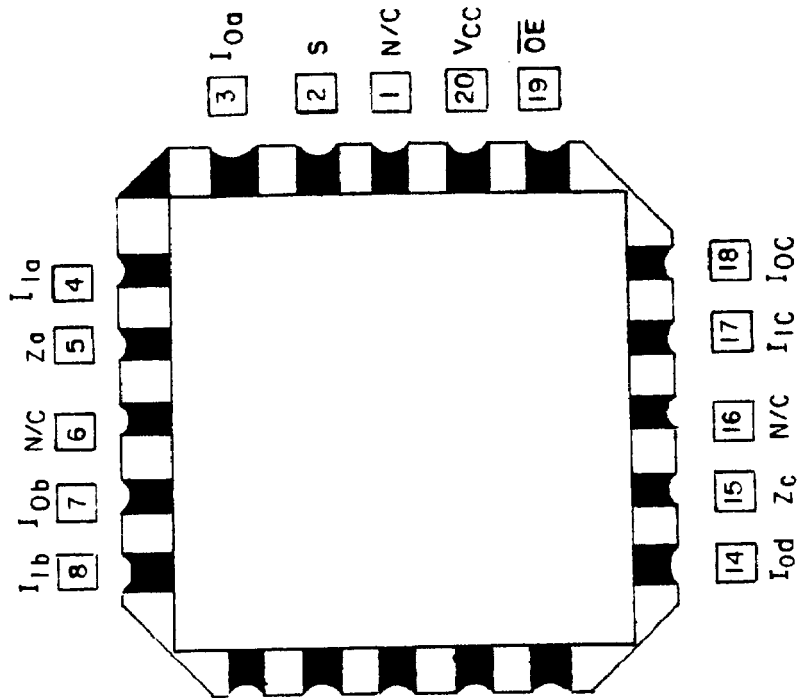
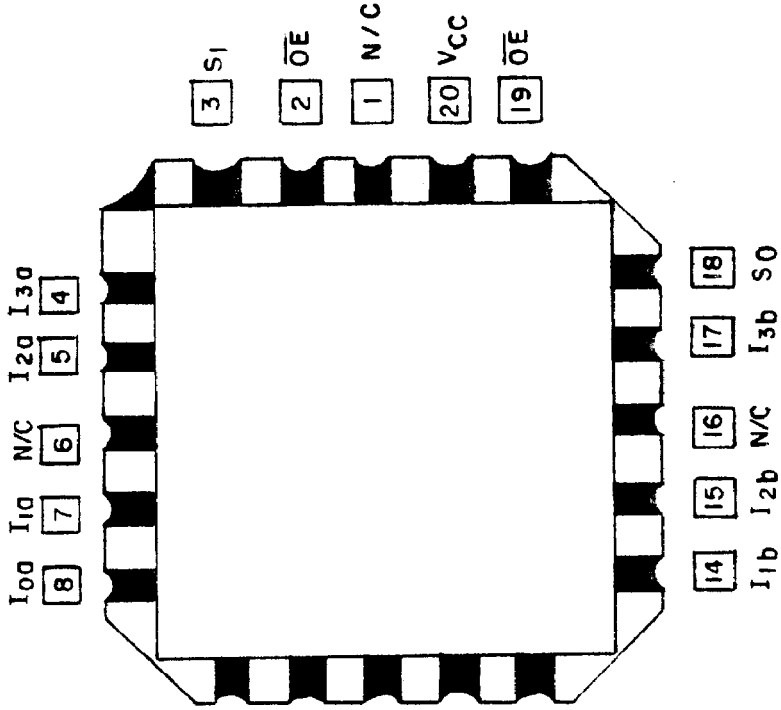


FIGURE 1. Terminal connections - Continued.

Device type 08

Case 2



Device type 07

Case 2

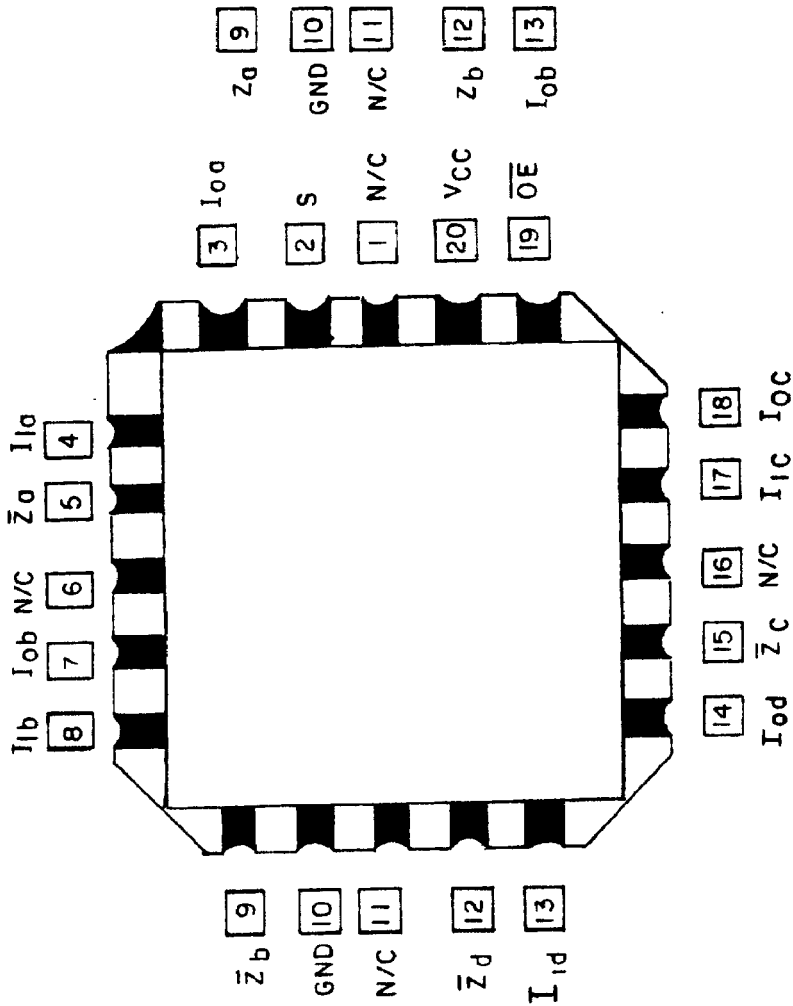
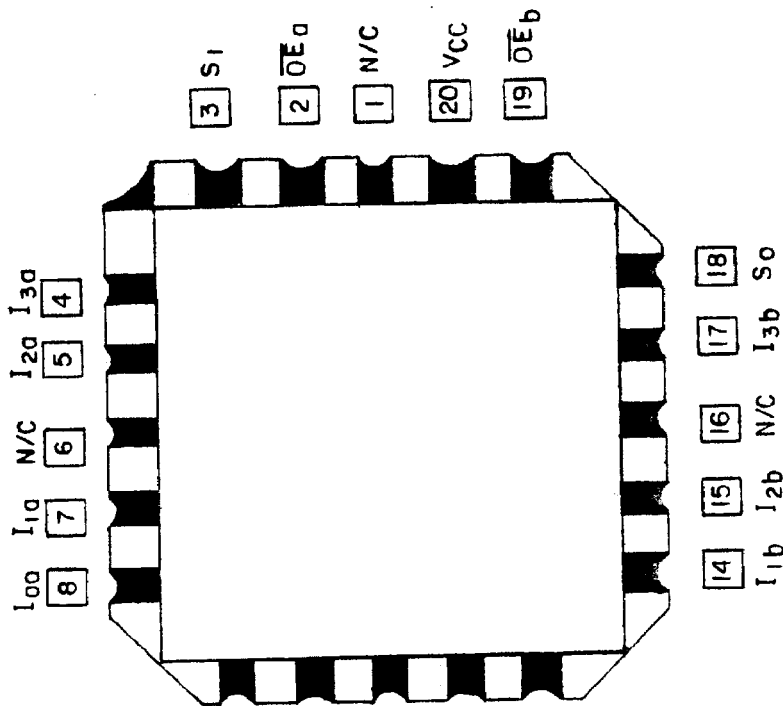


FIGURE 1. Terminal connections - Continued.

Device type 10  
Case 2



Device type 09  
Case 2

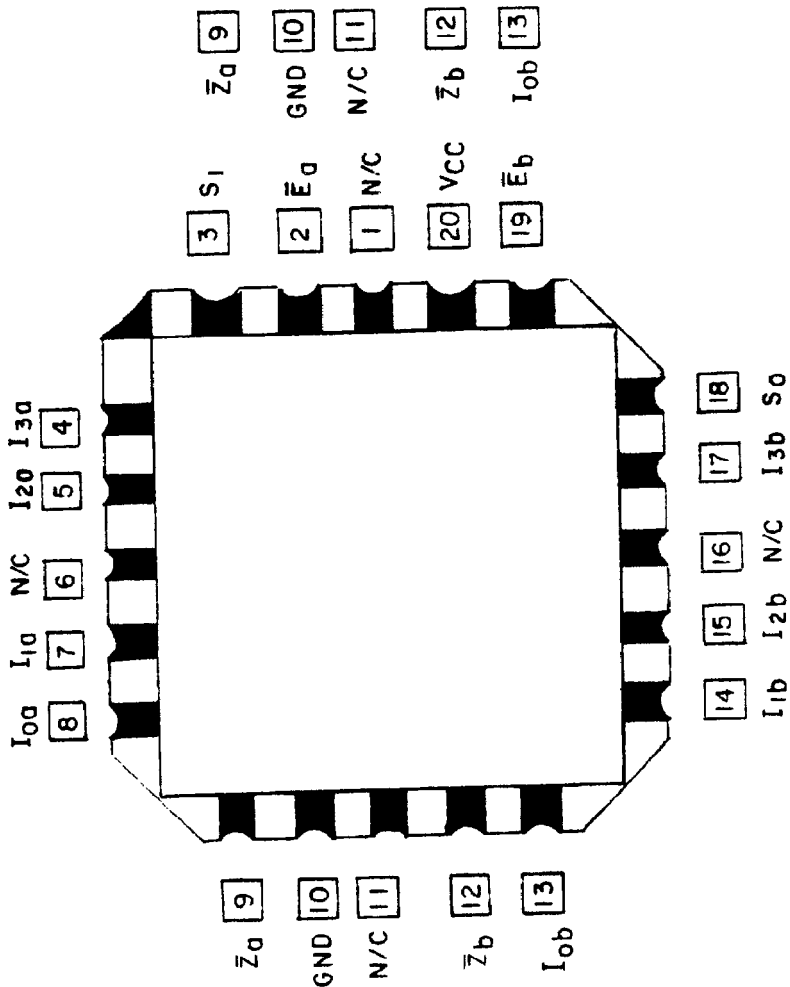
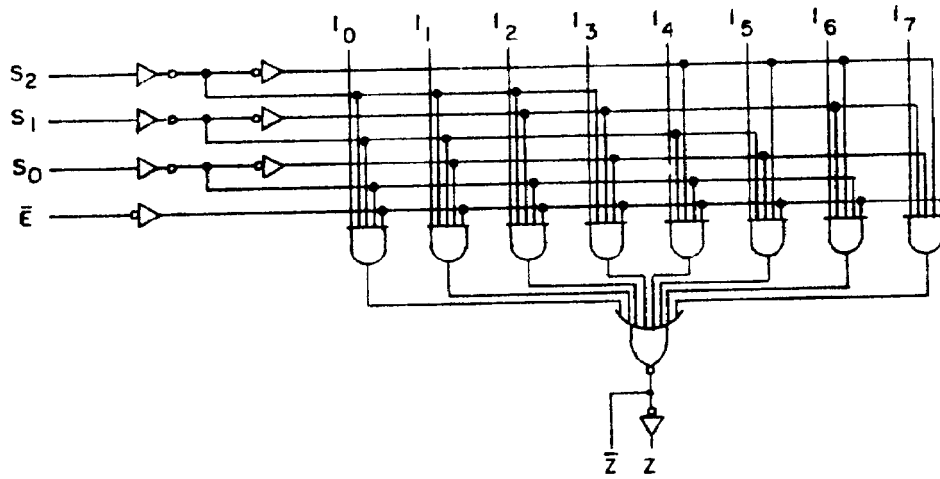


FIGURE 1. Terminal connections - Continued.

Device type 01



Device type 02

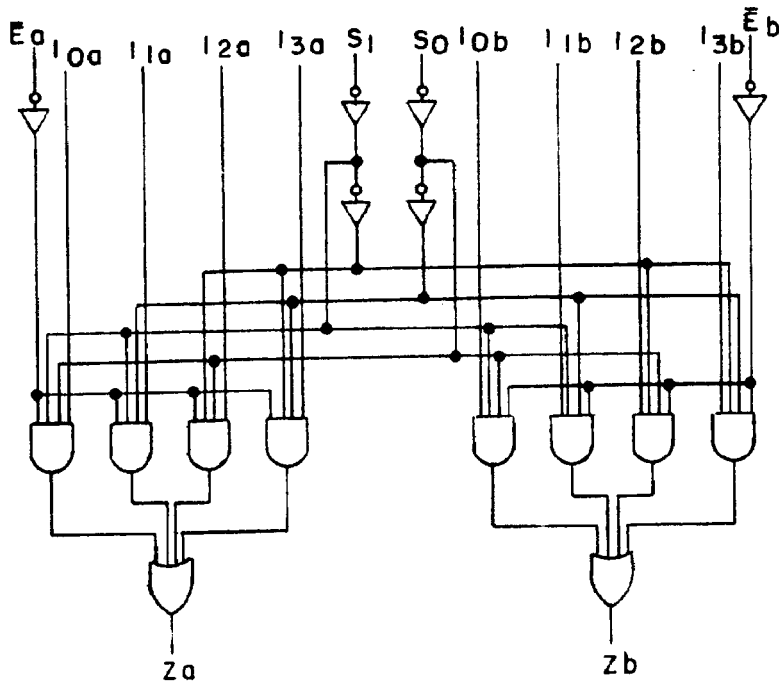
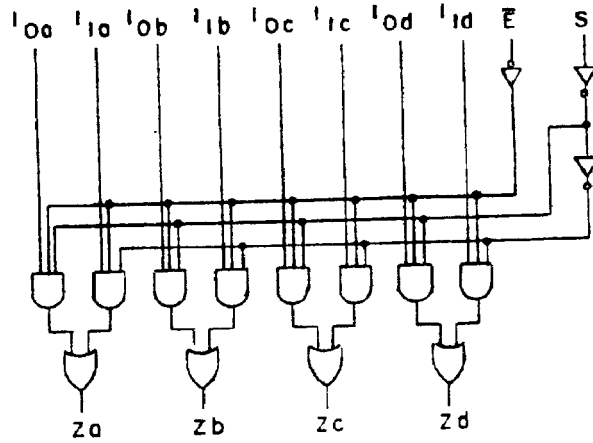


FIGURE 2. Logic diagrams.



Device type 03



Device type 04

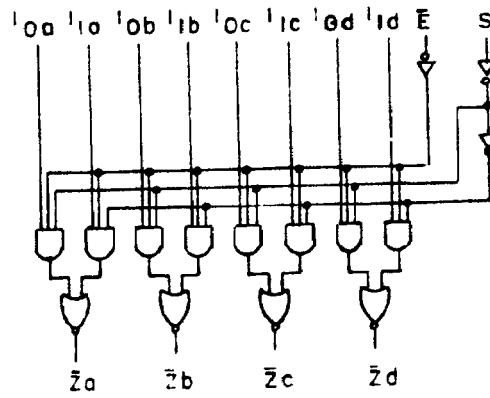
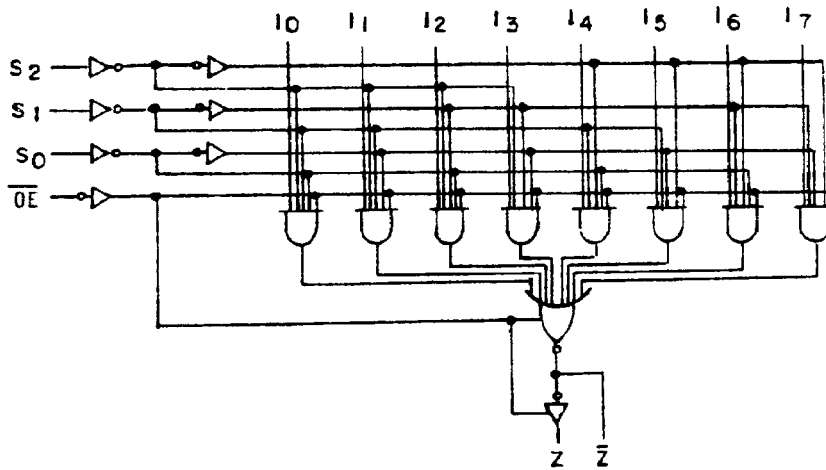


FIGURE 2. Logic diagrams - Continued.

Device type 05



Device type 06

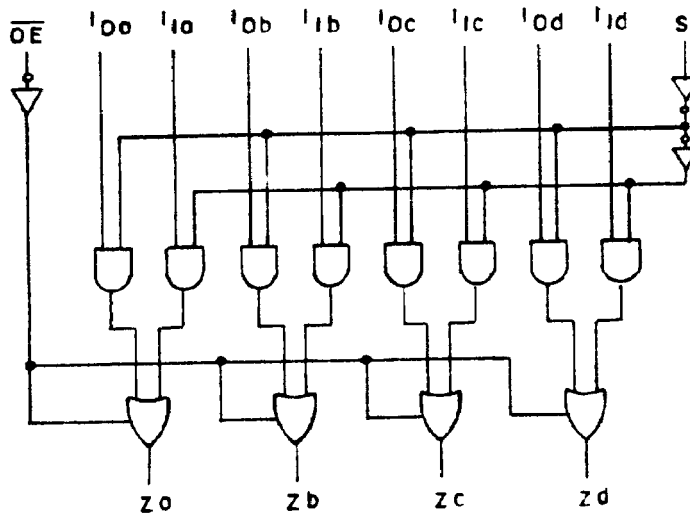
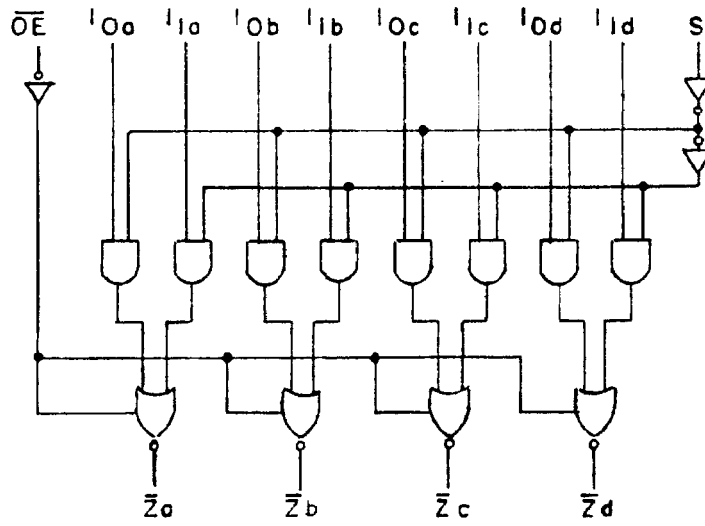


FIGURE 2. Logic diagrams - Continued.

Device type 07



Device type 08

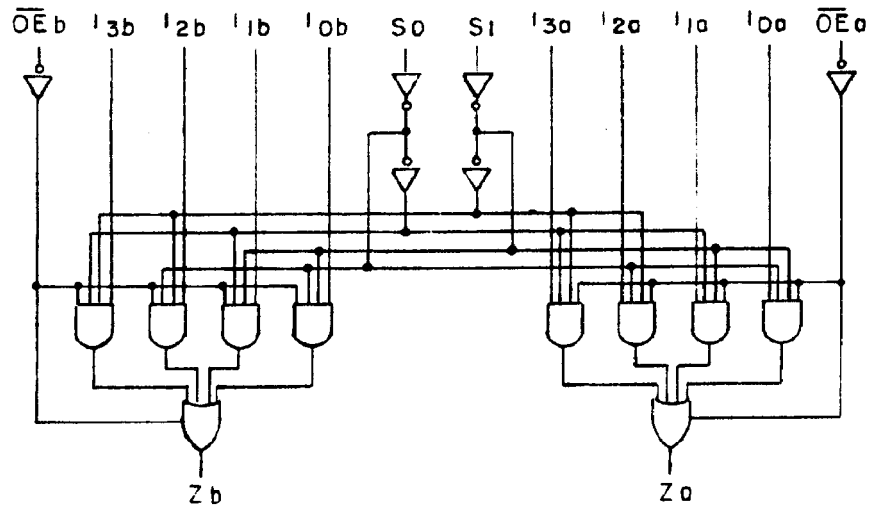
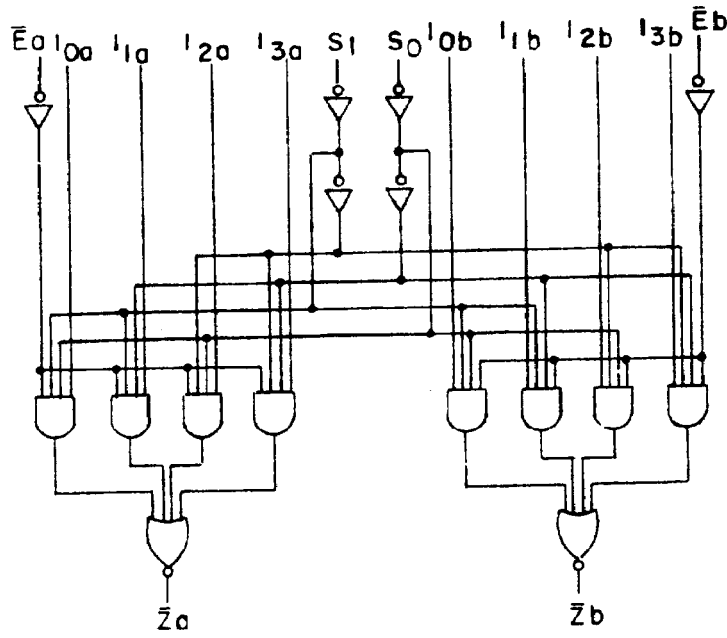


FIGURE 2. Logic diagrams - Continued.

Device type 09



Device type 10

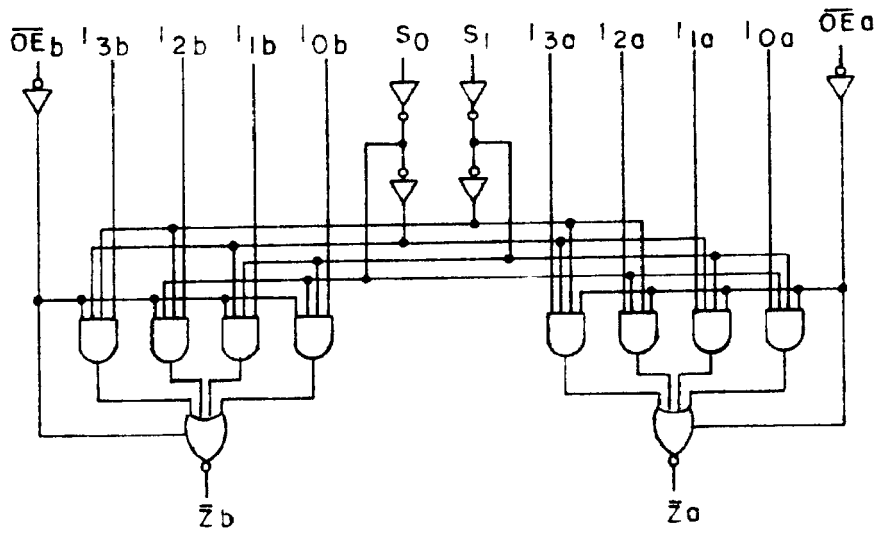


FIGURE 2. Logic diagrams - Continued.

Device type 01

INPUTS				OUTPUTS	
$\bar{E}$	S <sub>2</sub>	S <sub>1</sub>	S <sub>0</sub>	Z	Z
H	X	X	X	H	L
L	L	L	L	$\bar{T}_0$	10
L	L	L	H	$\bar{T}_1$	11
L	L	H	L	$\bar{T}_2$	12
L	L	H	H	$\bar{T}_3$	13
L	H	L	L	$\bar{T}_4$	14
L	H	L	H	$\bar{T}_5$	15
L	H	H	L	$\bar{T}_6$	16
L	H	H	H	$\bar{T}_7$	17

Device Type 02

SELECT INPUTS		INPUTS (a or b)					OUTPUT
S <sub>0</sub>	S <sub>1</sub>	$\bar{E}$	1 <sub>0</sub>	1 <sub>1</sub>	1 <sub>2</sub>	1 <sub>3</sub>	Z
X	X	H	X	X	X	X	L
L	L	L	L	X	X	X	L
L	L	L	H	X	X	X	H
H	L	L	X	L	X	X	L
H	L	L	X	H	X	X	H
L	H	L	X	X	L	X	L
L	H	L	X	X	H	X	H
H	H	L	X	X	X	L	L
H	H	L	X	X	X	H	H

H = HIGH voltage level  
 L = LOW voltage level  
 X = Immaterial

FIGURE 3. Truth tables.

Device Type 03

INPUTS				OUTPUT
E	S	I <sub>0</sub>	I <sub>1</sub>	Z
H	X	X	X	L
L	H	X	L	L
L	H	X	H	H
L	L	L	X	L
L	L	H	X	H

Device Type 04

INPUTS				OUTPUT
E	S	I <sub>0</sub>	I <sub>1</sub>	Z
H	X	X	X	H
L	L	L	X	H
L	L	H	X	L
L	H	X	L	H
L	H	X	H	L

Device type 05

INPUTS				OUTPUTS	
$\overline{OE}$	S <sub>2</sub>	S <sub>1</sub>	S <sub>0</sub>	Z	Z
H	X	X	X	Z	Z
L	L	L	L	I <sub>0</sub>	10
L	L	L	H	I <sub>1</sub>	11
L	L	H	L	I <sub>2</sub>	12
L	L	H	H	I <sub>3</sub>	13
L	H	L	L	I <sub>4</sub>	14
L	H	L	H	I <sub>5</sub>	15
L	H	H	L	I <sub>6</sub>	16
L	H	H	H	I <sub>7</sub>	17

Device Type 06

OUTPUT ENABLE	SELECT INPUT	DATA INPUTS		OUTPUTS
$\overline{OE}$	S	I <sub>0</sub>	I <sub>1</sub>	Z
H	X	X	X	(Z)
L	H	X	L	L
L	H	X	H	H
L	L	L	X	L
L	L	H	X	H

H = HIGH voltage level  
 L = LOW voltage level  
 X = Immaterial  
 (Z) = High impedance

FIGURE 3. Truth tables - Continued.

Device Type 07

OUTPUT ENABLE	SELECT INPUT	DATA INPUTS		OUTPUTS
$\overline{OE}$	S	1 <sub>0</sub>	1 <sub>1</sub>	$\overline{Z}$
H	X	X	X	Z
L	H	X	L	H
L	H	X	H	L
L	L	L	X	H
L	L	H	X	L

Device Type 08

SELECT INPUTS		DATA INPUTS				OUTPUT ENABLE	OUTPUT
S <sub>0</sub>	S <sub>1</sub>	1 <sub>0</sub>	1 <sub>1</sub>	1 <sub>2</sub>	1 <sub>3</sub>	$\overline{OE}$	Z
X	X	X	X	X	X	H	(Z)
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
H	L	X	L	X	X	L	L
H	L	X	H	X	X	L	H
L	H	X	X	L	X	L	L
L	H	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

Address inputs S<sub>0</sub> and S<sub>1</sub> are common to both sections.

H = HIGH voltage level  
 L = LOW voltage level  
 X = Immaterial  
 (Z) = High impedance

FIGURE 3. Truth tables - Continued.

Device Type 09

SELECT INPUTS		INPUTS (a or b)					OUTPUT
S <sub>0</sub>	S <sub>1</sub>	E	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	Z
X	X	H	X	X	X	X	H
L	L	L	L	X	X	X	H
L	L	L	H	X	X	X	L
H	L	L	X	L	X	X	H
H	L	L	X	H	X	X	L
L	H	L	X	X	L	X	H
L	H	L	X	X	H	X	L
H	H	L	X	X	X	L	H
H	H	L	X	X	X	H	L

Device Type 10

SELECT INPUTS		DATA INPUTS				OUTPUT ENABLE	OUTPUT
S <sub>0</sub>	S <sub>1</sub>	I <sub>0</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	OE	Z
X	X	X	X	X	X	H	(Z)
L	L	L	X	X	X	L	H
L	L	H	X	X	X	L	L
H	L	X	L	X	X	L	H
H	L	X	H	X	X	L	L
L	H	X	X	L	X	L	H
L	H	X	X	H	X	L	L
H	H	X	X	X	L	L	H
H	H	X	X	X	H	L	L

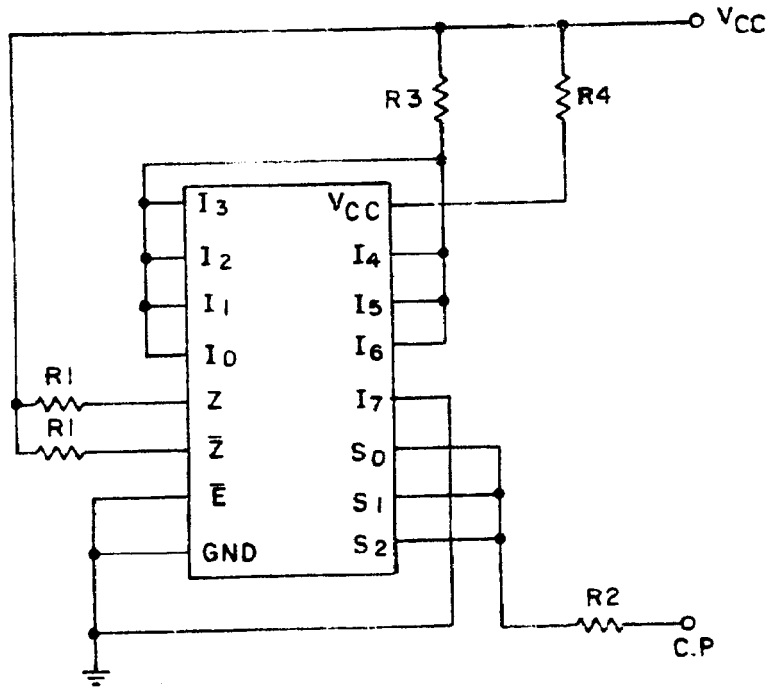
Address inputs S<sub>0</sub> and S<sub>1</sub> are common to both sections.

H = HIGH voltage level  
 L = LOW voltage level  
 X = Immaterial  
 (Z) = High impedance

FIGURE 3. Truth tables - Continued.



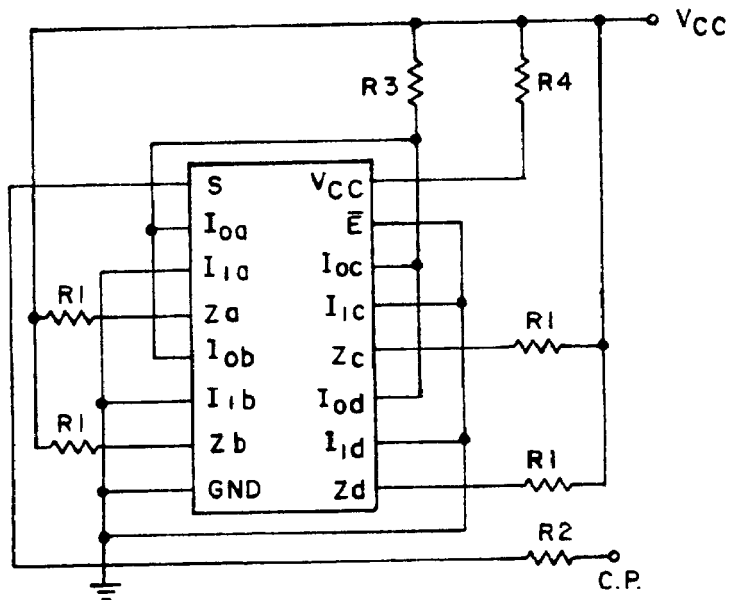
## Device types 01 and 05



## NOTES:

1. CP = 100 kHz  $\pm$ 50% square wave; duty cycle = 50  $\pm$ 15%;  
 $V_{IL}$  = -0.5 V minimum to 0.8 V maximum;  $V_{IH}$  = 2.0 V minimum to 5.5 V maximum.
2.  $R1$  = 240  $\Omega$   $\pm$ 5%;  $R2$  = 50  $\Omega$   $\pm$ 5%;  $R3$  = 1 k $\Omega$   $\pm$ 5%.
3.  $V_{CC}$  and  $R4$  shall be chosen to insure 5.5 V minimum is present at device  $V_{CC}$  terminal.

FIGURE 4. Burn-in and life test circuit.

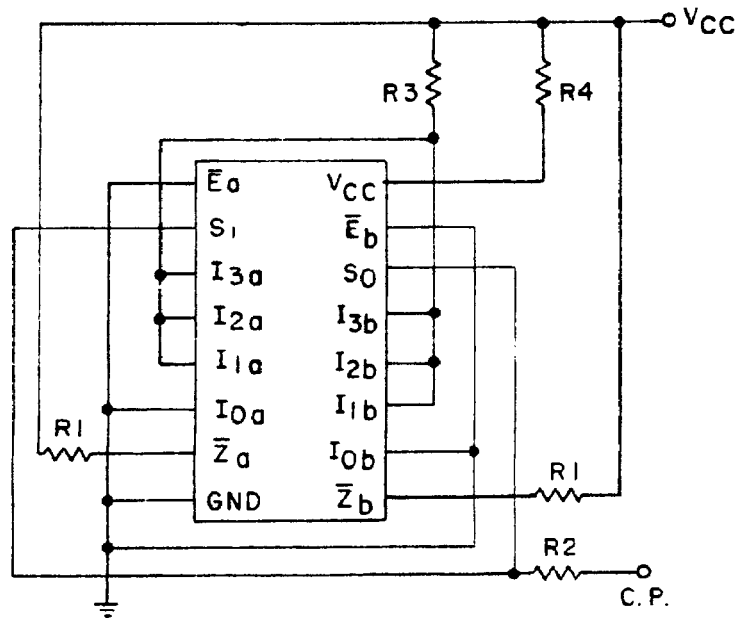
Device types 03, 04, 06 and 07

## NOTES:

1. CP = 100 kHz  $\pm$ 50% square wave; duty cycle = 50  $\pm$ 15%;  
 $V_{IL}$  = -0.5 V minimum to 0.8 V maximum;  $V_{IH}$  = 2.0 V minimum to 5.5 V maximum.
2.  $R1$  = 240 $\Omega$   $\pm$ 5%;  $R2$  = 50 $\Omega$   $\pm$ 5%;  $R3$  = 1 k $\Omega$   $\pm$ 5%.
3.  $V_{CC}$  and  $R4$  shall be chosen to insure 5.5 V minimum is present at device  $V_{CC}$  terminal.

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

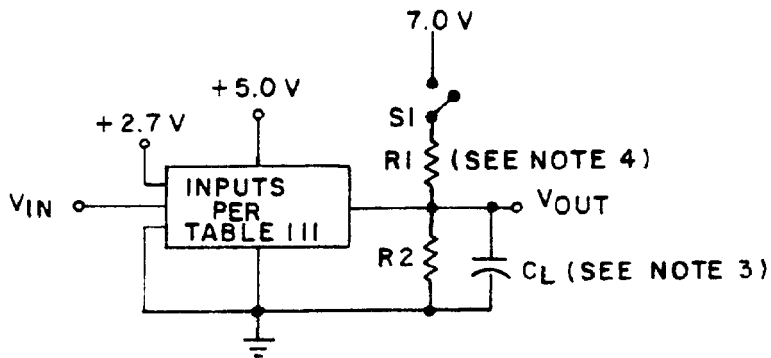
Device types 02, 08, 09 and 10



NOTES:

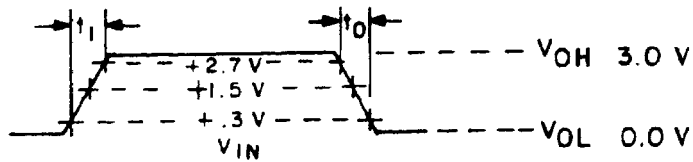
1. CP = 100 kHz  $\pm$ 50% square wave; duty cycle = 50  $\pm$ 15%;
  2.  $V_{IL}$  = -0.5 V minimum to 0.8 V maximum;  $V_{IH}$  = 2.0 V minimum to 5.5 V maximum.
  3.  $R_1$  = 240 $\Omega$   $\pm$ 5%;  $R_2$  = 50 $\Omega$   $\pm$ 5%;  $R_3$  = 1 k $\Omega$   $\pm$ 5%.
3.  $V_{CC}$  and  $R_4$  shall be chosen to insure 5.5 V minimum is present at device  $V_{CC}$  terminal.

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



Test Circuit

Test Type	S1
$t_{PLH}$	Open
$t_{PHL}$	Open
$t_{PHZ}$	Open
$t_{PZH}$	Open
$t_{PLZ}$	Closed
$t_{PZL}$	Closed



Voltage Waveform

**NOTES:**

1.  $V_{IN}$  input pulse has the following characteristics:  $t_1 = t_0 \leq 2.5$  ns;  
 $PRR \leq 1$  MHz;  $Z_{OUT} \approx 50\Omega$ .
2. Inputs not under test are at ground.
3.  $C_L = 50$  pF  $\pm 10\%$ , including scope probe, wiring and stray capacitance without package in test fixture.
4.  $R_1 = R_2 = 499 \pm 5\%$ .
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 5. Switching time test circuit and waveform for all device types.

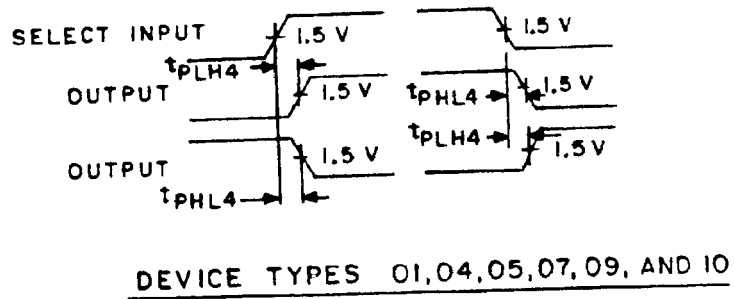
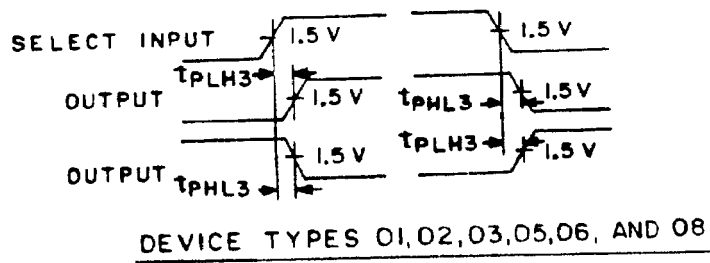
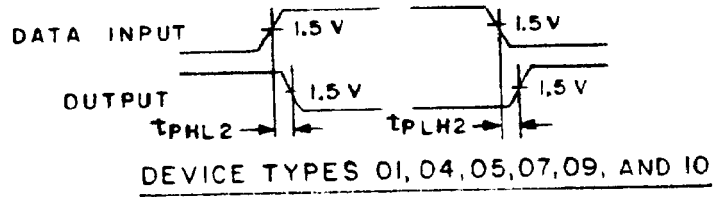
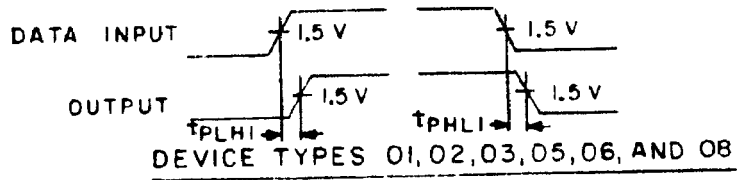


FIGURE 5. Switching time waveforms - Continued.

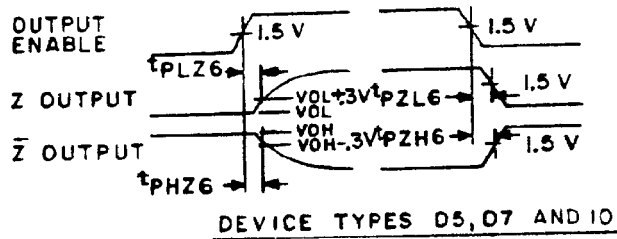
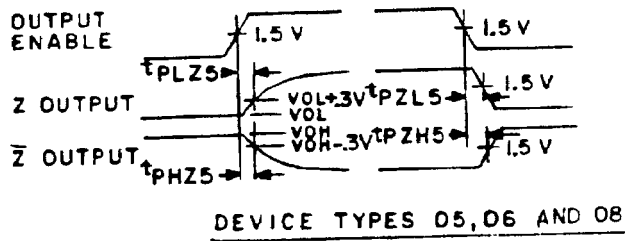
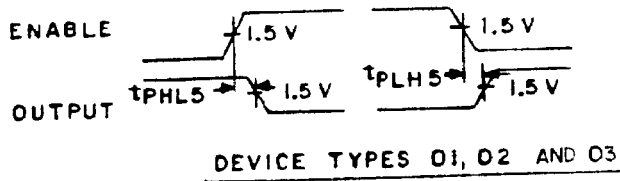
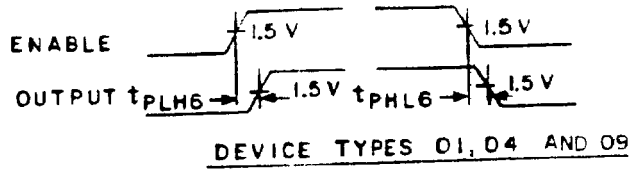


FIGURE 5. Switching time waveforms - Continued.



TABLE 1.1. Group A inspection for device type 01 - Continued.  
Terminal conditions (pins not designated may be High  $\geq 2.0$  V, low  $\leq 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2 Z/ Cases E, F Test no.	Terminal conditions																	Test limits					
				1	2	3	4	5	7	8	9	10	12	13	14	15	16	17	18	19	20	Measured terminal	Unit			
1	11L	3009	56	0.5 V																	13	1/				
			57		0.5 V																	12	1/			
			58			0.5 V																11	1/			
			59				0.5 V															10	1/			
			60					0.5 V														52	1/			
			61						0.5 V													21	1/			
			62							0.5 V												30	1/			
			63								0.5 V											17	1/			
			64									0.0 V										16	1/			
			65										0.5 V									15	1/			
66											0.0 V								14	1/						
67												0.0 V									1/					
2	10S	3011	68																		Z	1/				
			69																		Z	1/				
3	10D	3011	70																		Z	60				
			71																			Z	60			
4	10C	3005	72																		YCC	21				
2	Same tests, terminal conditions, and limits as for subgroup 1, except $T_C = +125^\circ\text{C}$ and VTC tests are omitted.																									
3	Same tests, terminal conditions, and limits as for subgroup 1, except $T_C = -55^\circ\text{C}$ and VTC tests are omitted.																									
7	Functional tests 2/	3014	73	A	A	A	A	A	H	A	GND	B	B	B	B	B	B	B	B	B	B	B	B			
			74	A	A	A	A	A	L	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
			75	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
			76	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
			77	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
			78	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
			79	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
			80	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			81	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			82	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			83	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			84	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			85	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			86	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			87	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
			88	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
89	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
90	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
91	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
92	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
93	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
94	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
95	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
96	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			

See footnotes at end of table.



TABLE III. Group A Inspection for device type 01 - Continued.  
Terminal conditions (pins not designated may be high 2.0 v, low 0.8 v, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2 3/4 Cases E, F Test no.	Terminal conditions																Test limits							
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Measured Terminal	Min	Max	Unit
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL1</sub>	3003	97	I <sub>3</sub>	I <sub>2</sub>	I <sub>1</sub>	I <sub>0</sub>	Z	Z	E	GND	S <sub>2</sub>	S <sub>1</sub>	S <sub>0</sub>	I <sub>6</sub>	I <sub>5</sub>	I <sub>4</sub>	I <sub>3C</sub>	5.0 V	3.0	6.5	ns					
			98			IN	IN	OUT			0.0 V	GND		0.0 V	0.0 V												
			99	IN																							
			100																								
			101																								
			102																								
			103																								
			104																								
			105																								
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138																											

See footnotes at end of table.



TABLE III. Group A inspection for device type 02.  
Terminal conditions (pins not designated may be high 2.0 V, low <0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case	Terminal conditions															Measured terminal	Test limits					
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	Min
1 T <sub>C</sub> = 25°C	V <sub>OH</sub>	3006	1	E <sub>a</sub>	S1	I3a	I2a	I1a	I0a	Z <sub>a</sub>	GND	Z <sub>b</sub>	I0b	I1b	I2b	I3b	S0	E <sub>b</sub>	Y <sub>CC</sub>	Z <sub>a</sub>	Z <sub>b</sub>	2.5	V		
			2	0.8 V	0.8 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	-1 mA	GND	-1 mA	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	4.5 V					
			3	"	0.8 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					
			4	"	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					
			5	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
			6	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
			7	"	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					
			8	"	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					
	V <sub>OL</sub>	3007	9																	Z <sub>a</sub>	Z <sub>b</sub>	0.5	V		
			10	2.0 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	20 mA	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
			11	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
			12	"	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						
			13	"	2.0 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
			14	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
			15	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	"	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
			17	"	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					
	V <sub>TC</sub>		19		-18 mA	-18 mA	-18 mA	-18 mA	-18 mA											E <sub>a</sub>	E <sub>b</sub>	-1.2	V		
			20	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA	-18 mA											S1	S0		V	
			21																		I3a	I3b		V	
			22																		I2a	I2b		V	
			23																		I1a	I1b		V	
			24																		I0a	I0b		V	
			25																		I1b	I1b		V	
			26																		I2b	I2b		V	
			27																		I3b	I3b		V	
			28																		S0	S0		V	
			29																			E <sub>b</sub>	E <sub>b</sub>		V
			30																			F <sub>b</sub>	F <sub>b</sub>		V
	I <sub>IH1</sub>	3010	31	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V											E <sub>a</sub>	E <sub>a</sub>	20	μA		
			32	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V											S1	S1		μA	
			33	"	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V											I3a	I3a		μA	
			34	"	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V											I2a	I2a		μA	
			35	"	"	"	"	"	"	"											I1a	I1a		μA	
			36	"	"	"	"	"	"	"											I0a	I0a		μA	
			37	"	"	"	"	"	"	"											I1b	I1b		μA	
			38	"	"	"	"	"	"	"											I2b	I2b		μA	
			39	"	"	"	"	"	"	"											I3b	I3b		μA	
			40	"	"	"	"	"	"	"											S0	S0		μA	
			41	"	"	"	"	"	"	"												E <sub>b</sub>	E <sub>b</sub>		μA
			42	"	"	"	"	"	"	"												F <sub>b</sub>	F <sub>b</sub>		μA
	I <sub>IH2</sub>		43	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V											E <sub>a</sub>	E <sub>a</sub>	190	V		
			44	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V											S1	S1		V	
			45	"	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V											I3a	I3a		V	
			46	"	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V											I2a	I2a		V	
			47	"	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V											I1a	I1a		V	
			48	"	"	"	"	"	"	"											I0a	I0a		V	
			49	"	"	"	"	"	"	"											I1b	I1b		V	
			50	"	"	"	"	"	"	"											I2b	I2b		V	
			51	"	"	"	"	"	"	"											I3b	I3b		V	
			52	"	"	"	"	"	"	"											S0	S0		V	
			53	"	"	"	"	"	"	"												E <sub>b</sub>	E <sub>b</sub>		V
			54	"	"	"	"	"	"	"												F <sub>b</sub>	F <sub>b</sub>		V

See footnotes at end of table.

TABLE III. Group A inspection for device type D2 - Continued.  
Terminal conditions (pins not designated may be high >2.0 V, low <0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2/3/ Cases E, F test no.	Terminal conditions																Test limits			
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Min	Max	
1 T <sub>C</sub> = 25°C	I <sub>IL1</sub>	3009	55	E <sub>a</sub>	S1	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	I <sub>0b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>b</sub>	V <sub>CC</sub>	E <sub>a</sub>	I <sub>b</sub>	mA		
			56	0.5 V																5.5 V			
			57	0.0 V	0.5 V																		
			58	4.5 V	0.5 V																		
			59	0.0 V		0.5 V																	
			60	0.0 V																			
2	I <sub>IS</sub>	3011 3011	67	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V		0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V		Z <sub>a</sub>				
			68	0.0 V																Z <sub>b</sub>			
			69	5.5 V							2.5 V									Z <sub>a</sub>	60		
			70	0.0 V																Z <sub>b</sub>	60		
			71	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V				0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	V <sub>CC</sub>		20	
3	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = -55°C and V <sub>IC</sub> tests are omitted.																						
7	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = -55°C and V <sub>IC</sub> tests are omitted.																						
7 T <sub>C</sub> = 25°C	I <sub>Func- tional test: Z<sub>i</sub></sub>	3014	72	A	A	A	A	A	A	L	L	L	L	L	L	L	L	L	L	L	L		
			73	B	B	B	B	B	H	H	H	H	H	H	H	H	H	H	H	H	H		
			74	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			75	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			76	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			77	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			78	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			79	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			81	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
8 T <sub>C</sub> = 25°C Fig. 5	I <sub>PLH</sub>	3003	84	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			87	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					

See footnotes at end of table.

TABLE III. Group A Inspection for device type 92 - Continued.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2/3/	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Test limits		Unit			
																					1	2		3	4	5
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL1</sub>	3003	E <sub>b</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>0b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>b</sub>	YCC		I <sub>0a</sub> > Z <sub>a</sub> I <sub>1a</sub> > Z <sub>a</sub> I <sub>2a</sub> > Z <sub>a</sub> I <sub>3a</sub> > Z <sub>a</sub> I <sub>0b</sub> > Z <sub>b</sub> I <sub>1b</sub> > Z <sub>b</sub> I <sub>2b</sub> > Z <sub>b</sub> I <sub>3b</sub> > Z <sub>b</sub>	2.5	6.5	ns			
				0.0 V	0.0 V	0.0 V	0.0 V	IN	OUT	GND		0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	5.0 V						
				"	91	"	0.0 V																			
				"	94	"	2.7 V	IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
				"	95	"	2.7 V	IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
				"	96	"	0.0 V							OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
				"	97	"	0.0 V							"	"	"	"	"	"	"	"	"	"	"	"	"
				"	98	"	2.7 V							"	"	"	"	"	"	"	"	"	"	"	"	"
				"	99	"	2.7 V							"	"	"	"	"	"	"	"	"	"	"	"	"
				10 T <sub>C</sub> = +125°C	t <sub>PLH5</sub> t <sub>PLH5</sub>	"	I <sub>M</sub>	0.0 V	0.0 V			2.7 V	OUT	"	OUT	2.7 V					IN			E <sub>a</sub> > Z <sub>a</sub> E <sub>b</sub> > Z <sub>b</sub>	4.5	9.0
"	100																									
"	101																									
"	102	I <sub>M</sub>									2.7 V	OUT	"	OUT	2.7 V					IN			E <sub>a</sub> > Z <sub>a</sub> E <sub>b</sub> > Z <sub>b</sub>	3.0	7.0	"
"	103																									
"	104	0.0 V	2.7 V					0.0 V	2.7 V	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	2.7 V	0.0 V	IN	IN	IN	IN	IN	IN	IN	IN
"	105	2.7 V	2.7 V					2.7 V	2.7 V	2.7 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	2.7 V	0.0 V	IN	IN	IN	IN	IN	IN	IN	IN
"	106	0.0 V	IN					2.7 V	2.7 V	0.0 V	0.0 V	OUT	"	OUT	2.7 V	0.0 V	2.7 V	0.0 V	IN	IN	IN	IN	IN	IN	IN	IN
"	107		IN					IN								0.0 V	0.0 V	2.7 V	2.7 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V
"	108	0.0 V	0.0 V					0.0 V	0.0 V	0.0 V	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	2.7 V	0.0 V	IN	IN	IN	IN	IN	IN	IN
11 T <sub>C</sub> = -55°C	t <sub>PHL3</sub>	"	I <sub>M</sub>	0.0 V	0.0 V			0.0 V	OUT	"	OUT	2.7 V	0.0 V	0.0 V	0.0 V		IN			E <sub>a</sub> > Z <sub>a</sub> E <sub>b</sub> > Z <sub>b</sub>	3.5	9.0	"			
				"	109																					
				"	110	0.0 V	IN	0.0 V	0.0 V	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	0.0 V	0.0 V	IN	IN	IN	IN	IN	IN	IN	
				"	111		IN	IN																		

Same tests and terminal conditions as subgroup 9, except T<sub>C</sub> = +125°C and, for the following limits:  
 t<sub>PHL1</sub> = 2.5 to 8.0 ns  
 t<sub>PHL3</sub> = 3.5 to 11.0 ns  
 t<sub>PLH5</sub> = 2.5 to 9.0 ns

1/ t<sub>PL</sub> limits are as follows:

Test	Min/Max limits (mA) for circuit:		
	A	B	C
t <sub>PL</sub>	-0.25/-0.60	-0.03/-0.60	-0.03/-0.60

2/ A = 2.5 V, R = 0.5 V.

3/ Case 2 pins not referenced are N/C.



TABLE III. Group A Inspection for device type 03 - Continued.  
Terminal conditions (pins not designated may be high  $\geq 2.0$  V, low  $\leq 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883C method	Case 2/3/	Terminal conditions																	Test limits		Unit		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	Measured terminal
1	I <sub>OS</sub>	3011	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	-60	-150	mA			
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	"	"	"	"
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	"	"	"	"
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	"	"	"	"
2	I <sub>DD</sub>	3011	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	60	"	"	"		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	60	"	"	"		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	60	"	"	"		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	60	"	"	"		
3	I <sub>CC</sub>	3005	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	4.5 V	4.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	4.5 V	4.5 V	5.5 V	5.5 V		
7	Functional tests	3014	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	4.5 V	4.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	4.5 V	4.5 V	5.5 V	5.5 V		
9	t <sub>PLH</sub>	3003	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
9	t <sub>PLH</sub>	3003	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		
				I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>OC</sub>	Z <sub>a</sub>	0.0 V	5.5 V	5.5 V	5.5 V		

See footnotes at end of table.

TABLE III. Group A Inspection for device type 03 - Continued.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883C method	Case																				Test limits			
			2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Unit						
9 T <sub>C</sub> = 25°C FF <sub>3</sub> , 5	I <sub>PHL</sub> 1	3003	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>1b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>CC</sub>	E → Z <sub>a</sub> E → Z <sub>b</sub> E → Z <sub>d</sub> E → Z <sub>c</sub>	2.5 " " "	6.5 " " "					
			92	0.0 V	2.7 V	OUT	2.7 V	OUT	OUT	OUT	OUT	OUT	2.7 V	OUT	OUT	OUT	OUT	OUT				OUT				
			93	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				"	"	"	"	
			94	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				"	"	"	"	"
			95	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				"	"	"	"	"
10 T <sub>C</sub> = +125°C	I <sub>PHU</sub> 3	"	I <sub>W</sub>	2.7 V	0.0 V	OUT	2.7 V	0.0 V	OUT	"	OUT	0.0 V	2.7 V	OUT	0.0 V	2.7 V	0.0 V	"	"	S → Z <sub>a</sub> S → Z <sub>b</sub> S → Z <sub>d</sub> S → Z <sub>c</sub>	4.0	10.0				
			96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
			97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
11 T <sub>C</sub> = -55°C	I <sub>PHL</sub> 3	"	"	0.0 V	2.7 V	OUT	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	OUT	2.7 V	0.0 V	"	"	S → Z <sub>a</sub> S → Z <sub>b</sub> S → Z <sub>d</sub> S → Z <sub>c</sub>	3.0	7.0					
			100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
			101	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
11 T <sub>C</sub> = -55°C	I <sub>PHL</sub> 3	"	"	0.0 V	2.7 V	OUT	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	OUT	2.7 V	0.0 V	"	"	S → Z <sub>a</sub> S → Z <sub>b</sub> S → Z <sub>d</sub> S → Z <sub>c</sub>	3.0	7.0					
			102	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
11 T <sub>C</sub> = -55°C	I <sub>PHL</sub> 3	"	"	0.0 V	2.7 V	OUT	0.0 V	2.7 V	OUT	"	OUT	2.7 V	0.0 V	OUT	2.7 V	0.0 V	"	"	S → Z <sub>a</sub> S → Z <sub>b</sub> S → Z <sub>d</sub> S → Z <sub>c</sub>	3.0	7.0					
			103	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		

10 Same tests and terminal conditions as subgroup 9, except T<sub>C</sub> = +125°C and use limits from table I.

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

I/ I<sub>IL</sub> limits are as follows:

Test	Min/Max limits (mA) for circuits:		
	A	B	C
I <sub>IL</sub>	25/-60	-03/-60	-03/-60

2/ A = 2.5 V, R = 0.5 V.

3/ Case 2 pins not referenced are W/C.



TABLE III. Group A. Inspection for device type 04.  
Terminal conditions (plus not designated may be high 32.0 V, low -0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2 1/2	Terminal conditions																	Test limits						
				1	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Unit					
			Cases E, F Test no.	I <sub>Qa</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>CC</sub>			Min	Max					
1 T <sub>C</sub> = 25°C	V <sub>OL</sub>	3007	1	0.8 V	2.0 V	0.8 V	20 mA													Z <sub>a</sub>	0.8 V	4.5 V	5	V			
			2	2.0 V	0.8 V	2.0 V	20 mA														Z <sub>a</sub>						
			3	0.8 V				20 mA														Z <sub>a</sub>					
			4	2.0 V				20 mA														Z <sub>a</sub>					
			5	2.0 V				20 mA														Z <sub>a</sub>					
			6	0.8 V																		Z <sub>a</sub>					
			7	2.0 V																		Z <sub>a</sub>					
			8	0.8 V																		Z <sub>a</sub>					
	V <sub>OH</sub>	3006	9	0.8 V	2.0 V	0.8 V	-1 mA													Z <sub>a</sub>							
			10	2.0 V	0.8 V	-1 mA															Z <sub>a</sub>						
			11	0.8 V				0.8 V	2.0 V	-1 mA											Z <sub>a</sub>						
			12	2.0 V				2.0 V	0.8 V	-1 mA											Z <sub>a</sub>						
			13	2.0 V				0.8 V	2.0 V	-1 mA												Z <sub>a</sub>					
			14	0.8 V																	Z <sub>a</sub>						
			15	2.0 V																	Z <sub>a</sub>						
			16	0.8 V																	Z <sub>a</sub>						
	V <sub>IC</sub>		17	-18 mA																Z <sub>a</sub>							
			18																		Z <sub>a</sub>						
			19																		Z <sub>a</sub>						
			20																		Z <sub>a</sub>						
			21																		Z <sub>a</sub>						
			22																		Z <sub>a</sub>						
			23																		Z <sub>a</sub>						
			24																		Z <sub>a</sub>						
			25																		Z <sub>a</sub>						
			26																		Z <sub>a</sub>						
	I <sub>IH1</sub>	3010	27	2.7 V	2.7 V	2.7 V														S							
			28	4.5 V	2.7 V	2.7 V															S						
			29	0.0 V																	S						
			30	4.5 V																	S						
			31	0.0 V																		S					
			32	0.0 V																		S					
			33	4.5 V																		S					
			34	0.0 V																		S					
			35	4.5 V																		S					
			36	4.5 V																		S					
	I <sub>IH2</sub>		37	7.0 V	7.0 V	7.0 V														S							
			38	4.5 V	7.0 V	7.0 V															S						
			39	0.0 V																	S						
			40	4.5 V																	S						
			41	0.0 V																	S						
			42	0.0 V																	S						
			43	4.5 V																	S						
			44	0.0 V																	S						
			45	4.5 V																	S						
			46	4.5 V																	S						
	I <sub>ILL</sub>	3009	47	0.5 V	0.5 V	0.5 V														S							
			48	0.0 V																	S						
			49	4.5 V																	S						
			50	0.0 V																	S						
			51	4.5 V																	S						
			52	4.5 V																	S						
			53	0.0 V																	S						
			54	4.5 V																	S						
			55	0.0 V																	S						
			56	0.0 V																	S						

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See footnotes at end of table.

TABLE III. Group A inspection for device type DA - Continued.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2 3/4	Cases															Measured terminal	Test limits						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	Min	Max
		Test no.	S	I <sub>0a</sub>	I <sub>1a</sub>	Z <sub>a</sub>	I <sub>0b</sub>	I <sub>1b</sub>	Z <sub>b</sub>	GND	Z <sub>d</sub>	I <sub>1d</sub>	I <sub>0d</sub>	Z <sub>c</sub>	I <sub>1c</sub>	I <sub>0c</sub>	E	V <sub>CC</sub>								
1 T <sub>C</sub> = 25°C	I <sub>05</sub>	3011	57	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	GND	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	5.5 V	Z <sub>a</sub>	0.0 V	5.5 V	-60	150			
		"	58	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>b</sub>	"	"	"	"			
		"	59	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>d</sub>	"	"	"	"		
		"	60	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>c</sub>	"	"	"	"		
2	I <sub>00</sub>	61	"	5.5 V		2.5 V												4.5 V	Z <sub>a</sub>			60				
		62	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>b</sub>	"	"	"	"			
		63	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>d</sub>	"	"	"	"			
		64	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	Z <sub>c</sub>	"	"	"	"			
3	I <sub>CC</sub>	3005	65	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	"	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	5.5 V	V <sub>CC</sub>	4.5 V	5.5 V	15	"			
4	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = +125°C and V <sub>IC</sub> tests are omitted.																									
5	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = -55°C and V <sub>IC</sub> tests are omitted.																									
7 T <sub>C</sub> = 25°C Fig. 5	I <sub>func-1</sub> tests	3014	66	A	A	A	A	A	A	H	GND	H	A	A	A	A	A	A	A	A	A	A	A	All outputs		
		"	67	B	B	B	B	B	B	L	"	H	B	B	B	B	B	B	B	B	B	B	B	"		
		"	68	A	A	A	A	A	A	H	"	L	A	A	A	A	A	A	A	A	A	A	A	"		
		"	69	B	B	B	B	B	B	H	"	H	B	B	B	B	B	B	B	B	B	B	B	"		
		"	70	A	A	A	A	A	A	H	"	H	A	A	A	A	A	A	A	A	A	A	A	"		
		"	71	A	A	A	A	A	A	L	"	L	A	A	A	A	A	A	A	A	A	A	A	"		
		9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL2</sub>	3003	72	0.0 V	IN																			
				"	73	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	
				"	74	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
				"	75	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL2</sub>	"	76	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN			
		"	77	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN			
		"	78	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
		"	79	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL2</sub>	"	80	0.0 V	IN																					
		"	81	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN			
		"	82	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
		"	83	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL6</sub>	"	84	0.0 V																						
		"	85	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN			
		"	86	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
		"	87	0.0 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN		
9 T <sub>C</sub> = 25°C Fig. 5	t <sub>PHL6</sub>	"	88	2.7 V	OUT	OUT	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN	IN			
		"	89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		

See footnotes at end of table.

TABLE II.1. Group A inspection for device type D4 - Continued.  
Terminal conditions (pins not designated may be high  $\geq 2.0$  V, low  $\leq 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883C method E, F	Case 2 3/	1	2	3	4	5	7	9	10	11	12	13	14	15	17	18	19	20	Test Limits			
																					Min	Max		
9 $T_C = 25^\circ C$ Fig. 5	tpHL6	303	92	0.0 V	2.7 V																			
			91	"	"																			
			94	"	"																			
10	tpLH4		96	IN	0.0 V	2.7 V	OUT																	
			97	"	"																			
			99	"	"																			
11 $T_C = -55^\circ C$	tpHL4		100	"	2.7 V	0.0 V	OUT																	
			101	"	"																			
			103	"	"																			

10/ Same tests and terminal conditions as subgroup 9, except  $T_C = +125^\circ C$  and use limits from table I.

$T_C = +125^\circ C$

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

$T_C = -55^\circ C$

12/ I/O limits are as follows:

Test	Min/Max limits (mA) for circuit:		
	A	B	C
I <sub>IL</sub>	-0.25/-0.60	-0.03/-0.60	-0.03/-0.60

2/ A = 2.5 V, B = 0.5 V.

3/ Case 2 pins not referenced are M/C.

TABLE III. Group A Inspection for device type 95.  
Terminal conditions (pins not designated may be high  $\geq 2.0$  V, low  $\leq 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2	3	4	5	7	9	10	12	13	14	15	17	19	20	Measured terminal	Test limits						
																		Min	Max	Unit				
I $T_C = 25^\circ\text{C}$	V <sub>OL</sub>	D007	1																					
			2			2.0 V																		
			3			2.0 V																		
			4	2.0 V																				
			5																					
			6																					
			7																					
			8																					
			9					0.8 V	20 mA															
V <sub>OH</sub>	D005		10																					
			11			2.0 V	-3.0 mA																	
			12			0.8 V																		
			13			0.8 V																		
			14	0.8 V																				
			15																					
			16																					
			17																					
			18																					
			19																					
V <sub>IC</sub>			19																					
			20																					
			21																					
			22																					
			23																					
			24																					
			25																					
			26																					
			27																					
			28																					
29																								
30																								
V <sub>IHI</sub>	D010		31																					
			32																					
			33																					
			34																					
			35																					
			36																					
			37																					
			38																					
			39																					
			40																					
			41																					
			42																					
V <sub>IHQ</sub>			43																					
			44																					
			45																					
			46																					
			47																					
			48																					
			49																					
			50																					
			51																					
			52																					
			53																					
			54																					

See footnotes at end of table.





TABLE III. Group A inspection for device type 05 - Continued.  
Terminal conditions (pins not designated may be high  $\pm 2.0$  V, low  $\pm 0.8$  V, or open)

Subgroup	Symbol	NLC-1510-8831 method	Case 2 3/	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8	Case 9	Case 10	Case 11	Case 12	Case 13	Case 14	Case 15	Case 16	Case 17	Case 18	Case 19	Case 20	Measured terminal	Test limits		Unit
																									Min	Max	
9 $T_C = 25^\circ C$	$t_{pZH5}$	3003 Fig. 4	I <sub>3</sub>	I <sub>1</sub>	I <sub>2</sub>	I <sub>1</sub>	I <sub>0</sub>	Z	Z	OE	IN	GND	GND	S <sub>0</sub>	S <sub>1</sub>	S <sub>2</sub>	S <sub>5</sub>	I <sub>6</sub>	I <sub>4</sub>	I <sub>5</sub>	I <sub>4</sub>	V <sub>CC</sub>	5.0 V	OE $\rightarrow$ Z	3.5	7.0	ns
	$t_{pZH6}$	"					0.0 V	OUT	OUT					"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	2.5	6.0	"	
	$t_{pZL5}$	"					0.0 V	OUT	OUT					"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	3.5	7.5	"	
	$t_{pZL6}$	"					2.7 V		OUT	OUT				"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	2.5	6.0	"	
	$t_{pZH5}$	"					2.7 V	OUT	OUT				"	"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	2.0	5.5	"	
	$t_{pZH6}$	"					0.0 V		OUT	OUT				"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	2.5	5.5	"	
	$t_{pZL5}$	"					0.0 V	OUT	OUT				"	"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	1.5	4.5	"	
	$t_{pZL6}$	"					2.7 V		OUT	OUT				"	"	"	"	"	"	"	"	"	OE $\rightarrow$ Z	"	4.5	"	
	10. Same tests and terminal conditions as subgroup 9, except $T_C = +125^\circ C$ and, for the following limits: $t_{pZH5} = 2.0$ to $5.5$ ns $t_{pZH6} = 3.0$ to $8.5$ ns $t_{pZL5} = 2.5$ to $6.0$ ns $t_{pZL6} = 3.5$ to $7.0$ ns $t_{pZH5} = 2.0$ to $5.5$ ns $t_{pZH6} = 3.0$ to $8.5$ ns $t_{pZL5} = 2.5$ to $6.0$ ns $t_{pZL6} = 3.5$ to $7.5$ ns																										
	11. Same test, terminal conditions, and limits as subgroup 10, except $T_C = -55^\circ C$ .																										

1/ I<sub>HL</sub> limits are as follows:

Test	Min/Max limits (mA) for circuit		
	A	B	C
I <sub>HL</sub>	-0.25/-0.60	-0.03/-0.60	-0.03/-0.60

2/ A = 2.4 V, B = 0.5 V.

3/ Case 2 pins not referenced are N/C.

TABLE III. Group A inspection for device type 06  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Cases		2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20	Measured terminal	Test limits							
			1	5																		Min	Max	Unit					
1 T <sub>C</sub> = 25°C	V <sub>OL</sub>	3007	Cases 1-8	Test no.	1	0.8 V	2.0 V	2.0 V	20 mA																				
					2	2.0 V	0.8 V	0.8 V	20 mA																				
					3	0.8 V	2.0 V	2.0 V	20 mA																				
					4	2.0 V	0.8 V	0.8 V	20 mA																				
					5	0.8 V	2.0 V	2.0 V	20 mA																				
					6	2.0 V	0.8 V	0.8 V	20 mA																				
					7	0.8 V	2.0 V	2.0 V	20 mA																				
					8	2.0 V	0.8 V	0.8 V	20 mA																				
	V <sub>OH</sub>	3006	Cases 9-16	Test no.	9	0.8 V	2.0 V	0.8 V	-3.0 mA																				
					10	2.0 V	0.8 V	2.0 V	-3.0 mA																				
					11	0.8 V	2.0 V	2.0 V	-3.0 mA																				
					12	2.0 V	0.8 V	0.8 V	-3.0 mA																				
					13	0.8 V	2.0 V	2.0 V	-3.0 mA																				
					14	2.0 V	0.8 V	0.8 V	-3.0 mA																				
					15	0.8 V	2.0 V	2.0 V	-3.0 mA																				
					16	2.0 V	0.8 V	0.8 V	-3.0 mA																				
V <sub>IC</sub>					17	-18 mA																							
					18																								
					19																								
					20																								
					21																								
					22																								
I <sub>IHL</sub>	3010	Cases 27-36	Test no.	27	2.7 V	2.7 V	2.7 V																						
				28	4.5 V	0.0 V	0.0 V																						
				29	0.0 V	4.5 V	4.5 V																						
				30	4.5 V	0.0 V	0.0 V																						
				31	0.0 V	4.5 V	4.5 V																						
				32	0.0 V	0.0 V	0.0 V																						
				33	4.5 V	0.0 V	0.0 V																						
				34	0.0 V	4.5 V	4.5 V																						
				35	4.5 V	0.0 V	0.0 V																						
				36	0.0 V	4.5 V	4.5 V																						
I <sub>IHZ</sub>					37	7.0 V	7.0 V	7.0 V																					
					38	4.5 V	0.0 V	0.0 V																					
					39	0.0 V	4.5 V	4.5 V																					
					40	4.5 V	0.0 V	0.0 V																					
					41	0.0 V	4.5 V	4.5 V																					
					42	0.0 V	0.0 V	0.0 V																					
I <sub>ILL</sub>	3009	Cases 47-56	Test no.	47	0.5 V	0.5 V	0.5 V																						
				48	0.0 V	4.5 V	4.5 V																						
				49	4.5 V	0.0 V	0.0 V																						
				50	0.0 V	4.5 V	4.5 V																						
				51	4.5 V	0.0 V	0.0 V																						
				52	0.0 V	4.5 V	4.5 V																						
				53	0.0 V	0.0 V	0.0 V																						
				54	4.5 V	4.5 V	4.5 V																						
55	0.0 V	0.0 V	0.0 V																										
56	0.0 V	0.0 V	0.0 V																										

See footnotes at end of table.





TABLE III. Group A Inspection for device type 05 - Continued.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 E/F Method	Case 2 3/	2	3	4	5	7	9	9	9	10	12	13	14	15	17	19	19	20	Measured Terminal	Test Limits (Unit)		
																						Min	Max	
9 TC = 25°C Fig 5.	EpHL1	J003 Fig 5.	92	0.0 V	IN	OUT	OUT	IN	IN	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5	
			93	2.7 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			94	0.0 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			95	2.7 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			96	2.7 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			97	0.0 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			98	2.7 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			99	0.0 V	IN	OUT	OUT	IN	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.0	5.5
			100	IN	0.0 V	2.7 V	OUT	OUT	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	4.0
10 TC = 125°C	EpHL3	J003	101	IN	0.0 V	2.7 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	4.0	9.5	
			102	IN	0.0 V	2.7 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	4.0	9.5	
			103	IN	0.0 V	2.7 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	4.0	9.5	
10 TC = 125°C	EpHL3	J003	104	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			105	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			106	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	107	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			108	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			109	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	110	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0		
			111	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			112	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	113	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0		
			114	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			115	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	116	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0		
			117	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			118	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	119	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0		
			120	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			121	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
10 TC = 125°C	EpHL3	J003	122	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0		
			123	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	
			124	IN	2.7 V	0.0 V	OUT	OUT	OUT	OUT	OUT	GRD	Zd	Id	Id	Zc	I1c	I0c	OE	Vcc	I10a → Za I11a → Za I10b → Zb I11b → Zb I10c → Zc I11c → Zc	2.5	7.0	

10 Same tests and terminal conditions as subgroup 9, except TC = +125°C and use limits from table 1.

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

1/ I/L limits are as follows:

Test	Min/Max Limits (mA) for circuit:
I/L	-0.25/-0.60
	-0.037/-0.60
	-0.017/-0.60

2/ A = 2.4 V, B = 0 V.

3/ Case 2 pins not referenced are N/C.

TABLE III. Group A inspection for device type 07.  
Terminal conditions (pins not designated may be high  $\pm 2.0$  V, low  $\leq 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883 method	Terminal conditions (pins not designated may be high $\pm 2.0$ V, low $\leq 0.8$ V, or open)																Test limits/Unit													
			Case 2/3/ Cases E.F. Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Measured terminal	Min	Max						
1 $T_C = 25^\circ C$	VOL	3007	1	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	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	2.0 V	Za	0.5	V						
			2	2.0 V	0.8 V	2.0 V	20 mA																		Za							
			3	0.8 V	2.0 V	0.8 V	20 mA																		Za							
			4	2.0 V	0.8 V	2.0 V	20 mA																			Za						
			5	0.8 V	2.0 V	0.8 V	20 mA																			Za						
			6	2.0 V	0.8 V	2.0 V	20 mA																			Za						
			7	0.8 V	2.0 V	0.8 V	20 mA																			Za						
			8	2.0 V	0.8 V	2.0 V	20 mA																			Za						
	VOH	3006	9	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	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	2.0 V	Za	2.4							
			10	2.0 V	0.8 V	2.0 V	3.0 mA																		Za							
			11	0.8 V	2.0 V	0.8 V	3.0 mA																		Za							
			12	2.0 V	0.8 V	2.0 V	3.0 mA																			Za						
			13	0.8 V	2.0 V	0.8 V	3.0 mA																			Za						
			14	2.0 V	0.8 V	2.0 V	3.0 mA																			Za						
			15	0.8 V	2.0 V	0.8 V	3.0 mA																			Za						
			16	2.0 V	0.8 V	2.0 V	3.0 mA																			Za						
	VIC		17	-18 mA																				S	-1.2							
			18																						IOa							
			19																							IOb						
			20																								IOc					
			21																									IOd				
			22																									IOe				
			23																									IOc				
			24																										IOc			
			25																										IOc			
			26																										IOc			
	I <sub>IHI</sub>	3010	27	2.7 V	2.7 V																			S	20	mA						
			28	4.5 V	0.0 V																											
			29	0.0 V	4.5 V																											
			30	4.5 V	0.0 V																											
			31	0.0 V	4.5 V																											
			32	0.0 V	4.5 V																											
			33	4.5 V	0.0 V																											
			34	0.0 V	4.5 V																											
			35	4.5 V	0.0 V																											
			36	0.0 V	4.5 V																											
	I <sub>IHZ</sub>		37	7.0 V	7.0 V																			S	100	mA						
			38	4.5 V	0.0 V																											
			39	0.0 V	4.5 V																											
			40	4.5 V	0.0 V																											
			41	0.0 V	4.5 V																											
			42	0.0 V	4.5 V																											
			43	4.5 V	0.0 V																											
			44	0.0 V	4.5 V																											
			45	4.5 V	0.0 V																											
			46	0.0 V	4.5 V																											
	I <sub>IIL1</sub>	3009	47	0.5 V	0.5 V																			S	1/	mA						
			48	0.0 V	0.5 V																											
			49	4.5 V	0.0 V																											
			50	0.0 V	4.5 V																											
			51	4.5 V	0.0 V																											
			52	0.0 V	4.5 V																											
			53	4.5 V	0.0 V																											
			54	0.0 V	4.5 V																											
			55	4.5 V	0.0 V																											
			56	0.0 V	4.5 V																											

TABLE III. Group A inspection for device type 07 continued  
Terminal conditions (pins not designated may be high, 2.0 V, low 0.0 V, or open)

Subgroup	Symbol	MIL-STD-883C method	Case 23/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Measured terminal		Test limits (min)			
																								Min	Max				
1 T <sub>C</sub> = 25°C	I <sub>OS</sub>	3011	57	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	V <sub>CC</sub>	Z <sub>a</sub>	0.0	1.50			
				0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	V <sub>CC</sub>	Z <sub>b</sub>	0.0	1.50		
				0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	V <sub>CC</sub>	Z <sub>c</sub>	0.0	1.50		
				0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	V <sub>CC</sub>	Z <sub>d</sub>	0.0	1.50		
				0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	V <sub>CC</sub>	Z <sub>e</sub>	0.0	1.50		
				0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	0.0 V	4.5 V	0.0 V	V <sub>CC</sub>	Z <sub>f</sub>	0.0	1.50		
I <sub>OP</sub>	3011	61	5.5 V	2.5 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	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V		
			5.5 V	2.5 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	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V		
			5.5 V	2.5 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	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	
			5.5 V	2.5 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	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	
I <sub>ON</sub>	3005	65	4.5 V	2.7 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
			4.5 V	2.7 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
			4.5 V	2.7 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
I <sub>OL</sub>	3005	69	4.5 V	0.5 V	4.5 V	3.0 V	0.5 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			4.5 V	0.5 V	4.5 V	3.0 V	0.5 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			4.5 V	0.5 V	4.5 V	3.0 V	0.5 V	4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
I <sub>ICL</sub>	3005	73	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
I <sub>ICL</sub>	3005	74	4.5 V	0.0 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
			4.5 V	0.0 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
			4.5 V	0.0 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V	4.5 V		
I <sub>ICZ</sub>	3005	75	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
			0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		
2	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = +125°C and V <sub>IC</sub> tests are omitted.																												
3	Same tests, terminal conditions, and limits as for subgroup 1, except T <sub>C</sub> = -55°C and V <sub>IC</sub> tests are omitted.																												
7 T <sub>C</sub> = 25°C	Functional tests Z1	3014	76	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
			77	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
			78	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			79	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			80	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			81	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
8	Same tests, terminal conditions, and limits as for subgroup 7, except T <sub>C</sub> = +125°C and T <sub>C</sub> = -55°C.																												
	9 T <sub>C</sub> = 25°C Fig. 5	3003	84	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
			85	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		
			86	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
			87	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
			88	B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
89			B	A	A	L	A	B	A	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L		

See footnotes at end of table.

TABLE III. Group A inspection for device type D7 - Continued.  
Terminal conditions (pins not designated may be High  $\geq 2.0$  V, low  $< 0.8$  V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case 2-3/ Tests E/F test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Test limits (unit)					
				$I_{0a}$	$I_{1a}$	$I_{1b}$	$I_{1c}$	$I_{1d}$	$I_{1e}$	$I_{1f}$	$I_{1g}$	$I_{1h}$	$I_{1i}$	$I_{1j}$	$I_{1k}$	$I_{1l}$	$I_{1m}$	$I_{1n}$	$I_{1o}$		$I_{1p}$	$I_{1q}$	$I_{1r}$	Min	Max	
9 $T_C = 25^\circ C$ Fig 5.	tPHI?	3003 Fig. 5	92	0.0 V	IN																	1.0	4.0			
			93	2.7 V	OUT																					
			94	0.0 V	OUT																					
			95	2.7 V	OUT																					
			96	2.7 V	IN																					
			97	0.0 V	IN																					
			98	2.7 V	OUT																					
			99	0.0 V	OUT																					
tPHL4	100	IN	2.7 V	0.0 V	OUT																	3.0	7.5			
	101	"	"	"	"																	"	"			
	103	"	"	"	"																	"	"			
tPHL4	104	"	IN	0.0 V	2.7 V	OUT																2.5	7.0			
	105	"	"	"	"																	"	"			
	106	"	"	"	"																	"	"			
	107	"	"	"	"																	"	"			
tPHL6	108	"	0.0 V	0.0 V	OUT																	2.0	6.0			
	109	"	"	"	"																	"	"			
	111	"	"	"	"																	"	"			
tPHL6	112	"	2.7 V	2.7 V	OUT																	2.5	7.0			
	113	"	"	"	"																	"	"			
	115	"	"	"	"																	"	"			
tPHZ5	116	"	0.0 V	0.0 V	OUT																	2.0	6.0			
	117	"	"	"	"																	"	"			
	119	"	"	"	"																	"	"			
tPHZ5	120	"	2.7 V	2.7 V	OUT																	"	"			
	121	"	"	"	"																	"	"			
	123	"	"	"	"																	"	"			

10 Same tests and terminal conditions as subgroup 9, except  $T_C = +125^\circ C$  and use limits from table I.

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

1/  $I_{1L}$  limits are as follows:

Test	Min/Max Limits (mA) for circuit:	
	A	B
1/1L	-0.25/-0.80	-0.03/-0.60

2/ A = 2.4 V, B = 0.5 V.

3/ Case 2 pins not referenced are N/C.

TABLE III. Group A Inspection for device type 02.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case	Terminal conditions																Measured terminal	Test limits								
				1	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19		20	Min	Max						
1	VOH	3006	TC = 25°C	1	OE <sub>a</sub>	S1	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>d</sub>	GND	Z <sub>5</sub>	I <sub>0h</sub>	I <sub>1h</sub>	I <sub>2h</sub>	I <sub>3b</sub>	S <sub>9</sub>	OE <sub>h</sub>	V <sub>CC</sub>	Z <sub>a</sub>	2.3							
				2	0.8 V	0.8 V	2.0 V	2.0 V	2.0 V	2.0 V	-1 mA																		
				3	"	0.9 V	2.0 V	2.0 V	2.0 V	2.0 V																			
				4	"	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V																			
				5	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V																			
				6	"	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V																			
				7	"	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V																			
				8	"	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V																			
	VOL	3007	TC = 25°C	9	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	20 mA																			
				10	"	0.8 V	0.8 V	0.8 V	0.8 V																				
				11	"	2.0 V	2.0 V	2.0 V	2.0 V																				
				12	"	2.0 V	0.8 V	0.8 V	0.8 V																				
				13	"	0.8 V	0.8 V	0.8 V	0.8 V																				
				14	"	0.8 V	0.8 V	0.8 V	0.8 V																				
				15	"	2.0 V	2.0 V	2.0 V	2.0 V																				
				16	"	2.0 V	2.0 V	2.0 V	2.0 V																				
	VIC	3010	TC = 25°C	17	-19 mA	-19 mA	-18 mA	-18 mA	-18 mA																				
				18	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				19	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				20	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				21	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				22	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				23	"	-19 mA	-18 mA	-18 mA	-18 mA																				
				24	"	-19 mA	-18 mA	-18 mA	-18 mA																				
	IINH	3010	TC = 25°C	29	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V																				
				30	"	2.7 V	2.7 V	2.7 V	2.7 V																				
				31	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				32	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				33	"	4.5 V	4.5 V	4.5 V	4.5 V																				
				34	"	4.5 V	4.5 V	4.5 V	4.5 V																				
				35	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				36	"	0.0 V	0.0 V	0.0 V	0.0 V																				
	IIMP	3010	TC = 25°C	41	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V																				
				42	"	7.0 V	7.0 V	7.0 V	7.0 V																				
				43	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				44	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				45	"	4.5 V	4.5 V	4.5 V	4.5 V																				
				46	"	4.5 V	4.5 V	4.5 V	4.5 V																				
				47	"	0.0 V	0.0 V	0.0 V	0.0 V																				
				48	"	0.0 V	0.0 V	0.0 V	0.0 V																				

See footnotes at end of table.







TABLE 111. Group A. Inspection for device type 09.  
Terminal conditions (pins not designated may be high >2.0 V, low <0.8 V, or open)

Subgroup	Symbol	MIL-STD-883 method	Case		2		3		4		5		7		8		9		10		12		13		14		15		16		Measured terminal	Test limits/Unit						
			2	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		Min	Max					
I T <sub>c</sub> = 25°C	V <sub>OH</sub>	3006	1	2.0 V	E <sub>a</sub>	S1	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>5</sub>	I <sub>0b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	OE <sub>b</sub>	V <sub>CC</sub>	Z <sub>g</sub>	4.5 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	2.0 V	2.5	V				
			2	0.8 V				0.8 V				-1 mA	GND																									
			3	0.8 V				0.8 V																														
			4	2.0 V			0.8 V																															
			5	2.0 V		0.8 V								-1 mA																								
			6	0.8 V											0.8 V																							
			7	0.8 V																																		
			8	0.8 V																																		
			9	2.0 V																																		
			10	2.0 V																																		
V <sub>OL</sub>	3007	11	0.8 V					2.0 V	2.0 V	2.0 V	20 mA																											
		12	0.8 V																																			
		13	2.0 V																																			
		14	2.0 V				2.0 V																															
		15	0.8 V										20 mA	2.0 V	2.0 V																							
		16	0.8 V																																			
		17	2.0 V																																			
		18	2.0 V																																			
V <sub>IC</sub>	3010	19	-18 mA																																			
		20	-18 mA																																			
		21	-18 mA																																			
		22	-18 mA																																			
		23	-18 mA																																			
		24	-18 mA																																			
		25	-18 mA																																			
		26	-18 mA																																			
		27	-18 mA																																			
		28	-18 mA																																			
		29	-18 mA																																			
		30	-18 mA																																			
I <sub>IHI</sub>	3010	31	2.7 V																																			
		32	2.7 V																																			
		33	4.5 V																																			
		34	4.5 V																																			
		35	4.5 V																																			
		36	4.5 V																																			
		37	4.5 V																																			
		38	4.5 V																																			
		39	0.0 V																																			
		40	0.0 V																																			
		41	0.0 V																																			
		42	0.0 V																																			
I <sub>IHI2</sub>	3010	43	7.0 V																																			
		44	7.0 V																																			
		45	4.5 V																																			
		46	0.0 V																																			
		47	0.0 V																																			
		48	4.5 V																																			
		49	4.5 V																																			
		50	0.0 V																																			
51	0.0 V																																					
52	0.0 V																																					
53	0.0 V																																					
54	0.0 V																																					

See footnotes at end of table.



TABLE III. Group A Inspection for device type D3 - Continued.  
Terminal conditions (pins not designated may be High 2.0 V, Low 0.0 V, or open)

Subgroup	Symbol	MIL-STD-883 E.F. method	Case 2/3/	Terminal conditions (pins not designated may be High 2.0 V, Low 0.0 V, or open)															Test Limits Unit				
				1	2	3	4	5	7	8	9	10	12	13	14	15	16	17	18	19	20	Measured terminal	Min
9 T <sub>C</sub> = 25°C	tPHL2	3003 Figs. 5	99	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	1.7	6.0	ns
			100	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			101	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			102	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			103	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			104	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
10 T <sub>C</sub> = -55°C	tPLH4	107	107	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			108	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			109	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			110	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			111	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			112	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
11 T <sub>C</sub> = -55°C	tPHL6	115	111	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			112	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			113	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			114	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			115	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		
			116	E <sub>9</sub>	S <sub>1</sub>	I <sub>3a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>0a</sub>	Z <sub>a</sub>	GND	Z <sub>b</sub>	I <sub>3b</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	S <sub>0</sub>	E <sub>6</sub>	Y <sub>CC</sub>	I <sub>1a</sub> > I <sub>4</sub> I <sub>2a</sub> > I <sub>4</sub> I <sub>1a</sub> > I <sub>4</sub> I <sub>0a</sub> > I <sub>4</sub> I <sub>0b</sub> > I <sub>4</sub> I <sub>1b</sub> > I <sub>4</sub> I <sub>2b</sub> > I <sub>4</sub> I <sub>3b</sub> > I <sub>4</sub>	2.7 V		

1) Same tests and terminal conditions as subgroup 9, except T<sub>C</sub> = +125°C and, for the following limits:  
 tPHL2 = 2.0 to 9.0 ns  
 tPHL4 = 3.5 to 14.5 ns  
 tPHL6 = 3.5 to 17.0 ns

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

3) IIL limits are as follows:

Test	A	Min/Max Limits (mA) for circuit:	B	C
IIL	-0.25/-0.60		-0.03/-0.60	-0.03/-0.60

2/ A = 2.5 V, B = 0.5 V.

3/ Case 2 pins not referenced are N/C.

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TABLE III. Group A inspection for device type 10.  
Terminal conditions (pins not designated may be high 2.0 V, low 0.8 V, or open)

Subgroup Symbol	Case	1	2	3	4	5	7	9	10	12	13	14	15	17	19	20	Measured terminals	Test Limits (Unit)			
																		Min	Max		
1 IC = 25°C	3305 41L-517-383 E.F. Test method	1	OE <sub>3</sub>	I <sub>1a</sub>	I <sub>2a</sub>	I <sub>1a</sub>	I <sub>3a</sub>	I <sub>3a</sub>	GM0	Z <sub>5</sub>	I <sub>1b</sub>	I <sub>2b</sub>	I <sub>3b</sub>	OE <sub>5</sub>	YCC		Z <sub>6</sub>	2.5	V		
		2	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	3 mA	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	4.5 V						
		3	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
		4	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
		5	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
		6	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
		7	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
		8	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V					
10L	3307	9	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		10	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		11	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		12	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		13	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		14	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
		15	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V						
11C	3309	17	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		18	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		19	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		20	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		21	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		22	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		23	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		24	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		25	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
		26	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA	-1.8 mA						
11H1	3310	29	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V						
		30	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		31	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		32	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		33	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		34	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		35	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		36	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		37	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		38	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		39	4.5 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V					
		11H2	3311	41	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V				
42	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
43	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
44	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
45	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
46	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
47	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
48	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
49	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
50	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
51	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					
52	4.5 V			0.0 V	0.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V	7.0 V					

See footnotes at end of table.





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. Tests shall be as specified in table II herein.
- b. Subgroups 4, 5, and 6 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. 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. Steady-state life test (method 1005 of MIL-STD-883) conditions:
  - (1) Test condition D, E, or F 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 method 1005 of MIL-STD-883.

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 shall be in accordance with MIL-M-38510.

## 6. NOTES

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

6.2 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 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 shall not apply to direct purchase by or direct shipment to the Government.
- h. Requirements for "JAN" marking.

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

GND - - - - - Ground zero voltage potential.  
 VIN - - - - - Voltage level at an input terminal.  
 IIN - - - - - Current flowing into an input terminal.

6.4 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) lead material and finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.5 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	54F151A
02	54F153
03	54F157A
04	54F158A
05	54F251A
06	54F257A
07	54F258A
08	54F253
09	54F352
10	54F353



6.6 Manufacturers' designations. Manufacturers' circuit which form a part of this specification are designated with an "X" as shown in table IV herein.

TABLE IV. Manufacturers' designation.

Device type	Circuits		
	A	B	C
	Fairchild Semiconductor	Motorola	Signetics
01	X	X	
02	X	X	
03	X		
04	X		
05	X	X	
05	X		
07	X		
08	X	X	
09		X	
10		X	

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

## Review activities:

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

## User activities:

Army - SM  
Navy - AS, CG, MC

Preparing activity:  
Air Force - 17

Agent:  
DLA - ES

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