

INCH-POUND

MIL-M-38510/339D

18 February 2004

SUPERSEDING

MIL-M-38510/339C

2 September 1986

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, ADVANCED SCHOTTKY TTL, DATA SELECTORS/MULTIPLEXERS WITH THREE-STATE OUTPUTS, MONOLITHIC SILICON

Reactivated after 18 February 2004 and may be used for either new or existing design acquisition.

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

The requirements for acquiring the product herein shall consist of this specification sheet and MIL-PRF 38535

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 finishes are provided for each type and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3).

1.2 Part or Identifying Number (PIN). The PIN is in accordance with MIL-PRF-38535, and as specified herein.

1.2.1 Device types. The device types are as follows:

<u>Device type</u>	<u>Circuit</u>
01	8 - 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 is the product assurance level as defined in MIL-PRF-38535.

1.2.3 Case outlines. The case outlines are as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
F	GDFP2-F16 or CDFP3-F16	16	Flat pack
2	CQCC1-N20	20	Square leadless chip carrier

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, 3990 East Broad St., Columbus, OH 43216-5000, or emailed to bipolar@dsccl.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil.

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V dc to +7.0 V dc
Input voltage range	-1.2 V dc at -18 mA to +7.0 V dc
Storage temperature range	-65° to +150°C
Maximum power dissipation, per device (P_D) <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_{JC}):	
Cases E, F, and 2	(See MIL-STD-1835)
Junction temperature (T_J) <u>2/</u>	175°C

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	4.5 V minimum to 5.5 V maximum
Minimum high level input voltage (V_{IH})	2.0 V dc
Maximum low level input voltage (V_{IL})	0.8 V dc
Case operating temperature range (T_C)	-55° to +125°C

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and Standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-38535 - Integrated Circuits (Microcircuits) Manufacturing, General Specification for.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-883 - Test Method Standard for Microelectronics.
MIL-STD-1835 - Interface Standard Electronic Component Case Outlines

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or www.dodssp.daps.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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

2/ Maximum junction temperature shall not be exceeded except in accordance with allowable short duration burn-in screening condition in accordance with MIL-PRF-38535.

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. Microcircuits furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturers list before contract award (see 4.3 and 6.4).

3.2 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-38535 and as specified herein or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not affect the form, fit, or function as described herein.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-PRF-38535 and herein.

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

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

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

3.3.4 Schematic circuits. The schematic circuits shall be maintained by the manufacturer and made available to the qualifying activity and the preparing activity upon request.

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

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 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.

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

3.7 Marking. Marking shall be in accordance with MIL-PRF-38535.

3.8 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 11 (see MIL-PRF-38535, appendix A).

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-PRF-38535 or as modified in the device manufacturer's Quality Management (QM) plan. The modification in the QM plan shall not effect the form, fit, or function as described herein.

4.2 Screening. Screening shall be in accordance with MIL-PRF-38535 and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

- a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.
- 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. Additional screening for space level product shall be as specified in MIL-PRF-38535.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-38535.

4.4 Technology Conformance inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 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 III of MIL-PRF-38535 and as follows:

- a. Tests shall be as specified in table II herein.
- b. Subgroups 4, 5, and 6 shall be omitted.

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of MIL-PRF-38535.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table IV of MIL-PRF-38535 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535. 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.

TABLE I. Electrical performance characteristics.

Test	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_{OH}	$V_{CC} = 4.5\text{ V},$ $V_{IL} = 0.8\text{ V},$ $V_{IH} = 2.0\text{ V}$	$I_{OH} = -1.0\text{ mA}$	01, 02, 03, 04, 09	2.5	V
			$I_{OH} = -3.0\text{ mA}$	05, 06, 07, 08, 10	2.4	V
Low level output voltage	V_{OL}	$V_{CC} = 4.5\text{ V}, I_{OL} = 20\text{ mA},$ $V_{IH} = 2.0\text{ V}, V_{IL} = 0.8\text{ V}$	All		0.5	V
Input clamp voltage	V_{IC}	$V_{CC} = 4.5\text{ V}, I_{IN} = -18\text{ mA},$ $T_C = +25^{\circ}\text{C}$	All		-1.2	V
High level input current	I_{IH1}	$V_{CC} = 5.5\text{ V}, V_{IH} = 2.7\text{ V}$	All		20	μA
	I_{IH2}	$V_{CC} = 5.5\text{ V}, V_{IH} = 7.0\text{ V}$	All		100	μA
Low level input current	I_{IL}	$V_{CC} = 5.5\text{ V}, V_{IL} = 0.5\text{ V}$	All	-0.3	-0.60	mA
Short circuit output current <u>1/</u>	I_{OS}	$V_{CC} = 5.5\text{ V}, V_{OS} = 0\text{ V}$	All	-60	-150	mA
Output drive	I_{OD}	$V_{CC} = 4.5\text{ V},$	01, 04, 09	60		mA
			02, 03, 05, 06, 07, 08, 10	35		mA
Supply current	I_{CC}	$V_{CC} = 5.5\text{ V}, V_{OS} = 0\text{ V}$	01		21	mA
			02		20	mA
			03		23	mA
			04		15	mA
			05		22	mA
High level supply current	I_{CCH}	$V_{CC} = 5.5\text{ V}$	06		15	mA
			07		9.5	mA
			08		16	mA
			09		14	mA
			10		14	mA
Low level supply current	I_{CCL}	$V_{CC} = 5.5\text{ V}$	06		22	mA
			07		23	mA
			08		23	mA
			09		20	mA
			10		20	mA

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

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C	Device type	Limits		Unit
				Min	Max	
Off state supply current	I _{CCZ}	V _{CC} = 5.5 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 V, V _{ZH} = 2.7 V	05, 06, 07, 08, 10		50	μA
	I _{OZL}	V _{CC} = 5.5 V, V _{ZL} = 0.5 V			-50	μA
Propagation delay time, low to high level, data to Z output	t _{PLH1}	V _{CC} = 5.5 V (see figure 4)	01	2.5	8.5	ns
			02	2.5	9.0	ns
			03	2.5	7.5	ns
			05	2.5	9.0	ns
			06	2.0	7.0	ns
			08	2.5	9.0	ns
Propagation delay time, low to high level, data to $\bar{Z}$ 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	3.5	15.0	ns
Propagation delay time, low to high level, select to $\bar{Z}$ 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 $\bar{Z}$ 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.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C	Device type	Limits		Unit
				Min	Max	
Propagation delay time, high to low level, data to Z output	t _{PHL1}	V _{CC} = 5.5 V (see figure 4)	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, high to low level, data to $\bar{Z}$ output	t _{PHL2}		01	1.5	6.0	ns
			04	1.5	5.0	ns
			05	1.0	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 _{PHL3}		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 $\bar{Z}$ output	t _{PHL4}		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 _{PHL5}		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 $\bar{Z}$ output	t _{PHL6}		01	2.5	6.5	ns
			04	2.0	8.5	ns
			09	3.0	13.0	ns
Propagation delay time, low level to off state, output enable to Z output	t _{PLZ5}		05	1.0	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 $\bar{Z}$ output	t _{PLZ6}		05	1.0	5.0	ns
			07	2.0	8.5	ns
			10	2.0	8.5	ns

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C	Device type	Limits		Unit
				Min	Max	
Propagation delay time, high level to off state, output enable to Z output	t _{PHZ5}	V _{CC} = 5.5 V (see figure 4)	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, output enable to $\bar{Z}$ output	t _{PHZ6}		05	2.0	6.0	ns
			07	1.5	7.0	ns
			10	2.0	6.5	ns
Propagation delay time, off state to low level output enable to Z output	t _{PZL5}		05	2.5	9.0	ns
			06	2.5	9.0	ns
			08	2.5	10.0	ns
Propagation delay time, off state to low level output enable to $\bar{Z}$ output	t _{PZL6}		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 output enable to Z output	t _{PZH5}		05	3.0	8.5	ns
			06	2.0	8.0	ns
			08	2.5	10.0	ns
Propagation delay time, off state to high level output enable to $\bar{Z}$ output	t _{PZH6}		05	2.0	7.0	ns
			07	2.0	8.0	ns
			10	3.0	11.0	ns

TABLE II. Electrical test requirements.

MIL-PRF-38535 test requirements	Subgroups (see table III)	
	Class S devices	Class B devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3, 7, 9, 10, 11	1*, 2, 3, 7, 9
Group A test requirements	1, 2, 3, 7, 8, 9, 10, 11	1, 2, 3, 7, 8, 9, 10, 11
Group B electrical test parameters when using the method 5005 QCI option	1, 2, 3, 7, 8, 9, 10, 11	N/A
Group C end-point electrical parameters	1, 2, 3, 7, 8, 9, 10, 11	1, 2, 3
Group D end-point electrical parameters	1, 2, 3	1, 2, 3

*PDA applies to subgroup 1.

Terminal number	Terminal assignments									
	Device type 01		Device type 02		Device type 03		Device type 04		Device type 05	
	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2
1	I3	N/C	$\bar{E} a$	N/C	S	N/C	S	N/C	I3	N/C
2	I2	I3	S1	$\bar{E} a$	I0a	S	I0a	S	I2	I3
3	I1	I2	I3a	S1	I1a	I0a	I1a	I0a	I1	I2
4	I0	I1	I2a	I3a	Za	I1a	$\bar{Z} a$	I1a	I0	I1
5	Z	I0	I1a	I2a	I0b	Za	I0b	$\bar{Z} a$	Z	I0
6	$\bar{Z}$	N/C	I0a	N/C	I1b	N/C	I1b	N/C	$\bar{Z}$	N/C
7	$\bar{E}$	Z	Za	I1a	Zb	I0b	$\bar{Z} b$	I0b	$\overline{QE}$	Z
8	GND	$\bar{Z}$	GND	I0a	GND	I1b	GND	I1b	GND	$\bar{Z}$
9	S2	$\bar{E}$	Zb	Za	Zd	Zb	$\bar{Z} d$	$\bar{Z} b$	S2	$\overline{QE}$
10	S1	GND	I0b	GND	I1d	GND	I1d	GND	S1	GND
11	S0	N/C	I1b	N/C	I0d	N/C	I0d	N/C	S0	N/C
12	I7	S2	I2b	Zb	Zc	Zd	$\bar{Z} c$	$\bar{Z} d$	I7	S2
13	I6	S1	I3b	I0b	I1c	I1d	I1c	I1d	I6	S1
14	I5	S0	S0	I1b	I0c	I0d	I0c	I0d	I5	S0
15	I4	I7	$\bar{E} b$	I2b	$\bar{E}$	Zc	$\bar{E}$	$\bar{Z} c$	I4	I7
16	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C
17		I6		I3b		I1c		I1c		I6
18		I5		S0		I0c		I0c		I5
19		I4		$\bar{E} b$		$\bar{E}$		$\bar{E}$		I4
20		V _{CC}		V _{CC}		V _{CC}		V _{CC}		V _{CC}

FIGURE 1. Terminal connections.

Terminal number	Terminal assignments									
	Device type 06		Device type 07		Device type 08		Device type 09		Device type 10	
	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2	Cases E and F	Case 2
1	S	N/C	S	N/C	$\overline{OE} a$	N/C	$\overline{E} a$	N/C	$\overline{OE} a$	N/C
2	I0a	S	I0a	S	S1	$\overline{OE} a$	S1	$\overline{E} a$	S1	$\overline{OE} a$
3	I1a	I0a	I1a	I0a	I3a	S1	I3a	S1	I3a	S1
4	Za	I1a	$\overline{Z} a$	I1a	I2a	I3a	I2a	I3a	I2a	I3a
5	I0b	Za	I0b	$\overline{Z} a$	I1a	I2a	I1a	I2a	I1a	I2a
6	I1b	N/C	I1b	N/C	I0a	N/C	I0a	N/C	I0a	N/C
7	Zb	I0b	$\overline{Z} b$	I0b	Za	I1a	$\overline{Z} a$	I1a	$\overline{Z} a$	I1a
8	GND	I1b	GND	I1b	GND	I0a	GND	I0a	GND	I0a
9	Zd	Zb	$\overline{Z} d$	$\overline{Z} b$	Zb	Za	$\overline{Z} b$	$\overline{Z} a$	$\overline{Z} b$	$\overline{Z} a$
10	I1d	GND	I1d	GND	I0b	GND	I0b	GND	I0b	GND
11	I0d	N/C	I0d	N/C	I1b	N/C	I1b	N/C	I1b	N/C
12	Zc	Zd	$\overline{Z} c$	$\overline{Z} d$	I2b	Zb	I2b	$\overline{Z} b$	I2b	$\overline{Z} b$
13	I1c	I1d	I1c	I1d	I3b	I0b	I3b	I0b	I3b	I0b
14	I0c	I0d	I0c	I0d	S0	I1b	S0	I1b	S0	I1b
15	$\overline{OE}$	Zc	$\overline{OE}$	$\overline{Z} c$	$\overline{OE} b$	I2b	$\overline{E} b$	I2b	$\overline{OE} b$	I2b
16	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C	V _{CC}	N/C
17		I1c		I1c		I3b		I3b		I3b
18		I0c		I0c		S0		S0		S0
19		$\overline{OE}$		$\overline{OE}$		$\overline{OE} b$		$\overline{E} b$		$\overline{OE} b$
20		V _{CC}		V _{CC}		V _{CC}		V _{CC}		V _{CC}

FIGURE 1. Terminal connections - Continued.

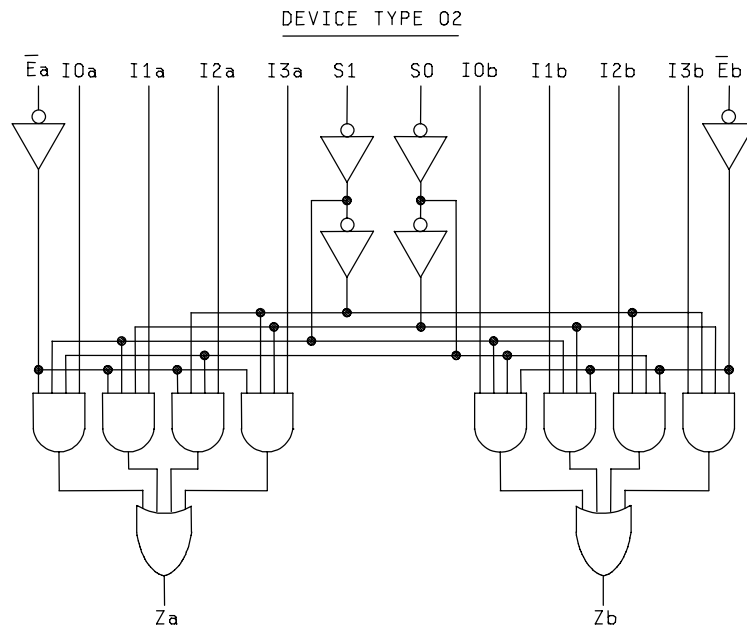
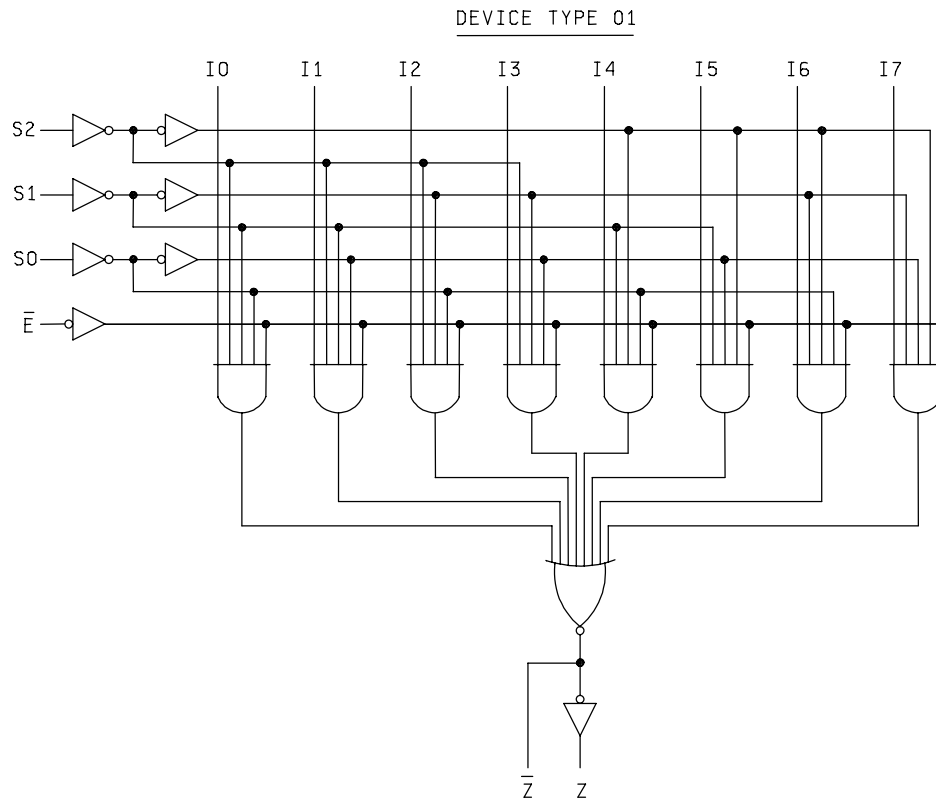
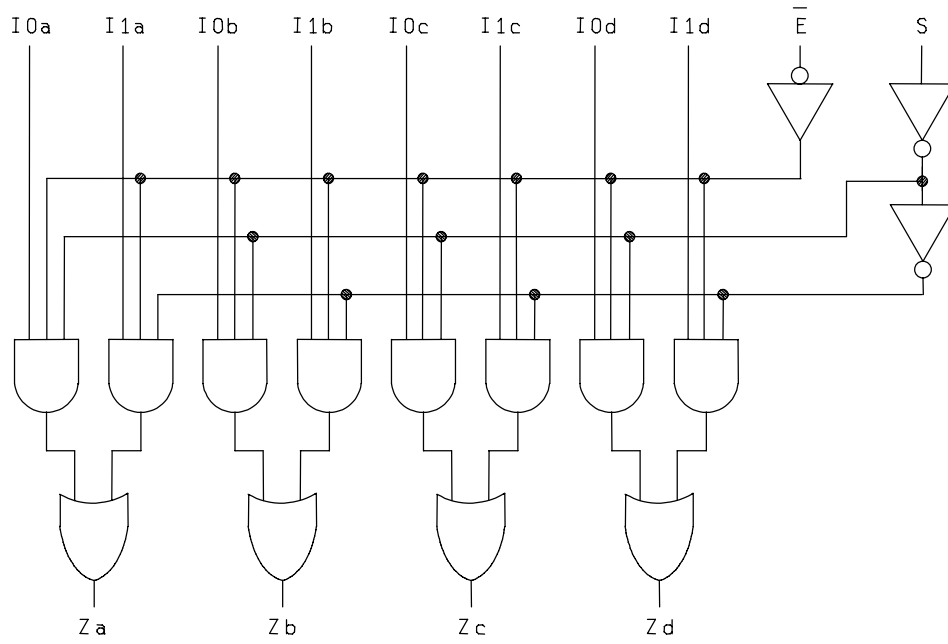


FIGURE 2. Logic diagrams.

DEVICE TYPE 03



DEVICE TYPE 04

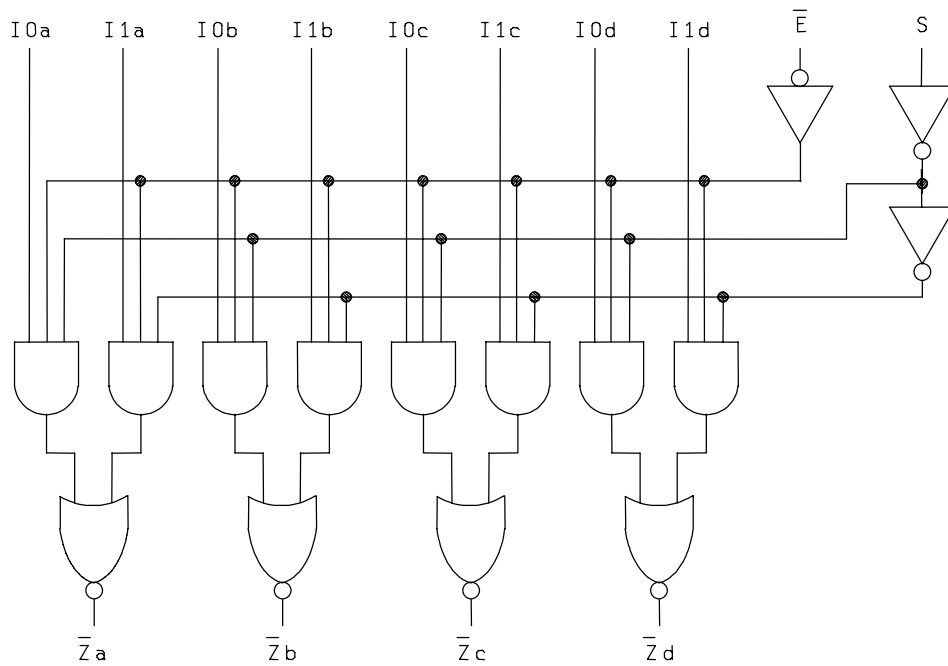
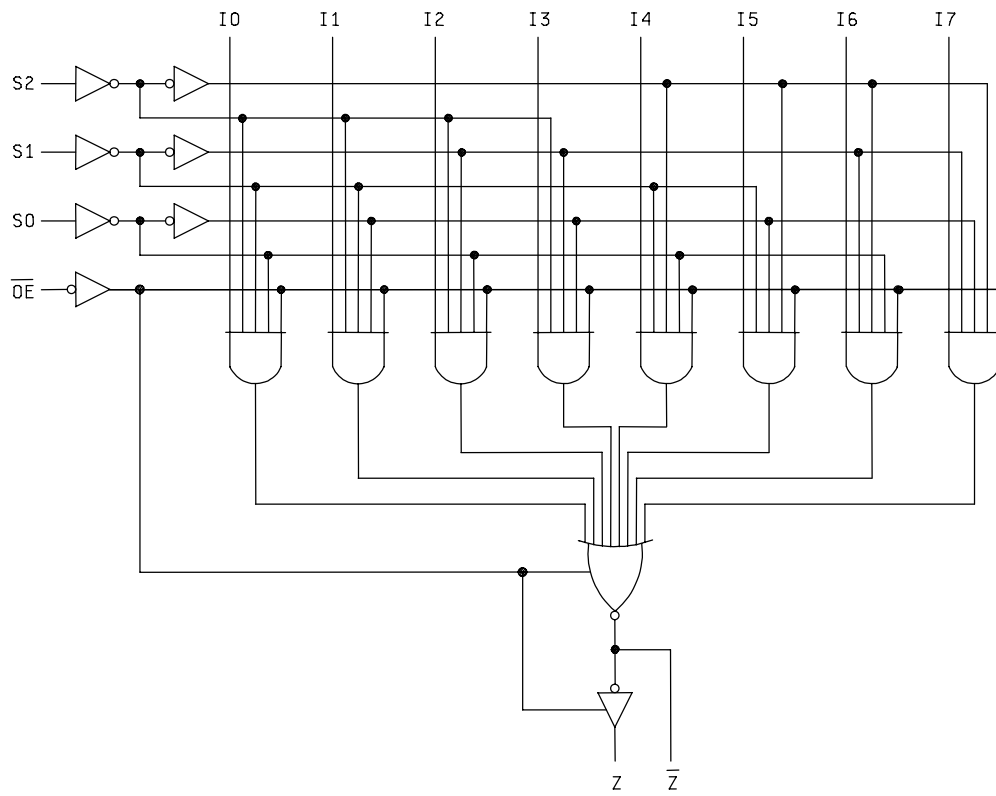


FIGURE 2. Logic diagrams - Continued.

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DEVICE TYPE 05



DEVICE TYPE 06

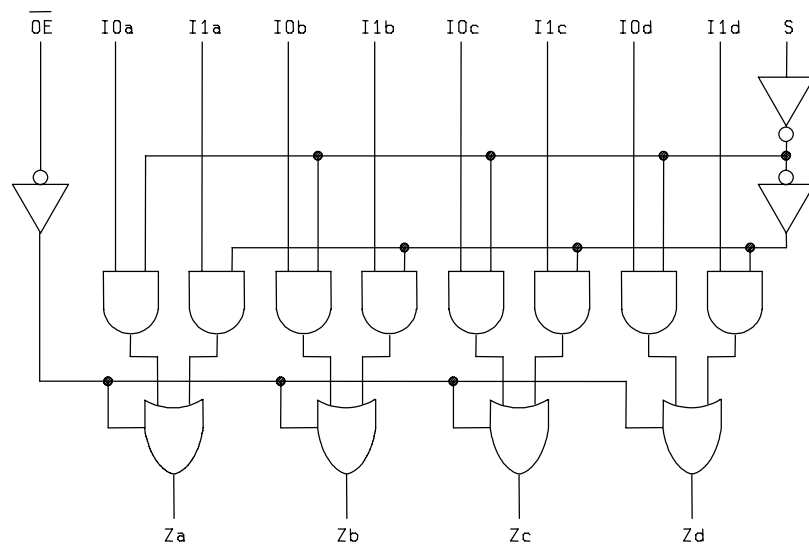
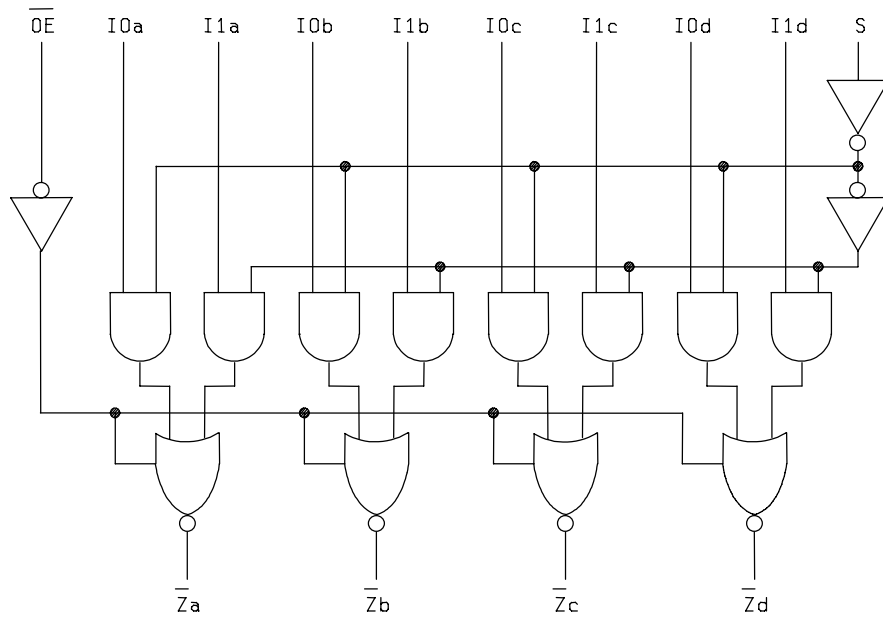


FIGURE 2. Logic diagrams - Continued.

DEVICE TYPE 07



DEVICE TYPE 08

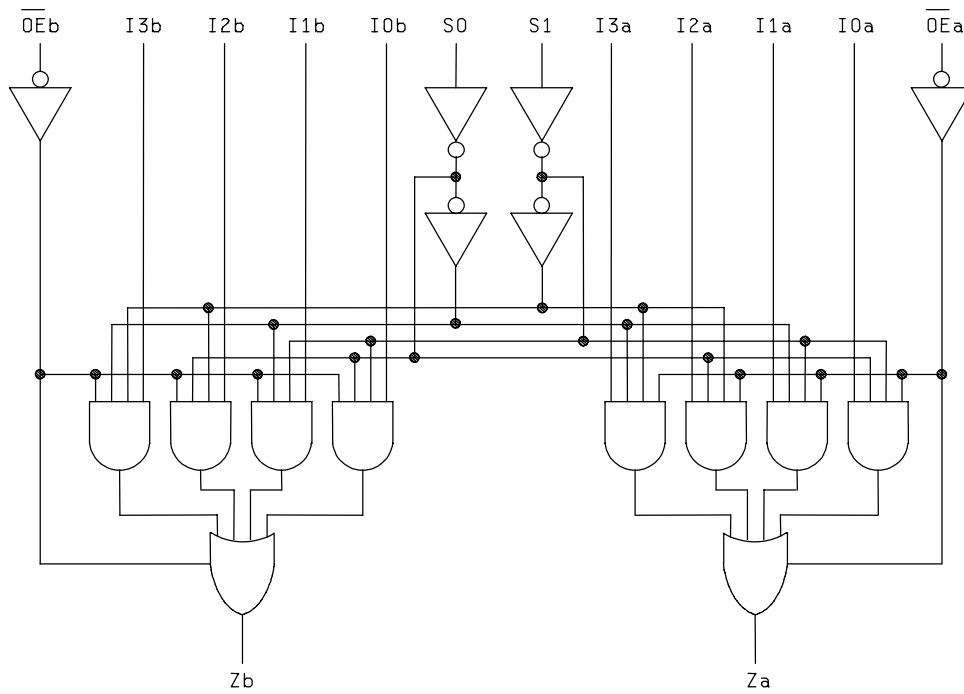
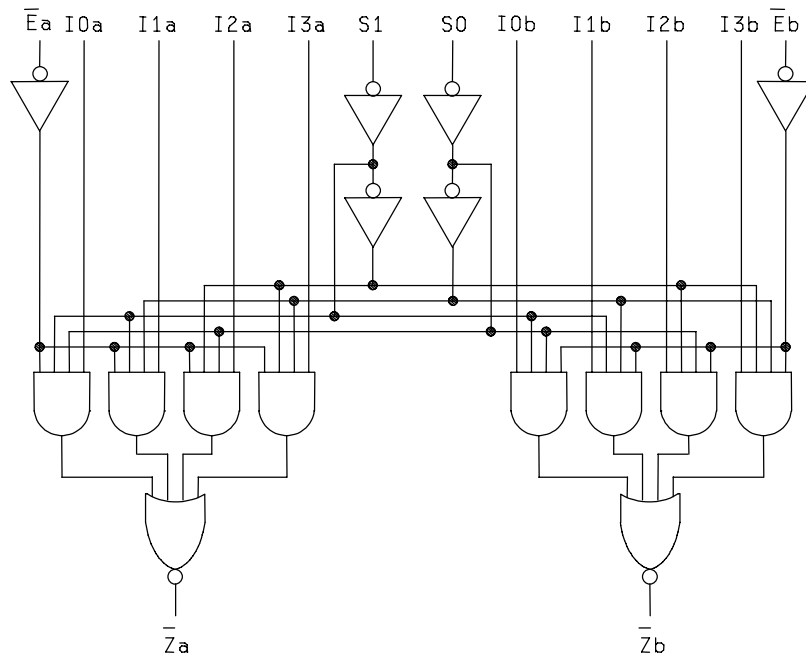


FIGURE 2. Logic diagrams - Continued.

DEVICE TYPE 09



DEVICE TYPE 10

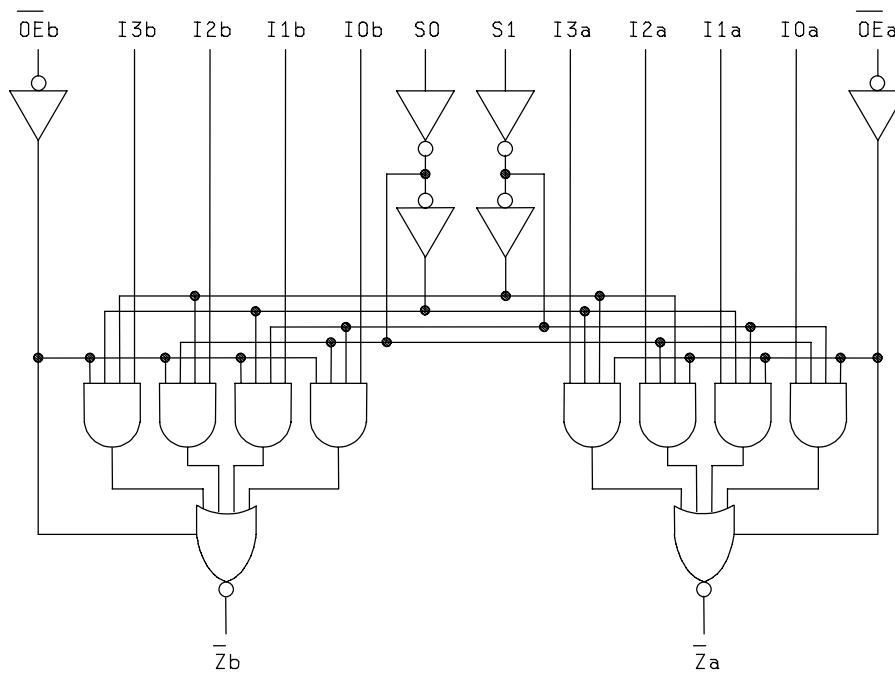


FIGURE 2. Logic diagrams - Continued.

Device type 01

INPUTS				OUTPUTS	
$\bar{E}$	S2	S1	S0	$\bar{Z}$	Z
H	X	X	X	H	L
L	L	L	L	$\bar{I} 0$	I 0
L	L	L	H	$\bar{I} 1$	I 1
L	L	H	L	$\bar{I} 2$	I 2
L	L	H	H	$\bar{I} 3$	I 3
L	H	L	L	$\bar{I} 4$	I 4
L	H	L	H	$\bar{I} 5$	I 5
L	H	H	L	$\bar{I} 6$	I 6
L	H	H	H	$\bar{I} 7$	I 7

Device type 02

SELECT INPUTS		INPUTS (a or b)					OUTPUT
S0	S1	$\bar{E}$	I 0	I 1	I 2	I 3	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
$\overline{E}$	S	I 0	I 1	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
$\overline{E}$	S	I 0	I 1	$\overline{Z}$
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	
$\overline{OE}$	S2	S1	S0	$\overline{Z}$	Z
H	X	X	X	Z	Z
L	L	L	L	$\overline{I} 0$	I 0
L	L	L	H	$\overline{I} 1$	I 1
L	L	H	L	$\overline{I} 2$	I 2
L	L	H	H	$\overline{I} 3$	I 3
L	H	L	L	$\overline{I} 4$	I 4
L	H	L	H	$\overline{I} 5$	I 5
L	H	H	L	$\overline{I} 6$	I 6
L	H	H	H	$\overline{I} 7$	I 7

Device type 06

OUTPUT ENABLE	SELECT INPUT	DATE INPUTS		OUTPUTS
$\overline{OE}$	S	I 0	I 1	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	DATE INPUTS		OUTPUTS
$\overline{OE}$	S	I 0	I 1	$\overline{Z}$
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
S0	S1	I 0	I 1	I 2	I 3	$\overline{OE}$	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

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
S0	S1	$\bar{E}$	I 0	I 1	I 2	I 3	$\bar{Z}$
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

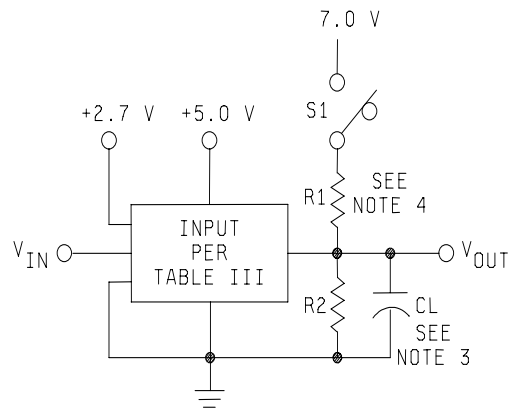
Device type 10

SELECT INPUTS		DATA INPUTS				OUTPUT ENABLE	OUTPUT
S0	S1	I 0	I 1	I 2	I 3	$\overline{OE}$	$\bar{Z}$
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

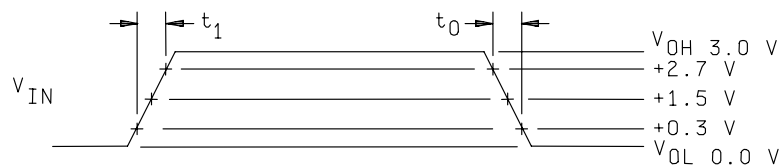
Address inputs S0 and S1 are common to both sections

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

FIGURE 3. Truth tables - Continued.

Test Circuit

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

**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. $R1 = R2 = 499\Omega \pm 5\%$.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Switching time test circuit and waveform for all device types.

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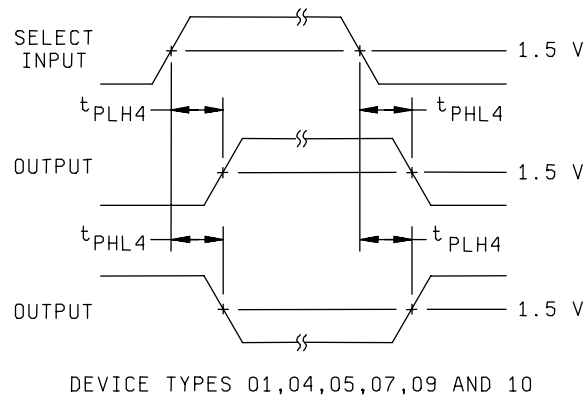
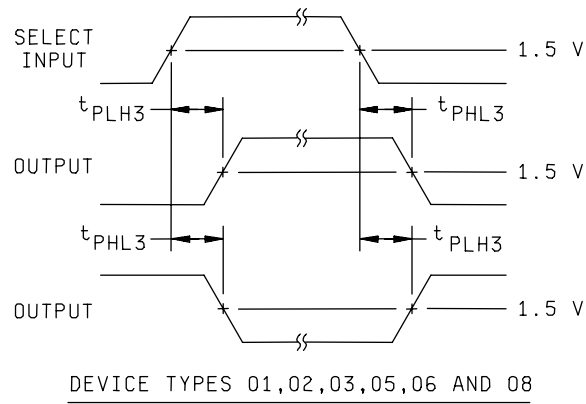
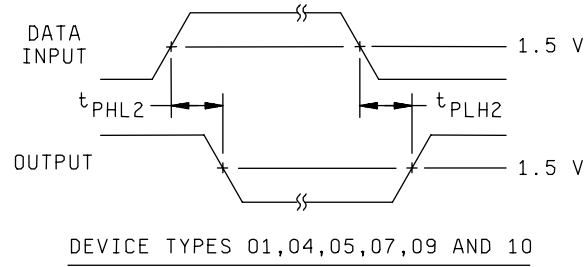
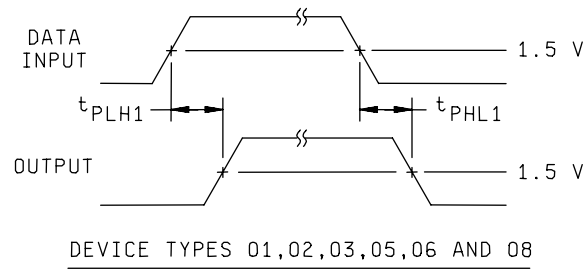


FIGURE 4. Switching time waveform - Continued.

MIL-M-38510/339D

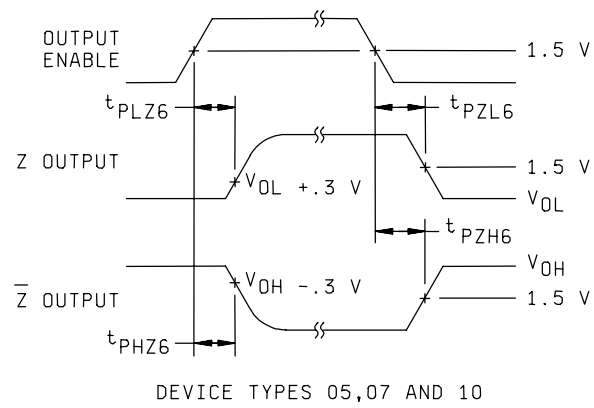
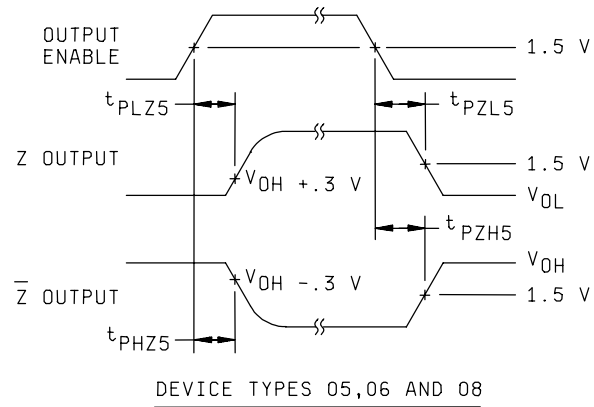
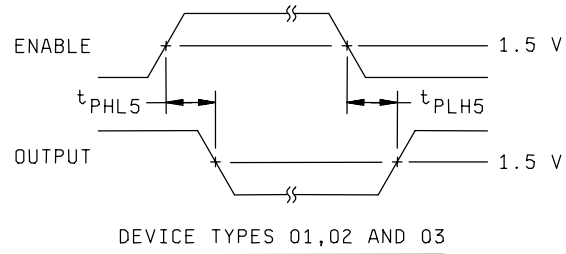
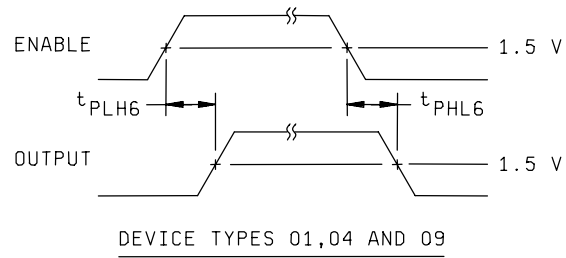


FIGURE 4. Switching time waveform - Continued.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, Case 2 1/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Limits		Measured terminal	Unit
																				Min	Max		
1	V_{OL}	3007	Test no.	I3	I2	I1	I0	Z	Z	$\bar{E}$	GND	S2	S1	S0	I7	I6	I5	I4	V _{CC}			Z	V
		"	1				2.0 V		20 mA	0.8 V	GND	0.8 V	0.8 V	0.8 V					4.5 V				0.5
		"	2			2.0 V			"	"	"	"	0.8 V	2.0 V					"				"
		"	3		2.0 V				"	"	"	"	0.8 V	2.0 V					"				"
		"	4	2.0 V					"	"	"	"	2.0 V	2.0 V					"				"
		"	5						"	"	"	2.0 V	0.8 V	0.8 V				2.0 V	"				"
		"	6						"	"	"	"	0.8 V	2.0 V			2.0 V		"				"
		"	7						"	"	"	2.0 V	0.8 V	0.8 V					"				"
		"	8						"	"	"	"	2.0 V	2.0 V	2.0 V				"				"
		"	9				0.8 V	20 mA	-1.0 mA	2.0 V	"	0.8 V	0.8 V	0.8 V					"			Z	"
		3006	10				0.8 V		"	0.8 V	"	"	0.8 V	0.8 V					"		2.5	Z	"
		"	11						"	0.8 V	"	0.8 V	0.8 V	0.8 V					"				"
		"	12			0.8 V			"	"	"	"	0.8 V	2.0 V					"				"
		"	13		0.8 V				"	"	"	"	2.0 V	0.8 V					"				"
		"	14	0.8 V					"	"	"	"	2.0 V	0.8 V				0.8 V	"				"
		"	15						"	"	"	2.0 V	0.8 V	0.8 V					"				"
		"	16						"	"	"	"	0.8 V	2.0 V			0.8 V		"				"
		"	17						"	"	"	"	2.0 V	0.8 V					"				"
		"	18						"	"	"	"	2.0 V	2.0 V	0.8 V				"				"
		"	19				2.0 V	-1.0 mA		"	"	0.8 V	0.8 V	0.8 V					"			Z	"
	V_{IC}		20	-18 mA							"								"			I3	"
			21		-18 mA						"								"			I2	-1.2
			22								"								"			I1	"
			23				-18 mA				"								"			I0	"
			24							-18 mA	"								"			E	"
			25								"	-18 mA							"			S2	"
			26								"		-18 mA						"			S1	"
			27								"				-18 mA				"			S0	"
			28								"								"			I7	"
			29								"						-18 mA		"			I6	"
			30								"								"			I5	"
			31								"							-18 mA	"			I4	"
			32	2.7 V						4.5 V	"	4.5 V	0.0 V	0.0 V					5.5 V			I3	20 μ A
	I_{H1}	3010	33		2.7 V						"	4.5 V	0.0 V	4.5 V					"			I2	"
		"	34							"	"	"	0.0 V	4.5 V					"			I1	"
		"	35				2.7 V			"	"	"	4.5 V	4.5 V					"			I0	"
		"	36							2.7 V	"		4.5 V	4.5 V					"			E	"
		"	37								"	2.7 V							"			S2	"
		"	38								"		2.7 V						"			S1	"
		"	39								"			2.7 V					"			S0	"
		"	40							4.5 V	"	0.0 V	0.0 V	0.0 V	2.7 V				"			I7	"
		"	41							"	"	"	0.0 V	4.5 V					"			I6	"
		"	42							"	"	"	4.5 V	4.5 V			2.7 V		"			I5	"
		"	43							"	"	"	4.5 V	4.5 V				2.7 V	"			I4	"
		"	44	7.0 V						"	"	4.5 V	0.0 V	0.0 V					"			I3	100
	I_{H2}	"	45							"	"	"	0.0 V	4.5 V					"			I2	"
		"	46							"	"	"	4.5 V	0.0 V					"			I1	"
		"	47				7.0 V			"	"	"	4.5 V	4.5 V					"			I0	"
		"	48							7.0 V	"		4.5 V	4.5 V					"			E	"
		"	49								"	7.0 V							"			S2	"
		"	50								"		7.0 V						"			S1	"
		"	51							4.5 V	"	0.0 V	0.0 V	7.0 V					"			S0	"
		"	52							"	"	0.0 V	0.0 V	0.0 V	7.0 V				"			I7	"
		"	53							"	"	"	0.0 V	4.5 V			7.0 V		"			I6	"
		"	54							"	"	"	4.5 V	0.0 V			7.0 V		"			I5	"
		"	55							"	"	"	4.5 V	4.5 V				7.0 V	"			I4	"

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	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Limits			Measured terminal	Unit
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min	Max				
1 Tc = 25°C	I _{IL}	3009	Case 2	0.5 V						0.0 V	GND	0.0 V	4.5 V	4.5 V						5.5 V		I ₃	mA	
		"	57							"	"	"	4.5 V	0.0 V						"		I ₂	"	
		"	58							"	"	"	0.0 V	4.5 V						"		I ₁	"	
		"	59				0.5 V			"	"	"	0.0 V	0.0 V						"		I ₀	"	
		"	60							0.5 V	"	"	"	"						"		E	"	
		"	61							"	"	0.5 V	"	0.5 V						"		S ₂	"	
		"	62							"	"	"	"	"						"		S ₁	"	
		"	63							"	"	"	4.5 V	4.5 V	0.5 V					"		S ₀	"	
		"	64							0.0 V	"	"	"	4.5 V	0.0 V					"		I ₇	"	
		"	65							"	"	"	"	4.5 V	0.0 V					"		I ₆	"	
		"	66							"	"	"	"	0.0 V	4.5 V			0.5 V		"		I ₅	"	
		"	67							"	"	"	"	0.0 V	0.0 V				0.5 V	"		I ₄	"	
3011	3011	68				4.5 V	0.0 V		0.0 V	4.5 V	"	0.0 V	0.0 V	0.0 V					"		Z	-60	-150	
	3011	69							0.0 V	4.5 V	"	"	"						"		Z	-60	-150	
I _{OP}	70					2.5 V			2.5 V	5.5 V	"	0.0 V	0.0 V						4.5 V		Z	60	"	
	71				5.5 V					0.0 V	"	0.0 V	0.0 V						4.5 V		Z	60	"	
I _{CC}	72	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 _{CC}			"		
Same tests, terminal conditions, and limits as subgroup 1, except T _C = +125°C and V _{IC} tests are omitted.																								
Same tests, terminal conditions, and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																								
7 Tc = 25°C	Functional test 3/	3014	73	A	A	A	A	L	H	A	GND	B	B	B	A	A	A	A	4/					
			74	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			75	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			76	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			77	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			78	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			79	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			81	B	B	B	"	H	L	B	"	B	B	B	B	B	B	B	B	B	"	"	"	"
			82	"	B	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			83	"	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			84	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
85	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
87	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
89	A	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
90	"	A	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
91	"	"	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
92	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
93	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
94	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
95	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
8	Same tests, terminal conditions, and limits as for subgroup 7, except T _C = +125°C and T _C = -55°C.																							

See footnotes at end of device types 01.

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	Cases E, F	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open)														Measured terminal	Limits		Unit	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16		Min
9 $T_c = 25^\circ\text{C}$	t_{PH1}	3003 Fig. 4	13	12	11	10	9	8	7	6	5	4	3	2	1							ns
			97			IN	OUT		0.0 V	GND	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	10 to Z	3.0	6.5	"			
			98						"		"	2.7 V	0.0 V	2.7 V	2.7 V	11 to Z	"	"	"			
			99		IN				"		"	2.7 V	0.0 V	2.7 V	2.7 V	12 to Z	"	"	"			
			100						"		"	2.7 V	2.7 V	2.7 V	2.7 V	13 to Z	"	"	"			
			101	IN					"		"	2.7 V	0.0 V	0.0 V	0.0 V	14 to Z	"	"	"			
			102						"		"	0.0 V	2.7 V	2.7 V	2.7 V	15 to Z	"	"	"			
			103						"		"	2.7 V	0.0 V	2.7 V	2.7 V	16 to Z	"	"	"			
			104						"		"	2.7 V	2.7 V	2.7 V	2.7 V	17 to Z	"	"	"			
			105			IN			"		"	0.0 V	0.0 V	0.0 V	0.0 V	10 to Z	3.7	7.0	"			
			106						"		"	0.0 V	2.7 V	2.7 V	2.7 V	11 to Z	"	"	"			
			107						"		"	2.7 V	0.0 V	2.7 V	2.7 V	12 to Z	"	"	"			
	108		IN				"		"	2.7 V	2.7 V	2.7 V	2.7 V	13 to Z	"	"	"					
	109						"		"	2.7 V	0.0 V	0.0 V	0.0 V	14 to Z	"	"	"					
	110						"		"	0.0 V	2.7 V	2.7 V	2.7 V	15 to Z	"	"	"					
	111						"		"	2.7 V	0.0 V	2.7 V	2.7 V	16 to Z	"	"	"					
	112						"		"	2.7 V	2.7 V	2.7 V	2.7 V	17 to Z	"	"	"					
	113			IN			OUT	"		0.0 V	0.0 V	0.0 V	0.0 V	10 to Z	3.0	6.5	"					
	114						"		"	0.0 V	2.7 V	2.7 V	2.7 V	11 to Z	"	"	"					
	115						"		"	2.7 V	0.0 V	2.7 V	2.7 V	12 to Z	"	"	"					
	116		IN				"		"	2.7 V	2.7 V	2.7 V	2.7 V	13 to Z	"	"	"					
	117						"		"	2.7 V	0.0 V	0.0 V	0.0 V	14 to Z	"	"	"					
	118						"		"	0.0 V	2.7 V	2.7 V	2.7 V	15 to Z	"	"	"					
	119						"		"	2.7 V	0.0 V	2.7 V	2.7 V	16 to Z	"	"	"					
	120						"		"	2.7 V	2.7 V	2.7 V	2.7 V	17 to Z	"	"	"					
t_{PH2}								"	"		0.0 V	0.0 V	0.0 V	0.0 V	10 to Z	1.5	4.0	"				
			121			IN			"	"	0.0 V	0.0 V	0.0 V	0.0 V	10 to Z	"	"	"				
			122					"	"		"	0.0 V	2.7 V	2.7 V	2.7 V	11 to Z	"	"	"			
			123					"	"		"	2.7 V	0.0 V	2.7 V	2.7 V	12 to Z	"	"	"			
			124	IN				"	"		"	2.7 V	2.7 V	2.7 V	2.7 V	13 to Z	"	"	"			
			125					"	"		"	2.7 V	0.0 V	0.0 V	0.0 V	14 to Z	"	"	"			
			126					"	"		"	0.0 V	2.7 V	2.7 V	2.7 V	15 to Z	"	"	"			
			127					"	"		"	2.7 V	0.0 V	2.7 V	2.7 V	16 to Z	"	"	"			
128					"	"		"	2.7 V	2.7 V	2.7 V	2.7 V	17 to Z	"	"	"						
t_{PH5}			129	2.7 V	2.7 V	2.7 V	2.7 V	OUT		IN	"	0.0 V	0.0 V	0.0 V	2.7 V	2.7 V	2.7 V	5.0	9.5	"		
			130	2.7 V	2.7 V	2.7 V	2.7 V	OUT		IN	"	0.0 V	0.0 V	0.0 V	"	2.7 V	2.7 V	2.7 V	3.5	7.0	"	
			131	0.0 V	0.0 V	0.0 V	0.0 V		OUT	"	"	2.7 V	2.7 V	2.7 V	"	0.0 V	0.0 V	"	3.0	6.1	"	
			132	0.0 V	0.0 V	0.0 V	0.0 V		OUT	"	"	2.7 V	2.7 V	2.7 V	"	0.0 V	0.0 V	"	3.0	6.0	"	
			133				0.0 V	OUT		0.0 V	"	0.0 V	0.0 V	IN	IN	0.0 V			4.5	10.5	"	
			134					"	"	"	"	0.0 V	IN	0.0 V	0.0 V	"			"	"	"	"
			135				"	"	"	"	"	IN	0.0 V	0.0 V	0.0 V	"			"	"	"	"
			136				2.7 V	"	"	"	"	0.0 V	0.0 V	IN	IN	0.0 V			"	"	"	"
t_{PH3}								"	"											"		
			137						"	"	"	0.0 V	0.0 V	0.0 V	"			"	"	"	"	
								"	"											"		
			138						"	"	"	IN	0.0 V	0.0 V	"			"	"	"	"	"

See footnotes at end of device types 01.

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	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit	
				Case 2 J/	3	4	5	7	8	9	10	12	S1	S0	17	18	19	20	Min		Max			
9	t _{PHL4}	3003	139				0.0 V	2.7 V	Z	Z	OUT	0.0 V	GND	0.0 V	0.0 V	IN				5.0 V	S0 to Z	4.0	9.0	ns
		Fig 4	140				0.0 V	"	"	"	"	"	0.0 V	IN	0.0 V					"	S1 to Z	"	"	"
		"	141					"	"	"	"	"	"	IN	0.0 V	0.0 V			0.0 V	"	S2 to Z	"	"	"
		"	142				2.7 V	0.0 V	"	"	"	"	0.0 V	0.0 V	IN					"	S0 to Z	3.2	7.5	"
10	t _{PHL4}	"	143				2.7 V	"	"	"	"	0.0 V	IN	0.0 V					"	S1 to Z	"	"	"	"
		"	144				"	"	"	"	"	IN	0.0 V	0.0 V				2.7 V	"	S2 to Z	"	"	"	"
Same tests and terminal conditions as subgroup 9, except T _C = +125°C and for the following limits. t _{PHL1} = 2.5 to 8.5 ns t _{PHL2} = 1.5 to 6.0 ns t _{PHL3} = 4.5 to 13.5 ns t _{PHL4} = 3.5 to 11.5 ns t _{PHL5} = 4.0 to 12.0 ns t _{PHL6} = 3.0 to 7.5 ns																								
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C.																							

1/ For case 2 pins not referenced are N/C.

2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit		
	A	B	C
I_{IL}	-0.25/- .60	-0.03/- .60	-.03/- .60

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.

4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

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	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit		
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max				
1 T _C = 25°C	V _{OH}	3006	Test no.	E a	S1	I3a	I2a	I1a	I0a	Za	GND	Zb	I0b	I1b	I2b	I3b	S0	E b	Za	4.5 V	2.5	V			
				1	0.8 V	0.8 V		2.0 V	2.0 V	-1 mA	GND														
				2	"	0.8 V				"															
				3	"	2.0 V		2.0 V		"	"														
				4	"	2.0 V				"	"														
				5	"	0.8 V				"	"	-1 mA	2.0 V	2.0 V											
				6	"	0.8 V				"	"	"													
				7	"	2.0 V				"	"	"													
				8	"	2.0 V				"	"	"													
				9	2.0 V					20 mA															
				10	0.8 V				0.8 V		"														
				11	"	0.8 V		0.8 V		"	"														
				12	"	2.0 V				0.8 V		"	"												
				13	"	2.0 V		0.8 V				"	"												
				14	"							"	"	20 mA											
				15	"	0.8 V						"	"	"	0.8 V										
				16	"	0.8 V						"	"	"											
				17	"	2.0 V						"	"	"											
				18	"	2.0 V						"	"	"											
				19	-18 mA									"											
	V _{OL}	3007		20	-18 mA					"															
				21						"															
				22			-18 mA						"												
				23									"												
				24									"												
				25									"												
				26									"												
				27									"												
				28									"												
				29									"												
				30									"												
				31	2.7 V								"												
				32		2.7 V							"												
				33	4.5 V	0.0 V	2.7 V						"												
				34	"	0.0 V							"												
				35	"	4.5 V		2.7 V					"												
				36	"	"							"												
				37	"	"							"												
				38	"	"							"												
				39	"	0.0 V							"												
				40	"	0.0 V							"												
				41	"								"												
				42	"								"												
				43	7.0 V								"												
				44	"	7.0 V							"												
				45	4.5 V	0.0 V	7.0 V						"												
				46	"	0.0 V							"												
				47	"	4.5 V	7.0 V						"												
				48	"	"							"												
				49	"	"							"												
				50	"	"							"												
				51	"	0.0 V							"												
				52	"	0.0 V							"												
				53	"								"												
				54	"								"												

See footnotes at end of table.

See footnotes at end of table.

[illegible]

TABLE III. Group A inspection for device type 02 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits	Unit
			Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20		Min	Max
			Test no.	E a	S1	I3a	I2a	I1a	I0a	Za	GND	Zb	I0b	I1b	I2b	I3b	S0	E b	V _{CC}			
9	t _{PLH5}	3003 Fig. 4	100	IN	0.0 V				2.7 V	OUT							0.0 V		5.0 V	E a to Za	4.5	9.0
T _C = 25°C	t _{PHL5}	"	101	"	"				2.7 V	OUT	"	OUT	2.7 V				"	IN	"	E b to Zb	4.5	9.0
	t _{PHL3}	"	102	IN	"					OUT	"						"		"	E a to Za	3.0	7.0
	t _{PLH3}	"	103	"	"						"	OUT	2.7 V				"	IN	"	E b to Zb	3.0	7.0
	t _{PLH3}	"	104	0.0 V	2.7 V	0.0 V	2.7 V			OUT	"						IN	0.0 V	"	S0 to Za	4.5	10.5
	t _{PLH3}	"	105	0.0 V	2.7 V					OUT	"	OUT					IN	0.0 V	"	S0 to Zb	"	"
	t _{PLH3}	"	106	0.0 V	IN	2.7 V		0.0 V		OUT	"						2.7 V		"	S1 to Za	"	"
	t _{PLH3}	"	107	0.0 V	IN			0.0 V		OUT	"	OUT		0.0 V			2.7 V	0.0 V	"	S1 to Zb	"	"
	t _{PLH3}	"	108	0.0 V	0.0 V			0.0 V	2.7 V	OUT	"						IN		"	S0 to Za	3.5	9.0
	t _{PLH3}	"	109	0.0 V	0.0 V					OUT	"	OUT	2.7 V	0.0 V			IN	0.0 V	"	S0 to Zb	"	"
	t _{PLH3}	"	110	0.0 V	IN		0.0 V		2.7 V	OUT	"		2.7 V				0.0 V	0.0 V	"	S1 to Za	"	"
	t _{PLH3}	"	111	IN	IN					OUT	"	OUT	2.7 V				0.0 V	0.0 V	"	S1 to Zb	"	"
10	Same tests and terminal conditions as subgroup 9, except T _C = +125°C and for the following limits. t _{PLH1} = 2.5 to 9.0 ns t _{PHL1} = 2.5 to 8.0 ns t _{PLH3} = 4.5 to 14.0 ns t _{PHL3} = 3.5 to 11.0 ns t _{PLH5} = 4.5 to 11.5 ns t _{PHL5} = 2.5 to 9.0 ns																					
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C.																					

1/ For case 2 pins not referenced are N/C.
2/ I_L limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I _L	-0.25/-0.60	-0.03/-0.60	-0.03/-0.60	0.0/-0.30

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.
4/ Perform function sequence at V_{CC} = 4.5 V and repeat at V_{CC} = 5.5 V.
5/ I_{OD} minimum limit for circuit D shall be 35 mA.

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit			
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max					
1 T _C = 25°C	V _{OL}	3007	Case 2 J	S																Za		0.5	V			
				1	0.8 V	0.8 V	2.0 V	20 mA														Za		"		
				2	2.0 V	2.0 V	0.8 V	20 mA															Zb		"	
				3	0.8 V				0.8 V	2.0 V		20 mA													"	
				4	2.0 V				2.0 V	0.8 V		20 mA													"	
				5	0.8 V																				"	
				6	2.0 V																				"	
				7	0.8 V																				"	
	V _{OH}	3006		8	2.0 V																Zc		"	"		
				9	0.8 V	2.0 V	0.8 V	-1 mA														Zc		"		
				10	2.0 V	0.8 V	2.0 V	-1 mA														Za	2.5	"		
				11	0.8 V				2.0 V	0.8 V		-1 mA											Za		"	
				12	2.0 V				0.8 V	2.0 V		-1 mA											Zb		"	
				13	0.8 V																		Zd		"	
				14	2.0 V																		Zd		"	
				15	0.8 V																		Zc		"	
	V _{IC}			16	2.0 V																	Zc		"		
				17	-18 mA																				"	
				18		-18 mA																	S		-1.2	
				19																			IOa		"	
				20					-18 mA															IOb		"
				21								-18 mA												IOb		"
				22																				IOd		"
				23																				IOd		"
I _{H1}	3010		24																				"			
			25																				"			
			26																				"			
			27	2.7 V																		E		"		
			28	4.5 V	2.7 V																			"		
			29	0.0 V		2.7 V																	IOa	20	μA	
			30	4.5 V																			IOa		"	
			31	0.0 V																			IOb		"	
I _{H2}			32	0.0 V																		IOb		"		
			33	4.5 V																			IOb		"	
			34	0.0 V																			IOd		"	
			35	4.5 V																			IOd		"	
			36																				IOc		"	
			37	7.0 V																			E		"	
			38	4.5 V	7.0 V																		S	100	"	
			39	0.0 V		7.0 V																	IOa		"	

See footnotes at end of table.

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit							
				Test no.	S	I0a	I1a	Za	I0b	I1b	Zb	GND	Zd	I1d	I0d	Zc	I1c	I0c	E		Vcc	5.5 V		Min	Max					
1 Tc = 25°C	I _{L1}	3009	47	0.5 V																S	2/	2/	mA							
			48	0.0 V																I0a			"							
			49	4.5 V		0.5 V														I1a			"							
			50	0.0 V				0.5 V												I0b			"							
			51	4.5 V					0.5 V											I1b			"							
			52	4.5 V									0.5 V							I1d			"							
			53	0.0 V										0.5 V						I0d			"							
			54	4.5 V											0.5 V					I1c			"							
			55	0.0 V											0.0 V					I0c			"							
			56							0.0 V										E			"							
			57	0.0 V			0.0 V													0.5 V			"							
2 Tc = 25°C	I _{OS}	3011	58	"				4.5 V			0.0 V								0.0 V		-60	-150	"							
			59	"										0.0 V		4.5 V				Zb			"							
			60	"																Zd			"							
			61														0.0 V			Zc			"							
			62					2.5 V												5.5 V	Za	60 5/	"							
			63																	Zb			"							
			64																	Zd			"							
			65	4.5 V				4.5 V							4.5 V					4.5 V	V _{CC}		23	"						
			3005																					"						
			3014																					"						
			3 Tc = 25°C	Functional test 3/	"	66	A	A	A	L	A	A	L	GND	L	L	A	A	L	A	A	A	4/	All outputs						
67	B	"				"	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
68	B	"				"	B	H	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
69	A	"				"	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
70	B	"				"	A	L	B	"	"	"	"	"	"	"	"	"	"	"	"	"								
71	A	"				"	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
72	0.0 V	IN				IN	OUT					GND								0.0 V	5.0 V	10a to Za	2.5				6.0	ns		
73	2.7 V						OUT					"	"								"	11a to Za	"				"	"		
74	0.0 V								IN			"	"								"	"	10b to Zb				"	"	"	
75	2.7 V									IN		"	"								"	"	"				11b to Zb	"	"	"
76	2.7 V											"	"	OUT							"	"	"				11d to Zd	"	"	"
4 Tc = 25°C	t _{PHL1}	"	77	0.0 V							"	"	OUT							"	"	"	"							
			78	2.7 V							"	"	OUT							"	"	"	"	"						
			79	0.0 V							"	"				IN	OUT			"	"	"	"	"						
			80	0.0 V	IN	IN	OUT				"	"					OUT			"	"	"	"	"						
			81	2.7 V			OUT				"	"								"	"	"	"	"						
			82	0.0 V					IN			"	"							"	"	"	"	"						
			83	2.7 V						IN		"	"							"	"	"	"	"						
			84	2.7 V								"	"	OUT						"	"	"	"	"						
			85	0.0 V								"	"	OUT						"	"	"	"	"						
			86	2.7 V								"	"			IN	OUT			"	"	"	"	"						
			87	0.0 V								"	"				OUT			"	"	"	"	"						
5 Tc = 25°C	t _{PLH6}	"	88	2.7 V														IN	"	"	5.0	9.5	"							
			89	"					2.7 V	OUT	"	"								"	"	"	"	"						
			90	"							"	"								"	"	"	"	"						
			91	"							"	"								"	"	"	"	"						

See footnotes at end of table.

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit	
				2	3	4	5	7	8	9	10	11	12	13	14	15	20	Min	Max					
9	t_{PHL5} $T_C = 25^\circ\text{C}$	3003	92	0.0 V	2.7 V		OUT				GND	Zd	11d	10d	Zc	11c	10c	$\bar{E}$	5.0 V	$\bar{E}$ to Za	2.5	6.5	ns	
		Fig. 4	93	"			2.7 V				OUT							"	"	"	$\bar{E}$ to Zb	"	"	"
		"	94	"								"	OUT		2.7 V				"	"	$\bar{E}$ to Zd	"	"	"
		"	95	"							"				OUT		2.7 V	"	"	"	$\bar{E}$ to Zc	"	"	"
		"	96	IN	2.7 V	0.0 V	OUT					"						0.0 V	"	"	S to Za	4.0	10.0	"
t_{PHL3}	"	97	"					2.7 V	0.0 V	OUT	"							"	"	S to Zb	"	"	"	
	"	98	"								OUT	0.0 V	2.7 V				"	"	"	S to Zd	"	"	"	
	"	99	"								"			OUT		0.0 V	2.7 V	"	"	S to Zc	"	"	"	
	"	100	"	0.0 V	2.7 V	OUT					"						"	"	"	S to Za	3.0	7.0	"	
	"	101	"					0.0 V	2.7 V	OUT	"						"	"	"	S to Zb	"	"	"	
10		"	102	"						"	OUT	2.7 V	0.0 V				"	"	"	S to Zd	"	"	"	
		"	103	"							"			OUT		2.7 V	0.0 V	"	"	S to Zc	"	"	"	
10	Same tests and terminal conditions as subgroup 9, except $T_C = +125^\circ\text{C}$ and use limits from table I.																							
11	Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.																							

1/ For case 2 pins not referenced are N/C.

2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I_{IL}	-.25/- .60	-.03/- .60	-.03/- .60	0.0/-0.30

3/ A = 2.5 V; B = 0.5 V; H ≥ 1.5 V; L ≤ 1.5 V.

4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

5/ I_{OO} minimum limit for circuit D shall be 35 mA.

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	Stress																Measured terminal	Limits		Unit
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
1	V _{OL}	3007	Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Z a	0.5	V	
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				
				S	10a	11a	12a	13a	14a	15a	16a	17a	18a	19a	20a	21a	22a	23a	24a				V _{CC}
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				45 V
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				45 V
				3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V				
				4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V					
				5	6	7	8	9	10	11	12	13	14	15	16	20	45 V						
				6	7	8	9	10	11	12	13	14	15	16	20	45 V							
				7	8	9	10	11	12	13	14	15	16	20	45 V								
2	V _{OH}	3006	Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Z a	2.5	"	
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				
				S	10a	11a	12a	13a	14a	15a	16a	17a	18a	19a	20a	21a	22a	23a	24a				V _{CC}
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				45 V
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				45 V
				3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V				
				4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V					
				5	6	7	8	9	10	11	12	13	14	15	16	20	45 V						
				6	7	8	9	10	11	12	13	14	15	16	20	45 V							
				7	8	9	10	11	12	13	14	15	16	20	45 V								
3	V _{IC}	3010	Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	S	-1.2	"	
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				
				S	10a	11a	12a	13a	14a	15a	16a	17a	18a	19a	20a	21a	22a	23a	24a				V _{CC}
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				45 V
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				45 V
				3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V				
				4	5	6	7	8	9	10	11	12	13	14	15	16	20	45 V					
				5	6	7	8	9	10	11	12	13	14	15	16	20	45 V						
				6	7	8	9	10	11	12	13	14	15	16	20	45 V							
				7	8	9	10	11	12	13	14	15	16	20	45 V								
4	I _{IR1}	3010	Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	S	20	μA	
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20				
				S	10a																		

See footnotes at end of table.

TABLE III. Group A inspection for device type 04.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, J/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Limits		Unit
																				Min	Max	
1 $T_c = 25^\circ\text{C}$	I_{L1}	3009	47	0.5 V																2/	2/	nA
			48	0.0 V	0.5 V																	
			49	4.5 V		0.5 V																
			50	0.0 V				0.5 V														
			51	4.5 V					0.5 V													
			52	4.5 V									0.5 V									
			53	0.0 V										0.5 V								
			54	4.5 V												0.5 V						
			55	0.0 V												0.0 V						
			56																			
			57	0.0 V	0.0 V	4.5 V	0.0 V														-60	-150
			58	"					0.0 V	4.5 V	0.0 V											
			59	"								0.0 V	4.5 V	0.0 V								
			60	"											0.0 V	4.5 V	0.0 V					
2 $T_c = 25^\circ\text{C}$	I_{op}	3011	61	"	5.5 V		2.5 V											5.5 V		60		
			62	"																		
			63	"								2.5 V										
			64	"											2.5 V			5.5 V				
			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			15	
			66	3014	A	A	H	A	A	H	GND	H	A	A	H	A	A	A				
			67	B	"	A	H	"	A	H	"	H	A	"	A	A	"	A	4/			
			68	B	"	B	L	"	B	L	"	L	B	"	L	B	"	B	"			
			69	A	"	B	H	"	B	H	"	H	B	"	H	B	"	B	"			
			70	B	B	A	H	B	A	H	"	H	A	B	H	A	B	"	"			
			71	A	B	A	L	B	A	L	"	L	A	B	L	A	B	"	"			
			72	0.0 V	IN	OUT	OUT				GND							0.0 V	5.0 V	2.5	5.9	ns
			73	2.7 V		IN	OUT				"							"	"	"	"	"
			74	0.0 V				IN		OUT	"							"	"	"	"	"
			75	2.7 V					IN	OUT	"							"	"	"	"	"
			76	2.7 V							"	OUT	IN					"	"	"	"	"
			77	0.0 V							"	OUT		IN				"	"	"	"	"
			78	2.7 V							"				OUT	IN		"	"	"	"	"
			79	0.0 V							"				OUT	IN		"	"	"	"	"
3 $T_c = 25^\circ\text{C}$	t_{PUH2}	3003	72	0.0 V	IN	OUT	OUT				GND							0.0 V	5.0 V	2.5	5.9	ns
			73	2.7 V		IN	OUT				"							"	"	"	"	"
			74	0.0 V				IN		OUT	"							"	"	"	"	"
			75	2.7 V					IN	OUT	"							"	"	"	"	"
			76	2.7 V							"	OUT	IN					"	"	"	"	"
			77	0.0 V							"	OUT		IN				"	"	"	"	"
			78	2.7 V							"				OUT	IN		"	"	"	"	"
			79	0.0 V							"				OUT	IN		"	"	"	"	"
											"						IN	"	"	"	"	"
											"							"	"	"	"	"
											"							"	"	"	"	"
											"							"	"	"	"	"
											"							"	"	"	"	"
											"							"	"	"	"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 04.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	Subgroup 9, except T _C = +125°C and use limits from table I.																Measured terminal	Limits		Unit																		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max																			
9 T _C = 25°C	t _{PHL2}	3003 Fig. 4	Case 2	2	3																																				
			Test no.	S	10a	11a	12	13	14	15	16	17	18	19	20																										
			80	0.0 V	IN	OUT				GND	GND	10d	11c	10c	0.0 V	5.0 V									ns																
			81	2.7 V		OUT																			"																
			82	0.0 V			IN		OUT																"																
			83	2.7 V				IN	OUT																"																
			84	2.7 V																					"																
			85	0.0 V							OUT	IN													"																
			86	2.7 V							OUT														"																
			87	0.0 V										IN	OUT										"																
			88	2.7 V			OUT								OUT		IN								"																
			89	"					2.7 V	OUT									IN				2.5	6.0	"																
			90	"										2.7 V											"																
91	"											OUT										"																			
92	0.0 V	2.7 V		OUT									OUT		2.7 V								"																		
93	"																						"																		
94	"													2.7 V									"																		
95	"																						"																		
96	IN	0.0 V	2.7 V	OUT									OUT			2.7 V		0.0 V			3.0	9.5	"																		
97	"					0.0 V	2.7 V	OUT															"																		
98	"																						"																		
99	"																						"																		
100	"	2.7 V	0.0 V	OUT																			"																		
101	"					2.7 V	0.0 V	OUT													2.5	6.5	"																		
102	"																						"																		
103	"												OUT	0.0 V	2.7 V								"																		
10	Same tests and terminal conditions as subgroup 9, except T _C = +125°C and use limits from table I.																																								
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C.																																								

1/ For case 2 pins not referenced are N/C.
2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I_{IL}	-25/-60	-03/-60	-03/-60	0.0/-0.30

3/ A = 2.5 V minimum, B = 0.5 V. $H \geq 1.5$ V, $L \leq 1.5$ V.
4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).																Measured terminal	Limits		Unit
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
1 $T_C = 25^{\circ}\text{C}$	V_{OL}	3007	Test no.	I3	I2	I1	I0	Z	$\overline{Z}$	$\overline{QE}$	GND	S2	S1	S0	I7	I6	I5	I4	20	$\overline{Z}$	0.5	V	
			1			2.0 V			20 mA	0.8 V	GND	0.8 V	0.8 V	0.8 V						4.5 V			
			2			2.0 V			"	"	"	"	0.8 V	2.0 V						"			
			3						"	"	"	"	2.0 V	0.8 V						"			
			4	2.0 V					"	"	"	"	2.0 V	2.0 V						"			
			5						"	"	"	2.0 V	0.8 V	0.8 V				2.0 V		"			
			6						"	"	"	"	0.8 V	2.0 V						"			
			7						"	"	"	"	2.0 V	0.8 V						"			
			8						"	"	"	"	2.0 V	0.8 V	2.0 V					"			
		3006	9							"	"	0.8 V	0.8 V	0.8 V						"			
			10							0.8 V	"	0.8 V	0.8 V	0.8 V						"			
			11						-3.0 mA	"	"	"	"	0.8 V						"			
			12						"	"	"	"	"	2.0 V						"			
			13						"	"	"	"	2.0 V	0.8 V						"			
			14	0.8 V					"	"	"	"	2.0 V	0.8 V						"			
			15						"	"	"	2.0 V	0.8 V	0.8 V				0.8 V		"			
			16						"	"	"	"	0.8 V	2.0 V						"			
			17						"	"	"	"	2.0 V	0.8 V						"			
V_{IC}	18						"	"	"	"	"	"	2.0 V	2.0 V	0.8 V				"				
	19	-18 mA							"	"	"	"							I3	-1.2	"		
	20								"	"	"	"							I2		"		
	21								"	"	"	"							I1		"		
	22						-18 mA		"	"	"	"							I0		"		
	23								-18 mA	"	"	"							$\overline{QE}$		"	"	
	24									"	-18 mA	"							S2		"	"	
	25									"	"		-18 mA						S1		"	"	
	26									"	"		"	-18 mA					S0		"	"	
	27									"	"		"		-18 mA				I7		"	"	
I_{IH1}	28									"	"					-18 mA			I6		"	"	
	29									"	"						-18 mA		I5		"	"	
	30									"	"								I4		"	"	
	31	2.7 V							4.5 V	"	4.5 V	0.0 V	0.0 V				-18 mA	5.5 V	I3	20	μA		
	32								"	"	"	0.0 V	4.5 V						I2		"	"	
	33								"	"	"	"	4.5 V	0.0 V					I1		"	"	
	34								"	"	"	4.5 V	4.5 V						I0		"	"	
	35								2.7 V	"	"			4.5 V					$\overline{QE}$		"	"	
	36									"	2.7 V								S2		"	"	
	37									"	"	2.7 V							S1		"	"	
	38									"	"		2.7 V						S0		"	"	
	39								4.5 V	"	0.0 V	0.0 V	0.0 V						I7		"	"	
	40								"	"	"	0.0 V	4.5 V						I6		"	"	
	41								"	"	"	4.5 V	0.0 V						I5		"	"	
	42								"	"	"	4.5 V	4.5 V						I4		"	"	
	43	7.0 V								"	4.5 V	0.0 V	0.0 V						I3		100	"	
	I_{IH2}	44									"	"	0.0 V	4.5 V						I2		"	"
		45									"	"	"	4.5 V	0.0 V					I1		"	"
46										"	"	"	4.5 V	4.5 V					I0		"	"	
47									7.0 V	"	"			4.5 V					$\overline{QE}$		"	"	
48										"	7.0 V								S2		"	"	
49										"	"								S1		"	"	
50										"	"	7.0 V							S0		"	"	
51										"	0.0 V	0.0 V	0.0 V						I7		"	"	
52									"	"	0.0 V	4.5 V						I6		"	"		
53									"	"	4.5 V	0.0 V						I5		"	"		
54									"	"	4.5 V	4.5 V						I4		"	"		

See footnotes at end of table.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits	Unit
			Case 2	13	12	4	5	7	8	9	10	12	13	14	15	17	18	19	20		Min	Max
			Test no.	13	12	11	10	9	8	7	6	5	4	3	2	1						
1 Tc = 25°C	I_{IL}	3009	55	0.5 V																13	2/	mA
		"	56		0.5 V															12	"	"
		"	57																	11	"	"
		"	58																	10	"	"
		"	59																	QE	"	"
		"	60																	S2	"	"
		"	61																	S1	"	"
		"	62																	S0	"	"
		"	63																	17	"	"
		"	64																	16	"	"
		"	65																	15	"	"
		"	66																	14	"	"
		I_{OZH}	67																	50	50	μ A
			68																	Z	50	"
		I_{OZL}	69																	Z	-50	"
			70																	Z	-50	"
7 Tc = 25°C	I_{OS}	3011	71																	Z	-60	-150 mA
		3011	72																	Z	-60	-150
			73																	Z	35	"
		I_{OP}	74																	Z	35	"
			75	4.5 V	4.5 V	4.5 V	4.5 V													4.5 V	4.5 V	"
		I_{CCZ}	76	4.5 V	4.5 V	4.5 V	4.5 V													V _{CC}	22	"
			77	B	B	B	A	H	L	B	GND	B	B	B	B	B	B	B	B	4/		
		3014	78	B	B	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"		
			79	"	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			80	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
8 Same tests, terminal conditions, and limits as for subgroup 7, except Tc = +125°C and Tc = -55°C.	Functional test		81	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			82	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			84	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			85	A	A	A	"	L	H	"	"	"	"	"	"	"	"	"	"	"		
			86	"	A	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			87	"	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			88	B	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			89	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			92	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			93	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
9 Tc = 25°C	t_{PUH1}	3003	94																	50 V	2.5	7.0 ns
		Fig. 4	95		IN															"	"	"
			96	IN																"	"	"
			97																	"	"	"
			98																	"	"	"
			99																	"	"	"
			100																	"	"	"
																				"	"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open)														Measured terminal	Limits		Unit																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
				1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16		Min	Max																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
9 T _C = 25°C	t _{PHL1}	3003 Fig. 4	Test no.	101																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

See footnotes at end of table.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F J/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
				2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20		V _{cc}	Min	
9	t _{PH5}	3003	137					OUT	Z	Z	Q $\overline{E}$	GND	S2	0.0 V	S1	0.0 V	S0	0.0 V	5.0 V	Q $\overline{E}$ to Z	3.5	7.0	ns
	t _{PH6}	Fig. 4	138					OUT		OUT		IN	GND							Q $\overline{E}$ to Z	2.5	6.0	"
	t _{PL5}	"	139					OUT												Q $\overline{E}$ to Z	3.5	7.5	"
	t _{PL6}	"	140					OUT		OUT										Q $\overline{E}$ to Z	2.5	6.0	"
	t _{PHZ5}	"	141					OUT												Q $\overline{E}$ to Z	2.0	5.5	"
	t _{PHZ6}	"	142					OUT		OUT										Q $\overline{E}$ to Z	2.5	5.5	"
	t _{PLZ5}	"	143					OUT												Q $\overline{E}$ to Z	1.0	4.5	"
10	t _{PLZ6}	"	144					OUT		OUT										Q $\overline{E}$ to Z	1.0	4.5	"
	Same tests and terminal conditions as subgroup 9, except T _c = +125°C and for the following limits. t _{PH1} = 2.5 to 9.0 ns t _{PH3} = 3.5 to 14.0 ns t _{PH4} = 2.5 to 8.5 ns t _{PH2} = 2.5 to 8.5 ns t _{PH4} = 3.5 to 11.5 ns t _{PH3} = 3.0 to 10.5 ns t _{PH1} = 3.5 to 9.0 ns t _{PH2} = 1.0 to 6.0 ns t _{PH4} = 3.2 to 8.0 ns t _{PL5} = 2.5 to 7.5 ns t _{PL6} = 2.0 to 5.5 ns t _{PLZ5} = 2.0 to 6.0 ns t _{PLZ6} = 1.0 to 5.0 ns																						
11	Same tests, terminal conditions and limits as for subgroup 10, except T _c = -55°C.																						

1/ For case 2 pins not referenced are N/C.

2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit		
	A	B	C
I_{IL}	-0.25/- .60	- .03/- .60	- .03/- .60

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.

4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

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 E, F Case 2 $\frac{V}{I}$ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit		
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max				
1 $T_C = 25^{\circ}C$	V_{OL}	3007	1	0.8 V	0.8 V	2.0 V	20 mA				GND							0.8 V	4.5 V	Za		0.5	V		
			2	2.0 V	2.0 V	0.8 V	20 mA														Za		"	"	
			3	0.8 V				0.8 V	2.0 V	20 mA												Zb		"	"
			4	2.0 V				2.0 V	0.8 V	20 mA												Zb		"	"
			5	0.8 V							20 mA	0.8 V										Zd		"	"
			6	2.0 V									20 mA	0.8 V	2.0 V							Zd		"	"
			7	0.8 V																		Zc		"	"
			8	2.0 V																		Zc		"	"
			9	0.8 V	2.0 V	0.8 V	-3 mA															Za	2.4		"
		10	2.0 V	0.8 V	2.0 V	-3 mA															Za		"	"	
		11	0.8 V				2.0 V	0.8 V	-3 mA												Zb		"	"	
		12	2.0 V						-3 mA												Zb		"	"	
		13	0.8 V																		Zd		"	"	
		14	2.0 V																		Zd		"	"	
		15	0.8 V																		Zc		"	"	
		16	2.0 V																		Zc		"	"	
		17	-18 mA																		S		-1.2	"	"
	18																			10a			"	"	
	19																			11a			"	"	
	20																			10b			"	"	
	21																			11b			"	"	
	22																			11d			"	"	
	23																			10d			"	"	
	24																			11c			"	"	
	25																			10c			"	"	
	26																				OE			"	"
	27	2.7 V																			S	20		μA	
	28	4.5 V	2.7 V																		10a			"	"
	29	0.0 V		2.7 V																	11a			"	"
	30	4.5 V					2.7 V														10b			"	"
	31	0.0 V								2.7 V											11b			"	"
	32	0.0 V																			11d			"	"
	33	4.5 V																			10d			"	"
	34	0.0 V																			11c			"	"
	35	4.5 V																			10c			"	"
	36																				OE			"	"
	37	7.0 V																			S	100		"	"
	38	4.5 V	7.0 V																		10a			"	"
	39	0.0 V			7.0 V																11a			"	"
	40	4.5 V																			10b			"	"
	41	0.0 V																			11b			"	"
	42	0.0 V																			11d			"	"
	43	4.5 V																			10d			"	"
	44	0.0 V																			11c			"	"
	45	4.5 V																			10c			"	"
	46																				OE			"	"

See footnotes at end of table.

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 E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
				2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20		Min	Max	
1 $T_C = 25^\circ\text{C}$	I_{L1}	3009	Case 2 J/	S	10a	11a	Za	10b	11b	Zb	GND	Zd	11d	10d	Zc	11c	10c	OE	V _{CC}	S	2/	2/	mA
				47	0.5 V						GND								5.5 V	10a	"	"	
				48	0.0 V						"								"	11a	"	"	
				49	4.5 V		0.5 V				"								"	10b	"	"	
				50	0.0 V			0.5 V			"								"	11b	"	"	
				51	4.5 V				0.5 V		"								"	11d	"	"	
				52	4.5 V						"		0.5 V						"	10d	"	"	
				53	0.0 V						"			0.5 V					"	11c	"	"	
				54	4.5 V						"					0.5 V			"	10c	"	"	
				55	0.0 V						"						0.5 V		"	OE	"	"	
				56							"							0.5 V	"		"	"	
2	I_{OS}	3011	Case 2 J/				0.0 V				"								"	Za	-60	-150	"
				57	0.0 V						"								"	Zb	"	"	"
				58	"			4.5 V		0.0 V	"			4.5 V					"	Zd	"	"	"
				59	"						"	0.0 V							"		"	"	"
				60	"						"				0.0 V		4.5 V		"	Zc	"	"	"
				61	0.0 V		2.5 V				"								"	Za	35		"
				62				0.0 V		2.5 V	"								"	Zb	"	"	"
				63							"	2.5 V		0.0 V					"	Zd	"	"	"
				64							"				2.5 V		0.0 V		"	Zc	"	"	"
				65	4.5 V	4.5 V	2.7 V				"								"	Za	50		μA
				66	"			4.5 V		2.7 V	"								"	Zb	"	"	"
				67	"						"	2.7 V	4.5 V	4.5 V					"	Zd	"	"	"
3	I_{OZL}	3005	Case 2 J/				0.5 V				"								"	Zc	"	"	"
				68	0.0 V						"								"	Za	-50		"
				69	0.0 V			0.0 V		0.5 V	"								"	Zb	"	"	"
				70	"						"		4.5 V	0.0 V					"	Zd	"	"	"
				71	"						"	0.5 V							"	Zc	"	"	"
				72	"						"				0.5 V	4.5 V	0.0 V		"	Za	"	"	"
				73	4.5 V	4.5 V					"			0.0 V					"	Zb	"	"	"
				74	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V		"		4.5 V	0.0 V		4.5 V	0.0 V	0.0 V	"	V _{CC}	15		mA
				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	4.5 V	"	V _{CC}	22		"
				76	0.0 V						"								"		23		"
				77	"	A	B	L	B	L	GND	L	L	A	L	B	B	A	4/	All outputs			
7 $T_C = 25^\circ\text{C}$	Functional test	3014	Case 2 J/								"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
											"								"				
8	Same tests, terminal conditions, and limits as for subgroup 1, except $T_C = +125^\circ\text{C}$ and V_{IC} tests are omitted.	3003	Case 2 J/								"								"				
											"								"				
											"								"				
											"								"				
											"								"				
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9 $T_C = 25^\circ\text{C}$	Same tests, terminal conditions, and limits as for subgroup 7, except $T_C = +125^\circ\text{C}$ and $T_C = -55^\circ\text{C}$.	3003	Case 2 J/								"								"				
											"								"				
											"								"				
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See footnotes at end of table.

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 E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
				2	3	4	5	7	8	9	10	12	13	14	15	19	20	Min	Max																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
9 T _C = 25°C	t _{PHL1}	3003 Fig. 4	Case 2 J	S	10a	11a	Za	10b	11b	Zb	GND	Zd	11d	10d	Zc	11c	10c	OE	0.0 V	5.0 V	10a to 2a	2.0	5.5	ns																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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1/ For case 2 pins not referenced are N/C.

2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I_{IL}	-25/-60	-03/-60	-03/-60	0.0/-0.30

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.

4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit				
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max						
1 Tc = 25°C	V _{OL}	3007	Test no.	1	0.8 V	2.0 V	0.8 V	20 mA										0.8 V	4.5 V	Z a		0.5	V				
				2	2.0 V	0.8 V	2.0 V	20 mA														Z a		"			
				3	0.8 V				2.0 V	0.8 V	20 mA												Z b		"		
				4	2.0 V				0.8 V	2.0 V	20 mA												Z b		"		
				5	0.8 V								20 mA	0.8 V	2.0 V	V							Z d		"		
				6	2.0 V									20 mA	2.0 V	0.8 V							Z d		"		
				7	0.8 V													20 mA	0.8 V	2.0 V			Z c		"		
				8	2.0 V													20 mA	2.0 V	0.8 V			Z c		"		
				9	0.8 V	0.8 V	2.0 V	-3 mA																Z a	2.4	"	
				10	2.0 V	2.0 V	0.8 V	-3 mA																Z a		"	
				11	0.8 V				0.8 V	2.0 V	-3 mA													Z b		"	
				12	2.0 V				2.0 V	0.8 V	-3 mA													Z b		"	
				13	0.8 V										-3 mA	2.0 V	0.8 V							Z d		"	
				14	2.0 V										-3 mA	0.8 V	2.0 V							Z d		"	
				15	0.8 V													-3 mA	2.0 V	0.8 V				Z c		"	
				16	2.0 V													-3 mA	0.8 V	2.0 V				Z c		"	
	V _{IC}			17	-18 mA																S		-1.2	"			
				18		-18 mA																10a		"			
				19																			11a		"		
				20					-18 mA															10b		"	
				21							-18 mA													11b		"	
				22																				11d		"	
				23													-18 mA							10d		"	
				24															-18 mA					11c		"	
				25																				10c		"	
				26																-18 mA				OE		"	
	I _{H1}	3010		27	2.7 V													-18 mA			OE		"				
				28	4.5 V	2.7 V														4.5 V	5.5 V	S	20	μA			
				29	0.0 V		2.7 V																10a		"		
				30	4.5 V				2.7 V															11a		"	
				31	0.0 V																			10b		"	
				32	0.0 V						2.7 V														11b		"
				33	4.5 V																			11d		"	
				34	0.0 V												2.7 V							10d		"	
				35	4.5 V														2.7 V					11c		"	
				36																	2.7 V			10c		"	
	I _{H2}			37	7.0 V													2.7 V			OE		"				
				38	4.5 V	7.0 V														4.5 V		S	100	"			
				39	0.0 V		7.0 V																	10a		"	
				40	4.5 V				7.0 V																11a		"
				41	0.0 V						7.0 V														10b		"
				42	0.0 V							7.0 V													11b		"
				43	4.5 V												7.0 V								11d		"
				44	0.0 V														7.0 V						10d		"
				45	4.5 V															7.0 V					11c		"
				46																	7.0 V			OE		"	

See footnotes at end of table.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits	Unit
			Case 2	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20		Min	Max
			Test no.	S	10a	11a	12a	10b	11b	12b	GND	12d	11d	10d	12c	11c	10c	OE	V _{CC}	S	2/	2/
1 T _C = 25°C	I _{IL1}	3009	47	0.5 V															5.5 V			
		"	48	0.0 V	0.5 V														"	10a	"	"
		"	49	4.5 V		0.5 V													"	11a	"	"
		"	50	0.0 V															"	10b	"	"
		"	51	4.5 V				0.5 V											"	11b	"	"
		"	52	4.5 V									0.5 V						"	11d	"	"
		"	53	0.0 V										0.5 V					"	10d	"	"
		"	54	4.5 V												0.5 V			"	11c	"	"
		"	55	0.0 V													0.5 V		"	10c	"	"
		"	56															0.5 V	"	OE	"	"
		3011	57	0.0 V	0.0 V	4.5 V	0.0 V											0.0 V	"	Z a	-60	-150
		"	58	"				0.0 V	4.5 V	0.0 V	"							"	"	Z b	"	"
		"	59	"							"	0.0 V	4.5 V	0.0 V				"	"	Z d	"	"
		"	60	"							"				0.0 V	4.5 V	0.0 V	"	"	Z c	"	"
2	I _{OD}		61	"	5.5 V		2.5 V				"							"	4.5 V	Z a	35	
			62	"				5.5 V		2.5 V	"							"	"	Z b	"	"
			63	"							"	2.5 V		5.5 V				"	"	Z d	"	"
			64	"							"				2.5 V		5.5 V	"	"	Z c	"	"
			65	"	4.5 V	4.5 V	2.7 V				"							2.0 V	5.5 V	Z a	50	μA
			66	"				4.5 V	4.5 V	2.7 V	"							"	"	Z b	"	"
			67	"							"	2.7 V	4.5 V	4.5 V				"	"	Z d	"	"
			68	"							"				2.7 V	4.5 V	4.5 V	"	"	Z c	"	"
			69	4.5 V	4.5 V	0.0 V	0.5 V				"							"	"	Z a	-50	"
			70	"				4.5 V	0.0 V	0.5 V	"							"	"	Z b	"	"
			71	"							"	0.5 V	0.0 V	4.5 V				"	"	Z d	"	"
			72	"							"				0.5 V	0.0 V	4.5 V	"	"	Z c	"	"
		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	"	V _{CC}	9.5	mA
		3005	74	4.5 V	0.0 V	4.5 V		0.0 V	4.5 V		"		4.5 V	0.0 V			0.0 V	0.0 V	"	V _{CC}	23	"
		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	"	V _{CC}	17	"
2	Same tests, terminal conditions, and limits as subgroup 1, except T _C = +125°C and V _{IC} tests are omitted.																					
3	Same tests, terminal conditions, and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																					
7	Functional test 3/	3014	76	B	A	B	L	A	B	L	GND	L	B	A	L	B	A	B	4/	All outputs		
7 T _C = 25°C			77	"	A	A	L	A	A	L	"	H	A	B	H	A	A	"	"			
			78	"	B	A	H	B	A	H	"	"	A	B	"	"	B	"	"			
			79	"	B	B	"	B	B	"	"	"	B	B	"	"	B	"	"			
			80	A	A	B	"	A	B	"	"	"	B	A	"	"	B	"	"			
			81	"	B	B	"	B	B	"	"	"	B	B	"	"	B	"	"			
8			82	"	B	A	L	B	A	L	"	L	A	B	L	A	B	"	"			
			83	"	A	A	L	A	A	L	"	L	A	A	A	A	A	"	"			
			Same tests, terminal conditions, and limits as for subgroup 7, except T _C = +125°C and T _C = -55°C.																			

See footnotes at end of table.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, J	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
				Test no.	IOa	I1a	Z a	IOb	I1b	Z b	GND	Z d	I1d	IOd	Z c	I1c	IOc	OE	0.0 V		Min	Max	
9 $T_C = 25^\circ\text{C}$	t_{PLH2}	3003 Fig. 4	Case 2	84	0.0 V		OUT				GND									IOa to Z a	2.5	5.3	ns
				85	2.7 V		OUT													I1a to Z a	"	"	"
				86	0.0 V			IN		OUT										IOb to Z b	"	"	"
				87	2.7 V				IN	OUT										I1b to Z b	"	"	"
				88	2.7 V							OUT								I1d to Z d	"	"	"
				89	0.0 V							OUT		IN						IOd to Z d	"	"	"
				90	2.7 V										OUT					I1c to Z c	"	"	"
				91	0.0 V										OUT		IN			IOc to Z c	"	"	"
				92	0.0 V	IN	OUT													IOa to Z a	1.0	4.0	"
				93	2.7 V		OUT													I1a to Z a	"	"	"
				94	0.0 V			IN		OUT										IOb to Z b	"	"	"
				95	2.7 V				IN	OUT										I1b to Z b	"	"	"
				96	2.7 V							OUT	IN							I1d to Z d	"	"	"
				97	0.0 V							OUT								IOd to Z d	"	"	"
				98	2.7 V										OUT					I1c to Z c	"	"	"
				99	0.0 V										OUT		IN			IOc to Z c	"	"	"
	t_{PLH4}	"	"	100	IN	2.7 V	OUT											IN		S to Z a	3.0	7.5	"
				101	"			2.7 V	0.0 V	OUT										S to Z b	"	"	"
				102	"															S to Z d	"	"	"
				103	"															S to Z c	"	"	"
				104	"	0.0 V	OUT								OUT	0.0 V	2.7 V			S to Z c	2.5	7.0	"
				105	"			0.0 V	2.7 V	OUT										S to Z a	"	"	"
				106	"							OUT	2.7 V	0.0 V						S to Z b	"	"	"
				107	"															S to Z d	"	"	"
				108	0.0 V	0.0 V	OUT								OUT	2.7 V	0.0 V			S to Z c	"	"	"
				109	"															OE to Z a	2.0	6.0	"
				110	"			0.0 V		OUT										OE to Z b	"	"	"
				111	"							OUT		0.0 V						OE to Z d	"	"	"
				112	2.7 V										OUT		0.0 V			OE to Z c	"	"	"
				113	"				2.7 V	OUT										OE to Z a	2.5	7.0	"
				114	"								2.7 V							OE to Z b	"	"	"
				115	"							OUT			OUT	2.7 V				OE to Z d	"	"	"

See footnotes at end of table.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit	
				Test no.	10a	11a	12a	10b	11b	12b	11d	10d	11c	10c	11e	10e	11f	10f	11g		10g	11h		10h
9	t _{PHZ6}	3003 Fig. 4	116	0.0 V	0.0 V	OUT	OUT	0.0 V		OUT	"								IN	5.0 V	2.0	6.0	ns	
			117	"																				"
			118	"										0.0 V										"
			119	"												OUT		0.0 V						"
			120	2.7 V	2.7 V	2.7 V	OUT																	"
10	t _{PHZ6}	"	121	"				2.7 V	OUT	"													"	
			122	"									2.7 V										"	
			123	"											OUT	2.7 V							"	
10	Same tests and terminal conditions as subgroup 9, except T _c = +125°C and use limits from table I.																							
11	Same tests, terminal conditions and limits as for subgroup 10, except T _c = -55°C.																							

1/ For case 2 pins not referenced are N/C.
2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I_{IL}	-0.25/-0.60	-0.03/-0.60	-0.03/-0.60	0.0/-0.30

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.
4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

TABLE III. Group A inspection for device type 08.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 1/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
																					Min	Max	
1 T _C = 25°C	V _{OH}	3006	Case 2	OE a	S1	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	Za	2.4		V
				OE a	0.8 V				2.0 V	-3 mA	GND	Zb	I0b	I1b	I2b	I3b	S0	OE b	4.5 V				
				"	0.8 V																		
				"	2.0 V		2.0 V																
				"	0.8 V																		
				"	2.0 V																		
				"	0.8 V																		
				"	2.0 V																		
	V _{OL}	3007	Case 2	OE a	S1	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	Za	0.5		"
				OE a	0.8 V				0.8 V	20 mA													
				"	0.8 V																		
				"	2.0 V		0.8 V																
				"	2.0 V																		
				"	0.8 V																		
				"	2.0 V																		
				"	0.8 V																		
	V _{IC}			OE a	0.8 V															OE a	-1.2		"
				OE a	0.8 V																		
				"	2.0 V																		
				"	2.0 V																		
				"	2.0 V																		
				"	2.0 V																		
				"	2.0 V																		
				"	2.0 V																		
	I _{H1}	3010		2.7 V															5.5 V	OE a	20	µA	
				2.7 V	2.7 V																		
				0.0 V	0.0 V	2.7 V																	
				0.0 V	0.0 V																		
				4.5 V	4.5 V																		
				"	"																		
				"	"																		
				"	"																		
	I _{H2}			7.0 V																OE b	100		"
				7.0 V	7.0 V																		
				0.0 V	0.0 V	7.0 V																	
				0.0 V	0.0 V																		
				4.5 V	4.5 V																		
				"	"																		
				"	"																		
				"	"																		

See footnotes at end of table.

See footnotes at end of table.

[illegible]

TABLE III. Group A inspection for device type 08 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit	
			Case 2	Test no.	OE a	S1	I3a	I2a	I1a	I0a	Za	GND	Zb	I0b	I1b	I2b	S0	OE b	V _{cc}		Min	Max		
9 T _C = 25°C	t _{PLH3}	3003 Fig. 4	100	0.0 V	0.0 V				2.7 V	0.0 V	OUT	GND					IN	0.0 V	5.0 V	S0 to Za	4.5	11.5	ns	
		"	101	0.0 V	0.0 V			2.7 V		0.0 V	OUT	"	OUT	0.0 V	2.7 V		0.0 V	0.0 V	"	S0 to Zb	"	"	"	
		"	102	0.0 V	IN					0.0 V	OUT	"	OUT	0.0 V	2.7 V		0.0 V	0.0 V	"	S1 to Za	"	"	"	
		"	103	0.0 V	IN						OUT	"	OUT	0.0 V			0.0 V	0.0 V	"	S1 to Zb	"	"	"	
	t _{PHL3}	"	104	0.0 V	0.0 V				0.0 V	2.7 V	OUT	"	OUT	2.7 V			IN	0.0 V	"	S0 to Za	3.0	9.0	"	
		"	105	0.0 V	0.0 V						OUT	"	OUT	2.7 V	0.0 V		IN	0.0 V	"	S0 to Zb	"	"	"	
		"	106	0.0 V	IN		0.0 V			2.7 V	OUT	"	OUT	2.7 V			0.0 V	0.0 V	"	S1 to Za	"	"	"	
		"	107	IN	IN						"	OUT	OUT	2.7 V	0.0 V	0.0 V	0.0 V	0.0 V	"	S1 to Zb	"	"	"	
	t _{PH25}	"	108	IN	2.7 V	2.7 V					OUT	"	OUT				2.7 V	2.7 V	"	OE a to Za	3.0	8.0	"	
		"	109		2.7 V	2.7 V					"	OUT	"	OUT			2.7 V	2.7 V	"	OE b to Zb	"	"	"	
10	t _{PL25}	"	110	IN	0.0 V				0.0 V	OUT	"	OUT					0.0 V		"	OE a to Za	"	"	"	
		"	111		0.0 V					"	OUT	"	OUT	0.0 V			0.0 V	IN	"	OE b to Zb	"	"	"	
	t _{PH25}	"	112	IN	2.7 V	2.7 V				OUT	"	OUT					2.7 V		"	OE a to Za	2.0	5.0	"	
		"	113		2.7 V					"	OUT	"	OUT				2.7 V	IN	"	OE b to Zb	2.0	5.0	"	
	t _{PL25}	"	114	IN	0.0 V				0.0 V	OUT	"	OUT					0.0 V		"	OE a to Za	2.0	6.0	"	
		"	115		0.0 V					"	OUT	"	OUT	0.0 V			0.0 V	IN	"	OE b to Zb	2.0	6.0	"	
	Same tests and terminal conditions as subgroup 9, except T _C = +125°C and for the following limits. t _{PHL1} = 2.5 to 9.0 ns t _{PHL3} = 2.5 to 8.0 ns t _{PHL5} = 2.5 to 10.0 ns t _{PLH3} = 2.5 to 11.0 ns t _{PH25} = 2.0 to 6.5 ns t _{PL25} = 2.0 to 8.0 ns																							
	11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C.																						

$\frac{1}{2}$ For case 2 pins not referenced are N/C.

$\frac{2}{2}$ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit			
	A	B	C	D
I _{IL}	-.25/- .60	-.03/- .60	-.03/- .60	0.0/-0.30

$\frac{3}{3}$ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.

$\frac{4}{4}$ Perform function sequence at V_{CC} = 4.5 V and repeat at V_{CC} = 5.5 V.

TABLE III. 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	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit	
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max			
1	V _{OH}	3006	Test no.	1	2.0 V					$\bar{Z}$ a	GND	$\bar{Z}$ b	i0b	i1b	i2b	i3b	S0	$\bar{E}$ b	4.5 V	$\bar{Z}$ a			V	
			2	0.8 V	0.8 V			0.8 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			3	"	0.8 V		0.8 V		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			4	"	2.0 V		0.8 V		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			5	"	2.0 V	0.8 V			"	"	"	"	"	"	"	"	"	"	"	"	"	$\bar{Z}$ b	"	"
			6	"					"	"	-1 mA	"	"	"	"	"	"	"	2.0 V	"	"	"	"	"
			7	"	0.8 V				"	"	"	"	"	0.8 V	"	"	"	"	0.8 V	"	"	"	"	"
			8	"	0.8 V				"	"	"	"	"	"	"	0.8 V	"	"	2.0 V	"	"	"	"	"
			9	"	2.0 V				"	"	"	"	"	"	"	"	0.8 V	"	0.8 V	"	"	"	"	"
			10	"	2.0 V				"	"	"	"	"	"	"	"	"	0.8 V	2.0 V	"	"	"	"	"
			11	0.8 V	0.8 V				2.0 V	20 mA	"	"	"	"	"	"	"	"	0.8 V	"	"	$\bar{Z}$ a	0.5	"
			12	"	0.8 V			2.0 V		"	"	"	"	"	"	"	"	"	2.0 V	"	"	"	"	"
			13	"	2.0 V		2.0 V			"	"	"	"	"	"	"	"	"	0.8 V	"	"	"	"	"
			14	"	2.0 V	2.0 V				"	"	"	"	"	"	"	"	"	2.0 V	"	"	"	"	"
			15	"	0.8 V					"	"	"	"	20 mA	2.0 V	"	"	"	0.8 V	"	"	$\bar{Z}$ b	"	"
			16	"	0.8 V					"	"	"	"	"	"	2.0 V	"	"	2.0 V	"	"	"	"	"
			17	"	2.0 V					"	"	"	"	"	"	"	2.0 V	"	2.0 V	"	"	"	"	"
			18	"	2.0 V					"	"	"	"	"	"	"	"	"	2.0 V	"	"	"	"	"
			19	-18 mA									"	"	"	"	"	"	"	"	"	$\bar{E}$ a	-1.2	"
	V _{IC}		20		-18 mA						"	"	"	"	"	"	"	"	"	"	S1	"	"	
			21						"	"	"	"	"	"	"	"	"	"	"	"	i3a	"	"	
			22			-18 mA			"	"	"	"	"	"	"	"	"	"	"	"	"	i2a	"	"
			23					-18 mA		"	"	"	"	"	"	"	"	"	"	"	"	i1a	"	"
			24							"	"	"	"	"	"	"	"	"	"	"	"	i0a	"	"
			25							-18 mA	"	"	"	"	-18 mA	"	"	"	"	"	"	i0b	"	"
			26								"	"	"	"	"	"	"	"	"	"	"	i1b	"	"
			27								"	"	"	"	"	"	-18 mA	"	"	"	"	i2b	"	"
			28								"	"	"	"	"	"	"	-18 mA	"	"	"	"	"	"
			29								"	"	"	"	"	"	"	"	"	"	"	S0	"	"
			30								"	"	"	"	"	"	"	"	-18 mA	"	"	$\bar{E}$ b	"	"
			31	2.7 V									"	"	"	"	"	"	"	-18 mA	"	"	20	μA
			32		2.7 V								"	"	"	"	"	"	"	"	"	$\bar{E}$ a	"	"
			33	4.5 V	0.0 V	2.7 V							"	"	"	"	"	"	0.0 V	"	"	S1	"	"
			34	"	0.0 V		2.7 V						"	"	"	"	"	"	4.5 V	"	"	i3a	"	"
			35	"	4.5 V					2.7 V			"	"	"	"	"	"	0.0 V	"	"	i2a	"	"
			36	"	"						2.7 V		"	"	"	"	"	"	4.5 V	"	"	i1a	"	"
			37	"	"								"	"	2.7 V	"	"	"	4.5 V	"	"	i0a	"	"
			38	"	"								"	"	"	"	"	"	0.0 V	"	"	i0b	"	"
39		0.0 V								"	"	"	"	2.7 V	"	4.5 V	"	"	i1b	"	"			
40		0.0 V								"	"	"	"	"	"	4.5 V	"	"	i2b	"	"			
41										"	"	"	"	"	2.7 V	2.7 V	"	"	i3b	"	"			
42	"									"	"	"	"	"	"	2.7 V	"	"	S0	"	"			
	I _{H2}		43	7.0 V							"	"	"	"	"	"	"	2.7 V	"	"	$\bar{E}$ b	"	"	
			44		7.0 V					"	"	"	"	"	"	"	"	"	"	"	$\bar{E}$ a	100	"	
			45	4.5 V	0.0 V	7.0 V				"	"	"	"	"	"	"	"	0.0 V	"	"	S1	"	"	
			46	"	0.0 V		7.0 V			"	"	"	"	"	"	"	"	4.5 V	"	"	i3a	"	"	
			47	"	4.5 V			7.0 V			"	"	"	"	"	"	"	0.0 V	"	"	i2a	"	"	
			48	"	"	4.5 V					7.0 V		"	"	"	"	"	4.5 V	"	"	i1a	"	"	

See footnotes at end of table.

[illegible]

	T _C L	50°C	T _C F	60 °C	70 °C	80 °C	90 °C	100 °C
2	Same tests, terminal conditions, and limits as subgroup 1, except T _c = +125°C and V _{iC} tests are omitted.							
3	Same tests, terminal conditions, and limits as subgroup 1, except T _c = -55°C and V _{iC} tests are omitted.							

[illegible]

See footnotes at end of table.

TABLE III. Group A inspection for device type 09 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit		
				Case 2 $\frac{J}{V}$	Test no.	$\bar{E}$ a	I2a	I1a	I0a	$\bar{Z}$ b	OUT	$\bar{Z}$ a	GND	$\bar{Z}$ b	OUT	I0b	I1b	I2b	I3b		S0	$\bar{E}$ b		V _{cc}	Min
9 $T_C = 25^\circ\text{C}$	t_{PLH2}	3003 Fig. 4	E a	95	0.0 V								IN				0.0 V	0.0 V	5.0 V	I0b to $\bar{Z}$ b	2.0	7.0	ns		
				96	0.0 V									IN				2.7 V			I1b to $\bar{Z}$ b	"	"	"	
				97	2.7 V												IN		0.0 V			I2b to $\bar{Z}$ b	"	"	"
				98	2.7 V													IN	2.7 V			I3b to $\bar{Z}$ b	"	"	"
	t_{PHL2}		0.0 V	99	2.7 V	IN				OUT								2.7 V			I3a to $\bar{Z}$ a	1.7	6.0	"	
				100	2.7 V		IN				"								0.0 V			I2a to $\bar{Z}$ a	"	"	"
				101	0.0 V					IN		"							2.7 V			I1a to $\bar{Z}$ a	"	"	"
				102	"						IN	"							0.0 V			I0a to $\bar{Z}$ a	"	"	"
				103	"							"	OUT		IN				0.0 V	0.0 V		I0b to $\bar{Z}$ b	"	"	"
				104	"							"	"			IN			2.7 V	"		I1b to $\bar{Z}$ b	"	"	"
				105	2.7 V							"	"				IN		0.0 V	"		I2b to $\bar{Z}$ b	"	"	"
				106	2.7 V							"	"						IN	2.7 V	"	I3b to $\bar{Z}$ b	"	"	"
	t_{PLH4}		0.0 V	107	0.0 V	2.7 V	2.7 V	0.0 V										IN			S0 to $\bar{Z}$ a	3.5	13.0	"	
				108	2.7 V								OUT				0.0 V	2.7 V	IN	0.0 V		S0 to $\bar{Z}$ b	"	"	"
				109	0.0 V	IN	0.0 V			2.7 V		OUT							2.7 V	2.7 V	0.0 V	S1 to $\bar{Z}$ a	"	"	"
				110	IN	IN							OUT			2.7 V			0.0 V	2.7 V	0.0 V	S1 to $\bar{Z}$ b	"	"	"
	t_{PHL4}		0.0 V	111	0.0 V				2.7 V	0.0 V	OUT							IN			S0 to $\bar{Z}$ a	"	"	"	
				112	0.0 V								OUT	0.0 V	2.7 V				IN	0.0 V		S0 to $\bar{Z}$ b	"	"	"
113				0.0 V	IN	2.7 V				0.0 V	OUT							0.0 V	0.0 V		S1 to $\bar{Z}$ a	"	"	"	
114					IN							OUT	0.0 V				2.7 V	0.0 V	0.0 V	S1 to $\bar{Z}$ b	"	"	"		
t_{PLH6}		IN	115	IN	0.0 V				2.7 V	OUT							0.0 V			$\bar{E}$ a to $\bar{Z}$ a	3.5	14.0	"		
			116	"	"								OUT	2.7 V				"	IN		$\bar{E}$ b to $\bar{Z}$ b	3.5	14.0	"	
t_{PHL6}		IN	117	IN	"				2.7 V	OUT							"			$\bar{E}$ a to $\bar{Z}$ a	3.0	11.0	"		
			118	"	"							OUT	2.7 V					"	IN		$\bar{E}$ b to $\bar{Z}$ b	3.0	11.0	"	
10	Same tests and terminal conditions as subgroup 9, except $T_C = +125^\circ\text{C}$ and for the following limits. $t_{PLH2} = 2.0$ to 9.0 ns $t_{PHL2} = 1.5$ to 7.5 ns $t_{PLH4} = 3.5$ to 14.5 ns $t_{PHL4} = 3.5$ to 15.0 ns $t_{PLH6} = 3.5$ to 17.0 ns $t_{PHL6} = 3.5$ to 13.0 ns																								
11	Same tests, terminal conditions and limits as for subgroup 10, except $T_C = -55^\circ\text{C}$.																								

1/ For case 2 pins not referenced are N/C.

2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit		
	A	B	C
I_{IL}	-25/-60	-03/-60	-03/-60

3/ A = 2.5 V, B = 0.5 V. H ≥ 1.5 V, L ≤ 1.5 V.

4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

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	MIL-STD-883 method	Cases E, F, Case 2 Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Limits		Measured terminal	Unit
				OE a	S1	I3a	I2a	I1a	I0a	Z a	GND	Z b	I0b	I1b	I2b	I3b	S0	OE b	V _{CC}	Min	Max		
1	V _{OH}	3006	1	0.8 V	0.8 V				0.8 V	-3 mA	GND						0.8 V		4.5 V	2.4			V
			2	"	0.8 V			0.8 V		"	"						2.0 V		"	"			"
			3	"	2.0 V					"	"						0.8 V		"	"			"
			4	"	2.0 V	0.8 V				"	"						2.0 V		"	"			"
			5		0.8 V						"	-3 mA	0.8 V				0.8 V	0.8 V	"	"			"
			6		0.8 V						"	"		0.8 V			2.0 V	"	"	"			"
			7		2.0 V						"	"			0.8 V		2.0 V	"	"	"			"
			8		2.0 V						"	"				0.8 V		"	"	"			"
			9	0.8 V	0.8 V				2.0 V	20 mA	"						0.8 V		"	"	0.5		"
			10	"	0.8 V			2.0 V		"	"						2.0 V		"	"			"
			11	"	2.0 V		2.0 V			"	"						0.8 V		"	"			"
			12	"	2.0 V					"	"						2.0 V		"	"			"
			13		0.8 V						"	20 mA	2.0 V				0.8 V	0.8 V	"	"			"
			14		0.8 V						"	"		2.0 V			2.0 V	"	"	"			"
			15		2.0 V					"	"	"			2.0 V		0.8 V	"	"	"			"
			16		2.0 V					"	"	"				2.0 V	2.0 V	"	"	"			"
	V _{OL}	3007	17	-18 mA							"								"		-1.2		"
			18		-18 mA						"								"				"
			19			-18 mA					"								"				"
			20				-18 mA				"								"				"
			21					-18 mA			"								"				"
			22						-18 mA		"								"				"
			23								"		-18 mA						"				"
			24								"			-18 mA					"				"
			25								"								"				"
			26								"								"				"
			27								"								"				"
			28								"						-18 mA	-18 mA	"				"
			29	2.7 V							"							-18 mA	"				"
			30		2.7 V						"								5.5 V		20		μ A
	I _{HI1}	3010	31	4.5 V	0.0 V	2.7 V					"								"				"
			32	"	0.0 V		2.7 V				"								"				"
			33	"	4.5 V			2.7 V			"								"				"
			34	"	"				2.7 V		"								"				"
			35	"	"						"		2.7 V					4.5 V	"				"
			36		"						"			2.7 V				4.5 V	"				"
			37		0.0 V						"				2.7 V			0.0 V	"				"
			38		0.0 V						"					2.7 V		4.5 V	"				"
			39	"							"						2.7 V	"	"				"
			40								"							2.7 V	"				"
			41	7.0 V							"								"		100		"
			42		7.0 V						"								"				"
			43	4.5 V	0.0 V	7.0 V					"						0.0 V		"				"
			44	"	0.0 V		7.0 V				"						0.0 V		"				"
			45	"	4.5 V			7.0 V			"						0.0 V		"				"
			46	"					7.0 V		"						4.5 V		"				"

See footnotes at end of table.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.8 V; or open).																Measured terminal	Limits		Unit
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
1 $T_C = 25^\circ\text{C}$	I_{H2}	3010	Test no.	OE a	S1	I3a	I2a	I1a	I0a	Z a	GND	Z b	I0b	I1b	I2b	I3b	S0	OE b	4.5 V	5.5 V	100	μA	
			47	4.5 V							GND		7.0 V					4.5 V	4.5 V				
			48	4.5 V											7.0 V				0.0 V				
			49	0.0 V												7.0 V			4.5 V				
			50	0.0 V													7.0 V		0.0 V				
			51																7.0 V				
			52																	7.0 V			
			53	0.5 V																	7.0 V		
			3009																				
			54	0.5 V																			
			55	0.0 V	0.5 V															4.5 V			
			56	4.5 V			0.5 V													0.0 V			
			57	0.0 V				0.5 V												4.5 V			
			58	"	"															0.0 V			
			59	"	"										0.5 V					0.0 V			
60	"	"											0.5 V				4.5 V						
2	I_{OH}		61	4.5 V											0.5 V				0.0 V				
			62	4.5 V												0.5 V			4.5 V				
			63															0.5 V					
			64																	0.5 V			
			65	2.0 V	0.0 V				2.0 V	2.7 V										0.0 V			
			66	"	"							2.7 V			2.0 V					"			
			67	2.0 V	"				0.8 V	0.5 V		"								"			
			68	"	"						"	0.5 V			0.8 V					"			
			69	0.0 V	0.0 V					0.0 V		"								"			
			70		0.0 V							"			0.0 V					"			
			71	0.0 V	0.0 V				5.5 V	2.5 V		"								"			
			72		0.0 V							"			5.5 V					4.5 V			
			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	4.5 V			
			74	0.0 V	0.0 V	0.0 V	0.0 V	0.0 V	4.5 V			"			4.5 V	0.0 V	0.0 V	0.0 V	0.0 V	5.5 V			
			75	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	4.5 V				
Same tests, terminal conditions, and limits as subgroup 1, except $T_C = +125^\circ\text{C}$ and V_C tests are omitted.																							
Same tests, terminal conditions, and limits as subgroup 1, except $T_C = -55^\circ\text{C}$ and V_C tests are omitted.																							
3 $T_C = 25^\circ\text{C}$	I_{ECH}	3014	76	B	B	B	B	B	B	H	GND	H	B	B	B	B	B	B	B	B	4/		
			77	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			78	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			79	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			80	"	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			81	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			82	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			83	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			84	"	B	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			85	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			87	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			88	"	A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
Same tests, terminal conditions, and limits as for subgroup 7, except $T_C = +125^\circ\text{C}$ and $T_C = -55^\circ\text{C}$.																							

See footnotes at end of table.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Min		Max		
				Test no.	$\overline{OE}$ a	S1	I2a	I1a	I0a	$\overline{Z}$ a	GND	$\overline{Z}$ b	I0b	I1b	I2b	I3b	S0	$\overline{OE}$ b				V_{cc}	
9 $T_C = 25^\circ C$	t_{PLH2}	3003 Fig. 4	92	0.0 V	2.7 V	IN				OUT	GND	GND					2.7 V		5.0 V	I3a to $\overline{Z}$ a	1.5	7.0	ns
			93	"	2.7 V		IN			"	"						0.0 V		"	I2a to $\overline{Z}$ a	"	"	"
			94	"	0.0 V			IN		"	"						2.7 V		"	I1a to $\overline{Z}$ a	"	"	"
			95	"	"				IN	"	"						0.0 V		"	I0a to $\overline{Z}$ a	"	"	"
			96	"	"					"	"	OUT	IN				0.0 V	0.0 V	"	I0b to $\overline{Z}$ b	"	"	"
			97	"	"					"	"	"		IN			2.7 V	"	"	I1b to $\overline{Z}$ b	"	"	"
			98	"	2.7 V					"	"	"			IN		0.0 V	"	"	I2b to $\overline{Z}$ b	"	"	"
			99	"	2.7 V					"	"	"				IN	2.7 V	"	"	I3b to $\overline{Z}$ b	"	"	"
			100	0.0 V	2.7 V					OUT	"	"					2.7 V	"	"	I3a to $\overline{Z}$ a	"	6.0	"
			101	"	2.7 V		IN			"	"	"					0.0 V		"	I2a to $\overline{Z}$ a	"	"	"
t_{PLH4}			102	"	0.0 V			IN		"	"						2.7 V		"	I1a to $\overline{Z}$ a	"	"	"
			103	"	"				IN	"	"						0.0 V		"	I0a to $\overline{Z}$ a	"	"	"
			104	"	"					"	"	OUT	IN				0.0 V	0.0 V	"	I0b to $\overline{Z}$ b	"	"	"
			105	"	"					"	"	"	IN				2.7 V	"	"	I1b to $\overline{Z}$ b	"	"	"
			106		2.7 V					"	"	"		IN			0.0 V	"	"	I2b to $\overline{Z}$ b	"	"	"
			107		2.7 V					"	"	"				IN	2.7 V	"	"	I3b to $\overline{Z}$ b	"	"	"
			108	0.0 V	2.7 V	2.7 V	0.0 V			OUT	"						IN		"	S0 to $\overline{Z}$ a	4.0	14.0	"
			109		2.7 V						"	OUT			0.0 V	2.7 V	IN	0.0 V	"	S0 to $\overline{Z}$ b	"	"	"
t_{PHL4}			110	0.0 V	IN	0.0 V		2.7 V		OUT	"						2.7 V		"	S1 to $\overline{Z}$ a	"	"	"
			111		IN	IN				"	"	OUT		2.7 V		0.0 V	2.7 V	0.0 V	"	S1 to $\overline{Z}$ b	"	"	"
			112	0.0 V	0.0 V	0.0 V		2.7 V	0.0 V	OUT	"						IN		"	S0 to $\overline{Z}$ a	"	11.0	"
			113		0.0 V	0.0 V				"	"	OUT	0.0 V	2.7 V			IN	0.0 V	"	S0 to $\overline{Z}$ b	"	"	"
			114	0.0 V	IN	IN	2.7 V		0.0 V	OUT	"						0.0 V		"	S1 to $\overline{Z}$ a	"	"	"
t_{PL26}			115		IN	IN				"	OUT	0.0 V		2.7 V			"	0.0 V	"	S1 to $\overline{Z}$ b	"	"	"
			116	IN	0.0 V	0.0 V		2.7 V	OUT	"	"						"		"	$\overline{OE}$ a to $\overline{Z}$ a	2.0	6.0	"
t_{PHZ6}			117		"					"	OUT	2.7 V					"	IN	"	$\overline{OE}$ b to $\overline{Z}$ b	"	"	"
			118	IN	"	"			0.0 V	OUT	"						"		"	$\overline{OE}$ a to $\overline{Z}$ a	"	"	"
			119		"					"	OUT	0.0 V					"	IN	"	$\overline{OE}$ b to $\overline{Z}$ b	"	"	"

See footnotes at end of table.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
				2	3	4	5	7	8	9	10	12	13	14	15	16	Min	Max					
9 T _C = 25°C	t _{PZL6}	3003 Fig. 4	Case 2 J/	OE a	S1	13a	12a	11a	10a	Z a	GND	Z b	10b	11b	12b	13b	S0	OE b	V _{CC}	OE a to Z a	3.0	11.0	ns
			120	IN	0.0 V				2.7 V	OUT	GND							0.0 V			OE b to Z b	3.0	11.0
	121		"						0.0 V	OUT	"	OUT	2.7 V			"	IN	"	"	OE a to Z a	3.0	8.0	"
	t _{PZH6}	"	122	IN	"					0.0 V	OUT	"	OUT	0.0 V			"	IN	"	OE b to Z b	3.0	8.0	"
10	Same tests and terminal conditions as subgroup 9, except T _C = +125°C and for the following limits: t _{PHL2} = 1.5 to 9.0 ns t _{PLH4} = 4.0 to 16.0 ns t _{PHL2} = 1.5 to 7.5 ns t _{PLH4} = 4.0 to 14.0 ns t _{PZL6} = 3.5 to 15.5 ns t _{PZH6} = 3.0 to 11.0 ns																						
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C.																						

1/ For case 2 pins not referenced are N/C.
2/ I_{IL} limits shall be as follows:

Test	Min/Max limits in mA for circuit		
	A	B	C
I_{IL}	- .25/- .60	- .03/- .60	- .03/- .60

3/ A = 2.5 V, B = 0.5 V, H ≥ 1.5 V, L ≤ 1.5 V.
4/ Perform function sequence at $V_{CC} = 4.5$ V and repeat at $V_{CC} = 5.5$ V.

5. PACKAGING

5.1 Packaging requirements. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Service or Defense Agency, or within the military service's system command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of the specification.
- b. PIN and compliance identifier, if applicable (see 1.2).
- c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- d. Requirements for certificate of compliance, if applicable.
- e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.
- f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.
- g. Requirements for product assurance options.
- h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements should not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.
- i. Requirements for "JAN" marking.
- j. Packaging requirements (see 5.1).

6.3 Superseding information. The requirements of MIL-M-38510 have been superseded to take advantage of the available Qualified Manufacturer Listing (QML) system provided by MIL-PRF-38535. Previous references to MIL-M-38510 in this document have been replaced by appropriate references to MIL-PRF-38535. All technical requirements now consist of this specification and MIL-PRF-38535. The MIL-M-38510 specification sheet number and PIN have been retained to avoid adversely impacting existing government logistics systems and contractor's parts lists.

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, 3990 E. Broad Street, Columbus, Ohio 43123-1199.

6.5 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535, MIL-HDBK-1331, and as follows:

GND Ground zero voltage potential
 I_{IN} Current flowing into an input terminal
 V_{IN} Voltage level at an input terminal

6.6 Logistic support. Lead materials and finishes (see 3.4) 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 A (see 3.4). Longer length leads and lead forming should not affect the part number.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-35810 device types and may have slight physical variations in relation to case size. The presence of this information should 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-PRF-38535.

Military device type	Generic-industry type
01	54F151A
02	54F153
03	54F157A
04	54F158A
05	54F251A
06	54F257A
07	54F258A
08	54F253
09	54F352
10	54F353

6.8 Manufacturers' designation. Manufacturers' circuits which form a part of this specification are designated with an "X" as shown in table IV herein.

TABLE IV. Manufacturers' designations.

Device type	Circuits			
	A	B	C	D
	National Semiconductor/ Fairchild Semiconductor	Motorola Inc.	Signetics Corp.	Texas Instruments
01	X	X		
02	X	X		X
03	X			X
04	X			
05	X	X		
06	X			X
07	X			
08	X	X		X
09		X		
10		X		

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

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5962-2018)

Review activities:

Army - MI, SM
Navy - AS, CG, MC, SH, TD
Air Force - 03, 19, 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.