

INCH-POUND

MIL-M-38510/309E

10 April 2003

SUPERSEDING

MIL-M-38510/309D

21 June 1985

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, LOW-POWER SCHOTTKY TTL, DATA SELECTOR/MULTIPLEXER WITH THREE-STATE OUTPUTS, MONOLITHIC SILICON

Inactive for new design after 18 April 1997.

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, low-power Schottky TTL, data selector/multiplexer (three-state) logic 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 For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3).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 number. The part number should be in accordance with MIL-PRF-38535, and as specified herein.

1.2.1 Device types. The device types should be as follows:

<u>Device type</u>	<u>Circuit</u>
01	Eight-input data selector/multiplexer, with enable
02	Dual, four-input data selector/multiplexer, with enable
03, 04	Quad, two-input data selector/multiplexer, with enable
05	Eight-input data selector/multiplexer, 3-state outputs with enable
06, 07	Quad, two-input data selector/multiplexer, 3-state outputs with enable
08	Dual, four-input data selector/multiplexer, 3-state outputs with enable
09	Cascadable, quad, two-input data selector/multiplexer, with storage

1.2.2 Device class. The device class should be the product assurance level as defined in MIL-PRF-38535.

1.2.3 Case outlines. The case outlines should be 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
X	CQCC2-N20	20	Square leadless chip carrier
2	CQCC1-N20	20	Square leadless chip carrier

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, P. O. Box 3990, Columbus, OH 43216-5000, by using the self addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 5962

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V to 7.0 V
Input voltage range	-1.5 V at -18 mA to 7.0 V
Storage temperature range	-65° to +150°C
Maximum power dissipation (P_D) <u>1/</u>	
Device type 01, 02	55 mW
Device type 03	88 mW
Device type 04	44 mW
Device type 05	66 mW
Device type 06, 07	104.5 mW
Device type 08	77 mW
Device type 09	115.5 mW
Lead temperature (soldering, 10 seconds)	300°C
Thermal resistance, junction to case (θ_{JC}):	
Cases E, F, X, 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 dc minimum to 5.5 V dc maximum
Minimum high level input voltage (V_{IH})	2.0 V
Maximum low level input voltage (V_{IL})	0.7 V
Normalized fanout (each output) <u>3/</u>	
Low logic level	10 maximum
High logic level	20 maximum
Case operating temperature range (T_C)	-55° to +125°C
Setup time $t_{(SETUP)}$ type 09 data to clock	15 ns
Setup time $t_{(SETUP)}$ type 09 word select to clock	25 ns
Hold time $t_{(HOLD)}$ type 09 data to clock	5 ns
Hold time $t_{(HOLD)}$ type 09 word select to clock	0 ns
Clock pulse width $t_{P(CLOCK)}$ type 09 high or low	20 ns

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 for allowable short duration burn-in screening conditions in accordance with MIL-PRF-38535.

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

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 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 shall be those listed in the issue of the Departments of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATION

DEPARTMENT OF DEFENSE

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

STANDARDS

DEPARTMENT OF DEFENSE

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

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this 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. The terminal connections shall be as specified on figure 1.

3.3.2 Logic diagrams. The logic diagrams shall be 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, appendix B.

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 MIL-PRF-38535.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified		Device types	Limits		Unit
					Min	Max	
High level output voltage	V _{OH}	V _{IL} = 0.7 V V _{CC} = 4.5 V V _{IH} = 2.0 V	I _{OH} = -0.4 mA	01, 02, 03, 04, 09	2.5		V
			I _{OH} = -1.0 mA	05, 06, 07, 08	2.4		V
Low level output voltage	V _{OL1}	V _{CC} = 4.5 V	I _{OL} = 4.0 mA	01, 02, 03, 04, 05, 08, 09		0.40	V
			I _{OL} = 12 mA	06, 07		0.40	V
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V, I _{IN} = -18 mA, T _C = +25°C		All		-1.5	V
Low level input current at data inputs	I _{IL1}	V _{CC} = 5.5 V, V _{IN} = 0.4 V		01, 05	0	-0.72	mA
Low level input current at select or strobe	I _{IL2}			01, 05	0	-0.40	mA
Low level input current at A, B, or C	I _{IL3}			01, 05	0	-0.40	mA
Low level input current	I _{IL1}			02, 08 09	0 -0.03	-0.40	mA
Low level input current at A, B, or C	I _{IL1}			03, 04	0	-0.44	mA
Low level input current at select or strobe	I _{IL2}			03, 04	0	-0.88	mA
Low level input current at A, B, or output control	I _{IL1}			06, 07	0	-0.44	mA
Low level input current at select	I _{IL2}			06	0	-0.88	mA
				07	0	-0.80	
High level input current	I _{IH1}			V _{CC} = 5.5 V, V _{IN} = 2.7 V		01, 02, 05, 08, 09	
	I _{IH2}	V _{CC} = 5.5 V, V _{IN} = 7.0 V		01, 02, 05, 08		100	μA
	I _{IH2}	V _{CC} = 5.5 V, V _{IN} = 5.5 V		09		100	μA
High level input current at A or B	I _{IH1}	V _{CC} = 5.5 V, V _{IN} = 2.7 V		03, 04		20	μA
	I _{IH2}	V _{CC} = 5.5 V, V _{IN} = 7.0 V				100	μA
High level input current at strobe or select	I _{IH3}	V _{CC} = 5.5 V, V _{IN} = 2.7 V		03, 04		40	μA
	I _{IH4}	V _{CC} = 5.5 V, V _{IN} = 7.0 V				200	μA
High level input current at A, B, or output control	I _{IH1}	V _{CC} = 5.5 V, V _{IN} = 2.7 V		06, 07		20	μA
	I _{IH2}	V _{CC} = 5.5 V, V _{IN} = 7.0 V				100	μA

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified		Device types	Limits		Unit
					Min	Max	
High level input current at select	I _{IH3}	V _{CC} = 5.5 V, V _{IN} = 2.7 V		06, 07		40	μA
	I _{IH4}	V _{CC} = 5.5 V, V _{IN} = 7.0 V				200	μA
Off-state output current high level voltage applied	I _{OZH}	V _{CC} = 5.5 V, V _O = 2.7 V		05, 06, 07, 08		20	μA
Off-state output current low level voltage applied	I _{OZL}	V _{CC} = 5.5 V, V _O = 0.4 V		05, 06, 07, 08		-20	μA
Short circuit output current	I _{OS}	V _{CC} = 5.5 V, <u>1/</u> V _{OUT} = GND		01,02,03, 04, 09	-15	-100	mA
				05,06,07, 08	-15	-130	
Supply current	I _{CC1}	V _{CC} = 5.5 V	V _{IN} (data) = 5.5 V	01		10	mA
			V _{IN} (data) = GND	02		10	
				09		21	
	I _{CC1}	V _{CC} = 5.5 V, V _{IN} (data) = 5.5 V		03		16	mA
	I _{CC1}	V _{CC} = 5.5 V, V _{IN} (data) = 5.5 V		04		8	mA
	I _{CC1}	V _{CC} = 5.5 V, V _{IN} (data) = 5.5 V V _{IN} (strobe) = GND		05		10	mA
	I _{CC2}	V _{CC} = 5.5 V, V _{IN} (data) = 5.5 V V _{IN} (strobe) = 5.5 V		05		12	mA
	I _{CC1}	V _{CC} = 5.5 V, V _{IN} (data) = 5.5 V V _{IN} (output control) = GND		06		12	mA
				07		15	
	I _{CC2}	V _{CC} = 5.5 V, V _{IN} (data) = GND V _{IN} (output control) = GND		06		18	mA
				07		9	
	I _{CC3}	V _{CC} = 5.5 V, V _{IN} (output control) = 5.5 V		06, 07		19	mA
I _{CC1}	V _{CC} = 5.5 V, V _{IN} (data) = GND V _{IN} (output control) = GND		08		12	mA	
I _{CC2}	V _{CC} = 5.5 V, V _{IN} (data) = GND V _{IN} (output control) = 5.5 V		08		14	mA	
Propagation delay time, low to high level output from data input to Y	t _{PLH1}	V _{CC} = 5.0 V, C _L = 50 pF ±10% R _L = See figure 5.		01	3	56	ns
				02	3	30	
				03	3	29	
				04	3	26	
				05	3	50	
				06, 07	3	35	
				09	3	43	
				08	3	45	

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

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device types	Limits		Unit
				Min	Max	
Propagation delay time, high to low level output from data input to Y	t _{PHL1}	V _{CC} = 5.0 V, C _L = 50 pF ±10% R _L = See figure 5.	01, 02	3	47	ns
			03	3	29	
			04	3	26	
			05	3	50	
			06, 07	3	35	
			09	3	48	
			08	3	38	
Propagation delay time, low to high level output from data to W	t _{PLH2}		01	3	39	ns
			05	3	30	
Propagation delay time, high to low level output from data to W	t _{PHL2}		01	3	38	ns
			03	3	30	
Propagation delay time, low to high level output from strobe to Y	t _{PLH3}		01	3	71	ns
			02	3	44	
			03	3	38	
			04	3	33	
Propagation delay time, high to low level output from strobe to Y	t _{PHL3}		01, 02	3	56	ns
			03	3	39	
			04	3	35	
Propagation delay time, low to high level output from strobe to W	t _{PLH4}		01	3	44	ns
Propagation delay time, high to low level output from strobe to W	t _{PHL4}		01	3	53	ns
Propagation delay time, high to low level output from select to Y	t _{PHL5}		01	3	72	ns
			02	3	51	
			03	3	42	
			04	3	38	
			05, 08	3	75	
			06, 07	3	39	
Propagation delay time, high to low level output from select to Y	t _{PHL5}		01	3	53	ns
			02	3	65	
			03	3	48	
			04	3	44	
			05	3	75	
			06, 07	3	39	
			08	3	56	

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device types	Limits		Unit
				Min	Max	
Propagation delay time, low to high level output from select to W	t _{PLH6}	V _{CC} = 5.0 V, C _L = 50 pF ±10% R _L = See figure 5.	01	3	42	ns
			05	3	57	
Propagation delay time, high to low level output from select to W	t _{PHL6}		01	3	56	ns
			05	3	57	
Enable time to high level output from strobe to Y	t _{PZH1}		05	3	75	ns
Enable time to high level output from strobe to W	t _{PZH2}		05	3	48	ns
Enable time to high level output from output control to Y	t _{PZH3}		06, 07	3	53	ns
			08	3	69	
Enable time to low level output from strobe to Y	t _{PZL1}		05	3	68	ns
Enable time to low level output from strobe to W	t _{PZL2}		05	3	68	ns
Enable time to low level output from output control to Y	t _{PZL3}		06, 07	3	53	ns
			08	3	42	
Disable time from high level output, from strobe to Y	t _{PHZ1}		05	3	75	ns
Disable time from high level output, from strobe to W	t _{PHZ2}		05	3	90	ns
Disable time from high level output, from output control to Y	t _{PHZ3}		06, 07	3	53	ns
			08	3	69	
Disable time from low level output, from strobe to Y	t _{PLZ1}	05	3	45	ns	
Disable time from low level output, from strobe to W	t _{PLZ2}	05	3	45	ns	
Disable time from low level output, from output control to Y	t _{PLZ3}	06, 07	3	45	ns	
		08	3	48		

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 test requirements 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.

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 and 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.

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Terminal number	Terminal symbol device type 01		Terminal symbol device type 02		Terminal symbol device type 03		Terminal symbol device type 04		Terminal symbol device type 05	
	Case X, 2	Case E, F	Case X, 2	Case E, F	Case X, 2	Case E, F	Case X, 2	Case E, F	Case X, 2	Case E, F
1	NC	D3	NC	1G	NC	S	NC	S	NC	D3
2	D3	D2	1G	B	S	1A	S	1A	D3	D2
3	D2	D1	B	1C3	1A	1B	1A	1B	D2	D1
4	D1	D0	1C3	1C2	1B	1Y	1B	1Y	D1	D0
5	D0	Y	1C2	1C1	1Y	2A	1Y	2A	D0	Y
6	NC	W	NC	1C0	NC	2B	NC	2B	NC	W
7	Y	S	1C1	1Y	2A	2Y	2A	2Y	Y	S
8	W	GND	1C0	GND	2B	GND	2B	GND	W	GND
9	S	C	1Y	2Y	2Y	3Y	2Y	3Y	S	C
10	GND	B	GND	2C0	GND	3B	GND	3B	GND	B
11	NC	A	NC	2C1	NC	3A	NC	3A	NC	A
12	C	D7	2Y	2C2	3Y	4Y	3Y	4Y	C	D7
13	B	D6	2C0	2C3	3B	4B	3B	4B	B	D6
14	A	D5	2C1	A	3A	4A	3A	4A	A	D5
15	D7	D4	2C2	2G	4Y	G	4Y	G	D7	D4
16	NC	V _{CC}	NC	V _{CC}	NC	V _{CC}	NC	V _{CC}	NC	V _{CC}
17	D6		2C3		4B		4B		D6	
18	D5		A		4A		4A		D5	
19	D4		2G		G		G		D4	
20	V _{CC}		V _{CC}		V _{CC}		V _{CC}		V _{CC}	

FIGURE 1. Terminal connections.

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Terminal number	Terminal symbol device type 06		Terminal symbol device type 07		Terminal symbol device type 08		Terminal symbol device type 09	
	Case X, 2	Case E, F	Case X, 2	Case E, F	Case X, 2	Case E, F	Case X, 2	Case E, F
1	NC	S	NC	S	NC	1G	NC	B2
2	S	1A	S	1A	1G	B	B2	A2
3	1A	1B	1A	1B	B	1C3	A2	A1
4	1B	1Y	1B	1Y	1C3	1C2	A1	B1
5	1Y	2A	1Y	2A	1C2	1C1	B1	C2
6	NC	2B	NC	2B	NC	1C0	NC	D2
7	2A	2Y	2A	2Y	1C1	1Y	C2	D1
8	2B	GND	2B	GND	1C0	GND	D2	GND
9	2Y	3Y	2Y	3Y	1Y	2Y	D1	C1
10	GND	3B	GND	3B	GND	2C0	GND	WS
11	NC	3A	NC	3A	NC	2C1	NC	\overline{CP}
12	3Y	4Y	3Y	4Y	2Y	2C2	C1	QD
13	3B	4B	3B	4B	2C0	2C3	WS	QC
14	3A	4A	3A	4A	2C1	A	\overline{CP}	QB
15	4Y	G	4Y	G	2C2	2G	QD	QA
16	NC	V _{cc}	NC	V _{cc}	NC	V _{cc}	NC	V _{cc}
17	4B		4B		2C3		QC	
18	4A		4A		A		QB	
19	G		G		2G		QA	
20	V _{cc}		V _{cc}		V _{cc}		V _{cc}	

FIGURE 1. Terminal connections - Continued.

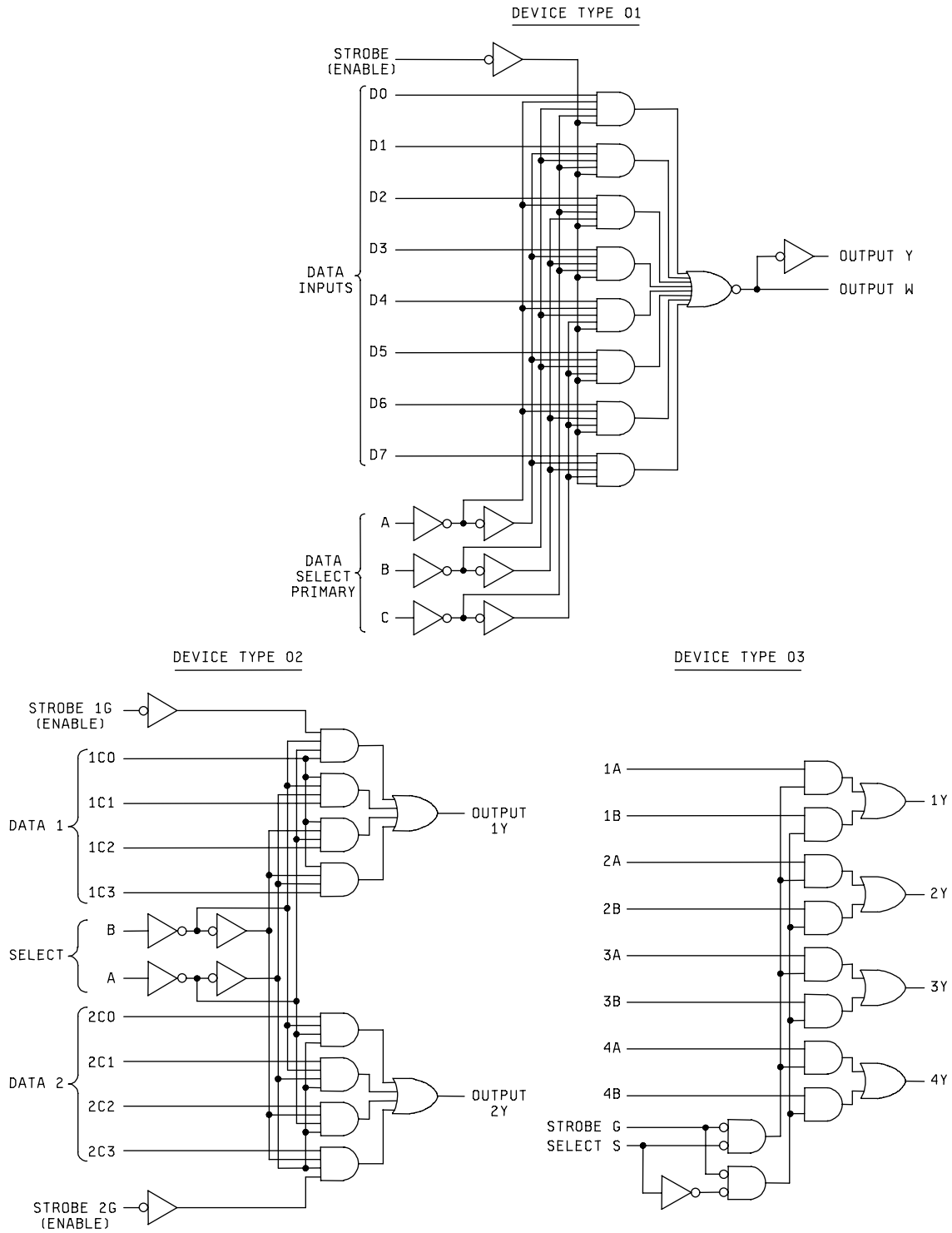
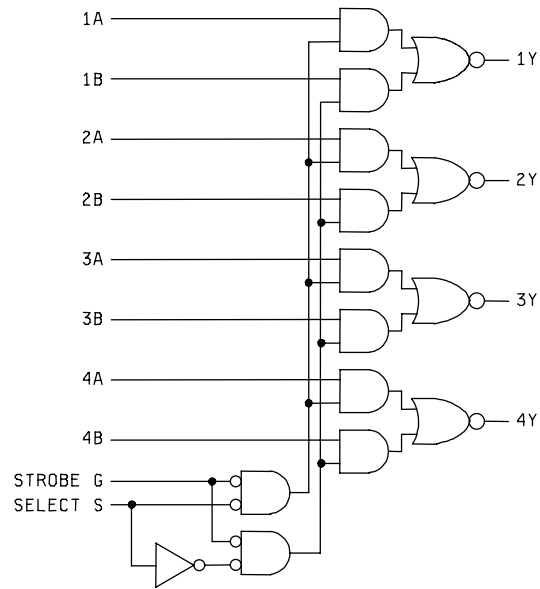


FIGURE 2. Logic diagrams.

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DEVICE TYPE 04



DEVICE TYPE 05

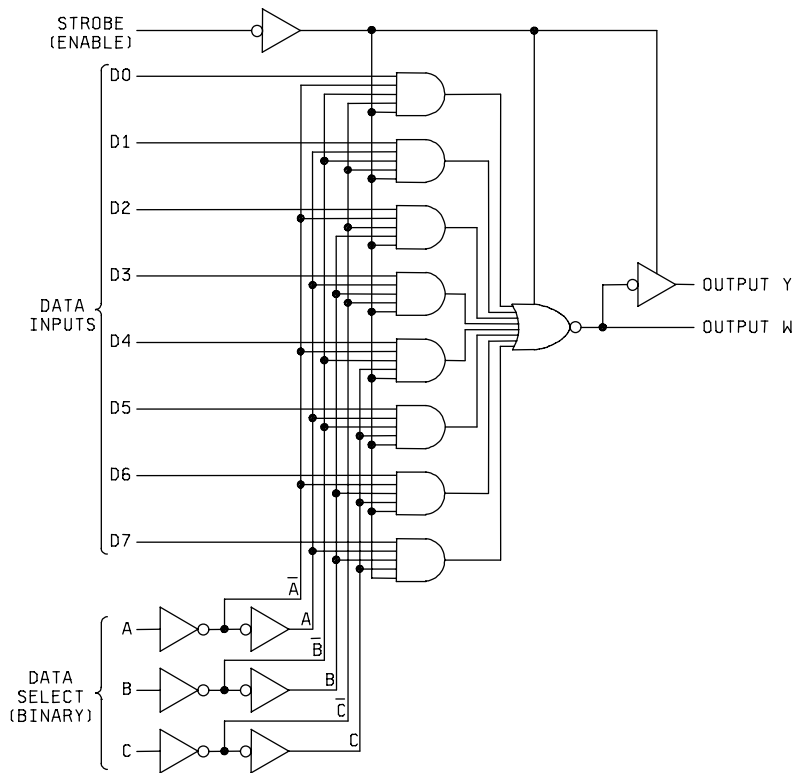


FIGURE 2. Logic diagrams - Continued.

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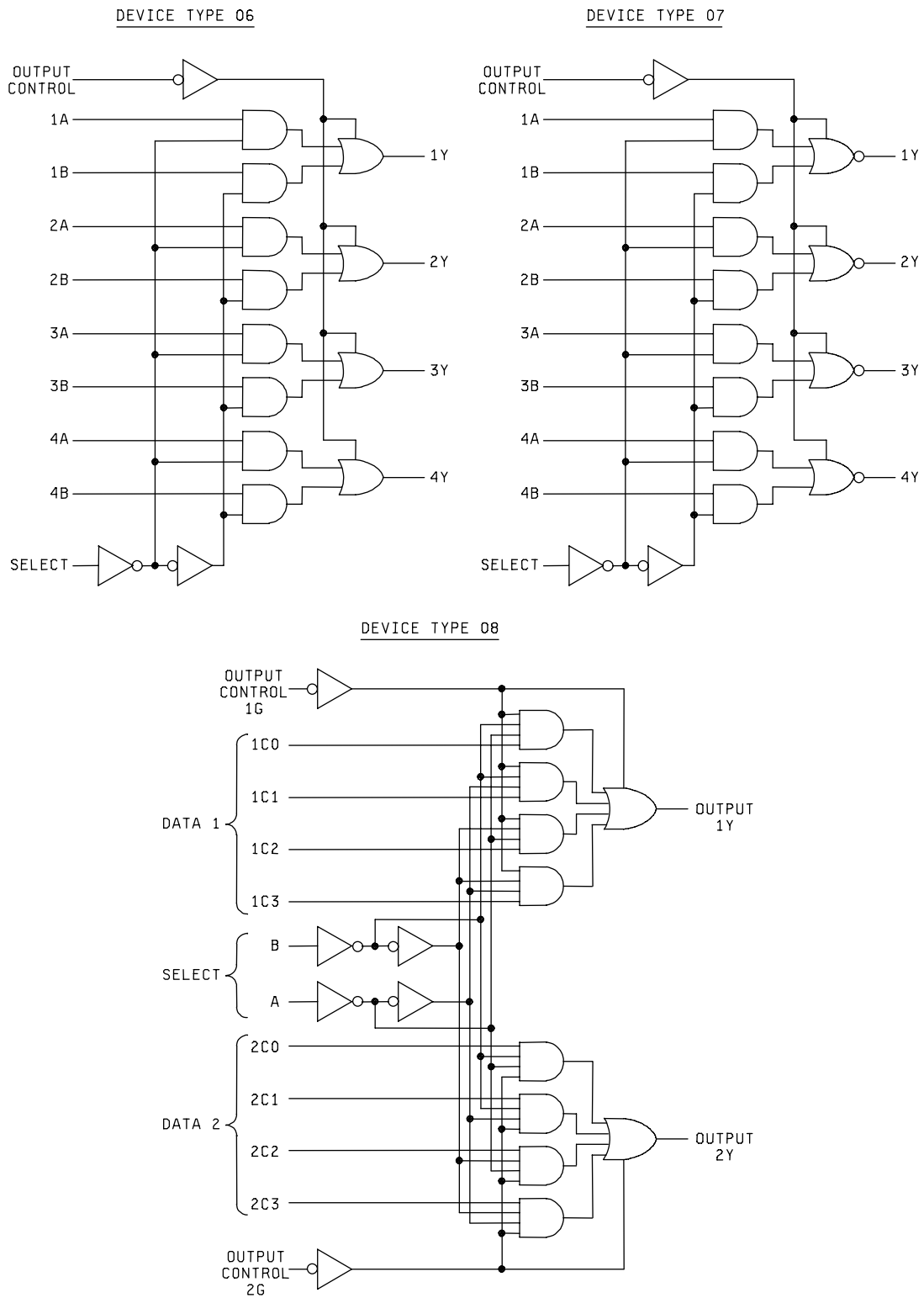


FIGURE 2. Logic diagrams - Continued.

DEVICE TYPE 09

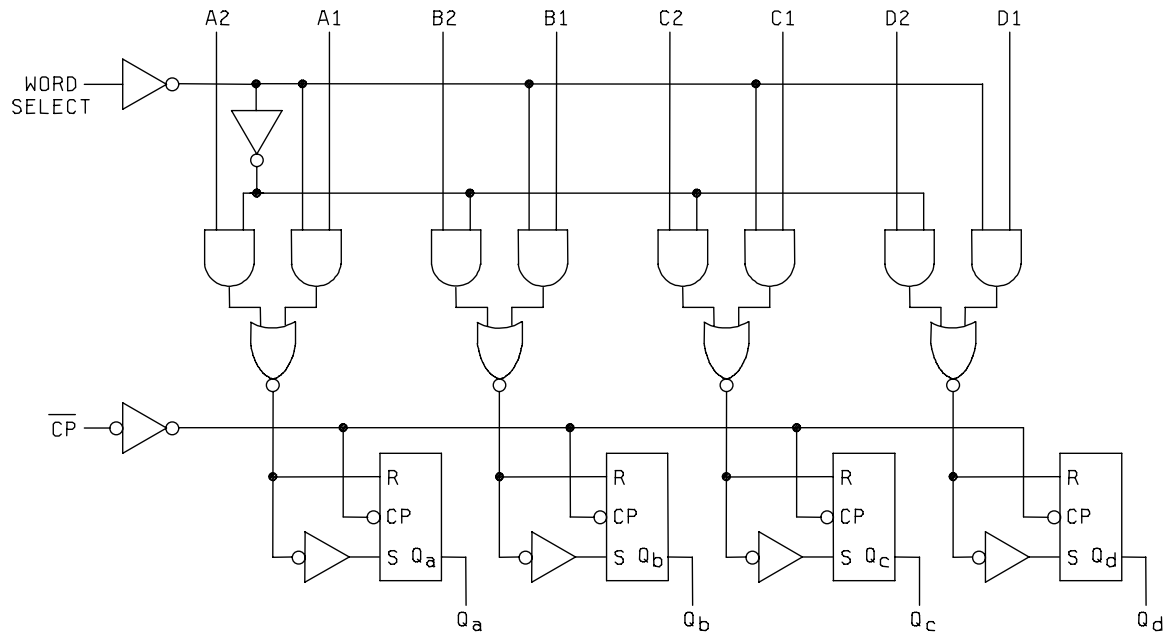


FIGURE 2. Logic diagrams - Continued.

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Device type 01

INPUTS				OUTPUTS	
SELECT			STROBE	Y	W
C	B	A	S		
X	X	X	H	L	H
L	L	L	L	D0	$\overline{D0}$
L	L	H	L	D1	$\overline{D1}$
L	H	L	L	D2	$\overline{D2}$
L	H	H	L	D3	$\overline{D3}$
H	L	L	L	D4	$\overline{D4}$
H	L	H	L	D5	$\overline{D5}$
H	H	L	L	D6	$\overline{D6}$
H	H	H	L	D7	$\overline{D7}$

H = high level, L = low level, X = irrelevant.
 D0, D1 D7 = the level of the D respective input.

Device type 02

SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	G	Y
X	X	X	X	X	X	H	L
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

Select inputs A and B are common to both sections.
 H = high level, L = low level, X = irrelevant.

Device types 03 and 04

INPUTS				OUTPUT Y	
STROBE	SELECT	A	B	TYPE 03	TYPE 04
H	X	X	X	L	H
L	L	L	X	L	H
L	L	H	X	H	L
L	H	X	L	L	H
L	H	X	H	H	L

H = high level, L = low level, X = irrelevant.

FIGURE 3. Truth tables.

Device type 05

INPUTS				OUTPUTS	
SELECT			STROBE	Y	W
C	B	A	S		
X	X	X	H	Z	Z
L	L	L	L	D0	$\overline{D0}$
L	L	H	L	D1	$\overline{D1}$
L	H	L	L	D2	$\overline{D2}$
L	H	H	L	D3	$\overline{D3}$
H	L	L	L	D4	$\overline{D4}$
H	L	H	L	D5	$\overline{D5}$
H	H	L	L	D6	$\overline{D6}$
H	H	H	L	D7	$\overline{D7}$

H = high logic level, L = low logic level, X = irrelevant,
 Z = high impedance (off).
 D0, D1.....D7 = the level of the respective D input.

Device types 06 and 07

INPUTS				OUTPUT Y	
OUTPUT CONTROL	SELECT	A	B	TYPE 06	TYPE 07
H	X	X	X	Z	Z
L	L	L	X	L	H
L	L	H	X	H	L
L	H	X	L	L	H
L	H	X	H	H	L

H = high logic level, L = low logic level, X = irrelevant,
 Z = high impedance (off).

FIGURE 3. Truth tables - Continued.

Device type 08

SELECT INPUTS		DATA INPUTS				OUTPUT CONTROL	OUTPUT
B	A	C0	C1	C2	C3	G	Y
X	X	X	X	X	X	H	Z
L	L	L	X	X	X	L	L
L	L	H	X	X	X	L	H
L	H	X	L	X	X	L	L
L	H	X	H	X	X	L	H
H	L	X	X	L	X	L	L
H	L	X	X	H	X	L	H
H	H	X	X	X	L	L	L
H	H	X	X	X	H	L	H

Address inputs A and B are common to both sections.
H = high logic level, L = low logic level, X = irrelevant,
Z = high impedance (off).

Device type 09

INPUTS		OUTPUTS			
WORD SELECT	CLOCK	Q _A	Q _B	Q _C	Q _D
L	↓	a1	b1	c1	d1
H	↓	a2	b2	c2	d2
X	H	Q _{A0}	Q _{B0}	Q _{C0}	Q _{D0}

H = high level (steady state)

L = low level (steady state)

X = irrelevant (any input, including transitions)

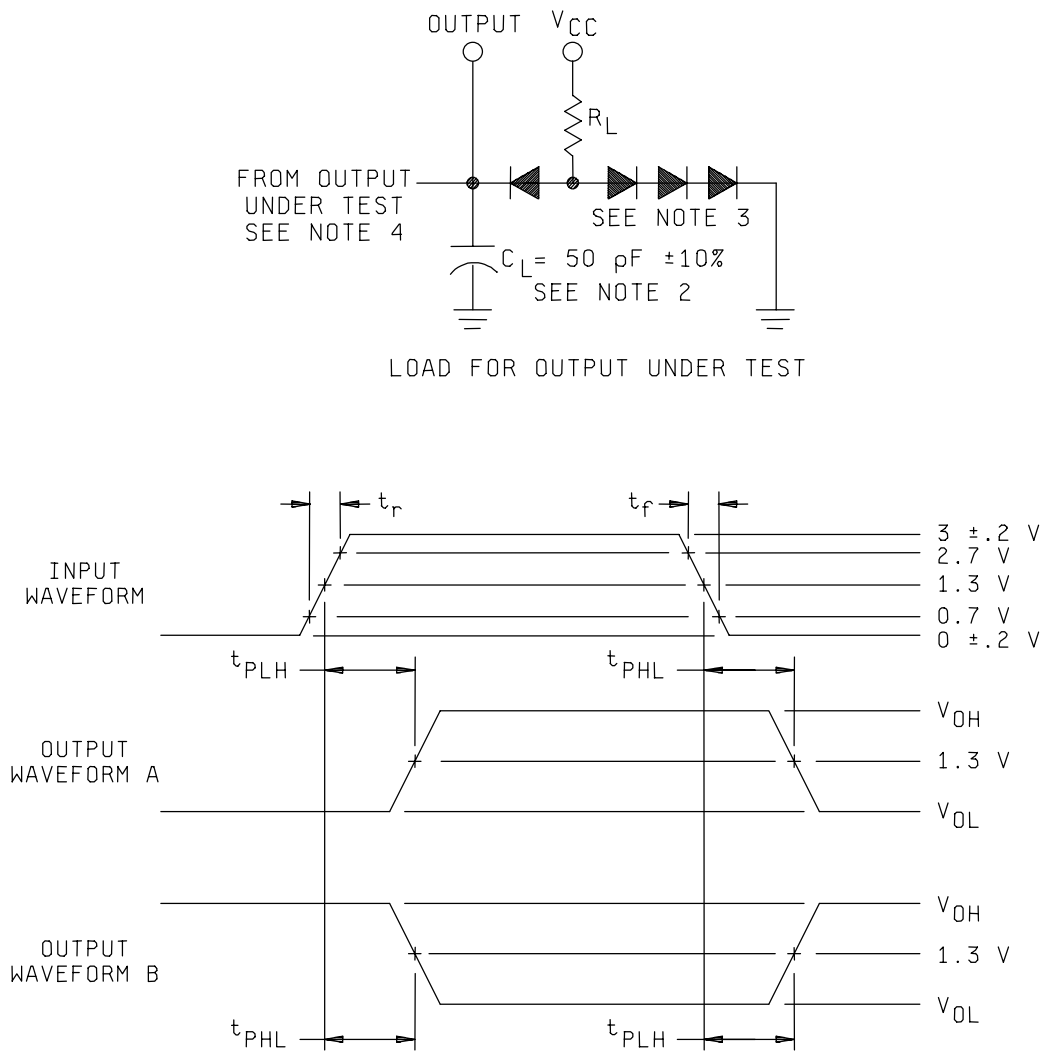
↓ = transition from high to low level

a1, a2, etc. = the level of steady state input at A1, A2, etc.

Q_{A0}, Q_{B0}, etc. = the level of Q_A, Q_B etc, entered on the
most recent ↓ transition of the clock input.

FIGURE 3. Truth tables - Continued.

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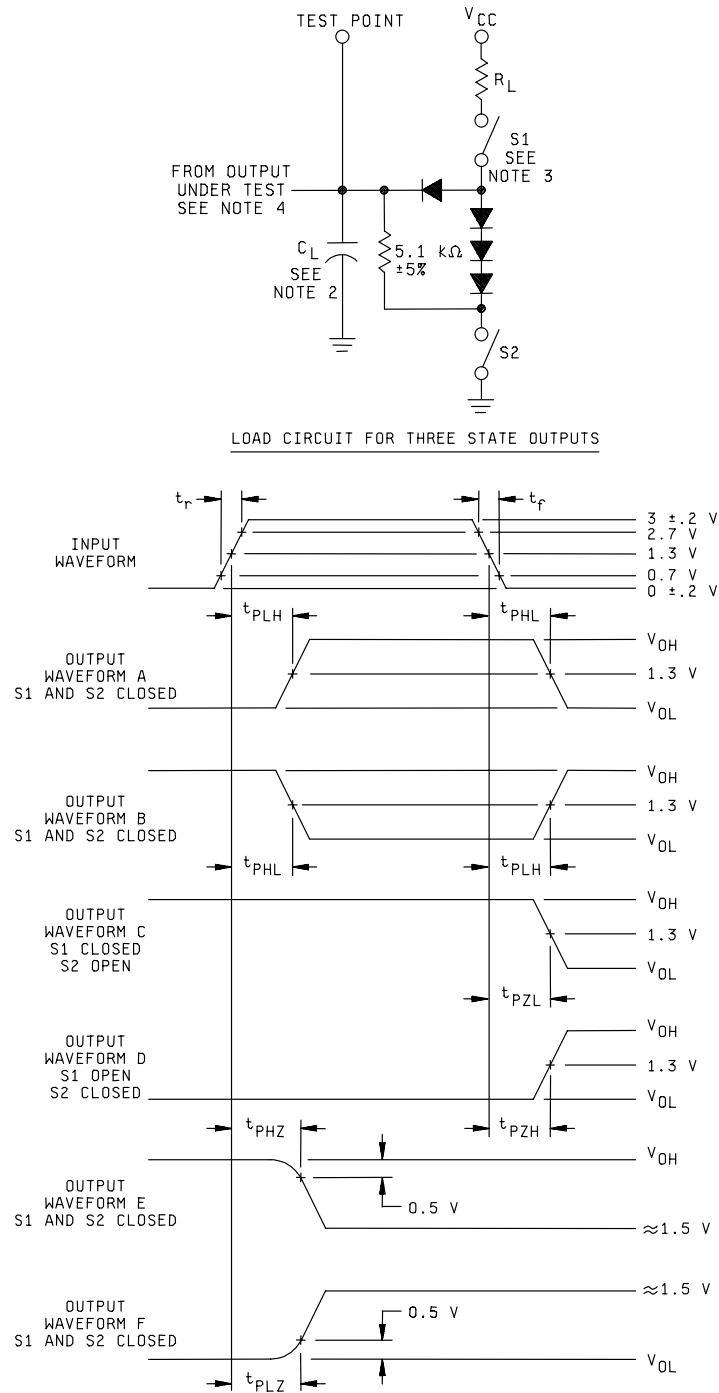


NOTES:

1. Input pulse characteristics: $PRR \leq 1.0 \text{ MHz}$, $t_r \leq 15 \text{ ns}$, $t_f \leq 6 \text{ ns}$.
2. $C_L = 50 \text{ pF} \pm 10\%$ including probe and jig capacitance.
3. $R_L = 2.0 \text{ k}\Omega \pm 5\%$. All diodes are 1N3064 or 1N916.
4. Load circuit on a given output is only required where the specific test in table III indicates "OUT" on that output.

FIGURE 4. Switching test for device types 01, 02, 03, and 04.

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NOTES:

1. Input pulse characteristics: $PRR \leq 1.0$ MHz, $t_r \leq 15$ ns, $t_f \leq 6$ ns.
2. $C_L = 50$ pF $\pm 10\%$ for t_{PLH} , t_{PHL} , t_{PZL} , and t_{PZH} tests; $C_L = 15$ pF minimum for t_{PHZ} , and t_{PLZ} tests. C_L includes probe and jig capacitance.
3. All diodes are 1N3064 or 1N916. $R_L = 2.0$ k Ω $\pm 5\%$ for device types 05 and 08, and $R_L = 680\Omega$ $\pm 5\%$ for device types 06 and 07.
4. Load circuit on a given output is only required where the specific test in table III indicates "OUT" on that output.

FIGURE 4. Switching test for device types 05, 06, 07, 08 - Continued.

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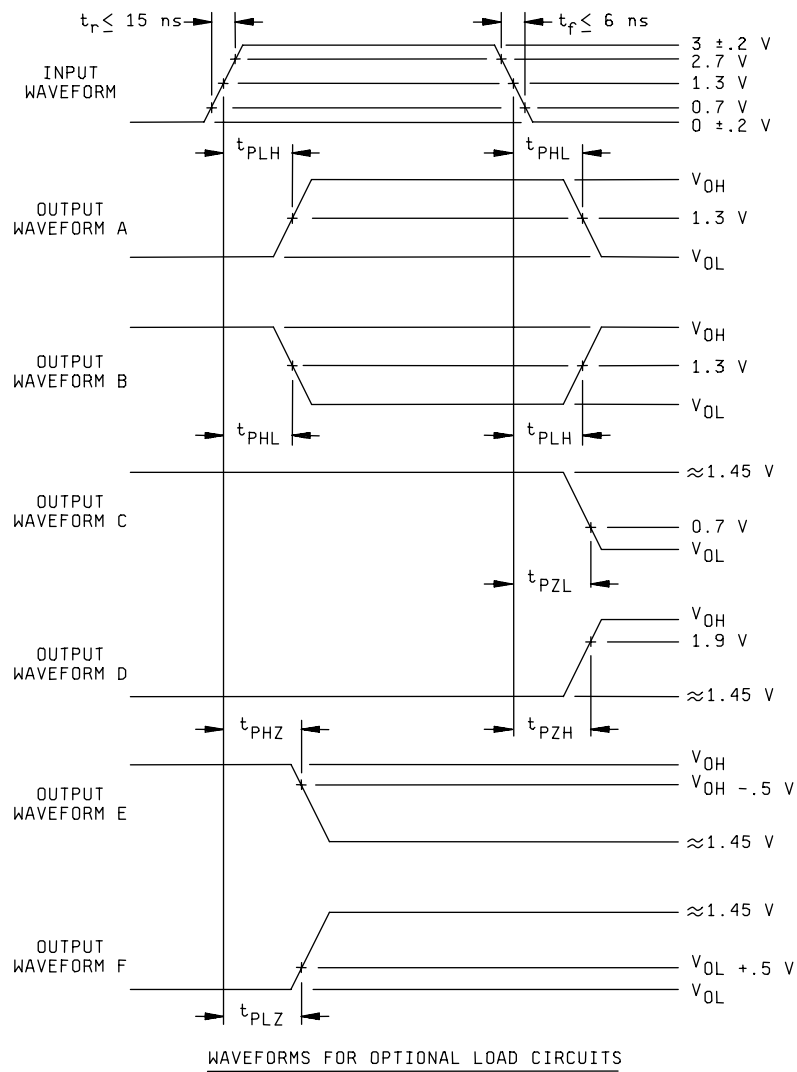
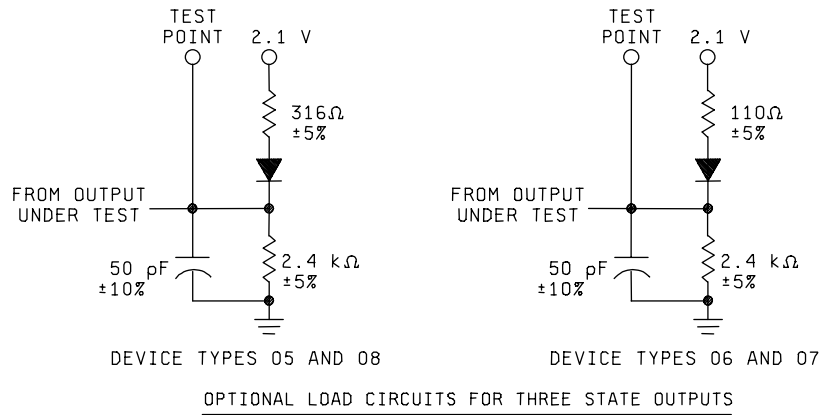
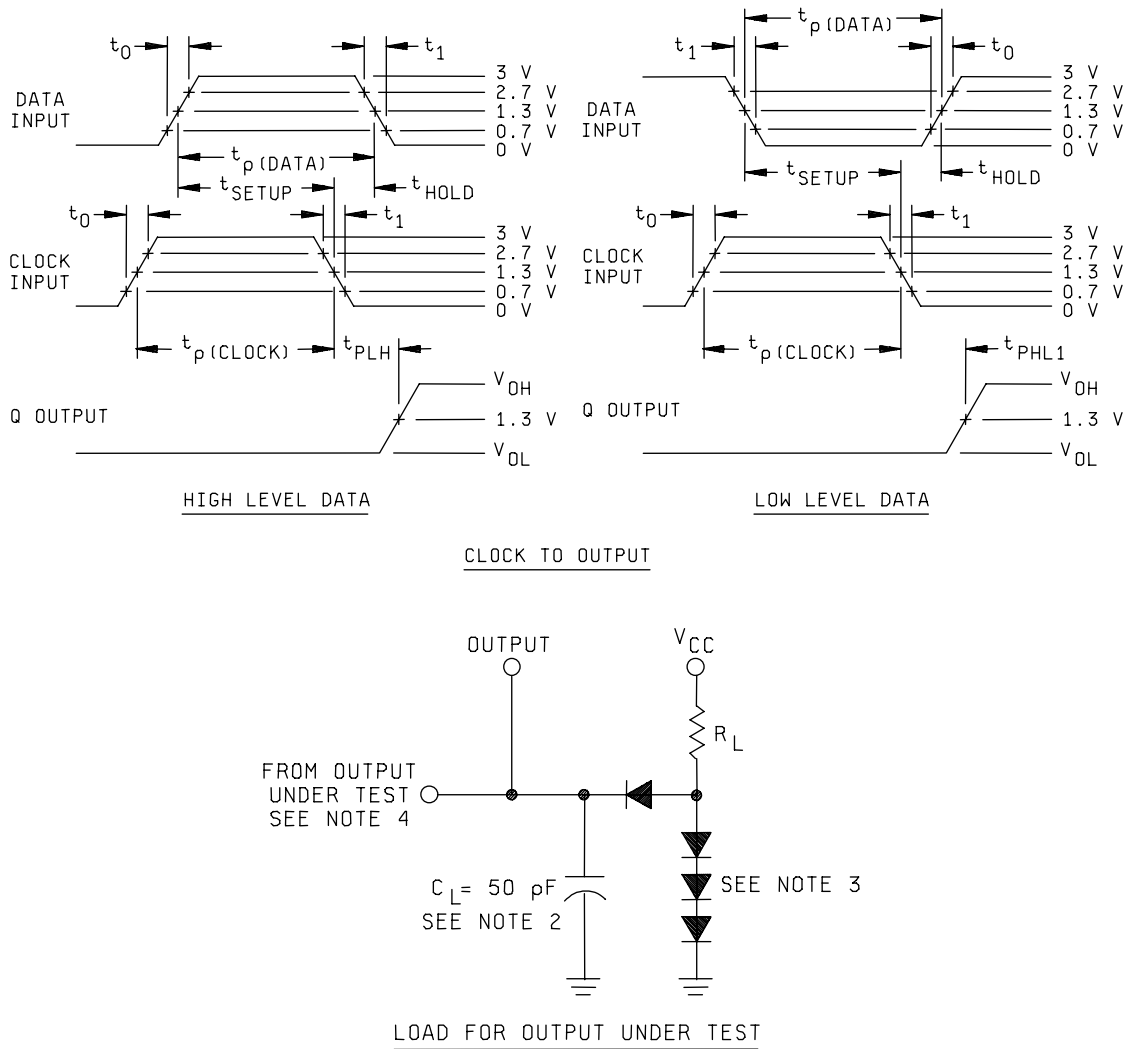


FIGURE 4. Switching test for device types 05, 06, 07, 08 - Continued.

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NOTES:

1. Input pulse characteristics: $\text{PRR} \leq 1.0 \text{ MHz}$, $t_0 \leq 15 \text{ ns}$, $t_1 \leq 6 \text{ ns}$, $t_p(\text{data}) = 20 \text{ ns}$, $t_p(\text{clock}) = 20 \text{ ns}$, $t_{\text{SETUP}} = 15 \text{ ns}$, and $t_{\text{HOLD}} = 5 \text{ ns}$.
2. $C_L = 50 \text{ pF} \pm 10\%$ including probe and jig capacitance.
3. $R_L = 2.0 \text{ k}\Omega \pm 5\%$. All diodes are 1N3064 or equivalent.
4. Load circuit on a given output is only required where the specific test in table III indicates "OUT" on that output.

FIGURE 4. Switching test for device type 09 - Continued.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases 1/2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	V _{OH}	3006	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V _{CC}	W	2.5	2.5	V											
			2	3	4	5	7	8	9	10	11	12	13	14	15	16	19	20	4.5 V	Y	2.5	2.5	V										
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	4.5 V	Y	2.5	2.5	V								
			4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	4.5 V	Y	2.5	2.5	V									
	V _{IC}	3007	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V										
			6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V											
			7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V												
			8	9	10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V													
			9	10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V														
			10	11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V															
			11	12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V																
			12	13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V																	
			13	14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V																		
			14	15	16	17	18	19	20	D3	D2	-1.5	-1.5	V																			
			15	16	17	18	19	20	D3	D2	-1.5	-1.5	V																				
			16	17	18	19	20	D3	D2	-1.5	-1.5	V																					
				I _{IL1}	3009	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA
						18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA	
						19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA		
						20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA			
21	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
22	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
23	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
24	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
25	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
26	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
27	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
28	1	2				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	D3	2/	2/	mA						
	I _{IH1}	3010				29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA
						30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA	
						31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA		
						32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA			
			33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA							
			34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA								
			35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA									
			36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA										
			37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA											
			38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA												
			39	40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA													
			40	41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA														
			41	42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA															
			42	43	44	45	46	47	48	49	50	51	52	D3	20	20	μA																
			43	44	45	46	47	48	49	50	51	52	D3	20	20	μA																	
			44	45	46	47	48	49	50	51	52	D3	20	20	μA																		
45	46	47	48	49	50	51	52	D3	20	20	μA																						
46	47	48	49	50	51	52	D3	20	20	μA																							
47	48	49	50	51	52	D3	20	20	μA																								
48	49	50	51	52	D3	20	20	μA																									
49	50	51	52	D3	20	20	μA																										
50	51	52	D3	20	20	μA																											
51	52	D3	20	20	μA																												
52	D3	20	20	μA																													

See footnotes at end of device type 01.

TABLE III. Group A inspection for device type 01 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions																Limits		Unit				
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Min		Max			
9 Tc = 25°C	t _{PHL2}	3003 Fig. 4	Cases 1/2, X	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V _{CC}	D0 to W	3	25	ns			
				IN	IN	IN	IN	OUT	GND	GND	GND	GND	GND	GND	GND	5.0 V					D1 to W	"	"	"	"	
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D2 to W	"	"	"	"
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D3 to W	"	"	"	"
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D4 to W	"	"	"	"
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D5 to W	"	"	"	"
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D6 to W	"	"	"	"
				IN	IN	IN	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	D7 to W	"	"	"	"
				IN	IN	IN	IN	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	S to Y	"	47	"
				IN	IN	IN	IN	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	5.0 V	5.0 V	5.0 V	5.0 V	5.0 V	S to Y	"	37	"
10	t _{PHL3}	"	"	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	S to W	"	29	"		
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	S to W	"	35	"	
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	S to W	"	48	"	
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to Y	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to Y	"	"	"	"
11	t _{PHL5}	"	"	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to Y	"	35	"		
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to Y	"	"	"	"	
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to W	"	28	"	
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	B to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	B to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	C to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	A to W	"	"	"	"
				GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	B to W	"	"	"	"

10 Same tests and terminal conditions as for subgroup 9, except T_C = +125°C and for following limits:
t_{PHL1} = 3 to 56 ns; t_{PHL3} = 3 to 47 ns; t_{PHL2} = 3 to 39 ns; t_{PHL4} = 3 to 38 ns;
t_{PH6} = 3 to 71 ns; t_{PH3} = 3 to 56 ns; t_{PH4} = 3 to 44 ns; t_{PH5} = 3 to 53 ns;
t_{PH6} = 3 to 72 ns; t_{PH5} = 3 to 53 ns; t_{PH6} = 3 to 42 ns; t_{PH6} = 3 to 56 ns.

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

1/ Case X and 2 pins not referenced are NC.

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

Test	Min/Max limits (mA) for circuit						
	A	B	C	D	E	F	G
I _{IL1}	-16/-40	-12/-36	-16/-40	-03/-30	-002/-150	-105/-345	0/-15
I _{IL2} & I _{IL3}	-12/-36	-12/-36	-16/-40	-03/-30	-002/-150	-16/-40	0/-15
						-10/-34	

3/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: H ≥ 1.5 V, L ≤ 1.5 V.

TABLE III. Group A inspection for device type 02.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	V _{OH}	3006	1G	1G	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	1Y	2.5	2.5	V					
			2	0.7 V	0.7 V	2.0 V	2.0 V	-4 mA								0.7 V	0.7 V	2Y	2.5	2.5	V				
			3	2.0 V															1Y	0.4	0.4	V			
			4							4 mA								2.0 V	2Y	0.4	0.4	V			
	V _{IC}	5	-18 mA															1G	-1.5	-1.5	V				
		6																B			V				
		7																1C3			V				
		8				-18 mA												1C2			V				
		9																1C1			V				
		10																1C0			V				
		11																2C0			V				
		12																2C1			V				
		13																2C2			V				
		14																2C3			V				
		15																A			V				
		16																2G			V				
I _{IL1}	17	0.4 V	GND														GND			2/	2/	mA			
	18	GND	0.4 V														GND			B			mA		
	19		5.5 V	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V										5.5 V			1C3			mA	
	20		5.5 V	5.5 V	0.4 V	5.5 V	5.5 V	5.5 V										GND			1C2			mA	
	21		GND	5.5 V	0.4 V	5.5 V	5.5 V	5.5 V											5.5 V			1C1			mA
	22					0.4 V	5.5 V	5.5 V											GND			1C0			mA
	23						5.5 V	5.5 V											GND			2C0			mA
	24																		5.5 V			2C1			mA
	25																		5.5 V			2C2			mA
	26																		5.5 V			2C3			mA
	27																		0.4 V			A			mA
	28																		0.4 V			A			mA
	29	2.7 V	GND																GND			2G			mA
	30	GND	2.7 V																5.5 V			1G			mA
	I _{H1}	31	5.5 V	GND	2.7 V	GND	GND	GND											GND			B			mA
		32		GND	2.7 V	GND	2.7 V	GND												5.5 V			1C3		
33			5.5 V	GND	2.7 V	GND	2.7 V	GND											5.5 V			1C2			mA
34						GND	2.7 V	GND											5.5 V			1C1			mA
35							GND	2.7 V	GND										5.5 V			1C0			mA
36																			5.5 V			2C0			mA
37																			GND			2C1			mA
38																			5.5 V			2C2			mA
39																			5.5 V			2C3			mA
40																			5.5 V			A			mA
41		7.0 V	GND																2.7 V			A			mA
42		GND	7.0 V																2.7 V			2G			mA
43		5.5 V	GND	7.0 V															5.5 V			1G			mA
44			GND	7.0 V	GND	7.0 V	GND	GND											5.5 V			B			mA
45			5.5 V	GND	7.0 V	GND	7.0 V	GND											5.5 V			1C3			mA
46																			5.5 V			1C2			mA
47																		5.5 V			1C1			mA	
48																		5.5 V			2C0			mA	
49																		5.5 V			2C1			mA	
50																		5.5 V			2C2			mA	
51																		5.5 V			2C3			mA	
52																		5.5 V			A			mA	
I _{OS}	53	GND	GND	GND	GND	GND	GND											5.5 V			2G			mA	
	3011																	5.5 V			GND			mA	
	3005																	5.5 V			GND			mA	
I _{CC1}	54																							mA	
	3005																							mA	

See footnotes at end of device type 02.

TABLE III. Group A inspection for device type 02 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X																Measured terminal	Limits		Unit
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
2			1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V _{CC}				
3			Same tests, terminal conditions, and limits as subgroup 1, except T _C = +125°C and V _{IC} tests are omitted.																			
7	Functional tests	3014	56	A	A	A	A	A	L	GND	L	L	A	A	A	A	A	5.0 V			1Y, 2Y	
57			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	"			"
58			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			"
59			B	"	"	"	"	"	"	"	H	H	A	"	"	"	"	"	B			"
60			"	"	"	"	"	"	"	"	L	L	B	"	"	"	"	"	"			"
61			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			"
62			A	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			"
63			B	"	"	"	"	"	"	"	H	H	"	"	"	"	"	"	A			"
64			B	"	"	"	"	"	"	"	L	L	"	"	"	"	"	"	B			"
65			A	"	"	"	"	"	"	"	L	L	"	"	"	"	"	"	B			"
66			B	"	"	"	"	"	"	"	H	H	"	"	"	"	"	"	B			"
67			B	"	"	"	"	"	"	"	L	L	"	"	"	"	"	"	B			"
68			A	"	"	"	"	"	"	"	L	L	"	"	"	"	"	"	A			"
69			B	"	"	"	"	"	"	"	H	H	"	"	"	"	"	"	B			"
70			B	"	"	"	"	"	"	"	L	L	"	"	"	"	"	"	B			"
8			Repeat subgroup 7 tests at T _C = +125°C and -55°C.																			
9	t _{PLH1}	3003 Fig. 4	71	GND	GND				IN	OUT	GND						GND	5.0 V	1C0 to 1Y	3	20	
72			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C1 to 1Y	"	"
73			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C2 to 1Y	"	"
74			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C3 to 1Y	"	"
75			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C0 to 2Y	"	"
76			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C1 to 2Y	"	"
77			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C2 to 2Y	"	"
78			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C3 to 2Y	"	"
79			"	"	"	"	"	"	"	"	IN	OUT	"	"	"	"	"	"	"	1C0 to 1Y	"	31
80			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C1 to 1Y	"	"
81			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C2 to 1Y	"	"
82			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1C3 to 1Y	"	"
83			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C0 to 2Y	"	"
84			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C1 to 2Y	"	"
85			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C2 to 2Y	"	"
86			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2C3 to 2Y	"	"
87	"	"	"	"	"	"	"	"	5.0 V	OUT	"	"	"	"	"	"	"	1G to 1Y	"	29		
88	"	"	"	"	"	"	"	"	"	OUT	"	"	"	"	"	"	"	2G to 2Y	"	29		
89	"	"	"	"	"	"	"	"	5.0 V	OUT	"	"	"	"	"	"	"	1G to 1Y	"	37		
90	"	"	"	"	"	"	"	"	"	OUT	"	"	"	"	"	"	"	2G to 2Y	"	37		
91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 1Y	"	34		
92	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 1Y	"	"		
93	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	B to 1Y	"	"		
94	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	B to 2Y	"	"		
95	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 1Y	"	43		
96	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 2Y	"	"		
97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	B to 2Y	"	"		
98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	B to 2Y	"	"		
10	Same tests and terminal conditions as for subgroup 9, except T _C = +125°C and for following limits:																					
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C																					

See footnotes at end of device type 02.

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

1/ Case X and 2 pins not referenced are NC.
 2/ I_{IL} limits are as follows:

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I_{IL1}	Tests 17 and 28 -001/-0.15 tests 18 through 27 -0.12/-0.36	-0.12/-0.36	-0.12/-0.36	-0.03/-0.30	Tests 17 and 28 -0.016/-0.40 tests 18 and 27 -0.12/-0.36 Tests 19 through 26 -0.16/-0.40	-0.12/-0.36	0/-0.15

3/ Inputs: A ≥ 2.5 V; B ≤ 0.4 V.
 Outputs: H ≥ 1.5 V; L ≤ 1.5 V

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases Test no.	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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_{OH}	3006	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4A	4B	4Y	1Y	20	2.5	V												
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"										
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"									
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"									
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
	V_{OL}	3007	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"									
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
	V_{IC}	3009	"	"	9	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"								
					10	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"						
					11	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
					12	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
					13	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
					14	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
15					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
16					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
17					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
18					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
I_{IL1}					3010	"	"	19	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
								20	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
								21	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
								22	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
								23	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
								24	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
								25	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
								26	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	27	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
	28	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
	29	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
	30	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	31	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	32	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	33	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	34	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	35	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
	I_{IL2}	3010	"	"				36	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
37					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"						
38					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
39					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
40					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
41					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
42					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
43					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
44					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
45					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
46					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
47					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
48					"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
I_{OS}					3011	"	"	49	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
								50	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
								51	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
								52	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
								53	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	54	"	"	"				"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"					
I_{CCI}	3005	"	"	55	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"									
				56	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"							

2 Same tests, terminal conditions and limits as subgroup 1, except $T_c = +125^\circ\text{C}$ and V_{IC} tests omitted.
3 Same tests, terminal conditions and limits as subgroup 1, except $T_c = -55^\circ\text{C}$ and V_{IC} tests omitted.

See footnotes at end of device type 03.

TABLE III. Group A inspection for device type 03 - Continued.

1/ Pins not designated are high ≥ 2.0 V; low ≤ 0.7 V; or open. Case X and 2 pins not referenced are NC.

2/ I_{IL} limits are as follows:

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I_{IL1}	-1.35/-370	-0.16/-40	-20/-44	-.03/-30	0/-20	-.12/-36	0/-15
I_{IL2}	-270/-740	-.12/-36	-.40/-88	-.06/-60	0/-10 for test 27 0/-10 for test 28	-.24/-72 except -.12/-36 test 28	0/-15

3/ For circuit F, test 46 I_{IH} limit is 20 μ A.

For circuit F, test 48 I_{IH} limit is 100 μ A.

4/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: H ≥ 1.5 V, L ≤ 1.5 V.

TABLE III. Group A inspection for device type 04.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases 1/2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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_{OH}	3006	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4A	G	19	20	1Y	2.5	V			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"	
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"	
	V_{OL}	3007	"	"	2.0 V	4 mA	"	"	2.0 V	4 mA	"	"	"	"	"	"	"	"	"	1Y	0.4	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"		
	V_{IC}	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
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		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"				
I_{HL1}	3009	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
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	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	I_{HL2}	3010	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
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		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
I_{HL3}		3010	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	I_{HL4}	3010	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
I_{OS}		3011	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
	I_{CCI}	3005	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
"		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			

2 Same tests, terminal conditions and limits as subgroup 1, except $T_c = +125^\circ\text{C}$ and V_{IC} tests omitted.
3 Same tests, terminal conditions and limits as subgroup 1, except $T_c = -55^\circ\text{C}$ and V_{IC} tests omitted.

See footnotes at end of device type 04.

TABLE III. Group A inspection for device type 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Cases 1/ 2, X	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Limits		Unit				
																				Min	Max					
7	Functional tests	3014	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V _{CC}	All outputs	3/		ns				
				54	A	A	H	A	H	GND	H	A	H	A	A	A	A	A					A	5.0 V		
				55	B	A	A	A	A	A	A	A	A	A	A	A	A	A					A	A	"	
				56	"	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	"	
				57	"	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	"	
				58	"	A	L	L	L	L	L	L	L	L	L	L	L	L					L	L	"	
				59	"	A	A	L	A	A	L	L	A	A	A	A	L	A					A	"	"	
				60	"	B	H	H	H	H	H	H	H	H	H	H	H	H					H	"	"	
				61	"	A	L	L	L	L	L	L	L	L	L	L	L	L					L	L	"	"
				62	"	A	A	L	A	A	L	L	L	L	L	L	L	L					L	L	"	"
				63	"	A	B	H	A	B	H	A	B	H	A	B	H	A					B	H	"	"
				8	Repeat subgroup 7 tests at T _C = +125°C and T _C = -55°C	3003 Fig. 4	GND	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT					OUT	GND	GND	5.0 V
64	5.0 V	OUT	OUT					IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	1B to 1Y	"	"	"		
66	GND	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	2A to 2Y	"	"	"	
67	5.0 V	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	2B to 2Y	"	"	"	
68	5.0 V	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	3A to 3Y	"	"	"	
69	GND	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	3B to 3Y	"	"	"	
70	5.0 V	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	4A to 4Y	"	"	"	
71	GND	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	4B to 4Y	"	"	"	
72	GND	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	1A to 1Y	"	"	"	
73	5.0 V	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	1B to 1Y	"	"	"	
74	GND	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	2A to 2Y	"	"	"	
75	5.0 V	IN	OUT					OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	2B to 2Y	"	"	"	
76	5.0 V	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	3B to 3Y	"	"	"					
77	GND	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	3A to 3Y	"	"	"					
78	5.0 V	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	4A to 4Y	"	"	"					
79	GND	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	4B to 4Y	"	"	"					
80	GND	5.0 V	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	"	G to 1Y	"	22					
81	"	"	5.0 V	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 1Y	"	"	"				
82	"	"	"	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 2Y	"	"	"				
83	"	"	"	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 3Y	"	"	"				
84	5.0 V	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	5.0 V	"	G to 4Y	"	23					
85	"	"	5.0 V	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 1Y	"	"	"				
86	"	"	"	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 2Y	"	"	"				
87	"	"	"	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 3Y	"	"	"				
88	"	"	5.0 V	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	"	G to 4Y	"	"	"				
89	"	"	"	5.0 V	GND	OUT	OUT	IN	IN	OUT	OUT	IN	IN	OUT	OUT	OUT	GND	"	S to 1Y	"	25					
90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	S to 2Y	"	"	"				
91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	S to 3Y	"	"	"				
92	"	"	"	"	GND	5.0 V	OUT	"	"	"	"	"	"	"	"	"	"	"	S to 4Y	"	"	"				
93	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	S to 1Y	"	"	29				
94	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	S to 2Y	"	"	"				
95	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	S to 3Y	"	"	"				
10	Same tests and terminal conditions as for subgroup 9, except T _C = +125°C and for following limits: t _{PHL1} = 3 to 26 ns; t _{PHL2} = 3 to 33 ns; t _{PHL3} = 3 to 35 ns; t _{PHL4} = 3 to 38 ns; t _{PHL5} = 3 to 44 ns.																									
11	Same tests, terminal conditions and limits as for subgroup 10, except T _C = -55°C																									

1/ Case X and 2 pins not referenced are NC.

2/ I_L limits are as follows:

Test	Min/Max limits (mA) for circuits							
	A	B	C	D	E	F	G	
I _{L1}	-135/-370	-016/-40	-20/-44	-03/-30	0/-20	-12/-36	0/-15	0/-15
I _{L2}	-270/-740	-12/-36	-40/-88	-06/-60	0/-10 for test 27	-24/-72 except	0/-15	0/-15
					0/-10 for test 28	-12/-36 test 28		

3/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: H ≥ 1.5 V, L ≤ 1.5 V.

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases 1/2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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_{OH}	3006	1	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V _{CC}	20	2.4	2.4	V							
								-1 mA		0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V	0.7 V					4.5 V									
								4 mA				4 mA																0.4		
																													0.4	
		V_{OL}	3007	2																										
		V_{IC}		3																										
				4																										
				5																										
				6																										
				7																										
				8																										
				9																										
				10																										
				11																										
				12																										
				13																										
			14																											
			15																											
			16																											
	I_{IL1}	3009	17	0.4 V	5.5 V	5.5 V	5.5 V																							
			18	5.5 V	0.4 V	5.5 V																								
			19																											
			20																											
			21																											
			22																											
			23																											
			24																											
	I_{IL2}		25																											
	I_{IL3}		26																											
			27																											
			28																											
	I_{IH1}	3010	29	2.7 V	GND	GND	GND																							
			30	GND	2.7 V	GND																								
			31																											
			32																											
			33																											
			34																											
			35																											
			36																											
			37	GND	GND	GND	GND																							
			38																											
			39																											
			40																											
	I_{IH2}		41	7.0 V																										
			42	GND	7.0 V	GND																								
			43	GND	7.0 V	GND																								
			44																											
			45																											
			46																											
			47																											
			48																											
			49	GND	GND	GND	GND																							
			50																											
			51																											
			52																											

See footnotes at end of device type 05.

TABLE III. Group A inspection for device type 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions																Measured terminal	Limits		Unit
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		Min	Max	
1 Tc = 25°C	I _{OPH}		D3	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V _{CC}	20	20	μA				
			53	5.5 V	5.5 V	2.7 V	2.0 V	GND	GND	5.5 V	5.5 V	5.5 V	0.7 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V		5.5 V			
	I _{OZL}					0.4 V						2.0 V											
			54				0.4 V						2.0 V										
	I _{OS} I _{CC1} I _{CC2}		3011			GND		GND					5.5 V						mA				
			3011			GND																	
			3005	5.5 V	5.5 V																		
			3006	5.5 V	5.5 V	5.5 V																	
	2	Same tests, terminal conditions and limits as subgroup 1, except Tc = +125°C and V _{IC} tests omitted.																					
	3	Same tests, terminal conditions and limits as subgroup 1, except Tc = -55°C and V _{IC} tests omitted.																					
7 Tc = 25°C	Functional tests	3014	61	B	B	A	H	L	L	B	B	B	B	B	B	B	B	B	5.0 V	4/			
			62	A	A	A	H	H	L	L	B	B	B	B	B	B	B	B	B		5.0 V		
			63	"	"	"	L	H	H	L	"	"	"	"	"	"	"	"	"		"		
			64	"	"	"	H	L	L	"	"	"	"	"	"	"	"	"	"		"		
			65	"	"	B	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
			66	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			67	"	"	B	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
			68	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			69	B	"	"	L	H	"	"	"	"	"	"	"	"	"	"	"		"		
			70	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			71	"	"	"	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
			72	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			73	"	"	"	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
			74	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			75	"	"	"	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
			76	"	"	"	"	H	L	"	"	"	"	"	"	"	"	"	"		"		
			77	"	"	"	"	L	H	"	"	"	"	"	"	"	"	"	"		"		
8 9 Tc = 25°C	Repeat subgroup 7 tests at Tc = +125°C and Tc = -55°C. t _{PH1} t _{PLH2}	3003 (Fig. 4)	78			IN	OUT			GND	GND	GND	GND	GND	GND	GND	GND	5.0 V	3	33	ns		
			79			IN																	
			80			IN																	
			81			IN																	
			82										5.0 V	GND	GND	GND	GND	GND	GND		IN		
			83																				
			84																				
			85																				
			86																				
			87						IN														
			88						IN														
			89			IN																	
			90																				
			91																				
92																							
93																							
94																							
95																							
96																							
97			IN																				
98																							
99																							
100																							
101																							

See footnotes at end of device type 05.

TABLE III. Group A inspection for device type 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Table with columns for Subgroup, Symbol, MIL-STD-883 method, Cases E, F, 1-129, and Measured terminal. It contains test conditions for various pins and subgroups, including test numbers, voltages, and terminal states (e.g., D0 to W, A, B, C, S, W, Y).

1/ Case X and 2 pins not referenced are NC.

2/ IIL limits are as follows:

Table showing Min/Max limits (mA) for circuits A, B, C, D, E, F, G. Values range from -0.16 to 0 mA.

3/ Ios limits for circuits A, B, D, F, and G are -15 to -100 mA.

4/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: H ≥ 1.5 V, L ≤ 1.5 V.

TABLE III. Group A inspection for device type 06.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Test no.	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	V _{OH}	3006	S	1A	1Y	2A	2Y	GND	3Y	3B	3A	4Y	4A	4A	4Y	4Y	4Y	1Y	2.4		V											
		"	"	2.0V	-1 mA			-1 mA				2.0V							"	"	"	"										
		"	"																	"	"	"	"									
		"	"																	"	"	"	"									
	V _{OL}	3007	"	"	5	2.0V																	0.4									
		"	"	"	6																											
		"	"	"	7						0.7V	12 mA																				
		"	"	"	8																											
	V _{IC}	3009	"	"	9	-18 mA																		-1.5								
					10																											
					11																											
					12																											
					13																											
					14																											
					15																											
					16																											
					17																											
					18																											
I _{IL1}	3010	"	"	19	GND																		2/									
				20	5.5V																											
				21	GND																											
				22	5.5V																											
				23	5.5V																											
				24	GND																											
				25	5.5V																											
				26	GND																											
				27																												
				28	0.4V																											
				I _{IH1}	3010	"	"	29	5.5V																		2/					
								30	GND																							
								31	5.5V																							
								32	GND																							
								33	GND																							
								34	5.5V																							
								35	GND																							
								36	5.5V																							
37																																
38	5.5V																															
I _{IH2}	3010	"	"					39	GND																			100				
								40	5.5V																							
				41	GND																											
				42	GND																											
				43	5.5V																											
				44	GND																											
				45	5.5V																											
				46																												
				47	2.7V																											
				48	7.0V																											
				I _{OZH}	3010	"	"	49	2.0V																			20				
								50	"																							
51	"																															
52	"																															
53	0.7V																															
54	"																															
I _{OZL}	3010	"	"	55	"																											
				56	"																											
				57	"																											
				58	"																											

See footnotes at end of device type 06.

TABLE III. Group A inspection for device type 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Table with columns for Subgroup, Symbol, MIL-STD-883 method, Cases 1/2, X, Cases E, F, 1-103, Measured terminal, Limits (Min, Max), and Unit. The table is organized into subgroups (7-10) and contains detailed test conditions and results.

See footnotes at end of device type 06.

TABLE III. Group A inspection for device type 06 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions											Limits		Unit					
				1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	Measured terminal	Min
9 Tc = 25°C	t _{PHZ3}	3003 Fig. 5	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	4Y	4A	G	V _{CC}	G to 1Y	3	35	ns		
			"	"	5.0 V	OUT	5.0 V	OUT	"	OUT	5.0 V	"	"	"	"	"	"	G to 2Y	"	"	"	
			"	"	"	"	"	"	"	"	"	"	OUT	5.0 V	"	"	"	"	G to 3Y	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	5.0 V	"	"	"	G to 4Y	"	"	"
			"	"	"	GND	OUT	"	"	"	"	"	"	"	"	"	"	"	"	G to 1Y	"	30
10	Same tests, terminal conditions and limits as subgroup 9, except T _c = +125°C and for the following: t _{PHL1} and t _{PHL4} = 3 to 35 ns; t _{PHL5} = 3 to 39 ns; t _{PHL6} , t _{PHL9} , and t _{PHL20} = 3 to 53 ns; t _{PHL21} = 3 to 45 ns.		"	"	"	"	GND	"	"	"	"	"	"	"	"	"	"	G to 2Y	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G to 2Y	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G to 3Y	"	"	"
11	Same tests, terminal conditions and limits as subgroup 10, except T _c = -55°C.	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G to 3Y	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G to 4Y	"	"	"	

1/ Case X and 2 pins not referenced are NC.

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

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I _{IL1}	-15/-38	-16/-40	-20/-44	0/-30	0/-20	-12/-36	0/-15
I _{IL2} test 27	0/-20	-16/-40	-20/-44	0/-30	0/-10	-12/-36	0/-15
I _{IL2} test 28	0/-20	-32/-80	-40/-88	0/-60	0/-10	-24/-72	0/-15

3/ I_{OS} limits for circuits B, C, D, F, and G are -15 to -100 mA.

4/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: Output voltages shall be either:

- a. H = 2.5 volts minimum and L = 0.4 volt maximum when using a high speed checker double comparator, or
- b. H ≥ 1.5 volts and L ≤ 1.5 volts when using a high speed checker single comparator.
- c. Attributes data only is required for subgroups 7 and 8.

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases 1/2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	V _{OH}	3006	S	1A	1Y	2A	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	0.7 V	4.5 V	1Y	2.4	V				
		"	"	"	-1 mA	"	"	-1 mA	"	"	"	0.7 V	"	"	"	"	"	2Y	"	"				
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"			
		"	"	"	"	"	"	"	"	"	"	"	-1 mA	"	"	"	"	"	4Y	"	"			
	V _{OL}	3007	"	"	2.0 V	12 mA	"	"	"	"	"	"	"	"	"	"	"	"	1Y	0.4	"			
		"	"	"	"	"	2.0 V	12 mA	"	"	"	"	"	"	"	"	"	"	2Y	"	"			
		"	"	"	"	"	"	"	"	12 mA	2.0 V	"	"	"	"	"	"	"	3Y	"	"			
		"	"	"	"	"	"	"	"	"	"	"	12 mA	2.0 V	"	"	"	"	4Y	"	"			
	V _{IC}	"	"	"	-18 mA	"	"	"	"	"	"	"	"	"	"	"	"	"	1A	-1.5	"			
		"	"	"	"	"	-18 mA	"	"	"	"	"	"	"	"	"	"	"	1B	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2A	"	"			
		"	"	"	"	"	-18 mA	"	"	"	"	"	"	"	"	"	"	"	2B	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3A	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1A	"	"			
		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	GND	2	mA			
I _{HL1}	3009	"	"	GND	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	1A	"	"				
	"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	1B	"	"				
	"	"	"	GND	"	0.4 V	"	"	"	"	"	"	"	"	"	"	"	2A	"	"				
	"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	2B	"	"				
	"	"	"	5.5 V	"	0.4 V	"	"	"	"	"	"	"	"	"	"	"	3B	"	"				
	"	"	"	GND	"	"	"	"	"	"	0.4 V	"	"	"	"	"	"	3A	"	"				
	"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	4B	"	"				
	"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	4A	"	"				
	"	"	"	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	G	"	"				
	"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	1A	"	"				
	I _{HL2}	3010	"	"	5.5 V	2.7 V	"	"	"	"	"	"	"	"	"	"	"	"	1A	20	μ A			
		"	"	"	GND	"	2.7 V	"	"	"	"	"	"	"	"	"	"	"	1B	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	2A	"	"			
		"	"	"	GND	"	2.7 V	"	"	"	"	"	"	"	"	"	"	"	2B	"	"			
		"	"	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	3B	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	2.7 V	"	"	"	"	"	"	3A	"	"			
		"	"	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	4B	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	4A	"	"			
"		"	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	G	"	"				
"		"	"	5.5 V	"	7.0 V	"	"	"	"	"	"	"	"	"	"	"	1A	100	"				
I _{HL3}		3010	"	"	GND	"	7.0 V	"	"	"	"	"	"	"	"	"	"	"	1B	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	2A	"	"			
		"	"	"	GND	"	7.0 V	"	"	"	"	"	"	"	"	"	"	"	2B	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	3B	"	"			
		"	"	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	3A	"	"			
		"	"	"	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	4B	"	"			
		"	"	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	4A	"	"			
		"	"	"	2.7 V	"	"	"	"	"	"	"	"	"	"	"	"	"	G	"	"			
	"	"	"	7.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	S	40	"				
	"	"	"	7.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	S	200	"				
	I _{OL2}	49	"	"	2.0 V	2.7 V	"	"	"	"	"	"	"	"	"	"	"	"	1Y	20	"			
		50	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"			
51		"	"	"	"	"	"	"	"	2.7 V	2.0 V	"	"	"	"	"	"	3Y	"	"				
52		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"				
53		"	"	0.7 V	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	1Y	-20	"				
54		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"				
55	"	"	"	"	"	"	"	"	0.4 V	"	"	"	"	"	"	"	3Y	"	"					
56	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"					

See footnotes at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X																	Limits	Unit	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
2	I_{CS}	3011	S	1A	1B	1Y	2A	2B	2Y	3A	3B	3Y	4A	4B	4Y	V _{CC}	15	"				
	I_{CC2}	"	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	V _{CC}	9	"				
	I_{CC3}	"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	V _{CC}	15	"				
																V _{CC}	9	"				
																V _{CC}	19	"				
																V _{CC}	9	"				
																V _{CC}	19	"				
2	Same tests, terminal conditions and limits as subgroup 1, except $T_c = +125^\circ\text{C}$ and V_{IC} tests omitted.																					
3	Same tests, terminal conditions and limits as subgroup 1, except $T_c = -55^\circ\text{C}$ and V_{IC} tests omitted.																					
7 $T_c = 25^\circ\text{C}$	Functional tests	3014	B	B	B	H	H	GND	H	H	H	B	B	B	H	B	B	B	5.0 V			
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			8	Repeat subgroup 7 tests at $T_c = +125^\circ\text{C}$ and $T_c = -55^\circ\text{C}$																		
t_{PLH1}	3003	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	72	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	73	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	74	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	75	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	76	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	77	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	78	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	79	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	80	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	81	5.0 V		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	82	GND		IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN		
	83	5.0 V	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN			
84	5.0 V	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN				
85	GND	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN				
86	5.0 V	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN				
87	GND	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN				
88	IN	5.0 V	GND	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT				
89	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
90	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
91	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
92	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
93	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
94	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
95	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
96	GND	GND	GND	OUT	IN	OUT	GND	5.0 V	5.0 V	GND	5.0 V	5.0 V	GND	5.0 V	5.0 V	GND	5.0 V	5.0 V				
97	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
98	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
99	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
100	5.0 V	5.0 V	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V	OUT	5.0 V			
101	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
102	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
103	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"			

See footnotes at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions											Limits		Unit					
				1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16		
9 $T_C = 25^\circ\text{C}$	t_{PHZ}	3003 Fig. 4	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	4Y	4A	G	V _{CC}	3	35	ns			
			GND	GND	OUT	OUT	OUT	OUT	OUT	OUT	OUT	GND	GND	OUT	GND	IN	"	"	"	"		
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
10	Same tests, terminal conditions and limits as subgroup 9, except $T_C = +125^\circ\text{C}$ and for the following: t_{PHL1} and $t_{PHL2} = 3$ to 35 ns; t_{PHL5} and $t_{PHL6} = 3$ to 39 ns; t_{PHZ3} , t_{PHZ4} , and $t_{PHZ5} = 3$ to 53 ns; $t_{PHZ6} = 3$ to 45 ns.																					
11	Same tests, terminal conditions and limits as subgroup 10, except $T_C = -55^\circ\text{C}$.																					

1/ Case X and 2 pins not referenced are NC.

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

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I _{IL1}	-0.15/-0.38	-0.16/-0.40	-0.20/-0.44	0/-0.30	0/-0.20	-0.12/-0.36	0/-0.15
I _{IL2} test 27	0/-0.20	-0.16/-0.40	-0.20/-0.44	0/-0.30	0/-0.10	-0.12/-0.36	0/-0.15
I _{IL2} test 28	0/-0.20	-0.32/-0.80	-0.32/-0.80	0/-0.60	0/-0.10	-0.24/-0.72	0/-0.15

3/ I_{OS} limits for circuits B, C, D, F, and G are -15 to -100 mA.

4/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum.

Outputs: Output voltages shall be either:

- a. H = 2.5 volts minimum and L = 0.4 volt maximum when using a high speed checker double comparator, or
- b. H ≥ 1.5 volts and L ≤ 1.5 volts when using a high speed checker single comparator.
- c. Attributes data only is required for subgroups 7 and 8.

TABLE III. Group A inspection for device type 08.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	V _{OH}	3006	1G	1G	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	1Y	2.4	2.4	V			
			2	0.7 V		2.0 V		-1 mA							0.7 V			2Y	2.4				
			3	0.7 V					4 mA		2.0 V					2.0 V			1Y	0.4			
			4													2.0 V			2Y	0.4			
	V _{OL}	3007		-18 mA																			
	V _{IC}																						
	I _{L1}	3009		17	0.4 V																		
				18																			
				19	GND	0.4 V																	
				20																			
21							0.4 V																
22																							
23																							
24												0.4 V											
25																							
26																							
27																							
28																							
29																							
30																							
31																							
32																							
33																							
34																							
35																							
36																							
37																							
38																							
39																							
40																							
I _{H2}			41	7.0 V																			
			42																				
			43																				
			44																				
			45																				
			46																				
			47																				
			48																				
			49																				
			50																				
			51																				
			52																				

See footnotes at end of device type 08.

TABLE III. Group A inspection for device type 08 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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 Tc = 25°C	I _{ozH} I _{ozL}		1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	0.7 V	20	μA				
			2.0 V	0.7 V	0.7 V			2.7 V	0.7 V														
			2.0 V	2.0 V	2.0 V			0.4 V															
			GND	GND	GND			GND															
			3011	3011	3005	3005																	
			58	58	59	60																	
2	I _{os} I _{cc1} I _{cc2}		GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND				
			5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V			
3 Tc = 25°C	Functional tests	3014	B	B	A	A	A	B	B	L	L	GND	L	L	L	A	B	B	A				
8	Repeat subgroup 7 tests at Tc = +125°C and Tc = -55°C.	3003	GND	GND	IN	IN	IN	IN	IN	OUT	OUT	GND	L	L	L	A	B	B	A				
9 Tc = 25°C	t _{PH1}	(Fig. 4)	GND	GND	IN	IN	IN	IN	IN	OUT	OUT	GND	L	L	L	A	B	B	A				
10	t _{PH5}		GND	GND	IN	IN	IN	IN	IN	OUT	OUT	GND	L	L	L	A	B	B	A				

See footnotes at end of device type 08.

TABLE III. Group A inspection for device type 08 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Terminal conditions																Limits		Unit			
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Min		Max		
9 Tc = 25°C	t _{PZH3} t _{PZL3}	3003 (Fig. 4)	95	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V _{CC}	1G to 1Y	3	46	ns		
			96	IN	5.0 V	5.0 V					OUT	GND					5.0 V	5.0 V	IN		2G to 2Y	"	46	"	
			97	IN	GND						GND	OUT										1G to 1Y	"	28	"
			98		GND							OUT										2G to 2Y	"	28	"
			99	IN	5.0 V	5.0 V						OUT										1G to 1Y	"	46	"
10	t _{PH23} t _{PL23}		100	IN	5.0 V											5.0 V				2G to 2Y	"	46	"		
			101	IN	GND						OUT										1G to 1Y	"	32	"	
			102		GND							OUT									2G to 2Y	"	32	"	
10	Same tests, terminal conditions and limits as subgroup 9, except T _c = +125°C and limits as follows: t _{PLH1} = 3 to 45 ns; t _{PHL1} = 3 to 38 ns; t _{PHL5} = 3 to 75 ns; t _{PHL6} = 3 to 56 ns; t _{PZH3} = 3 to 69 ns; t _{PZL3} = 3 to 42 ns, and t _{PH23} = 3 to 69 ns; t _{PL23} = 3 to 48 ns.																								
11	Same tests, terminal conditions and limits as subgroup 10, except T _c = -55°C.																								

1/ Case X and 2 pins not referenced are NC.

2/ I_L limits shall be as follows:

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I _{L1}	18 through 27 -.12/- .36 except test 28 and 17 -.001/- .15	-.12/- .36	-.12/- .36	-.03/- .30	Test 18 and 27 -.12/- .36 Test 17 and 28 -.16/- .40 Tests 19 through 26 -.16/- .40	-.12/- .36	0/- .15

3/ I_{OS} limits for circuits B, D, E, F, and G are -15 to -100 mA.

4/ Inputs: A ≥ 2.4 V minimum, B ≤ 0.4 V maximum.

Outputs: Output voltages shall be either:

- a. H = 2.5 volts minimum and L = 0.4 volt maximum when using a high speed checker double comparator, or
- b. H ≥ 1.5 volts and L ≤ 1.5 volts when using a high speed checker single comparator.
- c. Attributes data only is required for subgroups 7 and 8.

TABLE III. Group A inspection for device type 09.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 V; or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F, 2, X	Cases 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit		
					B2	A2	A1	B1	C2	D2	D1	GND	C1	WS	CP	QD	QC	QB	QA	V _{CC}		Min	Max			
1 T _c = 25°C	V _{OH}	3006		1	2.0 V																QA	2.5		V		
		"		2	2.0 V																	QB	"		"	
		"		3		2.0 V																QC	"		"	
		"		4			2.0 V															QD	"		"	
	V _{OL}	3007		5																		QA	0.4		"	
		"		6	0.7 V																	QB	"		"	
		"		7		0.7 V																QC	"		"	
		"		8			0.7 V															QD	"		"	
	V _{IC}			9	-18 mA																	QA			"	
				10																		QB			"	
				11																		QC			"	
				12																		QD			"	
				13	-18 mA																		B2			"
				14																			A2			"
				15																			A1			"
				16																			B1			"
				17																			C2			"
				18																			D2			"
I _{IH1}	3009		19	0.4 V																	C1			"		
	"		20		0.4 V																	WS			"	
	"		21																			CP			"	
	"		22																			B2			"	
	"		23																			A2			"	
	"		24																			A1			"	
	"		25																			B1			"	
	"		26																			C2			"	
	"		27																			D2			"	
	"		28																			D1			"	
I _{IH2}	3010		29	2.7 V																				"		
	"		30		2.7 V																			"		
	"		31																					"		
	"		32																					"		
	"		33																					"		
	"		34																					"		
	"		35																					"		
	"		36																						"	
	"		37																						"	
	"		38																						"	
I _{OS}			39	5.5 V																				"		
			40		5.5 V																			"		
			41																					"		
			42																					"		
			43																					"		
			44																					"		
			45																					"		
			46																					"		
			47																					"		
			48																					"		
I _{CC1}	3011		49																					"		
	"		50																					"		
	"		51																					"		
	"		52																					"		
I _{CC1}	3005		53																					"		
																								"		

See footnotes at end of device type 09.

TABLE III. Group A inspection for device type 09 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V; low ≤ 0.7 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		Unit																		
			2, X	Test no.																	Min	Max																			
2	Same tests, terminal conditions and limits as subgroup 1, except $T_C = +125^\circ\text{C}$ and V_{IC} tests omitted.	3014	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B																			
			B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B																		
	3	Same tests, terminal conditions and limits as subgroup 1, except $T_C = +55^\circ\text{C}$ and V_{IC} tests omitted.	Functional tests	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B																		
				B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B																	
				7	$T_C = 25^\circ\text{C}$	Functional tests	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B															
							B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B														
							8	Repeat subgroup 7 tests at $T_C = +125^\circ\text{C}$ and $T_C = -55^\circ\text{C}$.	Functional tests	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B												
										B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B											
										9	$T_C = 25^\circ\text{C}$	Fig. 4	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B									
													B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B								
													10	Same tests, terminal conditions and limits as subgroup 9, except $T_C = +125^\circ\text{C}$ and limits as follows: $t_{PHL} = 3$ to 43 ns; $t_{PHL} = 3$ to 48 ns.	Functional tests	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B						
																B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B					
																11	Same tests, terminal conditions and limits as subgroup 10, except $T_C = -55^\circ\text{C}$.	Functional tests	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B			
																			B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B		

- 1/ Case X and 2 pins not referenced are NC.
- 2/ Apply normal clock pulse.
- 3/ I_{IL} limits shall be as follows:

Test	Min/Max limits (mA) for circuits					
	A	B	C	D	E	F
I _{IL1}	-16/-40	-	-	-16/-40 except -03/-30 test 27 and 28	-16/-40 except -12/-36 test 27 and 28	-

- 4/ Apply ≥ 3.0 V pulse, then ground, then measure.
- 5/ Inputs: A ≥ 2.5 V minimum, B ≤ 0.4 V maximum. Outputs: H ≥ 1.5 volts, L ≤ 1.5 .

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 personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department of Defense Agency, or within the Military Department'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. Complete part number (see 1.2).
- c. Requirements for delivery of one copy of the quality conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.
- 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.
- j. Requirements for "JAN" marking.

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.
V_{IN}	Voltage level at an input terminal.
V_{IC}	Input clamp voltage.
I_{IN}	Current flowing into an input terminal.
t_{PHZ}	Output disable time (of a three-state output) from high level. The time between the specified reference points on the input and output voltage waveforms with the three-state output changing from the defined high level to a high-impedance (off) state.
t_{PLZ}	Output disable time (of a three-state output) from low level. The time between the specified reference points on the input and output voltage waveforms with the three-state output changing from the defined low level to a high-impedance (off) state.
t_{PZH}	Output enable time (of a three-state output) to high level. The time between the specified reference points on the input and output voltage waveforms with the three-state output changing from a high-impedance (off) state to the defined low level.
t_{PZL}	Output enable time (of a three-state output) to low level. The time between the specified reference points on the input and output voltage waveforms with the three-state output changing from a high-impedance (off) state to the defined low level.

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-38510 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	54LS151
02	54LS153
03	54LS157
04	54LS158
05	54LS251
06	54LS257B
07	54LS258B
08	54LS253
09	54LS298

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

TABLE IV. Manufacturer's designator.

Device type	CIRCUITS						
	A	B	C	D	E	F	G
	Texas Instruments	Advanced Micro Devices	Raytheon	Signetics	Motorola	Fairchild	National
01	X	X	X	X	X	X	X
02	X	X	X	X	X	X	X
03	X	X	X	X	X	X	X
04	X	X	X	X	X	X	X
05	X	X	X	X	X	X	X
06	X	X	X	X	X	X	X
07	X	X	X	X	X	X	X
08	X	X	X	X	X	X	X
09	X	X	X	X	X	X	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.

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

Preparing activity:
 DLA - CC
 (Project 5962-1958)

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

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7, and send to preparing activity.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-M-38510/309E

2. DOCUMENT DATE (YYYYMMDD)
2003-04-10

3. DOCUMENT TITLE

MICROCIRCUITS, DIGITAL, BIPOLAR LOW-POWER SCHOTTKY TTL, SELECTOR/MULTIPLEXER, WITH THREE STATE OUTPUTS, MONOLITHIC SILICON

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First Middle Initial)*

b. ORGANIZATION

c. ADDRESS *(Include Zip Code)*

d. TELEPHONE *(Include Area Code)*
(1) Commercial
(2) DSN
(If applicable)

7. DATE SUBMITTED
(YYYYMMDD)

8. PREPARING ACTIVITY

a. NAME
Defense Supply Center, Columbus

b. TELEPHONE *(Include Area Code)*
(1) Commercial 614-692-0536 (2) DSN 850-0536

c. ADDRESS *(Include Zip Code)*
DSCC-VA
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IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
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