Rochester Electronics

Datasheet

PART NUMBER

54LS298BFA-ROCV

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All re-creations are done with the approval of the Original Component Manufacturer. (OCM)

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-38535
    - Class Q Military
    - Class V Space Level

Qualified Suppliers List of Distributors (QSLD)

- Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OCM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

Rochester Electronics®

Datasheet

54LS158, 54LS298

Microcircuits, Digital, Bipolar, Low-Power Schottky TTL, Data Selector/Multiplexer with Three-State Outputs, Monolithic Silicon

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FOR REFERENCE ONLY

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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:

Device type	Circuit
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:

Outline letter	Descriptive designator	Terminals	Package style
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) 1/	
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) 2/	+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) 3/	
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 $-55°C \le T_C \le +125°C$ 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} = -.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	-.72	mA
Low level input current at select or strobe	I_{IL2}			01, 05	0	-.40	mA
Low level input current at A, B, or C	I_{IL3}			01, 05	0	-.40	mA
Low level input current	I_{IL1}			02, 08	0	-.40	mA
				09	-.03	-.40	
Low level input current at A, B, or C	I_{IL1}			03, 04	0	-.44	mA
Low level input current at select or strobe	I_{IL2}			03, 04	0	-.88	mA
Low level input current at A, B, or output control	I_{IL1}			06, 07	0	-.44	mA
Low level input current at select	I_{IL2}			06	0	-.88	mA
				07	0	-.80	
High level input current	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.7 V		01, 02, 05, 08, 09		20	µA
	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 $-55°C \le T_C \le +125°C$ 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, 1/ 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 $-55°C \le T_C \le +125°C$ 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_{PLH5}		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 $-55°C \le T_C \le +125°C$ 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}	V_{CC} = 5.0 V, C_L = 15 pF minimum R_L = See figure 5.	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.

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	IG	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.

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.

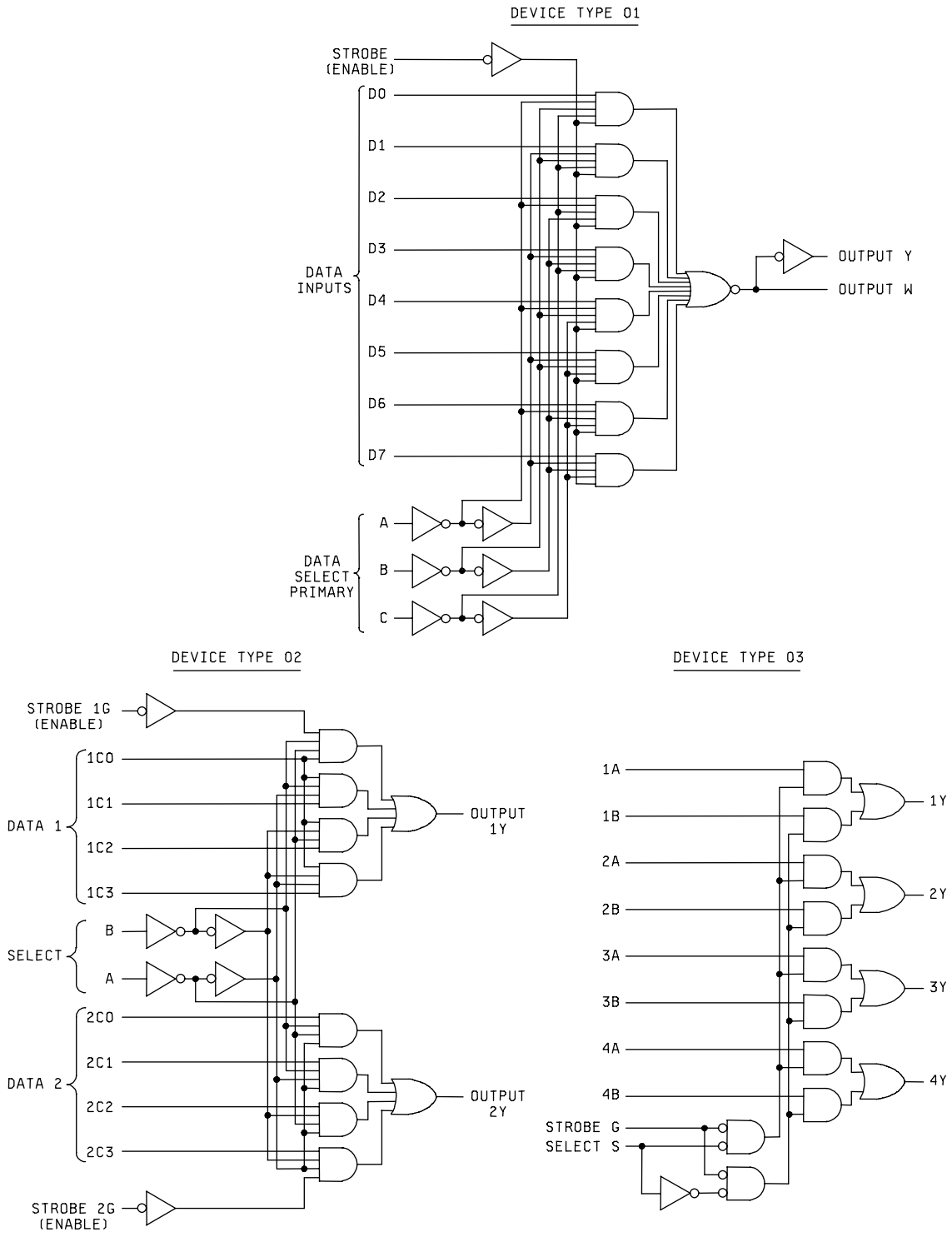
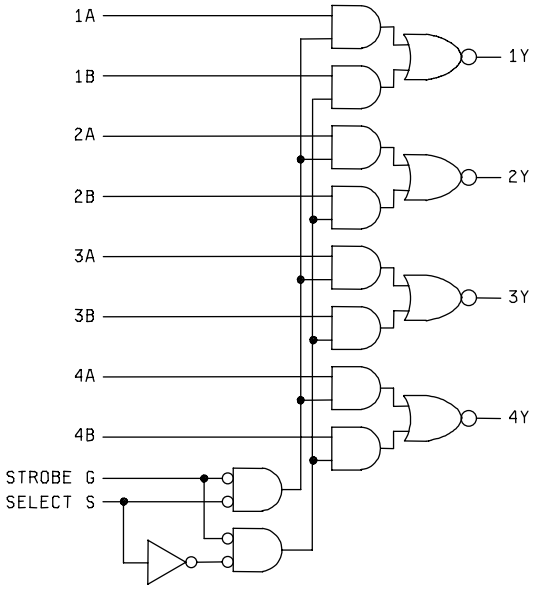


FIGURE 2. Logic diagrams.

DEVICE TYPE 04



DEVICE TYPE 05

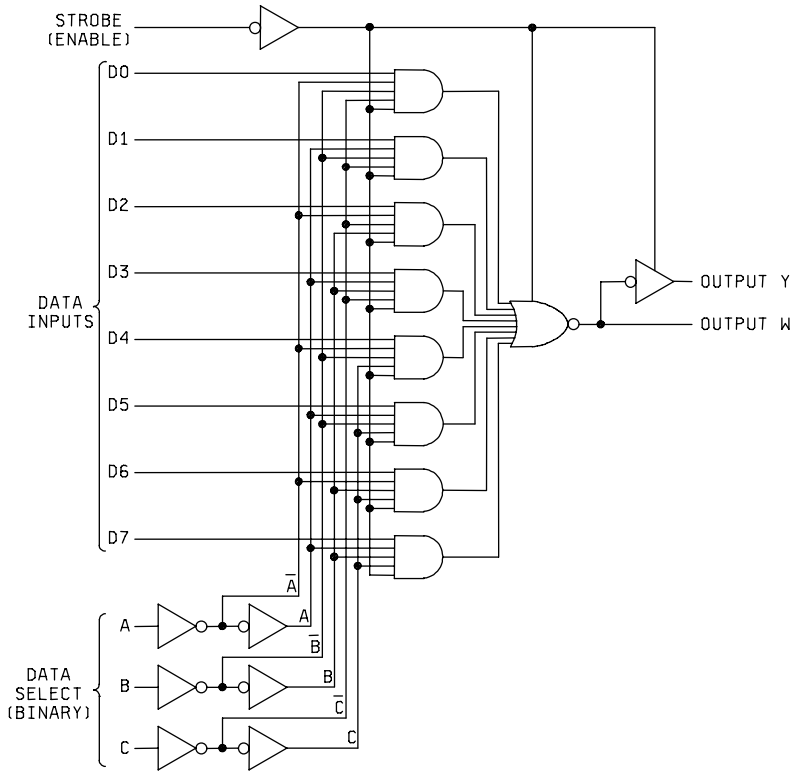
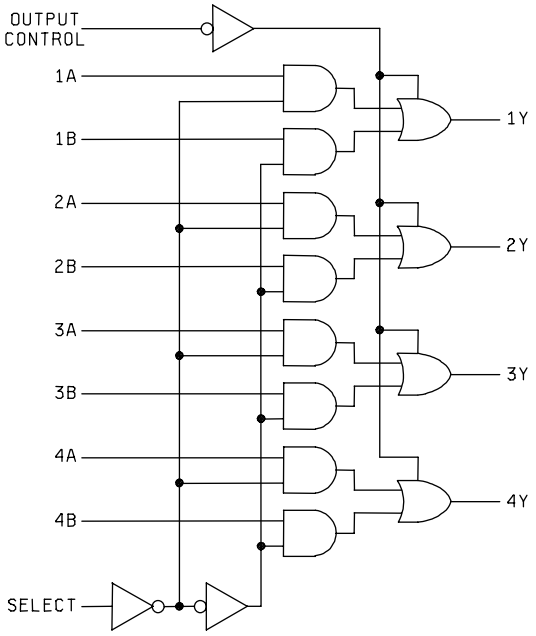
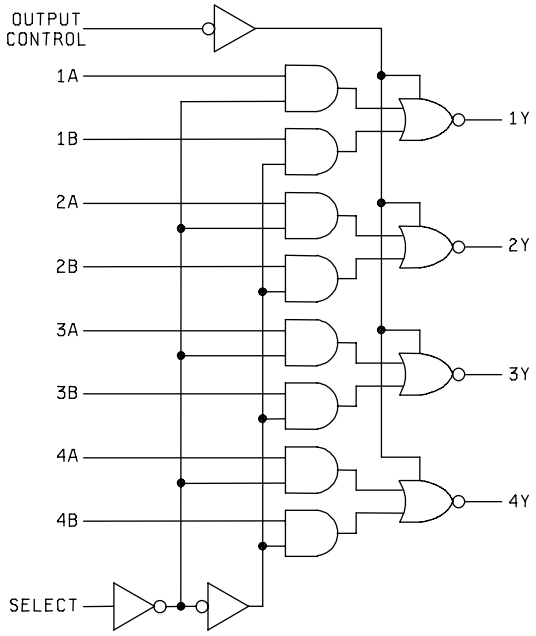


FIGURE 2. Logic diagrams - Continued.

DEVICE TYPE 06



DEVICE TYPE 07



DEVICE TYPE 08

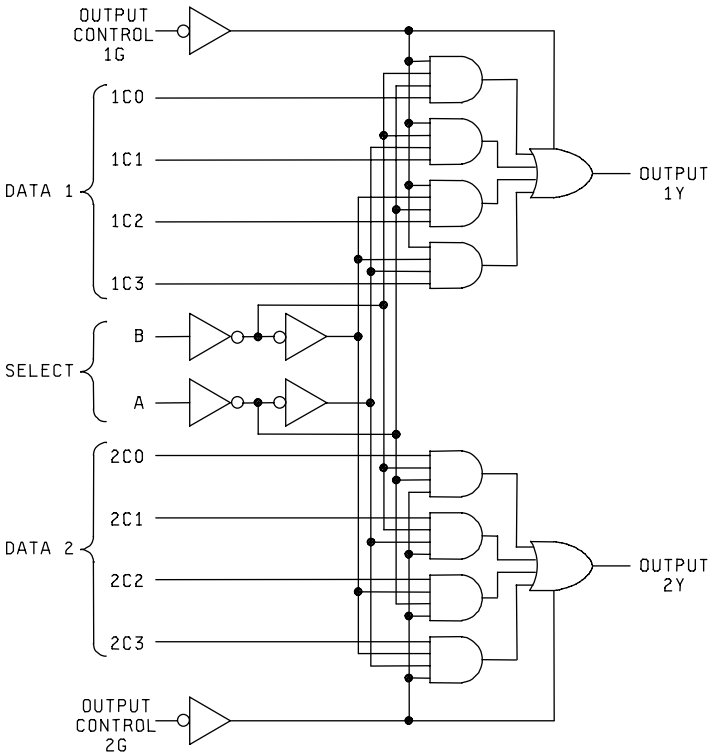


FIGURE 2. Logic diagrams - Continued.

DEVICE TYPE 09

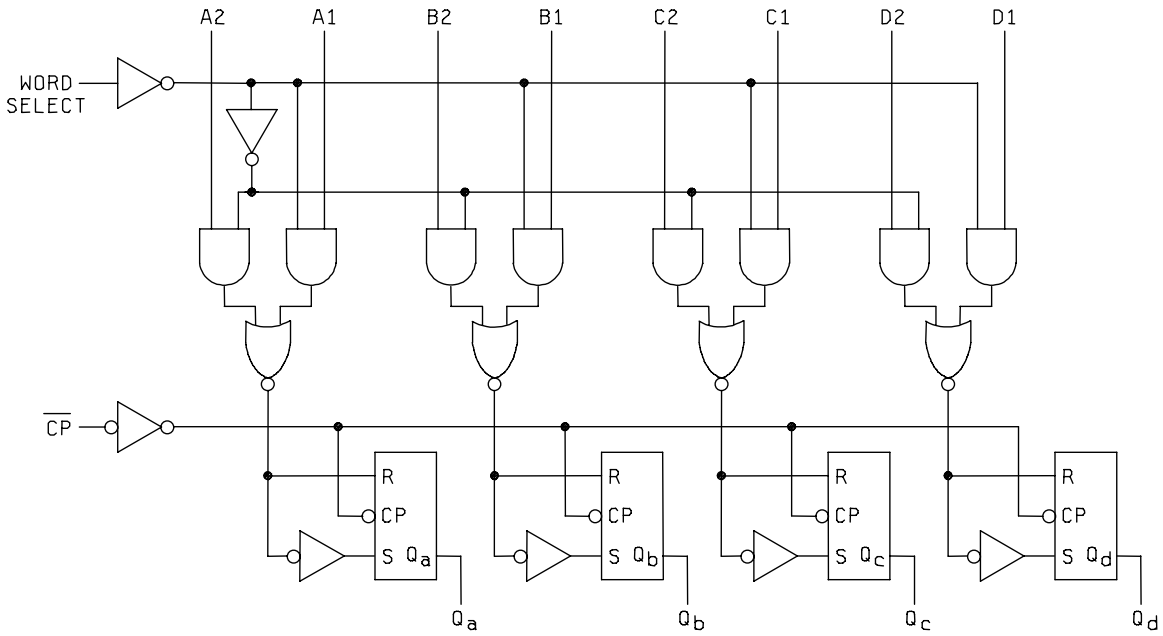


FIGURE 2. Logic diagrams - Continued.

Device type 01

INPUTS				OUTPUTS	
SELECT			STROBE		
C	B	A	S	Y	W
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		
C	B	A	S	Y	W
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

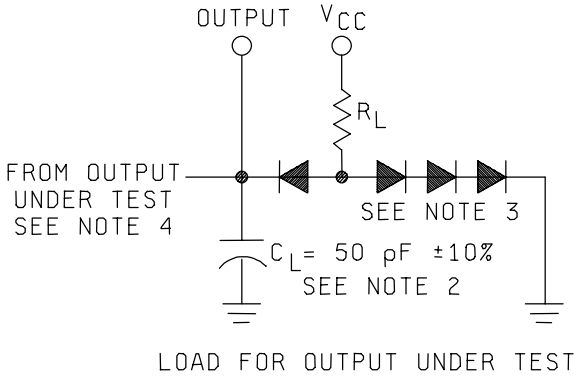
Address inputs A and B are common to both sections.
H = high logic level, L = low logic level, X = irrelevant,
Z = high impedance (off).

Device type 09

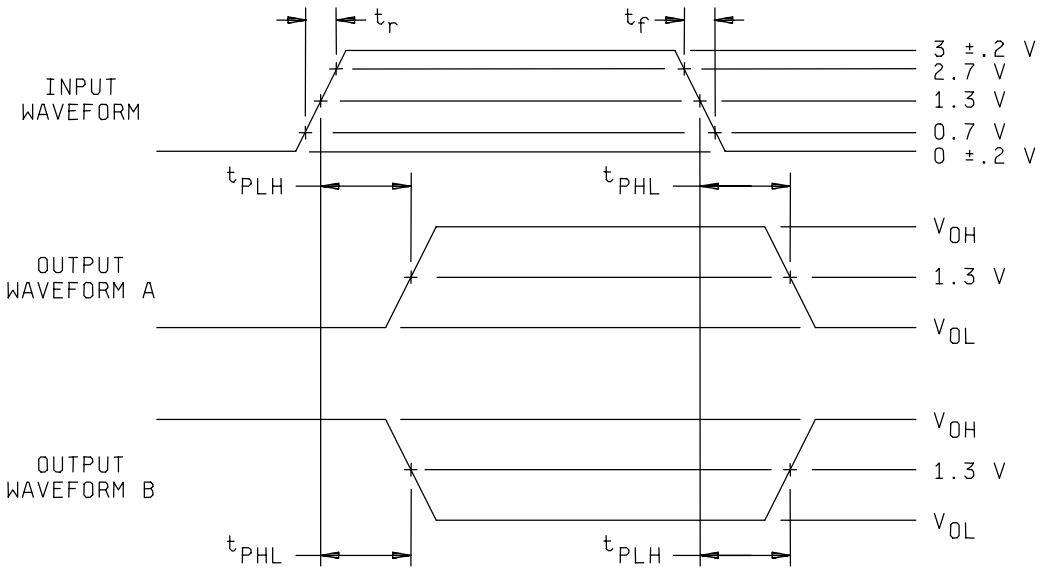
INPUTS		OUTPUTS			
WORD SELECT	CLOCK	Q_A	Q_B	Q_C	Q_D
L	↓	a1	b1	c1	d1
H	↓	a2	b2	c2	d2
X	H	Q_{A0}	Q_{B0}	Q_{C0}	Q_{D0}

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.



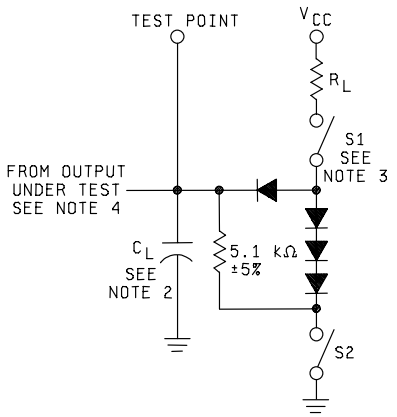
LOAD FOR OUTPUT UNDER TEST



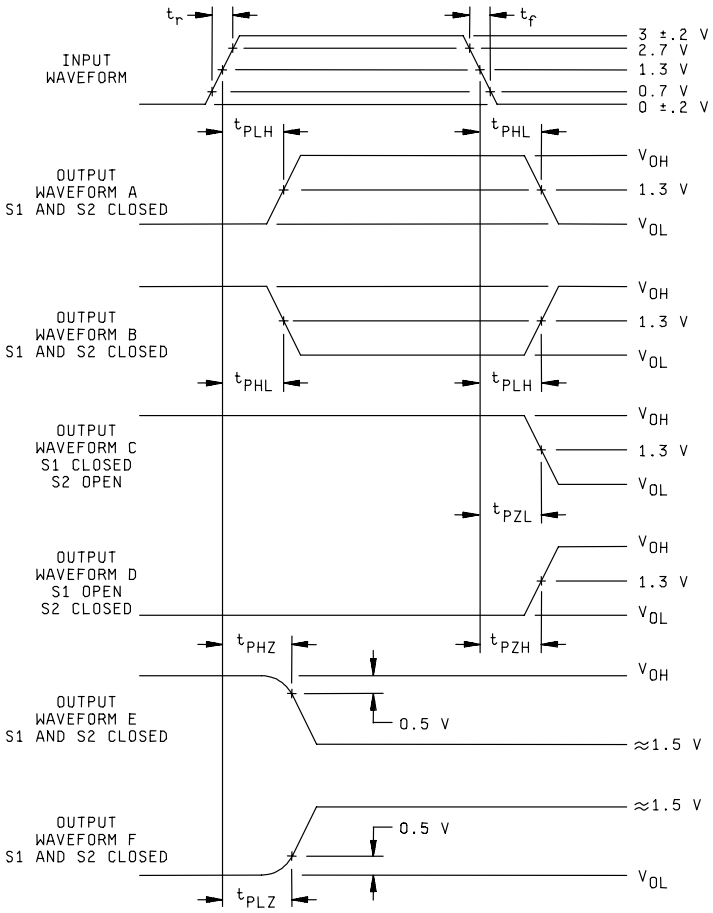
NOTES:

1. Input pulse characteristics: PRR ≤ 1.0 MHz, t_r ≤ 15 ns, t_f ≤ 6 ns.
2. C_L = 50 pF ±10% including probe and jig capacitance.
3. R_L = 2.0 kΩ ±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.



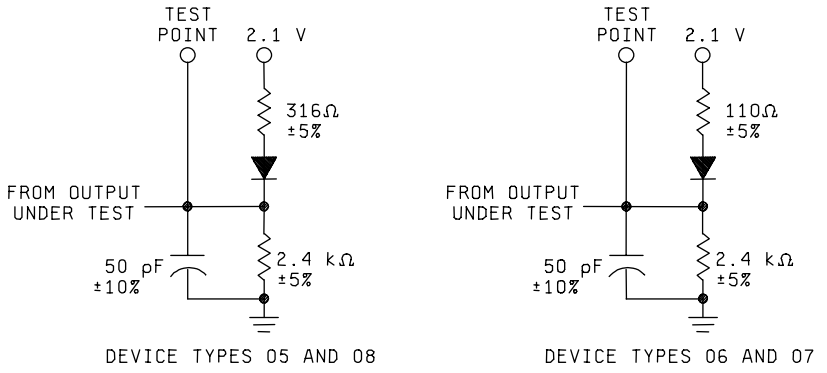
LOAD CIRCUIT FOR THREE STATE OUTPUTS



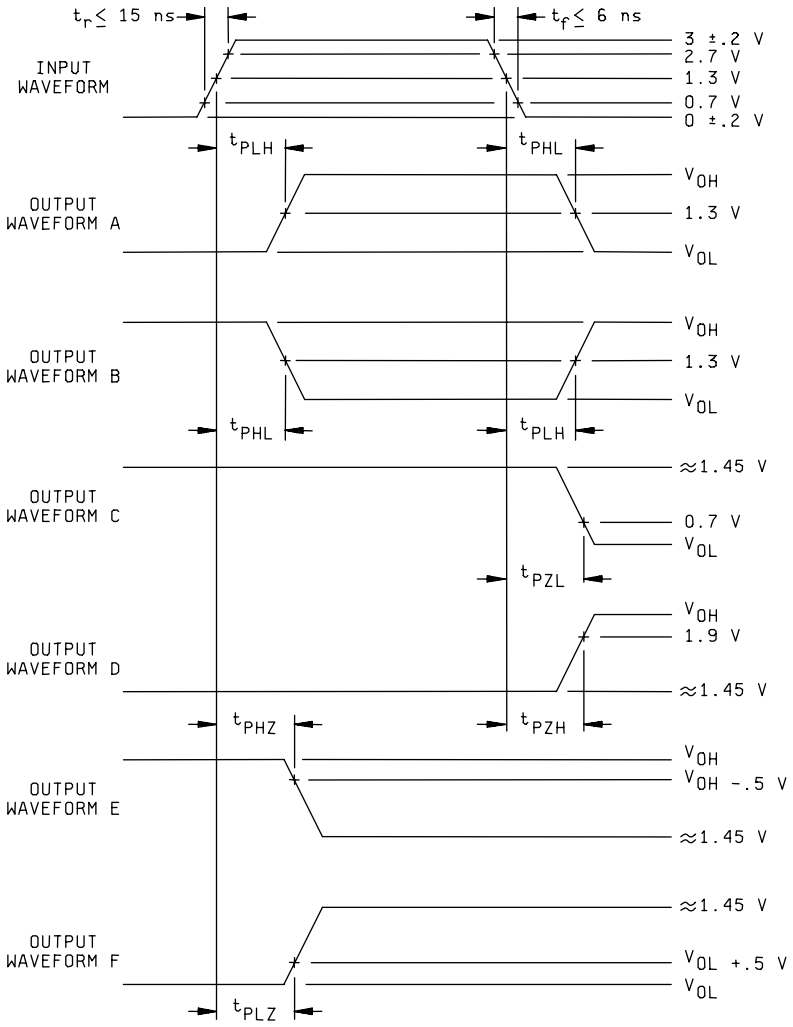
NOTES:

1. Input pulse characteristics: PRR ≤ 1.0 MHz, t_r ≤ 15 ns, t_f ≤ 6 ns.
2. C_L = 50 pF ±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 kΩ ±5% for device types 05 and 08, and R_L = 680Ω ±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.

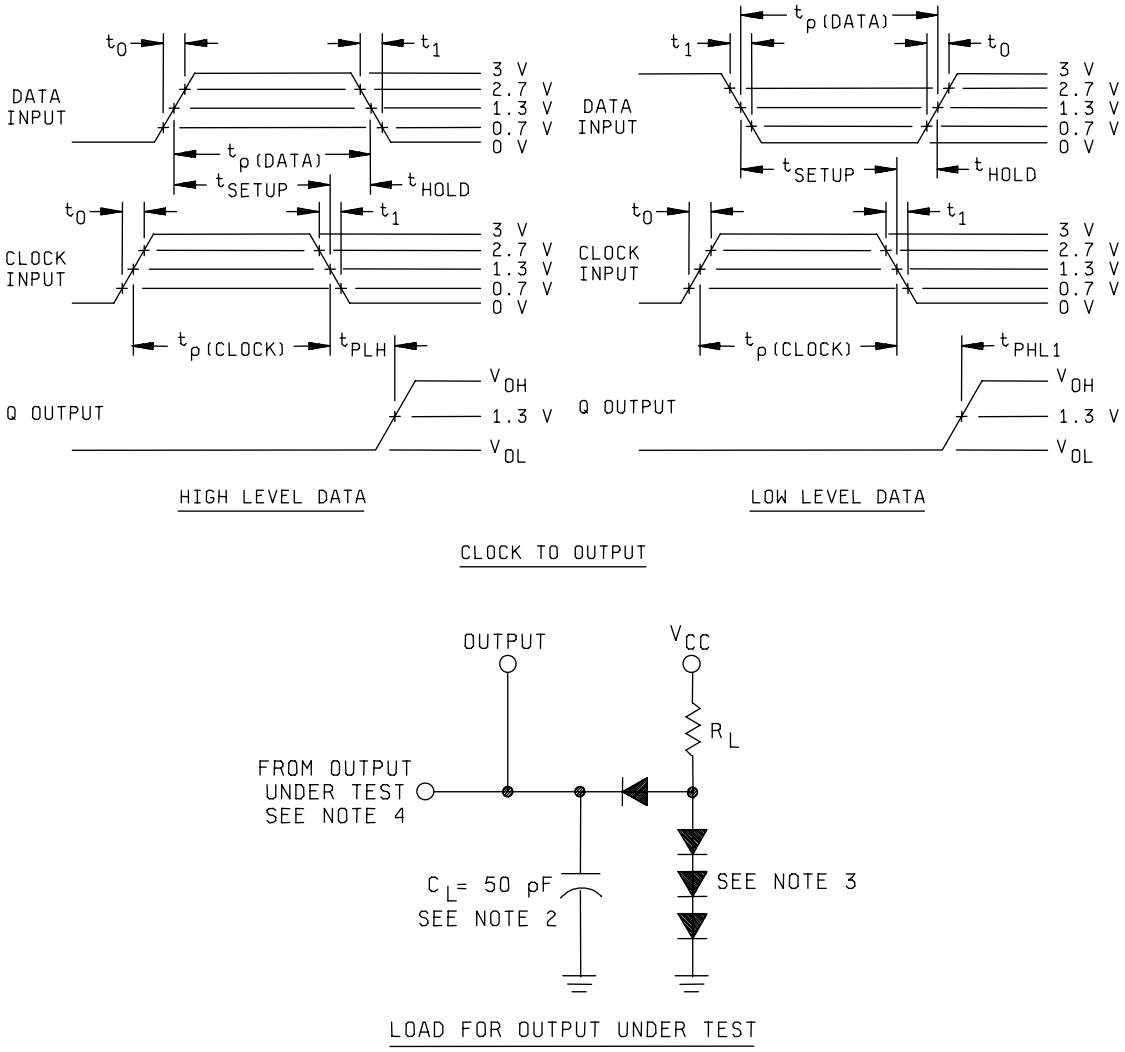


OPTIONAL LOAD CIRCUITS FOR THREE STATE OUTPUTS



WAVEFORMS FOR OPTIONAL LOAD CIRCUITS

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



NOTES:

1. Input pulse characteristics: PRR ≤ 1.0 MHz, t_O ≤ 15 ns, t_l ≤ 6 ns, t_P(data) = 20 ns, t_P(clock) = 20 ns, t_{SETUP} = 15 ns, and t_{HOLD} = 5 ns.
2. C_L = 50 pF ±10% including probe and jig capacitance.
3. R_L = 2.0 kΩ ±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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	2.0 V	2.0 V	2.0 V	2.0 V		-.4 mA	2.0 V	GND	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	4.5 V	W	2.5		V
		3006	2	"	"	"	"	-.4 mA		0.7 V	"	0.7 V	0.7 V	0.7 V	"	"	"	"	"	Y	2.5		"
	V_{OL}	3007	3	"	"	"	"		4.0 mA	0.7 V	"	0.7 V	0.7 V	0.7 V	"	"	"	"	"	W		0.4	"
		3007	4	"	"	"	"	4.0 mA		2.0 V	"	2.0 V	2.0 V	2.0 V	"	"	"	"	"	Y		0.4	"
	V_{IC}		5	-18 mA							"								"	D3		-1.5	"
			6		-18 mA						"								"	D2		"	"
			7			-18 mA					"								"	D1		"	"
			8				-18 mA				"								"	D0		"	"
			9							-18 mA	"								"	S		"	"
			10								"	-18 mA							"	C		"	"
			11								"		-18 mA						"	B		"	"
			12								"			-18 mA					"	A		"	"
			13								"				-18 mA				"	D7		"	"
			14								"					-18 mA			"	D6		"	"
			15								"						-18 mA		"	D5		"	"
			16								"							-18 mA	"	D4		"	"
	I_{IL1}	3009	17	0.4 V	5.5 V	5.5 V	5.5 V			GND	"	GND	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	D3	2/	2/	mA
		"	18	5.5 V	0.4 V	5.5 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D2	"	"	"
		"	19	"	5.5 V	0.4 V	"			"	"	"	GND	5.5 V	"	"	"	"	"	D1	"	"	"
		"	20	"	"	5.5 V	0.4 V			"	"	"	GND	GND	"	"	"	"	"	D0	"	"	"
		"	21	"	"	"	5.5 V			"	"	5.5 V	5.5 V	5.5 V	0.4 V	"	"	"	"	D7	"	"	"
		"	22	"	"	"	"			"	"	"	5.5 V	GND	5.5 V	0.4 V	"	"	"	D6	"	"	"
		"	23	"	"	"	"			"	"	"	GND	5.5 V	"	5.5 V	0.4 V	"	"	D5	"	"	"
		"	24	"	"	"	"			"	"	"	GND	GND	"	5.5 V	5.5 V	0.4 V	"	D4	"	"	"
	I_{IL2}	"	25							0.4 V	"								"	S	"	"	"
	I_{IL3}	"	26								"	0.4 V							"	C	"	"	"
		"	27								"		0.4 V						"	B	"	"	"
		"	28								"			0.4 V					"	A	"	"	"
	I_{IH1}	3010	29	2.7 V	GND	GND	GND			5.5 V	"	5.5 V	GND	GND	GND	GND	GND	GND	"	D3		20	µA
		"	30	GND	2.7 V	GND	"			"	"	"	GND	5.5 V	"	"	"	"	"	D2		"	"
		"	31	"	GND	2.7 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D1		"	"
		"	32	"	GND	GND	2.7 V			"	"	"	5.5 V	5.5 V	"	"	"	"	"	D0		"	"
		"	33							2.7 V	"								"	S		"	"
		"	34								"	2.7 V							"	C		"	"
		"	35								"		2.7 V						"	B		"	"
		"	36								"			2.7 V					"	A		"	"
		"	37	GND	GND	GND	GND			5.5 V	"	GND	GND	GND	2.7 V	GND	GND	GND	"	D7		"	"
		"	38	"	"	"	"			"	"	"	GND	5.5 V	GND	2.7 V	GND	"	"	D6		"	"
		"	39	"	"	"	"			"	"	"	5.5 V	GND	"	GND	2.7 V	"	"	D5		"	"
		"	40	"	"	"	"			"	"	"	5.5 V	5.5 V	"	"	GND	2.7 V	"	D4		"	"
	I_{IH2}	"	41	7.0 V	"	"	"			"	"	5.5 V	GND	GND	"	"	"	GND	"	D3		100	µA
		"	42	GND	7.0 V	"	"			"	"	"	GND	5.5 V	"	"	"	"	"	D2		"	"
		"	43	"	GND	7.0 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D1		"	"
		"	44	"	GND	GND	7.0 V			"	"	"	5.5 V	5.5 V	"	"	"	"	"	D0		"	"
		"	45							7.0 V	"								"	S		"	"
		"	46								"	7.0 V							"	C		"	"
		"	47								"		7.0 V						"	B		"	"
		"	48								"			7.0 V					"	A		"	"
		"	49	GND	GND	GND	GND			5.5 V	"	GND	GND	GND	7.0 V	GND	GND	GND	"	D7		"	"
		"	50	"	"	"	"			"	"	"	GND	5.5 V	GND	7.0 V	GND	"	"	D6		"	"
		"	51	"	"	"	"			"	"	"	5.5 V	GND	"	GND	7.0 V	"	"	D5		"	"
		"	52	"	"	"	"			"	"	"	5.5 V	5.5 V	"	"	GND	7.0 V	"	D4		"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
1	I_{OS}	3011	53	GND	GND	GND	5.5 V	GND		GND	"	GND	GND	GND	GND	GND	GND	GND	5.5 V	Y	-15	-100	mA
Tc = 25°C		3011	54	GND	GND	GND	GND		GND	5.5 V	"	GND	GND	GND	GND	GND	GND	GND	"	W	-15	-100	"
	I_{CC1}	3005	55	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}		10	"
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	Func-	3014	56	B	B	B	B	L	H	A	GND	B	B	B	B	B	B	B	5.0 V	All			
Tc = 25°C	tional	"	57	A	A	A	A	"	"	"	"	B	B	B	A	A	A	A	"	outputs			
	tests	"	58	A	A	A	A	"	"	"	"	A	A	A	A	A	A	A	"	"			
		"	59	B	B	B	B	"	"	"	"	"	"	"	B	B	B	B	"	"			
		"	60	"	"	"	"	"	"	"	"	"	"	"	A	A	A	A	"	"			
		"	61	"	"	"	"	H	L	B	"	"	"	"	"	B	B	B	"	"			
		"	62	"	"	"	"	L	H	A	"	"	"	B	"	A	"	"	"	"			
		"	63	"	"	"	"	H	L	B	"	"	"	B	"	"	"	"	"	"	3/		
		"	64	"	"	"	"	L	H	A	"	"	B	A	"	"	A	"	"	"			
		"	65	"	"	"	"	H	L	B	"	"	"	A	"	"	"	"	"	"			
		"	66	"	"	"	"	L	H	A	"	"	"	B	"	"	"	A	"	"			
		"	67	"	"	"	"	H	L	B	"	"	"	B	"	"	"	"	"	"			
		"	68	A	"	"	"	L	H	A	"	B	A	A	"	"	"	"	"	"			
		"	69	"	"	"	"	H	L	B	"	"	"	A	"	"	"	"	"	"			
		"	70	"	A	"	"	L	H	A	"	"	"	B	"	"	"	"	"	"			
		"	71	"	"	"	"	H	L	B	"	"	"	B	"	"	"	"	"	"			
		"	72	"	"	A	"	L	H	A	"	"	B	A	"	"	"	"	"	"			
		"	73	"	"	"	"	H	L	B	"	"	"	A	"	"	"	"	"	"			
		"	74	"	"	"	A	L	H	A	"	"	"	B	"	"	"	"	"	"			
		"	75	"	"	"	A	H	L	B	"	"	"	B	"	"	"	"	"	"			
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C.																						
9	t_{PLH1}	3003	76				IN	OUT		GND	GND	GND	GND	GND					5.0 V	D0 to Y	3	37	ns
Tc = 25°C		Fig. 4	77			IN		"		"	"	"	GND	5.0 V					"	D1 to Y	"	"	"
		"	78		IN			"		"	"	"	5.0 V	GND					"	D2 to Y	"	"	"
		"	79	IN				"		"	"	"	5.0 V	5.0 V					"	D3 to Y	"	"	"
		"	80					"		"	"	5.0 V	GND	GND				IN	"	D4 to Y	"	"	"
		"	81					"		"	"	"	GND	5.0 V			IN		"	D5 to Y	"	"	"
		"	82					"		"	"	"	5.0 V	GND		IN			"	D6 to Y	"	"	"
		"	83					"		"	"	"	5.0 V	5.0 V	IN				"	D7 to Y	"	"	"
	t_{PHL1}	"	84				IN	"		"	"	GND	GND	GND					"	D0 to Y	"	31	"
		"	85			IN		"		"	"	"	GND	5.0 V					"	D1 to Y	"	"	"
		"	86		IN			"		"	"	"	5.0 V	GND					"	D2 to Y	"	"	"
		"	87	IN				"		"	"	"	5.0 V	5.0 V					"	D3 to Y	"	"	"
		"	88					"		"	"	5.0 V	GND	GND				IN	"	D4 to Y	"	"	"
		"	89					"		"	"	"	GND	5.0 V			IN		"	D5 to Y	"	"	"
		"	90					"		"	"	"	5.0 V	GND		IN			"	D6 to Y	"	"	"
		"	91					"		"	"	"	5.0 V	5.0 V	IN				"	D7 to Y	"	"	"
	t_{PLH2}	"	92				IN		OUT	"	"	GND	GND	GND					"	D0 to W	"	26	"
		"	93			IN			"	"	"	"	GND	5.0 V					"	D1 to W	"	"	"
		"	94		IN				"	"	"	"	5.0 V	GND					"	D2 to W	"	"	"
		"	95	IN					"	"	"	"	5.0 V	5.0 V					"	D3 to W	"	"	"
		"	96						"	"	"	5.0 V	GND	GND				IN	"	D4 to W	"	"	"
		"	97						"	"	"	"	GND	5.0 V			IN		"	D5 to W	"	"	"
		"	98						"	"	"	"	5.0 V	GND		IN			"	D6 to W	"	"	"
		"	99						"	"	"	"	5.0 V	5.0 V	IN				"	D7 to W	"	"	"

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 ≤ 0.7 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	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
9 Tc = 25°C	t_{PHL2}	3003 Fig. 4	100				IN		OUT	GND	GND	GND	GND	GND					5.0 V	D0 to W	3	25	ns
		"	101			IN			"	"	"	"	GND	5.0 V					"	D1 to W	"	"	"
		"	102		IN				"	"	"	"	5.0 V	GND					"	D2 to W	"	"	"
		"	103	IN					"	"	"	"	5.0 V	5.0 V					"	D3 to W	"	"	"
		"	104						"	"	"	5.0 V	GND	GND				IN	"	D4 to W	"	"	"
		"	105						"	"	"	"	GND	5.0 V			IN		"	D5 to W	"	"	"
		"	106						"	"	"	"	5.0 V	GND		IN			"	D6 to W	"	"	"
		"	107						"	"	"	"	5.0 V	5.0 V	IN				"	D7 to W	"	"	"
	t_{PLH3}	"	108	5.0 V	5.0 V	5.0 V	5.0 V	OUT		IN	"	GND	GND	GND	5.0 V	5.0 V	5.0 V	5.0 V	"	S to Y	"	47	"
	t_{PHL3}	"	109	5.0 V	5.0 V	5.0 V	5.0 V	OUT		"	"	GND	GND	GND	"	5.0 V	5.0 V	5.0 V	"	S to Y	"	37	"
	t_{PLH4}	"	110	GND	GND	GND	GND		OUT	"	"	5.0 V	5.0 V	5.0 V	"	GND	GND	GND	"	S to W	"	29	"
	t_{PHL4}	"	111	GND	GND	GND	"		OUT	"	"	5.0 V	5.0 V	5.0 V	"	GND	GND	GND	"	S to W	"	35	"
	t_{PLH5}	"	112			5.0 V	"	OUT		GND	"	GND	GND	IN					"	A to Y	"	48	"
		"	113		5.0 V		"	"		"	"	GND	IN	GND					"	B to Y	"	"	"
		"	114				"	"		"	"	IN	GND	GND				5.0 V	"	C to Y	"	"	"
	t_{PHL5}	"	115			GND	5.0 V	"		"	"	GND	GND	IN					"	A to Y	"	35	"
		"	116		GND		"	"		"	"	GND	IN	GND					"	B to Y	"	"	"
		"	117				"	"		"	"	IN	GND	GND				GND	"	C to Y	"	"	"
	t_{PLH6}	"	118			GND	"		OUT	"	"	GND	GND	IN					"	A to W	"	28	"
		"	119		GND		"		"	"	"	GND	IN	GND					"	B to W	"	"	"
		"	120				"		"	"	"	IN	GND	GND				GND	"	C to W	"	"	"
	t_{PHL6}	"	121			5.0 V	GND		"	"	"	GND	GND	IN					"	A to W	"	37	"
		"	122		5.0 V		"		"	"	"	GND	IN	GND					"	B to W	"	"	"
		"	123				"		"	"	"	IN	GND	GND				5.0 V	"	C to W	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C and for following limits: t_{PLH1} = 3 to 56 ns; t_{PHL1} = 3 to 47 ns; t_{PLH2} = 3 to 39 ns; t_{PHL2} = 3 to 38 ns; t_{PLH3} = 3 to 71 ns; t_{PHL3} = 3 to 56 ns; t_{PLH4} = 3 to 44 ns; t_{PHL4} = 3 to 53 ns; t_{PLH5} = 3 to 72 ns; t_{PHL5} = 3 to 53 ns; t_{PLH6} = 3 to 42 ns; t_{PHL6} = 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 -.10/-.34	-.16/-.40	0/-.15

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	0.7 V	0.7 V				2.0 V	-.4 mA	GND						0.7 V		4.5 V	1Y	2.5		V
		3006	2		0.7 V						"	-.4 mA	2.0 V				0.7 V	0.7 V	"	2Y	2.5		"
	V_{OL}	3007	3	2.0 V						4 mA	"								"	1Y		0.4	"
		3007	4								"	4 mA						2.0 V	"	2Y		0.4	"
	V_{IC}		5	-18 mA							"								"	1G		-1.5	"
			6		-18 mA						"								"	B		"	"
			7			-18 mA					"								"	1C3		"	"
			8				-18 mA				"								"	1C2		"	"
			9					-18 mA			"								"	1C1		"	"
			10						-18 mA		"								"	1C0		"	"
			11								"		-18 mA						"	2C0		"	"
			12								"			-18 mA					"	2C1		"	"
			13								"				-18 mA				"	2C2		"	"
			14								"					-18 mA			"	2C3		"	"
			15								"						-18 mA		"	A		"	"
			16								"							-18 mA	"	2G		"	"
	I_{IL1}	3009	17	0.4 V	GND						"						GND	GND	5.5 V	1G	2/	2/	mA
	"	"	18	GND	0.4 V						"						GND	"	"	B	"	"	"
	"	"	19	"	5.5 V	0.4 V	5.5 V	5.5 V	5.5 V		"		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	"	1C3	"	"	"
	"	"	20	"	5.5 V	5.5 V	0.4 V	5.5 V	"		"		"	"	"	"	GND	"	"	1C2	"	"	"
	"	"	21	"	GND	"	5.5 V	0.4 V	"		"		"	"	"	"	5.5 V	"	"	1C1	"	"	"
	"	"	22	"	"	"	"	5.5 V	0.4 V		"		"	"	"	"	GND	"	"	1C0	"	"	"
	"	"	23	"	"	"	"	"	5.5 V		"		0.4 V	"	"	"	GND	"	"	2C0	"	"	"
	"	"	24	"	"	"	"	"	"		"		5.5 V	0.4 V	"	"	5.5 V	"	"	2C1	"	"	"
	"	"	25	"	5.5 V	"	"	"	"		"		"	5.5 V	0.4 V	"	GND	"	"	2C2	"	"	"
	"	"	26	"	5.5 V	"	"	"	"		"		"	5.5 V	5.5 V	0.4 V	5.5 V	"	"	2C3	"	"	"
	"	"	27	"	GND						"						0.4 V	"	"	A	"	"	"
	"	"	28	"	GND						"						GND	0.4 V	"	2G	"	"	"
	I_{IH1}	3010	29	2.7 V	GND						"						5.5 V	5.5 V	"	1G		20	µA
	"	"	30	GND	2.7 V						"						5.5 V	"	"	B		"	"
	"	"	31	5.5 V	GND	2.7 V	GND	GND	GND		"		GND	GND	GND	GND	GND	"	"	1C3		"	"
	"	"	32	"	GND	GND	2.7 V	GND	"		"		"	"	"	"	5.5 V	"	"	1C2		"	"
	"	"	33	"	5.5 V	"	GND	2.7 V	"		"		"	"	"	"	GND	"	"	1C1		"	"
	"	"	34	"	"	"	"	GND	2.7 V		"		"	"	"	"	5.5 V	"	"	1C0		"	"
	"	"	35	"	"	"	"	"	GND		"		2.7 V	"	"	"	5.5 V	"	"	2C0		"	"
	"	"	36	"	"	"	"	"	"		"		GND	2.7 V	"	"	GND	"	"	2C1		"	"
	"	"	37	"	GND	"	"	"	"		"		"	GND	2.7 V	"	5.5 V		"	2C2		"	"
	"	"	38	"	GND	"	"	"	"		"		"	GND	GND	2.7 V	GND	"	"	2C3		"	"
	"	"	39	"	5.5 V						"						2.7 V	GND	"	A		"	"
	"	"	40	"	5.5 V						"						GND	2.7 V	"	2G		"	"
	I_{IH2}	"	41	7.0 V	GND						"						5.5 V	5.5 V	"	1G		100	µA
	"	"	42	GND	7.0 V						"						5.5 V	"	"	B		"	"
	"	"	43	5.5 V	GND	7.0 V	GND	GND	GND		"		GND	GND	GND	GND	GND	"	"	1C3		"	"
	"	"	44	"	GND	GND	7.0 V	GND	"		"		"	"	"	"	5.5 V	"	"	1C2		"	"
	"	"	45	"	5.5 V	"	GND	7.0 V	"		"		"	"	"	"	GND	"	"	1C1		"	"
	"	"	46	"	"	"	"	GND	7.0 V		"		"	"	"	"	5.5 V	"	"	1C0		"	"
	"	"	47	"	"	"	"	"	GND		"		7.0 V	"	"	"	5.5 V	"	"	2C0		"	"
	"	"	48	"	"	"	"	"	"		"		GND	7.0 V	"	"	GND	"	"	2C1		"	"
	"	"	49	"	GND	"	"	"	"		"		"	GND	7.0 V	"	5.5 V	"	"	2C2		"	"
	"	"	50	"	GND	"	"	"	"		"		"	GND	GND	7.0 V	GND	"	"	2C3		"	"
	"	"	51	"	5.5 V						"						7.0 V	GND	"	A		"	"
	"	"	52	"	5.5 V						"						GND	7.0 V	"	2G		"	"
	I_{OS}	3011	53	GND	GND	GND	GND	GND	5.5 V	GND	"		5.5 V	GND	GND	GND	"	GND	"	1Y	-15	-100	mA
		3011	54	"	"	"	"	"	5.5 V		"	GND	5.5 V	"	"	"	"	"	"	2Y	-15	-100	"
	I_{CC1}	3005	55	"	"	"	"	"	GND		"		GND	"	"	"	"	"	"	V_{CC}		10	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V_{CC}		Min	Max	
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 Tc = 25°C	Func-	3014	56	A	A	A	A	A	A	L	GND	L	A	A	A	A	A	A	5.0 V	1Y, 2Y	3/		
	tional	"	57	"	B	B	B	B	B	"	"	"	B	B	B	B	B	"	"				
	tests	"	58	"	"	"	"	"	A	"	"	"	A	"	"	"	"	"	"				
		"	59	B	"	"	"	"	A	H	"	H	A	"	"	"	"	B	"				
		"	60	"	"	"	"	"	B	L	"	L	B	"	"	"	"	"	"				
		"	61	"	"	A	A	A	"	"	"	"	"	A	A	A	"	"	"				
		"	62	A	"	"	"	"	"	"	"	"	"	"	"	"	A	A	"				
		"	63	B	"	"	"	"	"	H	"	H	"	"	"	"	"	B	"				
		"	64	B	"	"	"	B	"	L	"	L	"	B	"	"	"	B	"				
		"	65	A	A	"	"	"	"	L	"	L	"	"	"	"	B	A	"				
		"	66	B	"	"	"	"	"	H	"	H	"	"	"	"	"	B	"				
		"	67	B	"	"	B	"	"	L	"	L	"	"	B	"	"	B	"				
		"	68	A	"	"	"	"	"	L	"	L	"	"	"	"	A	A	"				
		"	69	B	"	"	"	"	"	H	"	H	"	"	"	"	"	B	"				
		"	70	B	"	B	"	"	"	L	"	L	"	"	"	B	"	B	"				
8	Repeat subgroup 7 tests at T_C = +125°C and -55°C.																						
9 Tc = 25°C	t_{PLH1}	3003 Fig. 4	71	GND	GND				IN	OUT	GND						GND	GND	5.0 V	1C0 to 1Y	3	20	ns
		"	72	"	GND			IN		"	"						5.0 V	"	"	1C1 to 1Y	"	"	"
		"	73	"	5.0 V		IN			"	"						GND	"	"	1C2 to 1Y	"	"	"
		"	74	"	5.0 V	IN				"	"						5.0 V	"	"	1C3 to 1Y	"	"	"
		"	75	"	GND						"	OUT	IN				GND	"	"	2C0 to 2Y	"	"	"
		"	76	"	GND						"	"		IN			5.0 V	"	"	2C1 to 2Y	"	"	"
		"	77	"	5.0 V						"	"			IN		GND	"	"	2C2 to 2Y	"	"	"
		"	78	"	5.0 V						"	"				IN	5.0 V	"	"	2C3 to 2Y	"	"	"
	t_{PHL1}	"	79	"	GND				IN	OUT	"						GND	"	"	1C0 to 1Y	"	31	"
		"	80	"	GND			IN		"	"						5.0 V	"	"	1C1 to 1Y	"	"	"
		"	81	"	5.0 V		IN			"	"						GND	"	"	1C2 to 1Y	"	"	"
		"	82	"	5.0 V	IN				"	"						5.0 V	"	"	1C3 to 1Y	"	"	"
		"	83	"	GND						"	OUT	IN				GND	"	"	2C0 to 2Y	"	"	"
		"	84	"	GND						"	"		IN			5.0 V	"	"	2C1 to 2Y	"	"	"
		"	85	"	5.0 V						"	"			IN		GND	"	"	2C2 to 2Y	"	"	"
		"	86	"	5.0 V						"	"				IN	5.0 V	"	"	2C3 to 2Y	"	"	"
	t_{PLH3}	"	87	IN	GND				5.0 V	OUT	"						GND		"	1G to 1Y	"	29	"
		"	88		"						"	OUT	5.0 V				"	IN	"	2G to 2Y	"	29	"
	t_{PHL3}	"	89	IN	"				5.0 V	OUT	"						"		"	1G to 1Y	"	37	"
		"	90		"						"	OUT	5.0 V				"	IN	"	2G to 2Y	"	37	"
	t_{PLH5}	"	91	GND	5.0 V	GND	5.0 V			OUT	"				5.0 V	GND	IN	GND	"	A to 1Y	"	34	"
		"	92	"	5.0 V	GND	5.0 V				"	OUT			5.0 V	GND	IN	"	"	A to 2Y	"	"	"
		"	93	"	IN	5.0 V		GND		OUT	"			GND		5.0 V	5.0 V	"	"	B to 1Y	"	"	"
		"	94	"	IN	5.0 V		"			"	OUT		"		5.0 V	5.0 V	"	"	B to 2Y	"	"	"
	t_{PHL5}	"	95	"	GND			"	5.0 V	OUT	"		5.0 V	"			IN	"	"	A to 1Y	"	43	"
		"	96	"	GND			"	"		"	OUT	"	"			IN	"	"	A to 2Y	"	"	"
		"	97	"	IN		GND		"	OUT	"		"		GND		GND	"	"	B to 2Y	"	"	"
		"	98	"	IN		GND		"		"	OUT	"		GND		GND	"	"	B to 2Y	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C and for following limits: t_{PLH1} = 3 to 30 ns; t_{PHL1} = 3 to 47 ns; t_{PLH3} = 3 to 44 ns; t_{PHL3} = 3 to 56 ns; t_{PLH5} = 3 to 51 ns; t_{PHL5} = 3 to 65 ns.																						
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/-.15 tests 18 through 27 -.12/-.36	-.12/-.36	-.12/-.36	-.03/-.30	Tests 17 and 28 -.016/-.40 tests 18 and27 -.12/-.36 Tests 19 through 26 -.16/-.40	-.12/-.36	0/-.15

2/ 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	2.0 V		2.0 V	-.4 mA				GND							0.7 V	4.5 V	1Y	2.5		V
		"	2	"					2.0 V	-.4 mA	"							"	"	2Y	"		"
		"	3	"							"	-.4 mA	2.0 V					"	"	3Y	"		"
		"	4	"							"				-.4 mA	2.0 V		"	"	4Y	"		"
	V_{OL}	3007	5				4 mA				"							2.0 V	"	1Y		0.4	"
		"	6							4 mA	"							"	"	2Y		"	"
		"	7								"	4 mA						"	"	3Y		"	"
		"	8								"				4 mA			"	"	4Y		"	"
	V_{IC}		9	-18 mA							"								"	S		-1.5	"
			10		-18 mA						"								"	1A		"	"
			11			-18 mA					"								"	1B		"	"
			12					-18 mA			"								"	2A		"	"
			13						-18 mA		"								"	2B		"	"
			14								"		-18 mA						"	3B		"	"
			15								"			-18 mA					"	3A		"	"
			16								"					-18 mA			"	4B		"	"
			17								"						-18 mA		"	4A		"	"
			18								"							-18 mA	"	G		"	"
	I_{IL1}	3009	19	GND	0.4 V	5.5 V					"							GND	5.5 V	1A	2/	2/	mA
		"	20	5.5 V	5.5 V	0.4 V					"							"	"	1B		"	"
		"	21	GND				0.4 V	5.5 V		"							"	"	2A		"	"
		"	22	5.5 V				5.5 V	0.4 V		"							"	"	2B		"	"
		"	23	5.5 V							"		0.4 V	5.5 V				"	"	3B		"	"
		"	24	GND							"		5.5 V	0.4 V				"	"	3A		"	"
		"	25	5.5 V							"					0.4 V	5.5 V	"	"	4B		"	"
		"	26	GND							"					5.5 V	0.4 V	"	"	4A		"	"
	I_{IL2}	"	27	0.4 V							"							5.5 V	"	S		"	"
		"	28	5.5 V							"							0.4 V	"	G		"	"
	I_{IH1}	3010	29	5.5 V	2.7 V						"								"	1A		20	µA
		"	30	GND		2.7 V					"								"	1B		"	"
		"	31	5.5 V				2.7 V			"								"	2A		"	"
		"	32	GND					2.7 V		"								"	2B		"	"
		"	33	GND							"		2.7 V						"	3B		"	"
		"	34	5.5 V							"			2.7 V					"	3A		"	"
		"	35	GND							"					2.7 V			"	4B		"	"
		"	36	5.5 V							"						2.7 V		"	4A		"	"
	I_{IH2}	3010	37	5.5 V	7.0 V						"								"	1A		100	"
		"	38	GND		7.0 V					"								"	1B		"	"
		"	39	5.5 V				7.0 V			"								"	2A		"	"
		"	40	GND					7.0 V		"								"	2B		"	"
		"	41	GND							"		7.0 V						"	3B		"	"
		"	42	5.5 V							"			7.0 V					"	3A		"	"
		"	43	GND							"					7.0 V			"	4B		"	"
		"	44	5.5 V							"						7.0 V		"	4A		"	"
	I_{IH3}	"	45	2.7 V							"							GND	"	S		40	"
		"	46 3/	GND							"							2.7 V	"	G		40	"
	I_{IH4}	"	47	7.0 V							"							GND	"	S		200	µA
		"	48 3/	GND							"							7.0 V	"	G		200	µA
	I_{OS}	3011	49	"	5.5 V	5.5 V	GND				"							GND	"	1Y	-15	-100	mA
		"	50	"				5.5 V	5.5 V	GND	"							"	"	2Y	"	"	"
		"	51	"							"	GND	5.5 V	5.5 V				"	"	3Y	"	"	"
		"	52	"							"				GND	5.5 V	5.5 V	"	"	4Y	"	"	"
	I_{CC1}	3005	53	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}		16	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						

See footnotes at end of device type 03.

TABLE III. Group A inspection for device type 03 - 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	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
7 Tc = 25°C	Func-tional tests	3014	54	A	A	A	L	A	A	L	GND	L	A	A	L	A	A	A	5.0 V	All outputs	4/		
		"	55	B	A	A	"	A	A	"	"	"	A	A	"	A	A	"	"				
		"	56	"	B	B	"	B	B	"	"	"	B	B	"	B	B	"	"				
		"	57	"	B	"	"	B	"	"	"	"	"	B	"	"	B	B	"				
		"	58	"	A	"	H	A	"	H	"	H	"	A	H	"	A	"	"				
		"	59	"	A	A	H	A	A	H	"	H	A	A	H	A	A	"	"				
		"	60	"	B	"	L	B	"	L	"	L	"	B	L	"	B	"	"				
		"	61	A	B	"	H	B	"	H	"	H	"	B	H	"	B	"	"				
		"	62	"	A	"	H	A	"	H	"	H	"	A	H	"	A	"	"				
		"	63	"	A	B	L	A	B	L	"	L	B	A	L	B	A	"	"				
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C																						
9 Tc = 25°C	t_{PLH1}	3003 Fig. 4	64	GND	IN		OUT				GND							GND	5.0 V	1A to 1Y	3	19	ns
			65	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	66	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	67	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	68	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	69	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	70	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	71	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PHL1}	"	72	GND	IN		OUT				"							"	"	1A to 1Y	"	"	"
		"	73	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	74	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	75	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	76	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	77	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	78	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	79	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PLH3}	"	80	5.0 V		5.0 V	OUT				"							IN	"	G to 1Y	"	25	"
		"	81	"					5.0 V	OUT	"							"	"	G to 2Y	"	"	"
		"	82	"							"	OUT	5.0 V					"	"	G to 3Y	"	"	"
		"	83	"							"				OUT	5.0 V		"	"	G to 4Y	"	"	"
	t_{PHL3}	"	84	GND	5.0 V		OUT				"							IN	"	G to 1Y	"	26	"
		"	85	"				5.0 V		OUT	"							"	"	G to 2Y	"	"	"
		"	86	"							"	OUT		5.0 V				"	"	G to 3Y	"	"	"
		"	87	"							"				OUT		5.0 V	"	"	G to 4Y	"	"	"
	t_{PLH5}	"	88	IN	5.0 V	GND	OUT				"							GND	"	S to 1Y	"	28	"
		"	89	"				5.0 V	GND	OUT	"							"	"	S to 2Y	"	"	"
		"	90	"							"	OUT	GND	5.0 V				"	"	S to 3Y	"	"	"
		"	91	"							"				OUT	GND	5.0 V	"	"	S to 4Y	"	"	"
	t_{PHL5}	"	92	"	GND	5.0 V	OUT				"							IN	"	S to 1Y	"	32	"
		"	93	"				GND	5.0 V	OUT	"							"	"	S to 2Y	"	"	"
		"	94	"							"	OUT	5.0 V	GND				"	"	S to 3Y	"	"	"
		"	95	"							"				OUT	5.0 V	GND	"	"	S to 4Y	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C and for following limits: t_{PLH1} and t_{PHL1} = 3 to 29 ns; t_{PLH3} = 3 to 38 ns; t_{PHL3} = 3 to 39 ns; t_{PLH5} = 3 to 42 ns; t_{PHL5} = 3 to 48 ns.																						
11	Same tests, terminal conditions and limits as for subgroup 10, except T_C = -55°C																						

TABLE III. Group A inspection for device type 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	A	B	C	Min/Max limits (mA) for circuits D	E	F	G
I_{IL1}	-.135/-.370	-.016/-.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_{IH3} limit is 20 µA.
For circuit F, test 48 I_{IH3} limit is 100 µA.

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1				-.4 mA				GND							2.0 V	4.5 V	1Y	2.5		V
		"	2							-.4 mA	"							"	"	2Y	"		"
		"	3								"	-.4 mA						"	"	3Y	"		"
		"	4								"				-.4 mA			"	"	4Y	"		"
	V_{OL}	3007	5	2.0 V		2.0 V	4 mA				"							0.7 V	"	1Y		0.4	"
		"	6	"					2.0 V	4 mA	"							"	"	2Y		"	"
		"	7	"							"	4 mA	2.0 V					"	"	3Y		"	"
		"	8	"							"				4 mA	2.0 V		"	"	4Y		"	"
	V_{IC}		9	-18 mA							"								"	S		-1.5	"
			10		-18 mA						"								"	1A		"	"
			11			-18 mA					"								"	1B		"	"
			12					-18 mA			"								"	2A		"	"
			13						-18 mA		"								"	2B		"	"
			14								"		-18 mA						"	3B		"	"
			15								"			-18 mA					"	3A		"	"
			16								"					-18 mA			"	4B		"	"
			17								"						-18 mA		"	4A		"	"
			18								"							-18 mA	"	G		"	"
	I_{IL1}	3009	19	GND	0.4 V	5.5 V					"							GND	5.5 V	1A	2/	2/	mA
		"	20	5.5 V	5.5 V	0.4 V					"							"	"	1B		"	"
		"	21	GND				0.4 V	5.5 V		"							"	"	2A		"	"
		"	22	5.5 V				5.5 V	0.4 V		"							"	"	2B		"	"
		"	23	5.5 V							"		0.4 V	5.5 V				"	"	3B		"	"
		"	24	GND							"		5.5 V	0.4 V				"	"	3A		"	"
		"	25	5.5 V							"					0.4 V	5.5 V	"	"	4B		"	"
		"	26	GND							"					5.5 V	0.4 V	"	"	4A		"	"
	I_{IL2}	"	27	0.4 V							"							5.5 V	"	S		"	"
		"	28	5.5 V							"							0.4 V	"	G		"	"
	I_{IH1}	3010	29	5.5 V	2.7 V						"								"	1A		20	µA
		"	30	GND		2.7 V					"								"	1B		"	"
		"	31	5.5 V				2.7 V			"								"	2A		"	"
		"	32	GND					2.7 V		"								"	2B		"	"
		"	33	GND							"		2.7 V						"	3B		"	"
		"	34	5.5 V							"			2.7 V					"	3A		"	"
		"	35	GND							"					2.7 V			"	4B		"	"
		"	36	5.5 V							"						2.7 V		"	4A		"	"
	I_{IH2}	3010	37	5.5 V	7.0 V						"								"	1A		100	"
		"	38	GND		7.0 V					"								"	1B		"	"
		"	39	5.5 V				7.0 V			"								"	2A		"	"
		"	40	GND					7.0 V		"								"	2B		"	"
		"	41	GND							"		7.0 V						"	3B		"	"
		"	42	5.5 V							"			7.0 V					"	3A		"	"
		"	43	GND							"					7.0 V			"	4B		"	"
		"	44	5.5 V							"						7.0 V		"	4A		"	"
	I_{IH3}	"	45	2.7 V							"							GND	"	S		40	"
		"	46	GND							"							2.7 V	"	G		40	"
	I_{IH4}	"	47	7.0 V							"							GND	"	S		200	µA
		"	48	GND							"							7.0 V	"	G		200	µA
	I_{OS}	3011	49	"			GND				"							5.5 V	"	1Y	-15	-100	mA
		"	50	"						GND	"							"	"	2Y	"	"	"
		"	51	"							"	GND						"	"	3Y	"	"	"
		"	52	"							"				GND			"	"	4Y	"	"	"
	I_{CC1}	3005	53	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}		8.0	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
7 Tc = 25°C	Func-tional tests	3014	54	A	A	A	H	A	A	H	GND	H	A	A	H	A	A	A	5.0 V	All outputs	3/		
		"	55	B	A	A	"	A	A	"	"	"	A	A	"	A	A	"	"				
		"	56	"	B	B	"	B	B	"	"	"	B	B	"	B	B	"	"				
		"	57	"	B	"	"	B	"	"	"	"	"	B	"	"	B	B	"				
		"	58	"	A	"	L	A	"	L	"	L	"	A	L	"	A	"	"				
		"	59	"	A	A	L	A	A	L	"	L	A	A	L	A	A	"	"				
		"	60	"	B	"	H	B	"	H	"	H	"	B	H	"	B	"	"				
		"	61	A	B	"	L	B	"	L	"	L	"	B	L	"	B	"	"				
		"	62	"	A	"	L	A	"	L	"	L	"	A	L	"	A	"	"				
		"	63	"	A	B	H	A	B	H	"	H	B	A	H	B	A	"	"				
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C																						
9 Tc = 25°C	t_{PLH1}	3003 Fig. 4	64	GND	IN		OUT				GND							GND	5.0 V	1A to 1Y	3	17	ns
			65	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	66	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	67	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	68	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	69	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	70	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	71	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PHL1}	"	72	GND	IN		OUT				"							"	"	1A to 1Y	"	"	"
		"	73	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	74	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	75	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	76	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	77	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	78	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	79	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PLH3}	"	80	GND	5.0 V		OUT				"							IN	"	G to 1Y	"	22	"
		"	81	"				5.0 V		OUT	"							"	"	G to 2Y	"	"	"
		"	82	"							"	OUT		5.0 V				"	"	G to 3Y	"	"	"
		"	83	"							"				OUT		5.0 V	"	"	G to 4Y	"	"	"
	t_{PHL3}	"	84	5.0 V		5.0 V	OUT				"							"	"	G to 1Y	"	23	"
		"	85	"					5.0 V	OUT	"							"	"	G to 2Y	"	"	"
		"	86	"							"	OUT	5.0 V					"	"	G to 3Y	"	"	"
		"	87	"							"				OUT	5.0 V		"	"	G to 4Y	"	"	"
	t_{PLH5}	"	88	IN	5.0 V	GND	OUT				"							GND	"	S to 1Y	"	25	"
		"	89	"				5.0 V	GND	OUT	"							"	"	S to 2Y	"	"	"
		"	90	"							"	OUT	GND	5.0 V				"	"	S to 3Y	"	"	"
		"	91	"							"				OUT	GND	5.0 V	"	"	S to 4Y	"	"	"
	t_{PHL5}	"	92	"	GND	5.0 V	OUT				"							"	"	S to 1Y	"	29	"
		"	93	"				GND	5.0 V	OUT	"							"	"	S to 2Y	"	"	"
		"	94	"							"	OUT	5.0 V	GND				"	"	S to 3Y	"	"	"
		"	95	"							"				OUT	5.0 V	GND	"	"	S to 4Y	"	"	"
10	Same tests and terminal conditions as for subgroup 9, except T_C = +125°C and for following limits: t_{PLH1} and t_{PHL1} = 3 to 26 ns; t_{PLH3} = 3 to 33 ns; t_{PHL3} = 3 to 35 ns; t_{PLH5} = 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_{IL} limits are as follows:

Test	A	B	C	Min/Max limits (mA) for circuits D	E	F	G
I_{IL1}	-.135/-.370	-.016/-.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/ 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1					-1 mA		0.7 V	GND	2.0 V	2.0 V	2.0 V	2.0 V				4.5 V	Y	2.4		V
		"	2				0.7 V		-1 mA	"	"	0.7 V	0.7 V	0.7 V					"	W	2.4		"
	V_{OL}	3007	3				0.7 V	4 mA		"	"	0.7 V	0.7 V	0.7 V					"	Y		0.4	"
		"	4						4 mA	"	"	2.0 V	2.0 V	2.0 V	2.0 V				"	W		0.4	"
	V_{IC}		5	-18 mA							"								"	D3		-1.5	"
			6		-18 mA						"								"	D2		"	"
			7			-18 mA					"								"	D1		"	"
			8				-18 mA				"								"	D0		"	"
			9							-18 mA	"								"	S		"	"
			10								"	-18 mA							"	C		"	"
			11								"		-18 mA						"	B		"	"
			12								"			-18 mA					"	A		"	"
			13								"				-18 mA				"	D7		"	"
			14								"					-18 mA			"	D6		"	"
			15								"						-18 mA		"	D5		"	"
			16								"							-18 mA	"	D4		"	"
	I_{IL1}	3009	17	0.4 V	5.5 V	5.5 V	5.5 V			GND	"	GND	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	D3	2/	2/	mA
		"	18	5.5 V	0.4 V	5.5 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D2	"	"	"
		"	19	"	5.5 V	0.4 V	"			"	"	"	GND	5.5 V	"	"	"	"	"	D1	"	"	"
		"	20	"	"	5.5 V	0.4 V			"	"	"	GND	GND	"	"	"	"	"	D0	"	"	"
		"	21	"	"	"	5.5 V			"	"	5.5 V	5.5 V	5.5 V	0.4 V	"	"	"	"	D7	"	"	"
		"	22	"	"	"	"			"	"	"	5.5 V	GND	5.5 V	0.4 V	"	"	"	D6	"	"	"
		"	23	"	"	"	"			"	"	"	GND	5.5 V	"	5.5 V	0.4 V	"	"	D5	"	"	"
		"	24	"	"	"	"			"	"	"	GND	GND	"	5.5 V	5.5 V	0.4 V	"	D4	"	"	"
	I_{IL2}	"	25							0.4 V	"								"	S	"	"	"
	I_{IL3}	"	26								"	0.4 V							"	C	"	"	"
		"	27								"		0.4 V						"	B	"	"	"
		"	28								"			0.4 V					"	A	"	"	"
	I_{IH1}	3010	29	2.7 V	GND	GND	GND			GND	"	5.5 V	GND	GND	GND	GND	GND	GND	"	D3		20	µA
		"	30	GND	2.7 V	GND	"			"	"	"	GND	5.5 V	"	"	"	"	"	D2		"	"
		"	31	"	GND	2.7 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D1		"	"
		"	32	"	GND	GND	2.7 V			"	"	"	5.5 V	5.5 V	"	"	"	"	"	D0		"	"
		"	33							2.7 V	"								"	S		"	"
		"	34								"	2.7 V							"	C		"	"
		"	35								"		2.7 V						"	B		"	"
		"	36								"			2.7 V					"	A		"	"
		"	37	GND	GND	GND	GND			GND	"	GND	GND	GND	2.7 V	GND	GND	GND	"	D7		"	"
		"	38	"	"	"	"			"	"	"	GND	5.5 V	GND	2.7 V	GND	"	"	D6		"	"
		"	39	"	"	"	"			"	"	"	5.5 V	GND	"	GND	2.7 V	"	"	D5		"	"
		"	40	"	"	"	"			"	"	"	5.5 V	5.5 V	"	GND	GND	2.7 V	"	D4		"	"
	I_{IH2}	"	41	7.0 V	"	"	"			"	"	5.5 V	GND	GND	"	"	"	GND	"	D3		100	"
		"	42	GND	7.0 V	GND	"			"	"	"	GND	5.5 V	"	"	"	"	"	D2		"	"
		"	43	"	GND	7.0 V	"			"	"	"	5.5 V	GND	"	"	"	"	"	D1		"	"
		"	44	"	GND	GND	7.0 V			"	"	"	5.5 V	5.5 V	"	"	"	"	"	D0		"	"
		"	45							7.0 V	"								"	S		"	"
		"	46								"	7.0 V							"	C		"	"
		"	47								"		7.0 V						"	B		"	"
		"	48								"			7.0 V					"	A		"	"
		"	49	GND	GND	GND	GND			GND	"	GND	GND	GND	7.0 V	GND	GND	GND	"	D7		"	"
		"	50	"	"	"	"			"	"	"	GND	5.5 V	GND	7.0 V	GND	"	"	D6		"	"
		"	51	"	"	"	"			"	"	"	5.5 V	GND	"	GND	7.0 V	"	"	D5		"	"
		"	52	"	"	"	"			"	"	"	5.5 V	5.5 V	"	"	GND	7.0 V	"	D4		"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
1 Tc = 25°C	I_{OZH}		53	5.5 V	5.5 V	5.5 V	5.5 V	2.7 V		2.0 V	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	Y		20	µA
			54	"	"	"	"		2.7 V	"	"	"	"	"	2.0 V	"	"	"	"	W		20	"
	I_{OZL}		55	"	"	"	"	0.4 V		"	"	"	"	"	2.0 V	"	"	"	"	Y		-20	"
			56	"	"	"	"		0.4 V	"	"	"	"	"	0.7 V	"	"	"	"	W		-20	"
	I_{OS}	3011	57					GND		GND	"	"	"	"	5.5 V				"	Y	-30	-130	mA
	3/	3011	58				GND		GND	"	"	GND	GND	GND					"	W	-30	-130	"
	I_{CC1}	3005	59	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}		10	"
	I_{CC2}	3006	60	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}		12	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						
7 Tc = 25°C	Func-	3014	61	B	B	B	A	H	L	B	GND	B	B	B	B	B	B	B	5.0 V	Y, W	4/		
	tional	"	62	A	A	A	A	H	L	"	"	"	"	"	A	A	A	A	"	"			
	tests	"	63	"	"	"	B	L	H	"	"	"	"	"	"	"	"	"	"	"				
		"	64	"	"	"	"	H	L	"	"	"	"	A	"	"	"	"	"	"				
		"	65	"	"	B	"	L	H	"	"	"	"	A	"	"	"	"	"	"				
		"	66	"	"	"	"	H	L	"	"	"	A	B	"	"	"	"	"	"				
		"	67	"	B	"	"	L	H	"	"	"	"	B	"	"	"	"	"	"				
		"	68	"	"	"	"	H	L	"	"	"	"	A	"	"	"	"	"	"				
		"	69	B	"	"	"	L	H	"	"	"	"	A	"	"	"	"	"	"				
		"	70	"	"	"	"	H	L	"	"	A	B	B	"	"	"	"	"	"				
		"	71	"	"	"	"	L	H	"	"	"	"	B	"	"	"	B	"	"				
		"	72	"	"	"	"	H	L	"	"	"	"	A	"	"	"	"	"	"				
		"	73	"	"	"	"	L	H	"	"	"	"	A	"	"	B	"	"	"				
		"	74	"	"	"	"	H	L	"	"	"	A	B	"	"	"	"	"	"				
		"	75	"	"	"	"	L	H	"	"	"	"	B	"	B	"	"	"	"				
		"	76	"	"	"	"	H	L	"	"	"	"	A	"	"	"	"	"	"				
		"	77	"	"	"	"	L	H	"	"	"	"	A	B	"	"	"	"	"				
8	Repeat subgroup 7 tests at Tc = +125°C and Tc = -55°C.																						
9 Tc = 25°C	t_{PLH1}	3003 (Fig. 4)	78				IN	OUT		GND	GND	GND	GND	GND					5.0 V	D0 to Y	3	33	ns
		"	79			IN		"		"	"	"	GND	5.0 V					"	D1 to Y	"	"	"
		"	80		IN			"		"	"	"	5.0 V	GND					"	D2 to Y	"	"	"
		"	81	IN				"		"	"	"	5.0 V	5.0 V					"	D3 to Y	"	"	"
		"	82					"		"	"	5.0 V	GND	GND				IN	"	D4 to Y	"	"	"
		"	83					"		"	"	"	GND	5.0 V			IN		"	D5 to Y	"	"	"
		"	84					"		"	"	"	5.0 V	GND		IN			"	D6 to Y	"	"	"
		"	85					"		"	"	"	5.0 V	5.0 V	IN				"	D7 to Y	"	"	"
	t_{PHL1}	"	86				IN	"		"	"	GND	GND	GND					"	D0 to Y	"	"	"
		"	87			IN		"		"	"	"	GND	5.0 V					"	D1 to Y	"	"	"
		"	88		IN			"		"	"	"	5.0 V	GND					"	D2 to Y	"	"	"
		"	89	IN				"		"	"	"	5.0 V	5.0 V					"	D3 to Y	"	"	"
		"	90					"		"	"	5.0 V	GND	GND				IN	"	D4 to Y	"	"	"
		"	91					"		"	"	"	GND	5.0 V			IN		"	D5 to Y	"	"	"
		"	92					"		"	"	"	5.0 V	GND		IN			"	D6 to Y	"	"	"
		"	93					"		"	"	"	5.0 V	5.0 V	IN				"	D7 to Y	"	"	"
	t_{PLH2}	"	94				IN		OUT	"	"	GND	GND	GND					"	D0 to W	"	20	"
		"	95			IN			"	"	"	"	GND	5.0 V					"	D1 to W	"	"	"
		"	96		IN				"	"	"	"	5.0 V	GND					"	D2 to W	"	"	"
		"	97	IN					"	"	"	"	5.0 V	5.0 V					"	D3 to W	"	"	"
		"	98						"	"	"	5.0 V	GND	GND				IN	"	D4 to W	"	"	"
		"	99						"	"	"	"	GND	5.0 V			IN		"	D5 to W	"	"	"
		"	100						"	"	"	"	5.0 V	GND		IN			"	D6 to W	"	"	"
		"	101						"	"	"	"	5.0 V	5.0 V	IN				"	D7 to W	"	"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	D3	D2	D1	D0	Y	W	S	GND	C	B	A	D7	D6	D5	D4	V_{CC}		Min	Max	
9 Tc = 25°C	t_{PHL2}	3003 (Fig. 4)	102				IN		OUT	GND	GND	GND	GND	GND					5.0 V	D0 to W	3	20	ns
			103			IN			"	"	"	"	GND	5.0 V					"	D1 to W	"	"	"
			104		IN				"	"	"	"	5.0 V	GND					"	D2 to W	"	"	"
			105	IN					"	"	"	"	5.0 V	5.0 V					"	D3 to W	"	"	"
			106						"	"	"	5.0 V	GND	GND				IN	"	D4 to W	"	"	"
			107						"	"	"	"	GND	5.0 V			IN		"	D5 to W	"	"	"
			108						"	"	"	"	5.0 V	GND		IN			"	D6 to W	"	"	"
			109						"	"	"	"	5.0 V	5.0 V	IN				"	D7 to W	"	"	"
	t_{PLH5}		110			5.0 V	GND	OUT		"	"	GND	GND	IN					"	A to Y	"	50	"
			111		5.0 V		"	"		"	"	GND	IN	GND					"	B to Y	"	"	"
			112				"	"		"	"	IN	GND	GND				5.0 V	"	C to Y	"	"	"
	t_{PHL5}		113			5.0 V	"	"		"	"	GND	GND	IN					"	A to Y	"	"	"
			114		5.0 V		"	"		"	"	GND	IN	GND					"	B to Y	"	"	"
			115				"	"		"	"	IN	GND	GND				5.0 V	"	C to Y	"	"	"
	t_{PLH6}		116			5.0 V	"		OUT	"	"	GND	GND	IN					"	A to W	"	38	"
			117		5.0 V		"		"	"	"	GND	IN	GND					"	B to W	"	"	"
			118				"		"	"	"	IN	GND	GND				5.0 V	"	C to W	"	"	"
	t_{PHL6}		119			5.0 V	"		"	"	"	GND	GND	IN					"	A to W	"	"	"
			120		5.0 V		"		"	"	"	GND	IN	GND					"	B to W	"	"	"
			121				"		"	"	"	IN	GND	"				5.0 V	"	C to W	"	"	"
	t_{PZH1}		122				5.0 V	OUT		IN	"	GND	"	"					"	S to Y	"	50	"
	t_{PZH2}		123				GND		OUT	"	"	"	"	"					"	S to W	"	32	"
	t_{PZL1}		124				GND	OUT		"	"	"	"	"					"	S to Y	"	45	"
	t_{PZL2}		125				5.0 V		OUT	IN	"	"	"	"					"	S to W	"	45	"
	t_{PHZ1}		126				5.0 V	OUT		"	"	"	"	"					"	S to Y	"	50	"
	t_{PHZ2}		127				GND		OUT	"	"	"	"	"					"	S to W	"	60	"
	t_{PLZ1}		128				GND	OUT		"	"	"	"	"					"	S to Y	"	35	"
	t_{PLZ2}		129				5.0 V		OUT	"	"	"	"	"					"	S to W	"	35	"
10	Same tests and terminal conditions as subgroup 9, except T_C = +125°C and for the following limits: t_{PLH1} and t_{PHL1} = 3 to 50 ns; t_{PLH2} and t_{PHL2} = 3 to 30 ns; t_{PLH5} and t_{PHL5} = 3 to 75 ns; t_{PLH6} and t_{PHL6} = 3 to 57 ns; t_{PZH1} = 3 to 75 ns; t_{PZH2} = 3 to 48 ns; t_{PZL1} and t_{PZL2} = 3 to 68 ns; t_{PHZ1} = 3 to 75 ns; t_{PHZ2} = 3 to 90 ns; t_{PLZ1} and t_{PLZ2} = 3 to 45 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_{IL} limits are as follows:

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I_{IL1}	-.16/-.40	-.012/-.36	-.16/-.40	-.03/-.30	-.005/-.72	-.105/-.345	0/-.15
I_{IL2}	0/-.20	-.12/-.36	-.12/-.36	-.03/-.30	-.002/-.150	-.16/-.40	0/-.15
I_{IL3}	-.12/-.36	-.12/-.36	-.12/-.36	-.03/-.30	-.10/-.34	-.16/-.40	0/-.15

3/ I_{OS} 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	0.7 V	2.0 V		-1 mA				GND							0.7 V	4.5 V	1Y	2.4		V
		"	2	"				2.0 V		-1 mA	"							"	"	2Y	"		"
		"	3	"							"	-1 mA		2.0 V				"	"	3Y	"		"
		"	4	"							"				-1 mA		2.0 V	"	"	4Y	"		"
	V_{OL}	3007	5	2.0 V		0.7 V	12 mA				"							"	"	1Y		0.4	"
		"	6	"					0.7 V	12 mA	"							"	"	2Y		"	"
		"	7	"							"	12 mA	0.7 V					"	"	3Y		"	"
		"	8	"							"				12 mA	0.7 V		"	"	4Y		"	"
	V_{IC}		9	-18 mA							"								"	S		-1.5	"
			10		-18 mA						"								"	1A		"	"
			11			-18 mA					"								"	1B		"	"
			12					-18 mA			"								"	2A		"	"
			13						-18 mA		"								"	2B		"	"
			14								"		-18 mA						"	3B		"	"
			15								"			-18 mA					"	3A		"	"
			16								"					-18 mA			"	4B		"	"
			17								"						-18 mA		"	4A		"	"
			18								"							-18 mA	"	G		"	"
	I_{IL1}	3009	19	GND	0.4 V						"								5.5 V	1A	2/	2/	mA
		"	20	5.5 V		0.4 V					"								"	1B	"	"	"
		"	21	GND				0.4 V			"								"	2A	"	"	"
		"	22	5.5 V					0.4 V		"								"	2B	"	"	"
		"	23	5.5 V							"		0.4 V						"	3B	"	"	"
		"	24	GND							"			0.4 V					"	3A	"	"	"
		"	25	5.5 V							"					0.4 V			"	4B	"	"	"
		"	26	GND							"						0.4 V		"	4A	"	"	"
	I_{IL2}	"	27								"							0.4 V	"	G	"	"	"
		"	28	0.4 V							"								"	S	"	"	"
	I_{IH1}	3010	29	5.5 V	2.7 V						"								"	1A		20	µA
		"	30	GND		2.7 V					"								"	1B		"	"
		"	31	5.5 V				2.7 V			"								"	2A		"	"
		"	32	GND					2.7 V		"								"	2B		"	"
		"	33	GND							"		2.7 V						"	3B		"	"
		"	34	5.5 V							"			2.7 V					"	3A		"	"
		"	35	GND							"					2.7 V			"	4B		"	"
		"	36	5.5 V							"						2.7 V		"	4A		"	"
		"	37								"							2.7 V	"	G		"	"
	I_{IH2}	3010	38	5.5 V	7.0 V						"								"	1A		100	"
		"	39	GND		7.0 V					"								"	1B		"	"
		"	40	5.5 V				7.0 V			"								"	2A		"	"
		"	41	GND					7.0 V		"								"	2B		"	"
		"	42	GND							"		7.0 V						"	3B		"	"
		"	43	5.5 V							"			7.0 V					"	3A		"	"
		"	44	GND							"					7.0 V			"	4B		"	"
		"	45	5.5 V							"						7.0 V		"	4A		"	"
		"	46								"							7.0 V	"	G		"	"
	I_{IH3}	"	47	2.7 V							"								"	S		40	"
	I_{IH4}	"	48	7.0 V							"								"	S		200	"
	I_{OZH}		49	2.0 V	0.7 V		2.7 V				"							2.0 V	"	1Y		20	"
			50	"				0.7 V		2.7 V	"							"	"	2Y		"	"
			51	"							"	2.7 V		0.7 V				"	"	3Y		"	"
			52	"							"				2.7 V		0.7 V	"	"	4Y		"	"
	I_{OZL}		53	0.7 V		2.0 V	0.4 V				"							"	"	1Y		-20	"
			54	"					2.0 V	0.4 V	"							"	"	2Y		"	"
			55	"							"	0.4 V	2.0 V					"	"	3Y		"	"
			56	"							"				0.4 V	2.0 V		"	"	4Y		"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
	I_{OS} 3/	3011	57	GND	5.5 V		GND				"							GND	"	1Y	-30	-130	mA
	"	"	58	"				5.5 V		GND	"							"	"	2Y	"	"	"
	"	"	59	"							"	GND		5.5 V				"	"	3Y	"	"	"
	"	"	60	"							"				GND		5.5 V	"	"	4Y	"	"	"
	I_{CC1}	3005	61		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}		12	"
	I_{CC2}	"	62		GND	GND		GND	GND		"		GND	GND		GND	GND	"	"	V_{CC}		18	"
	I_{CC3}	"	63		GND	GND		GND	GND		"		GND	GND		GND	GND	5.5 V	"	V_{CC}		19	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						
7	Func-	3014	64	B	B	B	L	B	B	L	GND	L	B	B	L	B	B	B	5.0 V	All			
Tc = 25°C	tional	"	65	"	B	A	L	B	A	L	"	L	A	B	L	A	B	"	"	outputs			
	tests	"	66	"	A	"	H	A	"	H	"	H	"	A	H	"	A	"	"				
	"	"	67	"	B	"	L	B	"	L	"	L	"	B	L	"	B	"	"				
	"	"	68	A	B	"	H	B	"	H	"	H	"	B	H	"	B	"	"				
	"	"	69	"	A	"	H	A	"	H	"	H	"	A	H	"	A	"	"				
	"	"	70	"	A	B	L	A	B	L	"	L	B	A	L	B	A	"	"				
	"	"	71	"	B	B	L	B	B	L	"	L	B	B	L	B	B	"	"				
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C																						
9	t_{PLH1}	3003	72	GND	IN		OUT				GND							GND	5.0 V	1A to 1Y	3	23	ns
Tc = 25°C		Fig. 4	73	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
	"	"	74	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
	"	"	75	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
	"	"	76	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
	"	"	77	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
	"	"	78	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
	"	"	79	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PHL1}	"	80	GND	IN		OUT				"							"	"	1A to 1Y	"	"	"
	"	"	81	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
	"	"	82	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
	"	"	83	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
	"	"	84	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
	"	"	85	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
	"	"	86	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
	"	"	87	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PLH5}	"	88	IN	GND	5.0 V	OUT				"							"	"	S to 1Y	"	26	"
	"	"	89	"				GND	5.0 V	OUT	"							"	"	S to 2Y	"	"	"
	"	"	90	"							"	OUT	5.0 V	GND				"	"	S to 3Y	"	"	"
	"	"	91	"							"				OUT	5.0 V	GND	"	"	S to 4Y	"	"	"
	t_{PHL5}	"	92	"	5.0 V	GND	OUT				"							"	"	S to 1Y	"	"	"
	"	"	93	"				5.0 V	GND	OUT	"							"	"	S to 2Y	"	"	"
	"	"	94	"							"	OUT	GND	5.0 V				"	"	S to 3Y	"	"	"
	"	"	95	"							"				OUT	GND	5.0 V	"	"	S to 4Y	"	"	"
	t_{PZH3}	"	96	GND	5.0 V		OUT				"							IN	"	G to 1Y	"	35	"
	"	"	97	"				5.0 V		OUT	"							"	"	G to 2Y	"	"	"
	"	"	98	"							"	OUT		5.0 V				"	"	G to 3Y	"	"	"
	"	"	99	"							"				OUT		5.0 V	"	"	G to 4Y	"	"	"
	t_{PZL3}	"	100	5.0 V		GND	OUT				"							"	"	G to 1Y	"	"	"
	"	"	101	"					GND	OUT	"							"	"	G to 2Y	"	"	"
	"	"	102	"							"	OUT	GND					"	"	G to 3Y	"	"	"
	"	"	103	"							"				OUT	GND		"	"	G to 4Y	"	"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
9 Tc = 25°C	t_{PHZ3}	3003 Fig. 5	104	5.0 V		5.0 V	OUT				GND							IN	"	G to 1Y	3	35	ns
		"	105	"					5.0 V	OUT	"							"	"	G to 2Y	"	"	"
		"	106	"							"	OUT	5.0 V					"	"	G to 3Y	"	"	"
		"	107	"							"				OUT	5.0 V		"	"	G to 4Y	"	"	"
	t_{PLZ3}	"	108	GND	GND		OUT				"							"	"	G to 1Y	"	30	"
		"	109	"				GND		OUT	"							"	"	G to 2Y	"	"	"
		"	110	"							"	OUT		GND				"	"	G to 3Y	"	"	"
		"	111	"							"				OUT		GND	"	"	G to 4Y	"	"	"
10	Same tests, terminal conditions and limits as subgroup 9, except T_C = +125°C and for the following: t_{PLH1} and t_{PHL1} = 3 to 35 ns; t_{PLH5} and t_{PHL5} = 3 to 39 ns; t_{PZH3}, t_{PZL3}, and t_{PHZ3} = 3 to 53 ns; t_{PLZ3} = 3 to 45 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_{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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	0.7 V	0.7 V		-1 mA				GND							0.7 V	4.5 V	1Y	2.4		V
		"	2	"				0.7 V		-1 mA	"							"	"	2Y	"		"
		"	3	"							"	-1 mA		0.7 V				"	"	3Y	"		"
		"	4	"							"				-1 mA		0.7 V	"	"	4Y	"		"
	V_{OL}	3007	5	2.0 V		2.0 V	12 mA				"							"	"	1Y		0.4	"
		"	6	"					2.0 V	12 mA	"							"	"	2Y		"	"
		"	7	"							"	12 mA	2.0 V					"	"	3Y		"	"
		"	8	"							"				12 mA	2.0 V		"	"	4Y		"	"
	V_{IC}		9	-18 mA							"								"	S		-1.5	"
			10		-18 mA						"								"	1A		"	"
			11			-18 mA					"								"	1B		"	"
			12					-18 mA			"								"	2A		"	"
			13						-18 mA		"								"	2B		"	"
			14								"		-18 mA						"	3B		"	"
			15								"			-18 mA					"	3A		"	"
			16								"					-18 mA			"	4B		"	"
			17								"						-18 mA		"	4A		"	"
			18								"							-18 mA	"	G		"	"
	I_{IL1}	3009	19	GND	0.4 V						"							GND	5.5 V	1A	2/	2/	mA
		"	20	5.5 V		0.4 V					"							"	"	1B		"	"
		"	21	GND				0.4 V			"							"	"	2A		"	"
		"	22	5.5 V					0.4 V		"							"	"	2B		"	"
		"	23	5.5 V							"		0.4 V					"	"	3B		"	"
		"	24	GND							"			0.4 V				"	"	3A		"	"
		"	25	5.5 V							"					0.4 V		"	"	4B		"	"
		"	26	5.5 V							"						0.4 V	"	"	4A		"	"
	I_{IL2}	"	27								"							0.4 V	"	G		"	"
		"	28	0.4 V							"								"	S		"	"
	I_{IH1}	3010	29	5.5 V	2.7 V						"								"	1A		20	µA
		"	30	GND		2.7 V					"								"	1B		"	"
		"	31	5.5 V				2.7 V			"								"	2A		"	"
		"	32	GND					2.7 V		"								"	2B		"	"
		"	33	GND							"		2.7 V						"	3B		"	"
		"	34	5.5 V							"			2.7 V					"	3A		"	"
		"	35	GND							"					2.7 V			"	4B		"	"
		"	36	5.5 V							"						2.7 V		"	4A		"	"
		"	37	GND							"							2.7 V	"	G		"	"
	I_{IH2}	3010	38	5.5 V	7.0 V						"								"	1A		100	"
		"	39	GND		7.0 V					"								"	1B		"	"
		"	40	5.5 V				7.0 V			"								"	2A		"	"
		"	41	GND					7.0 V		"								"	2B		"	"
		"	42	GND							"		7.0 V						"	3B		"	"
		"	43	5.5 V							"			7.0 V					"	3A		"	"
		"	44	GND							"					7.0 V			"	4B		"	"
		"	45	5.5 V							"						7.0 V		"	4A		"	"
		"	46	GND							"							7.0 V	"	G		"	"
	I_{IH3}	"	47	2.7 V							"								"	S		40	"
	I_{IH4}	"	48	7.0 V							"								"	S		200	"
	I_{OZH}		49	2.0 V		2.0 V	2.7 V				"							2.0 V	"	1Y		20	"
			50	"					2.0 V	2.7 V	"							"	"	2Y		"	"
			51	"							"	2.7 V	2.0 V					"	"	3Y		"	"
			52	"							"				2.7 V	2.0 V		"	"	4Y		"	"
	I_{OZL}		53	0.7 V	0.7 V		0.4 V				"							"	"	1Y		-20	"
			54	"				0.7 V		0.4 V	"							"	"	2Y		"	"
			55	"							"	0.4 V		0.7 V				"	"	3Y		"	"
			56	"							"				0.4 V		0.7 V	"	"	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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
	I_{OS} 3/	3011	57	GND	GND		GND				"							GND	"	1Y	-30	-130	mA
		"	58	"				GND		GND	"							"	"	2Y	"	"	"
		"	59	"							"	GND		GND				"	"	3Y	"	"	"
		"	60	"							"				GND		GND	"	"	4Y	"	"	"
	I_{CC1}	3005	61	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	"
	I_{CC2}	"	62	GND	GND	GND		GND	GND		"		GND	GND		GND	GND	"	"	V_{CC}		9	"
	I_{CC3}	"	63								"							5.5 V	"	V_{CC}		19	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						
7 Tc = 25°C	Func-tional tests	3014	64	B	B	B	H	B	B	H	GND	H	B	B	H	B	B	B	5.0 V	All outputs	4/		
		"	65	"	B	A	H	B	A	H	"	H	A	B	H	A	B	"	"				
		"	66	"	A	"	L	A	"	L	"	L	"	A	L	"	A	"	"				
		"	67	"	B	"	H	B	"	H	"	H	"	B	H	"	B	"	"				
		"	68	A	B	"	L	B	"	L	"	L	"	B	L	"	B	"	"				
		"	69	"	A	"	L	A	"	L	"	L	"	A	L	"	A	"	"				
		"	70	"	A	B	H	A	B	H	"	H	B	A	H	B	A	"	"				
		"	71	"	B	B	H	B	B	H	"	H	B	B	H	B	B	"	"				
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C																						
9 Tc = 25°C	t_{PLH1}	3003 Fig. 4	72	GND	IN		OUT				GND							GND	5.0 V	1A to 1Y	3	23	ns
		"	73	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	74	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	75	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	76	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	77	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	78	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	79	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PHL1}	"	80	GND	IN		OUT				"							"	"	1A to 1Y	"	"	"
		"	81	5.0 V		IN	OUT				"							"	"	1B to 1Y	"	"	"
		"	82	GND				IN		OUT	"							"	"	2A to 2Y	"	"	"
		"	83	5.0 V					IN	OUT	"							"	"	2B to 2Y	"	"	"
		"	84	5.0 V							"	OUT	IN					"	"	3B to 3Y	"	"	"
		"	85	GND							"	OUT		IN				"	"	3A to 3Y	"	"	"
		"	86	5.0 V							"				OUT	IN		"	"	4B to 4Y	"	"	"
		"	87	GND							"				OUT		IN	"	"	4A to 4Y	"	"	"
	t_{PLH5}	"	88	IN	5.0 V	GND	OUT				"							"	"	S to 1Y	"	26	"
		"	89	"				5.0 V	GND	OUT	"							"	"	S to 2Y	"	"	"
		"	90	"							"	OUT	GND	5.0 V				"	"	S to 3Y	"	"	"
		"	91	"							"				OUT	GND	5.0 V	"	"	S to 4Y	"	"	"
	t_{PHL5}	"	92	"	GND	5.0 V	OUT				"							"	"	S to 1Y	"	"	"
		"	93	"				GND	5.0 V	OUT	"							"	"	S to 2Y	"	"	"
		"	94	"							"	OUT	5.0 V	GND				"	"	S to 3Y	"	"	"
		"	95	"							"				OUT	5.0 V	GND	"	"	S to 4Y	"	"	"
	t_{PZH3}	"	96	GND	GND		OUT				"							IN	"	G to 1Y	"	35	"
		"	97	"				GND		OUT	"							"	"	G to 2Y	"	"	"
		"	98	"							"	OUT		GND				"	"	G to 3Y	"	"	"
		"	99	"							"				OUT		GND	"	"	G to 4Y	"	"	"
	t_{PZL3}	"	100	5.0 V		5.0 V	OUT				"							"	"	G to 1Y	"	"	"
		"	101	"					5.0 V	OUT	"							"	"	G to 2Y	"	"	"
		"	102	"							"	OUT	5.0 V					"	"	G to 3Y	"	"	"
		"	103	"							"				OUT	5.0 V		"	"	G to 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	S	1A	1B	1Y	2A	2B	2Y	GND	3Y	3B	3A	4Y	4B	4A	G	V_{CC}		Min	Max	
9 Tc = 25°C	t_{PHZ3}	3003 Fig. 4	104	GND	GND		OUT				"							IN	"	G to 1Y	3	35	ns
		"	105	"				GND		OUT	"							"	"	G to 2Y	"	"	"
		"	106	"							"	OUT		GND				"	"	G to 3Y	"	"	"
		"	107	"							"				OUT		GND	"	"	G to 4Y	"	"	"
	t_{PLZ3}	"	108	5.0 V		5.0 V	OUT				"							"	"	G to 1Y	"	30	"
		"	109	"					5.0 V	OUT	"							"	"	G to 2Y	"	"	"
		"	110	"							"	OUT	5.0 V					"	"	G to 3Y	"	"	"
		"	111	"							"				OUT	5.0 V		"	"	G to 4Y	"	"	"
10	Same tests, terminal conditions and limits as subgroup 9, except T_C = +125°C and for the following: t_{PLH1} and t_{PHL1} = 3 to 35 ns; t_{PLH5} and t_{PHL5} = 3 to 39 ns; t_{PZH3}, t_{PZL3}, and t_{PHZ3} = 3 to 53 ns; t_{PLZ3} = 3 to 45 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_{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	-.32/-.80	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 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1	0.7 V	0.7 V				2.0 V	-1 mA	GND						0.7 V		4.5 V	1Y	2.4		V
		"	2		0.7 V						"	-1 mA	2.0 V				0.7 V	0.7 V	"	2Y	2.4		"
	V_{OL}	3007	3	0.7 V	2.0 V	0.7 V				4 mA	"						2.0 V		"	1Y		0.4	"
		"	4		2.0 V						"	4 mA				0.7 V	2.0 V	0.7 V	"	2Y		0.4	"
	V_{IC}		5	-18 mA							"								"	1G		-1.5	"
			6		-18 mA						"								"	B		"	"
			7			-18 mA					"								"	1C3		"	"
			8				-18 mA				"								"	1C2		"	"
			9					-18 mA			"								"	1C1		"	"
			10						-18 mA		"								"	1C0		"	"
			11								"		-18 mA						"	2C0		"	"
			12								"			-18 mA					"	2C1		"	"
			13								"				-18 mA				"	2C2		"	"
			14								"					-18 mA			"	2C3		"	"
			15								"						-18 mA		"	A		"	"
			16								"							-18 mA	"	2G		"	"
	I_{IL1}	3009	17	0.4 V							"								5.5 V	1G	2/	2/	mA
		"	18		0.4 V						"								"	B	"	"	"
		"	19	GND	5.5 V	0.4 V					"						5.5 V		"	1C3	"	"	"
		"	20	"	5.5 V		0.4 V				"						GND		"	1C2	"	"	"
		"	21	"	GND			0.4 V			"						5.5 V		"	1C1	"	"	"
		"	22	"	"				0.4 V		"						GND		"	1C0	"	"	"
		"	23		"						"		0.4 V				GND	GND	"	2C0	"	"	"
		"	24		"						"			0.4 V			5.5 V	"	"	2C1	"	"	"
		"	25		5.5 V						"				0.4 V		GND	"	"	2C2	"	"	"
		"	26		5.5 V						"					0.4 V	5.5 V	"	"	2C3	"	"	"
		"	27								"						0.4 V		"	A	"	"	"
		"	28								"							0.4 V	"	2G	"	"	"
	I_{IH1}	3010	29	2.7 V							"								"	1G		20	µA
		"	30		2.7 V						"								"	B		"	"
		"	31		GND	2.7 V	"				"						GND		"	1C3		"	"
		"	32		GND		2.7 V				"						5.5 V		"	1C2		"	"
		"	33		5.5 V			2.7 V			"						GND		"	1C1		"	"
		"	34		"				2.7 V		"						5.5 V		"	1C0		"	"
		"	35		"						"		2.7 V				5.5 V		"	2C0		"	"
		"	36		"						"			2.7 V			GND		"	2C1		"	"
		"	37		GND						"				2.7 V		5.5 V		"	2C2		"	"
		"	38		GND						"					2.7 V	GND		"	2C3		"	"
		"	39								"						2.7 V		"	A		"	"
		"	40								"							2.7 V	"	2G		"	"
	I_{IH2}	"	41	7.0 V							"								"	1G		100	"
		"	42		7.0 V						"								"	B		"	"
		"	43		GND	7.0 V					"						GND		"	1C3		"	"
		"	44		GND		7.0 V				"						5.5 V		"	1C2		"	"
		"	45		5.5 V			7.0 V			"						GND		"	1C1		"	"
		"	46		"				7.0 V		"						5.5 V		"	1C0		"	"
		"	47		"						"		7.0 V				5.5 V		"	2C0		"	"
		"	48		"						"			7.0 V			GND		"	2C1		"	"
		"	49		GND						"				7.0 V		5.5 V		"	2C2		"	"
		"	50		GND						"					7.0 V	GND		"	2C3		"	"
		"	51								"						7.0 V		"	A		"	"
		"	52								"							7.0 V	"	2G		"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V_{CC}		Min	Max	
1 Tc = 25°C	I_{OZH}		53	2.0 V	0.7 V				0.7 V	2.7 V	GND						0.7 V		5.5 V	1Y		20	µA
			54		0.7 V						"	2.7 V	0.7 V				0.7 V	2.0 V	"	2Y		20	"
	I_{OZL}		55	2.0 V	2.0 V	2.0 V				0.4 V	"						2.0 V		"	1Y		-20	"
			56		2.0 V						"	0.4 V				2.0 V	2.0 V	2.0 V	"	2Y		-20	"
	I_{OS}	3011	57	GND	GND				5.5 V	GND	"						GND		"	1Y	-30	-130	mA
	3/	3011	58		"						"	GND	5.5 V				"	GND	"	2Y	-30	-130	"
	I_{CC1}	3005	59	GND	"	GND	GND	GND	GND		"		GND	GND	GND	GND	"	GND	"	V_{CC}		12	"
	I_{CC2}	3005	60	5.5 V	"	GND	GND	GND	GND		"		GND	GND	GND	GND	"	5.5 V	"	V_{CC}		14	"
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						
7 Tc = 25°C	Func-tional tests	3014	61	B	B	A	A	A	B	L	GND	L	B	A	A	A	B	B	5.0 V	All	4/		
		"	62	"	"	B	B	B	B	L	"	L	B	B	B	B	"	"	"	Outputs			
		"	63	"	"	"	"	"	A	H	"	H	A	"	"	"	"	"	"	"			
		"	64	"	"	"	"	"	"	L	"	L	"	"	"	"	A	"	"	"			
		"	65	"	"	"	"	A	"	H	"	H	"	A	"	"	A	"	"	"			
		"	66	"	"	"	"	"	"	H	"	H	"	"	"	"	B	"	"	"			
		"	67	"	A	"	"	"	"	L	"	L	"	"	"	"	"	"	"	"			
		"	68	"	"	"	A	"	"	H	"	H	"	"	A	"	"	"	"	"			
		"	69	"	"	"	"	"	"	L	"	L	"	"	"	"	A	"	"	"			
		"	70	"	"	A	"	"	"	H	"	H	"	"	"	A	A	"	"	"			
8	Repeat subgroup 7 tests at Tc = +125°C and Tc = -55°C.																						
9 Tc = 25°C	t_{PLH1}	3003 (Fig. 4)	71	GND	GND				IN	OUT	GND						GND		5.0 V	1C0 to 1Y	3	30	ns
		"	72	"	GND			IN		"	"						5.0 V		"	1C1 to 1Y	"	"	"
		"	73	"	5.0 V		IN			"	"						GND		"	1C2 to 1Y	"	"	"
		"	74	"	5.0 V	IN				"	"						5.0 V		"	1C3 to 1Y	"	"	"
		"	75		GND						"	OUT	IN				GND	GND	"	2C0 to 2Y	"	"	"
		"	76		GND						"	"		IN			5.0 V	"	"	2C1 to 2Y	"	"	"
		"	77		5.0 V						"	"			IN		GND	"	"	2C2 to 2Y	"	"	"
		"	78		5.0 V						"	"				IN	5.0 V	"	"	2C3 to 2Y	"	"	"
	t_{PHL1}	"	79	GND	GND				IN	OUT	"						GND		"	1C0 to 1Y	"	25	"
		"	80	"	GND			IN			"						5.0 V		"	1C1 to 1Y	"	"	"
		"	81	"	5.0 V		IN				"						GND		"	1C2 to 1Y	"	"	"
		"	82	"	5.0 V	IN				OUT	"						5.0 V		"	1C3 to 1Y	"	"	"
		"	83		GND						"	OUT	IN				GND	GND	"	2C0 to 2Y	"	"	"
		"	84		GND						"	"		IN			5.0 V	"	"	2C1 to 2Y	"	"	"
		"	85		5.0 V						"	"			IN		GND	"	"	2C2 to 2Y	"	"	"
		"	86		5.0 V						"	"				IN	5.0 V	"	"	2C3 to 2Y	"	"	"
	t_{PLH5}	"	87	GND	GND			5.0 V	GND	OUT	"						IN		"	A to 1Y	"	50	"
		"	88		GND						"	OUT	GND	5.0 V			IN	GND	"	A to 2Y	"	"	"
		"	89	GND	IN		5.0 V		GND	OUT	"						GND		"	B to 1Y	"	"	"
		"	90		IN						"	OUT	GND		5.0 V		GND	GND	"	B to 2Y	"	"	"
	t_{PHL5}	"	91	GND	GND			GND	5.0 V	OUT	"						IN		"	A to 1Y	"	37	"
		"	92		GND						"	OUT	5.0 V	GND			IN	GND	"	A to 2Y	"	"	"
		"	93	GND	IN		GND		5.0 V	OUT	"						GND		"	B to 1Y	"	"	"
		"	94		IN						"	OUT	5.0 V		GND		GND	GND	"	B to 2Y	"	"	"

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	V_{CC}		Min	Max	
9 Tc = 25°C	t_{PZH3}	3003 (Fig. 4)	95	IN	5.0 V	5.0 V				OUT	GND						5.0 V		5.0 V	1G to 1Y	3	46	ns
			96		5.0 V						"	OUT				5.0 V	5.0 V	IN	"	2G to 2Y	"	46	"
	t_{PZL3}	"	97	IN	GND				GND	OUT	"						GND		"	1G to 1Y	"	28	"
		"	98		GND						"	OUT	GND				GND	IN	"	2G to 2Y	"	28	"
	t_{PHZ3}	"	99	IN	5.0 V	5.0 V				OUT	"						5.0 V		"	1G to 1Y	"	46	"
		"	100		5.0 V						"	OUT				5.0 V	5.0 V	IN	"	2G to 2Y	"	46	"
	t_{PLZ3}	"	101	IN	GND				GND	OUT	"						GND		"	1G to 1Y	"	32	"
		"	102		GND						"	OUT	GND				GND	IN	"	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_{PLH5} = 3 to 75 ns; t_{PHL5} = 3 to 56 ns; t_{PZH3} = 3 to 69 ns; t_{PZL3} = 3 to 42 ns, and t_{PHZ3} = 3 to 69 ns; t_{PLZ3} = 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_{IL} limits shall be as follows:

Test	Min/Max limits (mA) for circuits						
	A	B	C	D	E	F	G
I_{IL1}	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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	B2	A2	A1	B1	C2	D2	D1	GND	C1	WS	$\overline{CP}$	QD	QC	QB	QA	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OH}	3006	1		2.0 V						GND		2.0 V	2/				-.4 mA	4.5 V	QA	2.5		V
		"	2	2.0 V							"		"	"			-.4 mA		"	QB	"		"
		"	3					2.0 V			"		"	"		-.4 mA			"	QC	"		"
		"	4						2.0 V		"		"	"	-.4 mA				"	QD	"		"
	V_{OL}	3007	5		0.7 V						"		"	"				4.0 mA	"	QA		0.4	"
		"	6	0.7 V							"		"	"			4.0 mA		"	QB		"	"
		"	7					0.7 V			"		"	"		4.0 mA			"	QC		"	"
		"	8						0.7 V		"		"	"	4.0 mA				"	QD		"	"
	V_{IC}		9	-18 mA							"								"	B2		-1.5	"
			10		-18 mA						"								"	A2		"	"
			11			-18 mA					"								"	A1		"	"
			12				-18 mA				"								"	B1		"	"
			13					-18 mA			"								"	C2		"	"
			14						-18 mA		"								"	D2		"	"
			15							-18 mA	"								"	D1		"	"
			16								"	-18 mA							"	C1		"	"
			17								"		-18 mA						"	WS		"	"
			18								"			-18 mA					"	$\overline{CP}$		"	"
	I_{IL1}	3009	19	0.4 V							"		5.5 V						5.5 V	B2	3/	3/	mA
		"	20		0.4 V						"		5.5 V						"	A2	"	"	"
		"	21			0.4 V					"		GND						"	A1	"	"	"
		"	22				0.4 V				"		GND						"	B1	"	"	"
		"	23					0.4 V			"		5.5 V						"	C2	"	"	"
		"	24						0.4 V		"		5.5 V						"	D2	"	"	"
		"	25							0.4 V	"		GND						"	D1	"	"	"
		"	26								"	0.4 V	GND						"	C1	"	"	"
		"	27								"		0.4 V						"	WS	"	"	"
		"	28								"			0.4 V					"	$\overline{CP}$	"	"	"
	I_{IH1}	3010	29	2.7 V							"		GND						"	B2		20	µA
		"	30		2.7 V						"		GND						"	A2		"	"
		"	31			2.7 V					"		5.5 V						"	A1		"	"
		"	32				2.7 V				"		5.5 V						"	B1		"	"
		"	33					2.7 V			"		GND						"	C2		"	"
		"	34						2.7 V		"		GND						"	D2		"	"
		"	35							2.7 V	"		5.5 V						"	D1		"	"
		"	36								"	2.7 V	5.5 V						"	C1		"	"
		"	37								"		2.7 V						"	WS		"	"
		"	38								"			2.7 V					"	$\overline{CP}$		"	"
	I_{IH2}	"	39	5.5 V							"		GND						"	B2		100	"
		"	40		5.5 V						"		GND						"	A2		"	"
		"	41			5.5 V					"		5.5 V						"	A1		"	"
		"	42				5.5 V				"		5.5 V						"	B1		"	"
		"	43					5.5 V			"		GND						"	C2		"	"
		"	44						5.5 V		"		GND						"	D2		"	"
		"	45							5.5 V	"		5.5 V						"	D1		"	"
		"	46								"	5.5 V	"						"	C1		"	"
		"	47								"		"						"	WS		"	"
		"	48								"			5.5 V					"	$\overline{CP}$		"	"
	I_{OS}	3011	49			5.5 V					"		GND	2/				GND	"	QA	-15	-100	mA
		"	50				5.5 V				"		"	"			GND		"	QB	"	"	"
		"	51								"	5.5 V	"	"		GND			"	QC	"	"	"
		"	52							5.5 V	"		"	"	GND				"	QD	"	"	"
	I_{CC1}	3005	53	GND	GND	GND	GND	GND	GND	GND	"	GND	"	4/					"	V_{CC}		21	"

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	Measured terminal	Limits		Unit
			Cases 1/ 2, X	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19	20				
			Test no.	B2	A2	A1	B1	C2	D2	D1	GND	C1	WS	$\overline{CP}$	QD	QC	QB	QA	V_{CC}		Min	Max	
2	Same tests, terminal conditions and limits as subgroup 1, except T_C = +125°C and V_{IC} tests omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} tests omitted.																						
7	Func-	3014	54	A	A	B	B	A	A	B	GND	B	B	A	L	L	L	L	5.0 V	All			
Tc = 25°C	tional	"	55	"	"	"	"	"	"	"	"	"	"	B	"	"	"	"	"	ouputs			
	tests	"	56	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"			
		"	57	"	"	A	A	"	"	A	"	A	"	A	"	"	"	"	"	"			
		"	58	"	"	"	"	"	"	"	"	"	"	B	H	H	H	H	"	"			
		"	59	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"			
		"	60	"	"	B	B	"	"	B	"	B	"	A	"	"	"	"	"	"			
		"	61	"	"	B	B	"	"	B	"	B	"	B	L	L	L	L	"	"			
		"	62	"	"	A	A	"	"	A	"	A	"	"	"	"	"	"	"	"		5/	
		"	63	"	"	B	B	"	"	B	"	B	"	"	"	"	"	"	"	"			
		"	64	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"			
		"	65	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"	"			
		"	66	"	"	A	A	"	"	A	"	A	"	"	"	"	"	"	"	"			
		"	67	"	"	"	"	"	"	"	"	"	"	B	H	H	H	H	"	"			
		"	68	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"	"	"			
		"	69	B	B	"	"	B	B	"	"	"	"	A	"	"	"	"	"	"			
		"	70	B	B	"	"	B	B	"	"	"	"	B	L	L	L	L	"	"			
		"	71	A	A	"	"	A	A	"	"	"	"	"	"	"	"	"	"	"			
		"	72	B	B	"	"	B	B	"	"	"	"	"	"	"	"	"	"	"			
8	Repeat subgroup 7 tests at T_C = +125°C and T_C = -55°C.																						
9	t_{PLH1}	3003	73		IN						GND		5.5 V	IN				OUT	5.0 V	$\overline{CP}$ to QA	3	33	ns
Tc = 25°C		Fig. 4	74	IN							"		"	"			OUT		"	$\overline{CP}$ to QB	"	"	"
		"	75					IN			"		"	"		OUT			"	$\overline{CP}$ to QC	"	"	"
		"	76						IN		"		"	"	OUT				"	$\overline{CP}$ to QD	"	"	"
	t_{PHL1}	"	77		IN						"		"	"				OUT	"	$\overline{CP}$ to QA	"	37	"
		"	78	IN							"		"	"			OUT		"	$\overline{CP}$ to QB	"	"	"
		"	79					IN			"		"	"		OUT			"	$\overline{CP}$ to QC	"	"	"
		"	80						IN		"		"	"	OUT				"	$\overline{CP}$ to QD	"	"	"
10	Same tests, terminal conditions and limits as subgroup 9, except T_C = +125°C and limits as follows: t_{PLH1} = 3 to 43 ns; t_{PHL1} = 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/ 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	G
I_{IL1}	-.16/-.40	-	-	-.16/-.40 except -.03/-.30 test 27 and 28	-.16/-.40 except -.12/-.36 test 27 and 28	-.12/-.36	-

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.

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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 P. O. Box 3990 Columbus, Ohio 43216-5000	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Standardization Program Office (DLSC-LM) 8725 John J. Kingman Road, Suite 2533 Fort Belvoir, Virginia 22060-6221 Telephone (703)767-6888 DSN 427-6888