PART NUMBER

5420BDA-ROCS

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.

M38510-001 (5401)

Microcircuits, Digital, TTL, NAND Gates, Monolithic Silicon

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-35835
    - 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.

FOR REFERENCE ONLY

© 2018 Rochester Electronics, LLC. All Rights Reserved 10172018

INCH-POUND

MIL-M-38510/1F
16 March 2005
SUPERSEDING
MIL-M-38510/1E
1 June 1982

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL, NAND GATES, MONOLITHIC SILICON

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

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, TTL, positive NAND logic gating microcircuits. Two product assurance classes and a choice of case outlines and lead finishes are provided for each type and are reflected in the complete part number. For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3).

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

1.2.1 Device types. The device types are as follows:

Device type	Circuit
01	Single, 8-input positive NAND gate
02	Dual, 4-input positive NAND gate
03	Triple, 3-input positive NAND gate
04	Quadruple, 2-input positive NAND gate
05	Hex, 1-input inverter gate
06	Triple, 3-input positive NAND gate (open collector output)
07	Quadruple, 2-input positive NAND gate (open collector output)
08	Hex, 1-input inverter gate (open collector output)
09	Same as device type 07, except different pin connections

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

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

Outline letter	Descriptive designator	Terminals	Package style
A	GDFP5-F14 or CDFP6-F14	14	Flat
B	GDFP4-F14	14	Flat
C	GDIP1-T14 or CDIP2-T14	14	Dual-in-line
D	GDFP1-F14 or CDFP2-F14	14	Flat

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to bipolar@dla.mil . Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.daps.dla.mil .

AMSC N/A FSC 5962

1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V to +7.0 V
Input voltage range	-1.5 V at -12 mA to +5.5 V
Storage temperature range	-65° to +150°C
Maximum power dissipation per gate (P_D) 1/	40 mW
Lead temperature (soldering, 10 seconds)	300°C
Thermal resistance, junction to case (θ_{JC})	(See MIL-STD-1835)
Junction temperature (T_J) 2/	175°C

1.4 Recommended operating conditions.

Supply voltage	+4.5 V minimum to +5.5 V maximum
Minimum high level input voltage	+2.0 V
Maximum low level input voltage (V_{IL})	+0.8 V
Normalized fanout (each output) 3/	10 maximum
Case operating temperature range	-55° to +125°C

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 inputs of the same device type as that being tested.

2. APPLICABLE DOCUMENTS

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

2.2 Government documents.

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

DEPARTMENT OF DEFENSE SPECIFICATIONS

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

DEPARTMENT OF DEFENSE STANDARDS

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

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

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

3. REQUIREMENTS

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

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

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

3.3.1 Terminal connections and logic diagrams. The terminal connections and logic diagrams shall be as specified on figure 1.

3.3.2 Truth tables and logic equations. The truth tables and logic equations shall be as specified on figure 2.

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

3.3.4 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.

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions	Device types	Limits		Unit
		-55°C ≤ T_C ≤ +125°C		Min	Max	
High level output voltage	V_{OH}	V_{CC} = 4.5 V, V_{IN} = 0.8 V, I_{OH} = -400 µA 1/	01, 02, 03, 04, 05	2.4	- - -	V
Low level output voltage	V_{OL}	V_{CC} = 4.5 V, I_{OL} = 16 mA, V_{IN} = 2.0 V for all inputs of gate under test 1/	All		0.4	V
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V, I_{IN} = -12 mA T_C = 25°C	All		-1.5	V
Maximum collector cut-off current	I_{CEX}	V_{CC} = 4.5 V, V_{IN} = 0.8 V, V_{OH} = 5.5 V	06, 07 08, 09		250	µA
High level input current	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.4 V 2/	All		40	µA
High level input current	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V 2/	All		100	µA
Low level input current	I_{IL}	V_{CC} = 5.5 V, V_{IN} = 0.4 V 1/	All	-0.7	-1.6	mA
Short circuit output current	I_{OS}	V_{CC} = 5.5 V 2/ 3/	01, 02, 03, 04, 05	-20	-55	mA
High level supply current per gate	I_{CCH}	V_{CC} = 5.5 V, V_{IN} = 0 V 2/	All		1.65	mA
Low level supply current per gate	I_{CCL}	V_{CC} = 5.5 V, V_{IN} = 5.5 V 1/	All		5.0	mA
Propagation delay time, high-to-low level	t_{PHL}	C_L = 50 pF, R_L = 390Ω	01, 02, 03, 04, 05	3	24	ns
			06, 07, 08, 09	3	29	ns
Propagation delay time, low-to-high level	t_{PLH}	C_L = 50 pF, R_L = 390Ω	01, 02, 03, 04, 05	3	27	ns
			06, 07, 08, 09	3	35	ns

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

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.

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, 9 10, 11	1*, 2, 3, 9
Group A test requirements	1, 2, 3, 9, 10, 11	1, 2, 3, 9
Group B electrical test parameters when using the method 5005 QCI option	1, 2, 3, 9, 10, 11	N/A
Group C end-point electrical parameters	1, 2, 3, 9, 10, 11	1, 2, 3
Additional electrical parameters for group C periodic inspections	N/A	10, 11
Group D end-point electrical parameters	1, 2, 3	1, 2, 3

*PDA applies to subgroup 1.

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 1 (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 affect 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 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-3853*5* and as follows:

a. Tests shall be as specified in table II herein.

b. Subgroups 4, 5, 6, 7, and 8 shall be omitted.

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

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

a. End-point electrical parameters shall be as specified in table II herein.

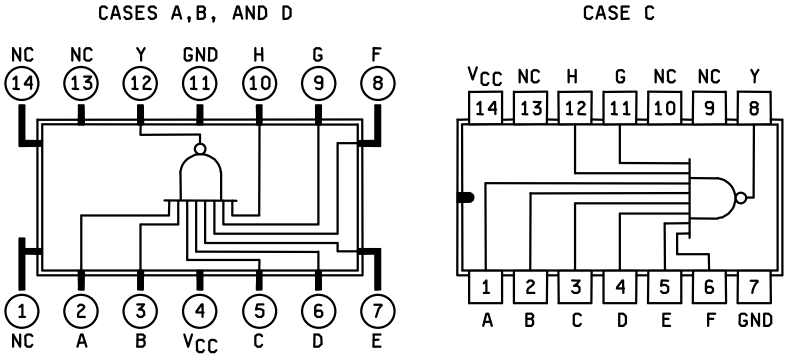
b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology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

4.4.4 Group D inspection. Group D inspection shall be in accordance with table V of MIL-PRF-38535. End-point electrical parameters shall be as specified in table II herein.

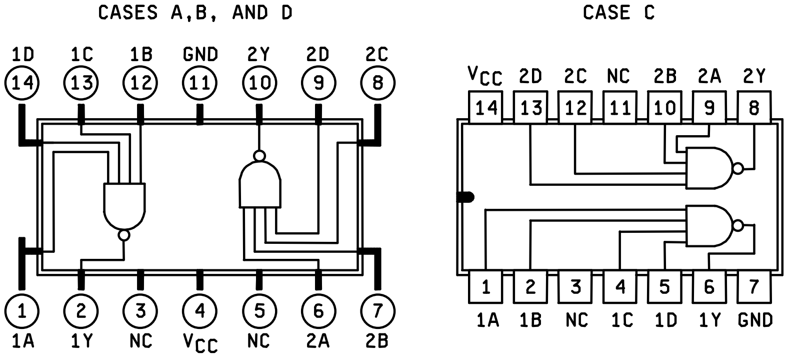
4.5 Methods of inspection. Methods of inspection shall be as specified and as follows:

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.

DEVICE TYPE 01



DEVICE TYPE 02



DEVICE TYPE 03

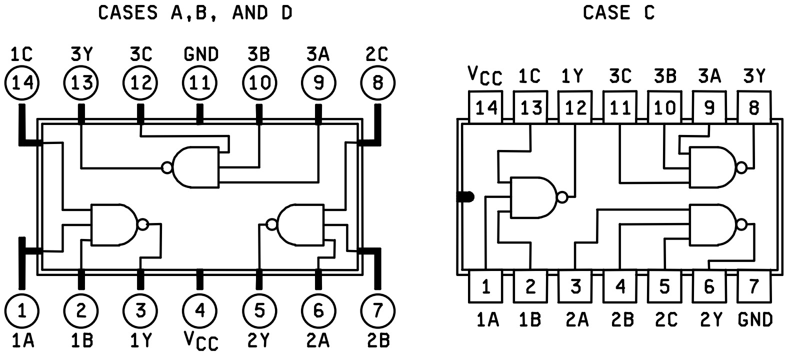
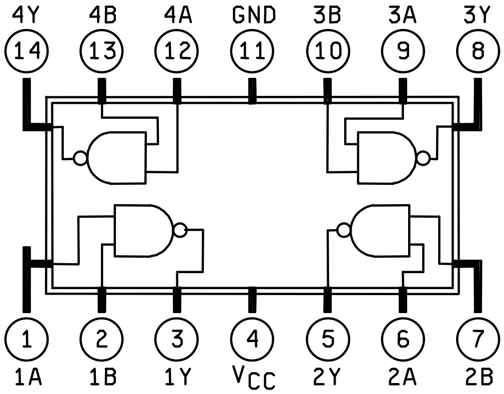


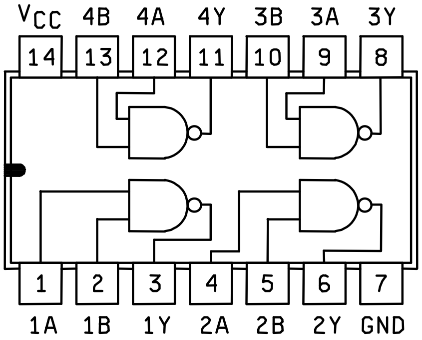
FIGURE 1. Terminal connections and logic diagrams.

DEVICE TYPE 04

CASES A,B AND D

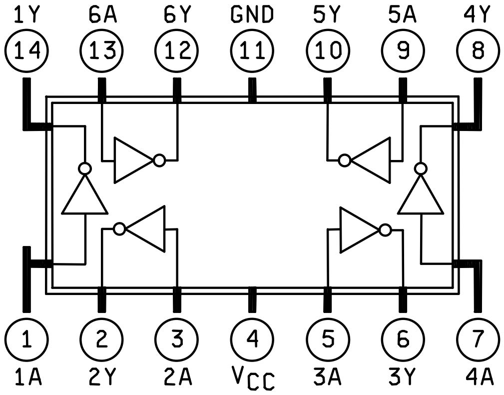


CASE C



DEVICE TYPES 05 AND 08

CASES A,B AND D



CASE C

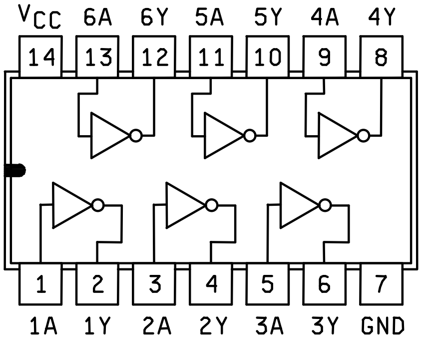
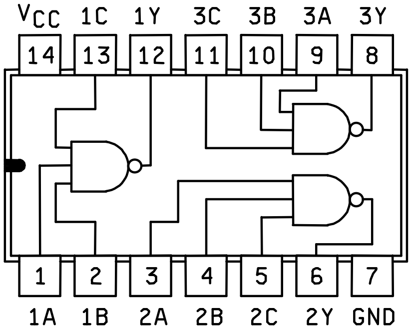


FIGURE 1. Terminal connections and logic diagrams - Continued.

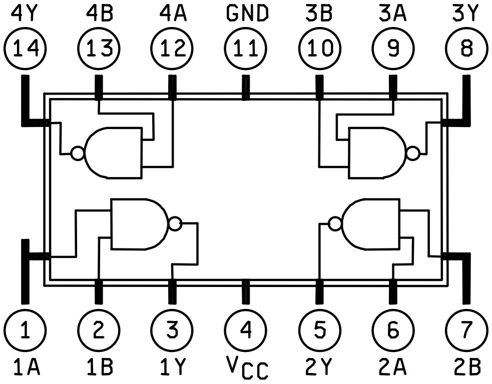
DEVICE TYPE 06

CASES A,B,C AND D

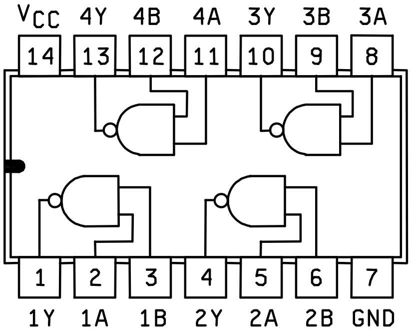


DEVICE TYPE 07

CASES A,B AND D



CASE C



DEVICE TYPE 09

CASE C

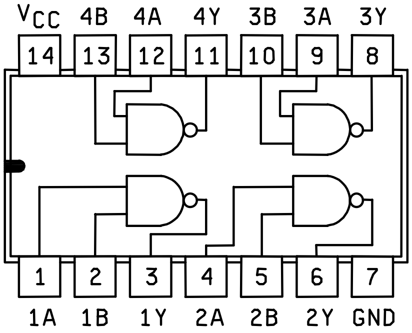


FIGURE 1. Terminal connections and logic diagrams - Continued.

Device type 01

Truth table								
Input								Output
A	B	C	D	E	F	G	H	Y
H	H	H	H	H	H	H	H	L
All other combinations of H and L at the inputs give H output.								

Positive logic $Y = \overline{ABCDEFGH}$

Device types 03 and 06

Truth table			
Input			Output
A	B	C	Y
L	L	L	H
H	L	L	H
L	H	L	H
H	H	L	H
L	L	H	H
H	L	H	H
L	H	H	H
H	H	H	L

Positive logic $Y = \overline{ABC}$

Device type 02

Truth table				
Input				Output
A	B	C	D	Y
L	L	L	L	H
H	L	L	L	H
L	H	L	L	H
H	H	L	L	H
L	L	H	L	H
H	L	H	L	H
L	H	H	L	H
H	H	H	L	H
L	L	L	H	H
H	L	L	H	H
L	H	L	H	H
H	H	L	H	H
L	L	H	H	H
H	L	H	H	H
L	H	H	H	H
H	H	H	H	L

Positive logic $Y = \overline{ABCD}$

Device types 04, 07, and 09

Truth table each gate		
Input		Output
A	B	Y
L	L	H
H	L	H
L	H	H
H	H	L

Positive logic $Y = \overline{AB}$

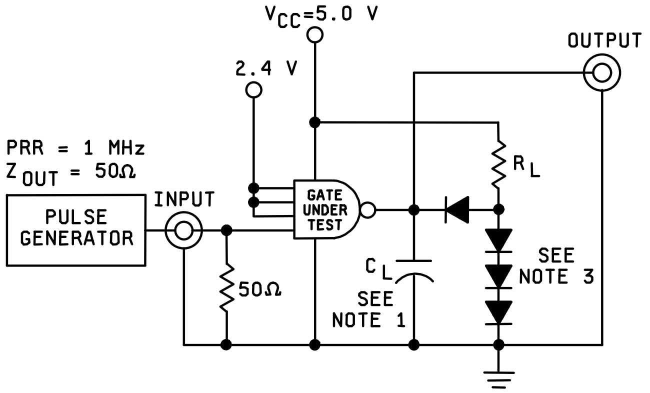
Device types 05 and 08

Truth table each gate	
Input	Input
A	Y
L	H
H	L

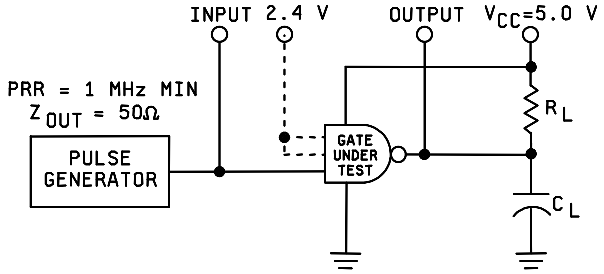
Positive logic $Y = \overline{A}$

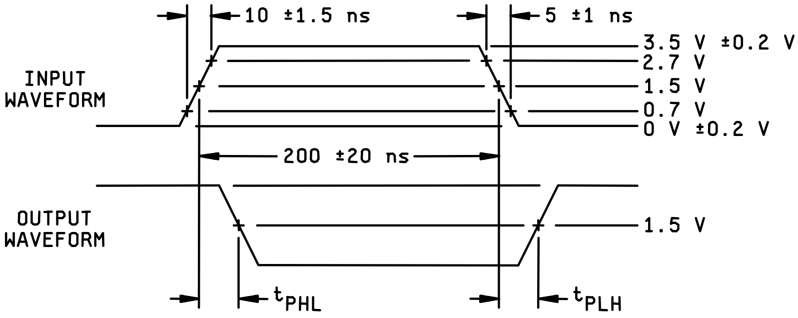
FIGURE 2. Truth tables and logic equations.

TEST CIRCUITS EXCEPT FOR OPEN COLLECTOR CIRCUITS



FOR OPEN COLLECTOR CIRCUITS





NOTES:

1. C_L = 50 pF minimum, including scope probe, wiring and stray capacitance, without package in test fixture.
2. Voltage measurements are to be made with respect to network ground terminal.
3. All diode are 1N3064 or equivalent.
4. R_L = 390 ohm ±5%.

FIGURE 3. Test circuit and switching waveforms.

TABLE III. Group A inspection for device type 01.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	13	1	2	14	3	4	5	6	11	12	7	8	9	10				
			Test no.	NC	A	B	V_{CC}	C	D	E	F	G	H	GND	Y	NC	NC		Min	Max	
1	V_{OL}	3007	1		2.0 V	2.0 V	4.5 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	GND	16mA			Y		0.4	V
Tc = 25°C	V_{OH}	3006	2		0.8 V	5.5 V	4.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	-.4mA			Y	2.4		V
			3		5.5 V	0.8 V	"	"	"	"	"	"	"	"	"			Y	"		"
			4		"	5.5 V	"	0.8 V	"	"	"	"	"	"	"			Y	"		"
			5		"	"	"	5.5 V	0.8 V	"	"	"	"	"	"			Y	"		"
			6		"	"	"	"	5.5 V	0.8 V	"	"	"	"	"			Y	"		"
			7		"	"	"	"	"	5.5 V	0.8 V	"	"	"	"			Y	"		"
			8		"	"	"	"	"	"	5.5 V	0.8 V	"	"	"			Y	"		"
			9		"	"	"	"	"	"	"	5.5 V	0.8 V	"	"			Y	"		"
	I_{OS}	3011	10		GND	GND	5.5 V	GND	GND	GND	GND	GND	GND	GND	GND			Y	-20	-55	mA
	I_{IH1}	3010	11		2.4 V	GND	5.5 V	GND	GND	GND	GND	GND	GND	GND				A		40	µA
			12		GND	2.4 V	"	"	"	"	"	"	"	"				B		"	"
			13		"	GND	"	2.4 V	"	"	"	"	"	"				C		"	"
			14		"	"	"	GND	2.4 V	"	"	"	"	"				D		"	"
			15		"	"	"	"	GND	2.4 V	"	"	"	"				E		"	"
			16		"	"	"	"	"	GND	2.4 V	"	"	"				F		"	"
			17		"	"	"	"	"	"	GND	2.4 V	"	"				G		"	"
			18		"	"	"	"	"	"	"	GND	2.4 V	"				H		"	"
	I_{IH2}	3010	19		5.5 V	GND	5.5 V	GND	GND	GND	GND	GND	GND	GND				A		100	µA
			20		GND	5.5 V	"	"	"	"	"	"	"	"				B		"	"
			21		"	GND	"	5.5 V	"	"	"	"	"	"				C		"	"
			22		"	"	"	GND	5.5 V	"	"	"	"	"				D		"	"
			23		"	"	"	"	GND	5.5 V	"	"	"	"				E		"	"
			24		"	"	"	"	"	GND	5.5 V	"	"	"				F		"	"
			25		"	"	"	"	"	"	GND	5.5 V	"	"				G		"	"
			26		"	"	"	"	"	"	"	GND	5.5 V	"				H		"	"
	I_{IL}	3009	27		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	GND				A	-0.7	-1.6	mA
			28		5.5 V	0.4 V	"	"	"	"	"	"	"	"				B	"	"	"
			29		"	5.5 V	"	0.4 V	"	"	"	"	"	"				C	"	"	"
			30		"	"	"	5.5 V	0.4 V	"	"	"	"	"				D	"	"	"
			31		"	"	"	"	5.5 V	0.4 V	"	"	"	"				E	"	"	"
			32		"	"	"	"	"	5.5 V	0.4 V	"	"	"				F	"	"	"
			33		"	"	"	"	"	"	5.5 V	0.4 V	"	"				G	"	"	"
			34		"	"	"	"	"	"	"	5.5 V	0.4 V	"				H	"	"	"
	I_{CCL}	3005	35		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	GND				V_{CC}		5.0	mA
	I_{CCH}	3005	36		GND	GND	5.5 V	GND	GND	GND	GND	GND	GND	GND				V_{CC}		1.65	mA
	V_{IC}		37		-12 mA		4.5 V							GND				A		-1.5	V
			38			-12 mA	"							"				B		"	"
			39				"	-12 mA						"				C		"	"
			40				"		-12 mA					"				D		"	"
			41				"			-12 mA				"				E		"	"
			42				"				-12 mA			"				F		"	"
			43				"					-12 mA		"				G		"	"
			44				"						-12 mA	"				H		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				
9	t_{PHL}	3003	45		IN	2.4 V	5.0 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	GND	OUT			A to Y	3	20	ns
Tc = 25°C	t_{PLH}	(Fig. 3)	46		"	"	"	"	"	"	"	"	"	"	"			A to Y	3	25	ns
10	t_{PHL}	3003	47		IN	2.4 V	5.0 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	GND	OUT			A to Y	3	24	ns
Tc = 125°C	t_{PLH}	(Fig. 3)	48		"	"	"	"	"	"	"	"	"	"	"			A to Y	3	27	ns
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 02.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	1	6	3	14	11	9	10	12	13	8	7	2	4	5		Min	Max	
			Test no.	1A	1Y	NC	V_{CC}	NC	2A	2B	2C	2D	2Y	GND	1B	1C	1D				
1	V_{OL}	3007	1	2.0 V	16 mA		4.5 V		5.5 V	5.5 V	5.5 V	5.5 V		GND	2.0 V	2.0 V	2.0 V	1Y		0.4	V
Tc = 25°C			2	5.5 V			"		2.0 V	2.0 V	2.0 V	2.0 V	16 mA	"	5.5 V	5.5 V	5.5 V	2Y		"	"
	V_{OH}	3006	3	0.8 V	-.4 mA		4.5 V		5.5 V	5.5 V	5.5 V	5.5 V		GND	5.5 V	5.5 V	5.5 V	1Y	2.4		V
			4	5.5 V	"		"		"	"	"	"		"	0.8 V	"	"	1Y	"		"
			5	"	"		"		"	"	"	"		"	5.5 V	0.8 V	"	1Y	"		"
			6	"	"		"		"	"	"	"		"	"	5.5 V	0.8 V	1Y	"		"
			7	"			"		0.8 V	"	"	"	-.4 mA	"	"	"	5.5 V	2Y	"		"
			8	"			"		5.5 V	0.8 V	"	"	"	"	"	"	"	2Y	"		"
			9	"			"		"	5.5 V	0.8 V	"	"	"	"	"	"	2Y	"		"
			10	"			"		"	"	5.5 V	0.8 V	"	"	"	"	"	2Y	"		"
	I_{OS}	3011	11	GND	GND		5.5 V							GND	GND	GND	GND	1Y	-20	-55	mA
			12				"		GND	GND	GND	GND	GND					2Y	"	"	"
	I_{IH1}	3010	13	2.4 V			5.5 V		GND	GND	GND	GND		GND	GND	GND	GND	1A		40	µA
			14	GND			"		"	"	"	"		"	2.4 V	"	"	1B		"	"
			15	"			"		"	"	"	"		"	GND	2.4 V	"	1C		"	"
			16	"			"		"	"	"	"		"	"	GND	2.4 V	1D		"	"
			17	"			"		2.4 V	"	"	"		"	"	"	GND	2A		"	"
			18	"			"		GND	2.4 V	"	"		"	"	"	"	2B		"	"
			19	"			"		"	GND	2.4 V	"		"	"	"	"	2C		"	"
			20	"			"		"	"	GND	2.4 V		"	"	"	"	2D		"	"
	I_{IH2}	3010	21	5.5 V			5.5 V		GND	GND	GND	GND		GND	GND	GND	GND	1A		100	µA
			22	GND			"		"	"	"	"		"	5.5 V	"	"	1B		"	"
			23	"			"		"	"	"	"		"	GND	5.5 V	"	1C		"	"
			24	"			"		"	"	"	"		"	"	GND	5.5 V	1D		"	"
			25	"			"		5.5 V	"	"	"		"	"	"	GND	2A		"	"
			26	"			"		GND	5.5 V	"	"		"	"	"	"	2B		"	"
			27	"			"		"	GND	5.5 V	"		"	"	"	"	2C		"	"
			28	"			"		"	"	GND	5.5 V		"	"	"	"	2D		"	"
	I_{IL}	3009	29	0.4 V			5.5 V		5.5 V	5.5 V	5.5 V	5.5 V		GND	5.5 V	5.5 V	5.5 V	1A	-0.7	-1.6	mA
			30	5.5 V			"		"	"	"	"		"	0.4 V	"	"	1B	"	"	"
			31	"			"		"	"	"	"		"	5.5 V	0.4 V	"	1C	"	"	"
			32	"			"		"	"	"	"		"	"	5.5 V	0.4 V	1D	"	"	"
			33	"			"		0.4 V	"	"	"		"	"	"	5.5 V	2A	"	"	"
			34	"			"		5.5 V	0.4 V	"	"		"	"	"	"	2B	"	"	"
			35	"			"		"	5.5 V	0.4 V	"		"	"	"	"	2C	"	"	"
			36	"			"		"	"	5.5 V	0.4 V		"	"	"	"	2D	"	"	"
	I_{CCL}	3005	37	5.5 V			5.5 V		5.5 V	5.5 V	5.5 V	5.5 V		GND	5.5 V	5.5 V	5.5 V	V_{CC}		10	mA
	I_{CCH}	3005	38	GND			5.5 V		GND	GND	GND	GND		GND	GND	GND	GND	V_{CC}		3.3	mA
	V_{IC}		39	-12 mA			4.5 V							GND				1A		-1.5	V
			40				"							"	-12 mA			1B		"	"
			41				"							"		-12 mA		1C		"	"
			42				"							"			-12 mA	1D		"	"
			43				"		-12 mA					"				2A		"	"
			44				"			-12 mA				"				2B		"	"
			45				"				-12 mA			"				2C		"	"
			46				"					-12 mA		"				2D		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				
9	t_{PHL}	3003	47	IN	OUT		5.0 V							GND	2.4 V	2.4 V	2.4 V	1A to 1Y	3	20	ns
Tc = 25°C	t_{PHL}	(Fig. 3)	48				"		IN	2.4 V	2.4 V	2.4 V	OUT	"				2A to 2Y	"	"	"
	t_{PLH}	3003	49	IN	OUT		5.0 V							GND	2.4 V	2.4 V	2.4 V	1A to 1Y	3	25	ns
	t_{PLH}	(Fig. 3)	50				"		IN	2.4 V	2.4 V	2.4 V	OUT	"				2A to 2Y	"	"	"
10	t_{PHL}	3003	51	IN	OUT		5.0 V							GND	2.4 V	2.4 V	2.4 V	1A to 1Y	3	24	ns
Tc = 125°C	t_{PHL}	(Fig. 3)	52				"		IN	2.4 V	2.4 V	2.4 V	OUT	"				2A to 2Y	"	"	"
	t_{PLH}	3003	53	IN	OUT		5.0 V							GND	2.4 V	2.4 V	2.4 V	1A to 1Y	3	27	ns
	t_{PLH}	(Fig. 3)	54				"		IN	2.4 V	2.4 V	2.4 V	OUT	"				2A to 2Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 03.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13				
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C		Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V	2.0 V	16 mA	4.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		2.0 V	1Y		0.4	V
			2	5.5 V	5.5 V		"	16 mA	2.0 V	2.0 V	2.0 V	"	"	"	"		5.5 V	2Y		"	"
			3	"	"		"		5.5 V	5.5 V	5.5 V	2.0 V	2.0 V	"	2.0 V	16 mA	"	3Y		"	"
	V_{OH}	3006	4	0.8 V	5.5 V	-.4 mA	4.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	1Y	2.4		V
			5	5.5 V	0.8 V	"	"		"	"	"	"	"	"	"		"	1Y	"		"
			6	"	5.5 V	"	"		"	"	"	"	"	"	"		0.8 V	1Y	"		"
			7	"	"		"	-.4 mA	0.8 V	"	"	"	"	"	"		5.5 V	2Y	"		"
			8	"	"		"	"	5.5 V	0.8 V	"	"	"	"	"		"	2Y	"		"
			9	"	"		"	"	"	5.5 V	0.8 V	"	"	"	"		"	2Y	"		"
			10	"	"		"		"	"	5.5 V	0.8 V	"	"	"	-.4 mA	"	3Y	"		"
			11	"	"		"		"	"	"	5.5 V	0.8 V	"	"	"	"	3Y	"		"
			12	"	"		"		"	"	"	"	5.5 V	"	0.8 V	"	"	3Y	"		"
	I_{OS}	3011	13	GND	GND	GND	5.5 V							GND			GND	1Y	-20	-55	mA
			14				"	GND	GND	GND	GND			"				2Y	"	"	"
			15				"					GND	GND	"	GND	GND		3Y	"	"	"
	I_{IH1}	3010	16	2.4 V	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	1A		40	µA
			17	GND	2.4 V		"		"	"	"	"	"	"	"		"	1B		"	"
			18	"	GND		"		"	"	"	"	"	"	"		2.4 V	1C		"	"
			19	"	"		"		2.4 V	"	"	"	"	"	"		GND	2A		"	"
			20	"	"		"		GND	2.4 V	"	"	"	"	"		"	2B		"	"
			21	"	"		"		"	GND	2.4 V	"	"	"	"		"	2C		"	"
			22	"	"		"		"	"	GND	2.4 V	"	"	"		"	3A		"	"
			23	"	"		"		"	"	"	GND	2.4 V	"	"		"	3B		"	"
			24	"	"		"		"	"	"	"	GND	"	2.4 V		"	3C		"	"
	I_{IH2}	3010	25	5.5 V	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	1A		100	µA
			26	GND	5.5 V		"		"	"	"	"	"	"	"		"	1B		"	"
			27	"	GND		"		"	"	"	"	"	"	"		5.5 V	1C		"	"
			28	"	"		"		5.5 V	"	"	"	"	"	"		GND	2A		"	"
			29	"	"		"		GND	5.5 V	"	"	"	"	"		"	2B		"	"
			30	"	"		"		"	GND	5.5 V	"	"	"	"		"	2C		"	"
			31	"	"		"		"	"	GND	5.5 V	"	"	"		"	3A		"	"
			32	"	"		"		"	"	"	GND	5.5 V	"	"		"	3B		"	"
			33	"	"		"		"	"	"	"	GND	"	5.5 V		"	3C		"	"
	I_{IL}	3009	34	0.4 V	5.5 V		"		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	1A	-0.7	-1.6	mA
			35	5.5 V	0.4 V		"		"	"	"	"	"	"	"		"	1B	"	"	"
			36	"	5.5 V		"		"	"	"	"	"	"	"		0.4 V	1C	"	"	"
			37	"	"		"		0.4 V	"	"	"	"	"	"		5.5 V	2A	"	"	"
			38	"	"		"		5.5 V	0.4 V	"	"	"	"	"		"	2B	"	"	"
			39	"	"		"		"	5.5 V	0.4 V	"	"	"	"		"	2C	"	"	"
			40	"	"		"		"	"	5.5 V	0.4 V	"	"	"		"	3A	"	"	"
			41	"	"		"		"	"	"	5.5 V	0.4 V	"	"		"	3B	"	"	"
			42	"	"		"		"	"	"	"	5.5 V	"	0.4 V		"	3C	"	"	"
	I_{CCH}	3005	43	GND	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	V_{CC}		4.95	mA
	I_{CCL}	3005	44	5.5 V	5.5 V		5.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	V_{CC}		15	mA
	V_{IC}		45	-12 mA			4.5 V							GND				1A		-1.5	V
			46		-12mA		"							"				1B		"	"
			47				"							"			-12 mA	1C		"	"
			48				"		-12 mA					"				2A		"	"
			49				"			-12 mA				"				2B		"	"
			50				"				-12 mA			"				2C		"	"
			51				"					-12 mA		"				3A		"	"
			52				"						-12 mA	"				3B		"	"
			53				"							"	-12 mA			3C		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

		MIL-STD-	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
Subgroup	Symbol	883	Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13	Measured	Limits		Unit
		method	Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	terminal	Min	Max	
9	t_{PHL}	3003	54	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	20	ns
Tc = 25°C		(Fig. 3)	55				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			56				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
	t_{PLH}	3003	57	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	25	ns
		(Fig. 3)	58				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			59				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
10	t_{PHL}	3003	60	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	24	ns
Tc = 125°C		(Fig. 3)	61				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			62				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
	t_{PLH}	3003	63	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	27	ns
		(Fig. 3)	64				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			65				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 04.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	1	2	3	14	6	4	5	8	9	10	7	12	13	11				
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y		Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V	2.0 V	16 mA	4.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1Y		0.4	V
			2	5.5 V	5.5 V		"	16 mA	2.0 V	2.0 V		"	"	"	"	"		2Y		"	"
			3	"	"		"		5.5 V	5.5 V	16 mA	2.0 V	2.0 V	"	"	"		3Y		"	"
			4	"	"		"		"	"		5.5 V	5.5 V	"	2.0 V	2.0 V	16 mA	4Y		"	"
	V_{OH}	3006	5	0.8 V	5.5 V	-.4 mA	4.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1Y	2.4		V
			6	5.5 V	0.8 V	"	"		"	"		"	"	"	"	"		1Y	"		"
			7	"	5.5 V		"	-.4 mA	0.8 V	"		"	"	"	"	"		2Y	"		"
			8	"	"		"	"	5.5 V	0.8 V		"	"	"	"	"		2Y	"		"
			9	"	"		"		"	5.5 V	-.4 mA	0.8 V	"	"	"	"		3Y	"		"
			10	"	"		"		"	"	"	5.5 V	0.8 V	"	"	"		3Y	"		"
			11	"	"		"		"	"		"	5.5 V	"	0.8 V	"	-.4 mA	4Y	"		"
			12	"	"		"		"	"		"	"	"	5.5 V	0.8 V	"	4Y	"		"
	I_{OS}	3011	13	GND	GND	GND	5.5 V							GND				1Y	-20	-55	mA
			14				"	GND	GND	GND				"				2Y	"	"	"
			15				"				GND	GND	GND	"				3Y	"	"	"
			16				"							"	GND	GND	GND	4Y	"	"	"
	I_{IH1}	3010	17	2.4 V	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		1A		40	µA
			18	GND	2.4 V		"		"	"		"	"	"	"	"		1B		"	"
			19	"	GND		"		2.4 V	"		"	"	"	"	"		2A		"	"
			20	"	"		"		GND	2.4 V		"	"	"	"	"		2B		"	"
			21	"	"		"		"	GND		2.4 V	"	"	"	"		3A		"	"
			22	"	"		"		"	"		GND	2.4 V	"	"	"		3B		"	"
			23	"	"		"		"	"		"	GND	"	2.4 V	"		4A		"	"
			24	"	"		"		"	"		"	"	"	GND	2.4 V		4B		"	"
	I_{IH2}	3010	25	5.5 V	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		1A		100	µA
			26	GND	5.5 V		"		"	"		"	"	"	"	"		1B		"	"
			27	"	GND		"		5.5 V	"		"	"	"	"	"		2A		"	"
			28	"	"		"		GND	5.5 V		"	"	"	"	"		2B		"	"
			29	"	"		"		"	GND		5.5 V	"	"	"	"		3A		"	"
			30	"	"		"		"	"		GND	5.5 V	"	"	"		3B		"	"
			31	"	"		"		"	"		"	GND	"	5.5 V	"		4A		"	"
			32	"	"		"		"	"		"	"	"	GND	5.5 V		4B		"	"
	I_{IL}	3009	33	0.4 V	5.5 V		5.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1A	-0.7	-1.6	mA
			34	5.5 V	0.4 V		"		"	"		"	"	"	"	"		1B	"	"	"
			35	"	5.5 V		"		0.4 V	"		"	"	"	"	"		2A	"	"	"
			36	"	"		"		5.5 V	0.4 V		"	"	"	"	"		2B	"	"	"
			37	"	"		"		"	5.5 V		0.4 V	"	"	"	"		3A	"	"	"
			38	"	"		"		"	"		5.5 V	0.4 V	"	"	"		3B	"	"	"
			39	"	"		"		"	"		"	5.5 V	"	0.4 V	"		4A	"	"	"
			40	"	"		"		"	"		"	"	"	5.5 V	0.4 V		4B	"	"	"
	I_{CCH}	3005	41	GND	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		V_{CC}		6.6	mA
	I_{CCL}	3005	42	5.5 V	5.5 V		5.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		V_{CC}		20	mA
	V_{IC}		43	-12 mA			4.5 V							GND				1A		-1.5	V
			44		-12mA		"							"				1B		"	"
			45				"		-12 mA					"				2A		"	"
			46				"			-12 mA				"				2B		"	"
			47				"					-12 mA		"				3A		"	"
			48				"						-12 mA	"				3B		"	"
			49				"							"	-12 mA			4A		"	"
			50				"							"		-12 mA		4B		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13				
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y		Min	Max	
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	51	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	20	ns
			52				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			53				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			54				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	55	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	25	ns
			56				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			57				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			58				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	59	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	24	ns
			60				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			61				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			62				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	63	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	27	ns
			64				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			65				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			66				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 05.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

		MIL-STD-	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
Subgroup	Symbol	883	Case C	11	4	3	14	5	6	9	8	11	10	7	12	13	2	Measured	Limits		Unit
		method	Test no.	1A	2Y	2A	V_{CC}	3A	3Y	4A	4Y	5A	5Y	GND	6Y	6Y	6A	terminal	Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V		5.5 V	4.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V	16mA	1Y		0.4	V
			2	5.5 V	16 mA	2.0 V	"	"		"		"		"		"		2Y		"	"
			3	"		5.5 V	"	2.0 V	16mA	"		"		"		"		3Y		"	"
			4	"		"	"	5.5 V		2.0 V	16mA	"		"		"		4Y		"	"
			5	"		"	"	"		5.5 V		2.0 V	16mA	"		"		5Y		"	"
			6	"		"	"	"		"		5.5 V		"	16mA	2.0 V		6Y		"	"
	V_{OH}	3006	7	0.8 V		5.5 V	4.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V	-.4mA	1Y	2.4		V
			8	5.5 V	-.4 mA	0.8 V	"	"		"		"		"		"		2Y	"		"
			9	"		5.5 V	"	0.8 V	-.4 mA	"		"		"		"		3Y	"		"
			10	"		"	"	5.5 V		0.8 V	-.4 mA	"		"		"		4Y	"		"
			11	"		"	"	"		5.5 V		0.8 V	-.4 mA	"		"		5Y	"		"
			12	"		"	"	"		"		5.5 V		"	-.4 mA	0.8 V		6Y	"		"
	I_{OS}	3011	13	GND			5.5 V							GND			GND	1Y	-20	-55	mA
			14		GND	GND	"							"				2Y	"	"	"
			15				"	GND	GND					"				3Y	"	"	"
			16				"			GND	GND			"				4Y	"	"	"
			17				"					GND	GND	"				5Y	"	"	"
			18				"							"	GND	GND		6Y	"	"	"
	I_{IH1}	3010	19	2.4 V		GND	5.5 V	GND		GND		GND		GND		GND		1A		40	µA
			20	GND		2.4 V	"	"		"		"		"		"		2A		"	"
			21	"		GND	"	2.4 V		"		"		"		"		3A		"	"
			22	"		"	"	GND		2.4		"		"		"		4A		"	"
			23	"		"	"	"		GND		2.4 V		"		"		5A		"	"
			24	"		"	"	"		"		GND		"		2.4 V		6A		"	"
	I_{IH2}	3010	25	5.5 V		GND	5.5 V	GND		GND		GND		GND		GND		1A		100	µA
			26	GND		5.5 V	"	"		"		"		"		"		2A		"	"
			27	"		GND	"	5.5 V		"		"		"		"		3A		"	"
			28	"		"	"	GND		5.5 V		"		"		"		4A		"	"
			29	"		"	"	"		GND		5.5 V		"		"		5A		"	"
			30	"		"	"	"		"		GND		"		5.5 V		6A		"	"
	I_{IL}	3009	31	0.4 V		5.5 V	5.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V		1A	-0.7	-1.6	mA
			32	5.5 V		0.4 V	"	"		"		"		"		"		2A	"	"	"
			33	"		5.5 V	"	0.4 V		"		"		"		"		3A	"	"	"
			34	"		"	"	5.5 V		0.4 V		"		"		"		4A	"	"	"
			35	"		"	"	"		5.5 V		0.4 V		"		"		5A	"	"	"
			36	"		"	"	"		"		5.5 V		"		0.4 V		6A	"	"	"
	I_{CCL}	3005	37	5.5 V		5.5 V	5.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V		V_{CC}		30	mA
	I_{CCH}	3005	38	GND		GND	5.5 V	GND		GND		GND		GND		GND		V_{CC}		9.9	mA
	V_{IC}		39	-12 mA			4.5 V							GND				1A		-1.5	V
			40			-12 mA	"							"				2A		"	"
			41				"	-12 mA						"				3A		"	"
			42				"			-12 mA				"				4A		"	"
			43				"					-12 mA		"				5A		"	"
			44				"							"		-12 mA		6A		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13				
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y		Min	Max	
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	45	IN			5.0 V							GND			OUT	1A to 1Y	3	20	ns
			46		OUT	IN	"							"				2A to 2Y	"	"	"
			47				"	IN	OUT					"				3A to 3Y	"	"	"
			48				"			IN	OUT			"				4A to 4Y	"	"	"
			49				"					IN	OUT	"				5A to 5Y	"	"	"
			50				"							"	OUT	IN		6A to 6Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	51	IN			5.0 V							GND			OUT	1A to 1Y	3	25	ns
			52		OUT	IN	"							"				2A to 2Y	"	"	"
			53				"	IN	OUT					"				3A to 3Y	"	"	"
			54				"			IN	OUT			"				4A to 4Y	"	"	"
			55				"					IN	OUT	"				5A to 5Y	"	"	"
			56				"							"	OUT	IN		6A to 6Y	"	"	"
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	57	IN			5.0 V							GND			OUT	1A to 1Y	3	24	ns
			58		OUT	IN	"							"				2A to 2Y	"	"	"
			59				"	IN	OUT					"				3A to 3Y	"	"	"
			60				"			IN	OUT			"				4A to 4Y	"	"	"
			61				"					IN	OUT	"				5A to 5Y	"	"	"
			62				"							"	OUT	IN		6A to 6Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	63	IN			5.0 V							GND			OUT	1A to 1Y	3	27	ns
			64		OUT	IN	"							"				2A to 2Y	"	"	"
			65				"	IN	OUT					"				3A to 3Y	"	"	"
			66				"			IN	OUT			"				4A to 4Y	"	"	"
			67				"					IN	OUT	"				5A to 5Y	"	"	"
			68				"							"	OUT	IN		6A to 6Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 06.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, C, and D	1	2	12	14	6	3	4	5	9	10	7	11	8	13	Measured terminal	Limits		Unit
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C		Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V	2.0 V	16 mA	4.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		2.0 V	1Y		0.4	V
			2	5.5 V	5.5 V		"	16 mA	2.0 V	2.0 V	2.0 V	"	"	"	"		5.5 V	2Y		"	"
			3	"	"		"		5.5 V	5.5 V	5.5 V	2.0 V	2.0 V	"	2.0 V	16 mA	"	3Y		"	"
	I_{CEX}		4	0.8 V	5.5 V	5.5 V	4.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	1Y		250	µA
			5	5.5 V	0.8 V	"	"		"	"	"	"	"	"	"		"	1Y		"	"
			6	"	5.5 V	"	"		"	"	"	"	"	"	"		0.8 V	1Y		"	"
			7	"	"		"	5.5 V	0.8 V	"	"	"	"	"	"		5.5 V	2Y		"	"
			8	"	"		"	"	5.5 V	0.8 V	"	"	"	"	"		"	2Y		"	"
			9	"	"		"	"	"	5.5 V	0.8 V	"	"	"	"		"	2Y		"	"
			10	"	"		"		"	"	5.5 V	0.8 V	"	"	"	5.5 V	"	3Y		"	"
			11	"	"		"		"	"	"	5.5 V	0.8 V	"	"	"	"	3Y		"	"
			12	"	"		"		"	"	"	"	5.5 V	"	0.8 V	"	"	3Y		"	"
	V_{IC}		13	-12 mA			4.5 V							GND				1A		-1.5	V
			14		-12 mA		"							"				1B		"	"
			15				"							"			-12 mA	1C		"	"
			16				"		-12 mA					"				2A		"	"
			17				"			-12 mA				"				2B		"	"
			18				"				-12 mA			"				2C		"	"
			19				"					-12 mA		"				3A		"	"
			20				"						-12 mA	"				3B		"	"
			21				"							"	-12 mA			3C		"	"
	I_{IH1}	3010	22	2.4 V	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	1A		40	µA
			23	GND	2.4 V		"		"	"	"	"	"	"	"		"	1B		"	"
			24	"	GND		"		"	"	"	"	"	"	"		2.4 V	1C		"	"
			20	"	"		"		2.4 V	"	"	"	"	"	"		GND	2A		"	"
			26	"	"		"		GND	2.4 V	"	"	"	"	"		"	2B		"	"
			27	"	"		"		"	GND	2.4 V	"	"	"	"		"	2C		"	"
			28	"	"		"		"	"	GND	2.4 V	"	"	"		"	3A		"	"
			29	"	"		"		"	"	"	GND	2.4 V	"	"		"	3B		"	"
			30	"	"		"		"	"	"	"	GND	"	2.4 V		"	3C		"	"
	I_{IH2}	3010	31	5.5 V	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	1A		100	µA
			32	GND	5.5 V		"		"	"	"	"	"	"	"		"	1B		"	"
			33	"	GND		"		"	"	"	"	"	"	"		5.5 V	1C		"	"
			34	"	"		"		5.5 V	"	"	"	"	"	"		GND	2A		"	"
			35	"	"		"		GND	5.5 V	"	"	"	"	"		"	2B		"	"
			36	"	"		"		"	GND	5.5 V	"	"	"	"		"	2C		"	"
			37	"	"		"		"	"	GND	5.5 V	"	"	"		"	3A		"	"
			38	"	"		"		"	"	"	GND	5.5 V	"	"		"	3B		"	"
			39	"	"		"		"	"	"	"	GND	"	5.5 V		"	3C		"	"
	I_{IL}	3009	40	0.4 V	5.5 V		5.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	1A	-0.7	-1.6	mA
			41	5.5 V	0.4 V		"		"	"	"	"	"	"	"		"	1B	"	"	"
			42	"	5.5 V		"		"	"	"	"	"	"	"		0.4 V	1C	"	"	"
			43	"	"		"		0.4 V	"	"	"	"	"	"		5.5 V	2A	"	"	"
			44	"	"		"		5.5 V	0.4 V	"	"	"	"	"		"	2B	"	"	"
			45	"	"		"		"	5.5 V	0.4 V	"	"	"	"		"	2C	"	"	"
			46	"	"		"		"	"	5.5 V	0.4 V	"	"	"		"	3A	"	"	"
			47	"	"		"		"	"	"	5.5 V	0.4 V	"	"		"	3B	"	"	"
			48	"	"		"		"	"	"	"	5.5 V	"	0.4 V		"	3C	"	"	"
	I_{CCL}	3005	49	5.5 V	5.5 V		5.5 V		5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V		5.5 V	V_{CC}		15	mA
	I_{CCH}	3005	50	GND	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	V_{CC}		4.95	mA
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Subgroup	Symbol	MIL-STD-883	Cases A, B, C, and D	1	2	12	14	6	3	4	5	9	10	7	11	8	13	Measured	Limits		Unit
		method	Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C	terminal	Min	Max	
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	51	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	23	ns
			52				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			53				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	54	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	28	ns
			55				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			56				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	57	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	29	ns
			58				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			59				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	60	IN	2.4 V	OUT	5.0 V							GND			2.4 V	1A to 1Y	3	35	ns
			61				"	OUT	IN	2.4 V	2.4 V			"				2A to 2Y	"	"	"
			62				"					IN	2.4 V	"	2.4 V	OUT		3A to 3Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 07.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

		MIL-STD-	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
Subgroup	Symbol	883	Case C	2	3	1	14	4	5	6	10	8	9	7	11	12	13	Measured	Limits		Unit
		method	Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	terminal	Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V	2.0 V	16 mA	4.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1Y		0.4	V
			2	5.5 V	5.5 V		"	16 mA	2.0 V	2.0 V		"	"	"	"	"		2Y		"	"
			3	"	"		"		5.5 V	5.5 V	16 mA	2.0 V	2.0 V	"	"	"		3Y		"	"
			4	"	"		"		"	"		5.5 V	5.5 V	"	2.0 V	2.0 V	16 mA	4Y		"	"
	I_{CEX}		5	0.8 V	4.5 V	5.5 V	4.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1Y		250	µA
			6	4.5 V	0.8 V	"	"		"	"		"	"	"	"	"		1Y		"	"
			7	5.5 V	5.5 V		"	5.5 V	0.8 V	4.5 V		"	"	"	"	"		2Y		"	"
			8	"	"		"	"	4.5 V	0.8 V		"	"	"	"	"		2Y		"	"
			9	"	"		"		5.5 V	5.5 V	5.5 V	0.8 V	4.5 V	"	"	"		3Y		"	"
			10	"	"		"		"	"	"	4.5 V	0.8 V	"	"	"		3Y		"	"
			11	"	"		"		"	"		5.5 V	5.5 V	"	0.8 V	4.5 V	5.5 V	4Y		"	"
			12	"	"		"		"	"		"	"	"	4.5 V	0.8 V	"	4Y		"	"
	I_{IH1}	3010	13	2.4 V	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		1A		40	µA
			14	GND	2.4 V		"		"	"		"	"	"	"	"		1B		"	"
			15	"	GND		"		2.4 V	"		"	"	"	"	"		2A		"	"
			16	"	"		"		GND	2.4 V		"	"	"	"	"		2B		"	"
			17	"	"		"		"	GND		2.4 V	"	"	"	"		3A		"	"
			18	"	"		"		"	"		GND	2.4 V	"	"	"		3B		"	"
			19	"	"		"		"	"		"	GND	"	2.4 V	"		4A		"	"
			20	"	"		"		"	"		"	"	"	GND	2.4 V		4B		"	"
	I_{IH2}	3010	21	5.5 V	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		1A		100	µA
			22	GND	5.5 V		"		"	"		"	"	"	"	"		1B		"	"
			23	"	GND		"		5.5 V	"		"	"	"	"	"		2A		"	"
			24	"	"		"		GND	5.5 V		"	"	"	"	"		2B		"	"
			25	"	"		"		"	GND		5.5 V	"	"	"	"		3A		"	"
			26	"	"		"		"	"		GND	5.5 V	"	"	"		3B		"	"
			27	"	"		"		"	"		"	GND	"	5.5 V	"		4A		"	"
			28	"	"		"		"	"		"	"	"	GND	5.5 V		4B		"	"
	I_{IL}	3009	29	0.4 V	5.5 V		5.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		1A	-0.7	-1.6	mA
			30	5.5 V	0.4 V		"		"	"		"	"	"	"	"		1B	"	"	"
			31	"	5.5 V		"		0.4 V	"		"	"	"	"	"		2A	"	"	"
			32	"	"		"		5.5 V	0.4 V		"	"	"	"	"		2B	"	"	"
			33	"	"		"		"	5.5 V		0.4 V	"	"	"	"		3A	"	"	"
			34	"	"		"		"	"		5.5 V	0.4 V	"	"	"		3B	"	"	"
			35	"	"		"		"	"		"	5.5 V	"	0.4 V	"		4A	"	"	"
			36	"	"		"		"	"		"	"	"	5.5 V	0.4 V		4B	"	"	"
	I_{CCL}	3005	37	5.5 V	5.5 V		5.5 V		5.5 V	5.5 V		5.5 V	5.5 V	GND	5.5 V	5.5 V		V_{CC}		20	mA
	I_{CCH}	3005	38	GND	GND		5.5 V		GND	GND		GND	GND	GND	GND	GND		V_{CC}		6.6	mA
	V_{IC}		39	-12mA			4.5 V							GND				1A		-1.5	V
			40		-12mA		"							"				1B		"	"
			41				"		-12mA					"				2A		"	"
			42				"			-12mA				"				2B		"	"
			43				"					-12mA		"				3A		"	"
			44				"						-12mA	"				3B		"	"
			45				"							"	-12mA			4A		"	"
			46				"							"		-12mA		4B		"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Subgroup	Symbol	MIL-STD-883 method	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Case C	2	3	1	14	4	5	6	10	8	9	7	11	12	13		Min	Max	
			Test no.	1A	1B	1Y	V_{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y				
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	47	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	23	ns
			48				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			49				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			50												IN	2.4 V	OUT	4A to 4Y			
	t_{PLH}	3003 (Fig. 3)	51	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	28	ns
			52				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			53				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			54												IN	2.4 V	OUT	4A to 4Y			
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	55	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	29	ns
			56				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			57				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			58												IN	2.4 V	OUT	4A to 4Y			
	t_{PLH}	3003 (Fig. 3)	59	IN	2.4 V	OUT	5.0 V							GND				1A to 1Y	3	35	ns
			60				"	OUT	IN	2.4 V				"				2A to 2Y	"	"	"
			61				"				OUT	IN	2.4 V	"				3A to 3Y	"	"	"
			62												IN	2.4 V	OUT	4A to 4Y			
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

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

		MIL-STD-	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				
Subgroup	Symbol	883	Case C	1	4	3	14	5	6	9	8	11	10	7	12	13	2	Measured	Limits		Unit
		method	Test no.	1A	2Y	2A	V_{CC}	3A	3Y	4A	4Y	5A	5Y	GND	6Y	6A	1Y	terminal	Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V		5.5 V	4.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V	16 mA	1Y		0.4	V
			2	5.5 V	16 mA	2.0 V	"	"		"		"		"		"		2Y		"	"
			3	"		5.5 V	"	2.0 V	16 mA	"		"		"		"		3Y		"	"
			4	"		"	"	5.5 V		2.0 V	16 mA	"		"		"		4Y		"	"
			5	"		"	"	"		5.5 V		2.0 V	16 mA	"		"		5Y		"	"
			6	"		"	"	"		"		5.5 V		"	16 mA	2.0 V		6Y		"	"
	I_{CEX}		7	0.8 V		5.5 V	4.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V	5.5 V	1Y		250	µA
			8	5.5 V	5.5 V	0.8 V	"	"		"		"		"		"		2Y		"	"
			9	"		5.5 V	"	0.8 V	5.5 V	"		"		"		"		3Y		"	"
			10	"		"	"	5.5 V		0.8 V	5.5 V	"		"		"		4Y		"	"
			11	"		"	"	"		5.5 V		0.8 V	5.5 V	"		"		5Y		"	"
			12	"		"	"	"		"		5.5 V		"	5.5 V	0.8 V		6Y		"	"
	V_{IC}		13	-12mA			4.5 V							GND				1A		-1.5	V
			14			-12mA	"							"				2A		"	"
			15				"	-12mA						"				3A		"	"
			16				"			-12mA				"				4A		"	"
			17				"					-12mA		"				5A		"	"
			18				"							"		-12mA		6A		"	"
	I_{IH1}	3010	19	2.4 V		GND	5.5 V	GND		GND		GND		GND		GND		1A		40	µA
			20	GND		2.4 V	"	"		"		"		"		"		2A		"	"
			21	"		GND	"	2.4 V		"		"		"		"		3A		"	"
			22	"		"	"	GND		2.4 V		"		"		"		4A		"	"
			23	"		"	"	"		GND		2.4 V		"		"		5A		"	"
			24	"		"	"	"		"		GND		"		2.4 V		6A		"	"
	I_{IH2}	3010	25	5.5 V		GND	5.5 V	GND		GND		GND		GND		GND		1A		100	µA
			26	GND		5.5 V	"	"		"		"		"		"		2A		"	"
			27	"		GND	"	5.5 V		"		"		"		"		3A		"	"
			28	"		"	"	GND		5.5 V		"		"		"		4A		"	"
			29	"		"	"	"		GND		5.5 V		"		"		5A		"	"
			30	"		"	"	"		"		GND		"		5.5 V		6A		"	"
	I_{IL}	3009	31	0.4 V		5.5 V	5.5 V	5.5 V		5.5 V		5.5 V		"		5.5 V		1A	-0.7	-1.6	mA
			32	5.5 V		0.4 V	"	"		"		"		"		"		2A	"	"	"
			33	"		5.5 V	"	0.4 V		"		"		"		"		3A	"	"	"
			34	"		"	"	5.5 V		0.4 V		"		"		"		4A	"	"	"
			35	"		"	"	"		5.5 V		0.4 V		"		"		5A	"	"	"
			36	"		"	"	"		"		5.5 V		"		0.4 V		6A	"	"	"
	I_{CCL}	3005	37	5.5 V		5.5 V	5.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V		V_{CC}		30	mA
	I_{CCH}	3005	38	GND		GND	5.5 V	GND		GND		GND		GND		GND		V_{CC}		9.9	mA
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

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

Subgroup	Symbol	MIL-STD-	Cases A, B, D	1	2	3	4	5	6	7	8	9	10	11	12	13	14				Unit
		883	Case C	1	4	3	14	5	6	9	8	11	10	7	12	13	2	Measured	Limits		
		method	Test no.	1A	2Y	2A	V_{CC}	3A	3Y	4A	4Y	5A	5Y	GND	6Y	6A	1Y	terminal	Min	Max	
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	39	IN			5.0 V							GND			OUT	1A to 1Y	3	23	ns
			40		OUT	IN	"							"				2A to 2Y	"	"	"
			41				"	IN	OUT					"				3A to 3Y	"	"	"
			42				"			IN	OUT			"				4A to 4Y	"	"	"
			43				"					IN	OUT	"				5A to 5Y	"	"	"
			44				"							"	OUT	IN		6A to 6Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	45	IN			5.0 V							GND			OUT	1A to 1Y	3	28	ns
			46		OUT	IN	"							"				2A to 2Y	"	"	"
			47				"	IN	OUT					"				3A to 3Y	"	"	"
			48				"			IN	OUT			"				4A to 4Y	"	"	"
			49				"					IN	OUT	"				5A to 5Y	"	"	"
			50				"							"	OUT	IN		6A to 6Y	"	"	"
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	51	IN			5.0 V							GND			OUT	1A to 1Y	3	29	ns
			52		OUT	IN	"							"				2A to 2Y	"	"	"
			53				"	IN	OUT					"				3A to 3Y	"	"	"
			54				"			IN	OUT			"				4A to 4Y	"	"	"
			55				"					IN	OUT	"				5A to 5Y	"	"	"
			56				"							"	OUT	IN		6A to 6Y	"	"	"
	t_{PLH}	3003 (Fig. 3)	57	IN			5.0 V							GND			OUT	1A to 1Y	3	35	ns
			58		OUT	IN	"							"				2A to 2Y	"	"	"
			59				"	IN	OUT					"				3A to 3Y	"	"	"
			60				"			IN	OUT			"				4A to 4Y	"	"	"
			61				"					IN	OUT	"				5A to 5Y	"	"	"
			62				"							"	OUT	IN		6A to 6Y	"	"	"
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

TABLE III. Group A inspection for device type 09.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Case C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
			Test no.	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	3B	4Y	4A	4B	V_{CC}		Min	Max	
1 Tc = 25°C	V_{OL}	3007	1	2.0 V	2.0 V	16 mA	5.5 V	5.5 V		GND		5.5 V	5.5 V		5.5 V	5.5 V	4.5 V	1Y		0.4	V
			2	5.5 V	5.5 V		2.0 V	2.0 V	16 mA	"		"	"		"	"	"	2Y		"	"
			3	"	"		5.5 V	5.5 V		"	16 mA	2.0 V	2.0 V		"	"	"	3Y		"	"
			4	"	"		"	"		"		5.5 V	5.5 V	16 mA	2.0 V	2.0 V	"	4Y		"	"
	I_{CEX}		5	0.8 V	4.5 V	5.5 V	5.5 V	5.5 V		GND		5.5 V	5.5 V		5.5 V	5.5 V	4.5 V	1Y		250	µA
			6	4.5 V	0.8 V	"	"	"		"		"	"		"	"	"	1Y		"	"
			7	5.5 V	5.5 V		0.8 V	4.5 V	5.5 V	"		"	"		"	"	"	2Y		"	"
			8	"	"		4.5 V	0.8 V	"	"		"	"		"	"	"	2Y		"	"
			9	"	"		5.5 V	5.5 V		"	5.5 V	0.8 V	4.5 V		"	"	"	3Y		"	"
			10	"	"		"	"		"	"	4.5 V	0.8 V		"	"	"	3Y		"	"
			11	"	"		"	"		"		5.5 V	5.5 V	5.5 V	0.8 V	4.5 V	"	4Y		"	"
			12	"	"		"	"		"		"	"	"	4.5 V	0.8 V	"	4Y		"	"
	V_{IC}		13	-12mA						GND							4.5 V	1A		-1.5	V
			14		-12mA					"							"	1B		"	"
			15				-12mA			"							"	2A		"	"
			16					-12mA		"							"	2B		"	"
			17							"		-12mA					"	3A		"	"
			18							"			-12mA				"	3B		"	"
			19							"					-12mA		"	4A		"	"
			20							"						-12mA	"	4B		"	"
	I_{IH1}	3010	21	2.4 V	GND		GND	GND		GND		GND	GND		GND	GND	5.5 V	1A		40	µA
			22	GND	2.4 V		"	"		"		"	"		"	"	"	1B		"	"
			23	"	GND		2.4 V	"		"		"	"		"	"	"	2A		"	"
			24	"	"		GND	2.4 V		"		"	"		"	"	"	2B		"	"
			25	"	"		"	GND		"		2.4 V	"		"	"	"	3A		"	"
			26	"	"		"	"		"		GND	2.4 V		"	"	"	3B		"	"
			27	"	"		"	"		"		"	GND		2.4 V	"	"	4A		"	"
			28	"	"		"	"		"		"	"		GND	2.4 V	"	4B		"	"
	I_{IH2}	3010	29	5.5 V	GND		GND	GND		GND		GND	GND		GND	GND	5.5 V	1A		100	µA
			30	GND	5.5 V		"	"		"		"	"		"	"	"	1B		"	"
			31	"	GND		5.5 V	"		"		"	"		"	"	"	2A		"	"
			32	"	"		GND	5.5 V		"		"	"		"	"	"	2B		"	"
			33	"	"		"	GND		"		5.5 V	"		"	"	"	3A		"	"
			34	"	"		"	"		"		GND	5.5 V		"	"	"	3B		"	"
			35	"	"		"	"		"		"	GND		5.5 V	"	"	4A		"	"
			36	"	"		"	"		"		"	"		GND	5.5 V	"	4B		"	"
	I_{IL}	3009	37	0.4 V	5.5 V		5.5 V	5.5 V		GND		5.5 V	5.5 V		5.5 V	5.5 V	5.5 V	1A	-0.7	-1.6	mA
			38	5.5 V	0.4 V		"	"		"		"	"		"	"	"	1B	"	"	"
			39	"	5.5 V		0.4 V	"		"		"	"		"	"	"	2A	"	"	"
			40	"	"		5.5 V	0.4 V		"		"	"		"	"	"	2B	"	"	"
			41	"	"		"	5.5 V		"		0.4 V	"		"	"	"	3A	"	"	"
			42	"	"		"	"		"		5.5 V	0.4 V		"	"	"	3B	"	"	"
			43	"	"		"	"		"		"	5.5 V		0.4 V	"	"	4A	"	"	"
			44	"	"		"	"		"		"	"		5.5 V	0.4 V	"	4B	"	"	"
	I_{CCL}	3005	45	5.5 V	5.5 V		5.5 V	5.5 V		GND		5.5 V	5.5 V		5.5 V	5.5 V	5.5 V	V_{CC}		20	mA
	I_{CCH}	3005	46	GND	GND		GND	GND		GND		GND	GND		GND	GND	5.5 V	V_{CC}		6.6	mA
2	Same tests, terminal conditions and limits as for subgroup 1, except Tc = 125°C and V_{IC} tests are omitted.																				
3	Same tests, terminal conditions and limits as for subgroup 1, except Tc = -55°C and V_{IC} tests are omitted.																				

TABLE III. Group A inspection for device type 09 - Continued.

Terminal conditions (pins not designated may be high ≥ 2.0 V, low ≤ 0.8 V or open)

Subgroup	Symbol	MIL-STD-883 method	Case C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured	Limits		Unit
			Test no.	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	3B	4Y	4A	4B	V_{CC}	terminal	Min	Max	
9 Tc = 25°C	t_{PHL}	3003 (Fig. 3)	47	IN	2.4 V	OUT				GND							5.0 V	1A to 1Y	3	23	ns
			48				IN	2.4 V	OUT	"							"	2A to 2Y	"	"	"
			49							"	OUT	IN	2.4 V				"	3A to 3Y	"	"	"
			50							"				OUT	IN	2.4 V	"	4A to 4Y			
	t_{PLH}	3003 (Fig. 3)	51	IN	2.4 V	OUT				GND							5.0 V	1A to 1Y	3	28	ns
			52				IN	2.4 V	OUT	"							"	2A to 2Y	"	"	"
			53							"	OUT	IN	2.4 V				"	3A to 3Y	"	"	"
			54							"				OUT	IN	2.4 V	"	4A to 4Y			
10 Tc = 125°C	t_{PHL}	3003 (Fig. 3)	55	IN	2.4 V	OUT				GND							5.0 V	1A to 1Y	3	29	ns
			56				IN	2.4 V	OUT	"							"	2A to 2Y	"	"	"
			57							"	OUT	IN	2.4 V				"	3A to 3Y	"	"	"
			58							"				OUT	IN	2.4 V	"	4A to 4Y			
	t_{PLH}	3003 (Fig. 3)	59	IN	2.4 V	OUT				GND							5.0 V	1A to 1Y	3	35	ns
			60				IN	2.4 V	OUT	"							"	2A to 2Y	"	"	"
			61							"	OUT	IN	2.4 V				"	3A to 3Y	"	"	"
			62							"				OUT	IN	2.4 V	"	4A to 4Y			
11	Same tests, terminal conditions and limits as for subgroup 10, except Tc = -55°C.																				

5. PACKAGING

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

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

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

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of the specification.

b. PIN and compliance identifier, if applicable (see 1.2).

c. Requirements for delivery of one copy of the conformance inspection data pertinent to the device inspection lot to be supplied with each shipment by the device manufacturer, if applicable.

d. Requirements for certificate of compliance, if applicable.

e. Requirements for notification of change of product or process to contracting activity in addition to notification to the qualifying activity, if applicable.

f. Requirements for failure analysis (including required test condition of method 5003 of MIL-STD-883), corrective action, and reporting of results, if applicable.

g. Requirements for product assurance options.

h. Requirements for special carriers, lead lengths, or lead forming, if applicable. These requirements should not affect the part number. Unless otherwise specified, these requirements will not apply to direct purchase by or direct shipment to the Government.

i. Requirements for "JAN" marking.

J. Packaging requirements (see 5.1).

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

6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List QML-38535 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from DSCC-VQ, P.O. Box 3990, Columbus, Ohio 43218-3990.

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

6.6 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.3). Longer length leads and lead forming should not affect the part number.

6.7 Substitutability. The cross-reference information below is presented for the convenience of users. Microcircuits covered by this specification will functionally replace the listed generic-industry type. Generic-industry microcircuit types may not have equivalent operational performance characteristics across military temperature ranges or reliability factors equivalent to MIL-M-35810 device types and may have slight physical variations in relation to case size. The presence of this information should not be deemed as permitting substitution of generic-industry types for MIL-M-38510 types or as a waiver of any of the provisions of MIL-PRF-38535.

Military device type	Generic-industry type
01	5430
02	5420
03	5410
04	5400
05	5404
06	5412
07	5401
08	5405
09	5403

6.8 Changes from previous issue. Marginal notations 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 5962-2072)

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

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