
PART NUMBER**54H22BCA-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.

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL, HIGH SPEED, NAND GATES MONOLITHIC SILICON

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

Inactive for new design after 06 September 1996

1. SCOPE

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 For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.3)

1.2 Part number. The part number should be in accordance with MIL-PRF-38535, and as specified herein.

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

<u>Device type</u>	<u>Circuit</u>
01	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	Quadruple, 2-input positive NAND gate (open collector output)
07	Dual, 4-input positive NAND gate (open collector output)

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

1.2.3 Case outline. The case outline should be as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
A <u>1/</u>	GDFP5-F14 or CDFP6-F14	14	Flat pack
B <u>1/</u>	GDFP4-14	14	Flat pack
C	GDIP1-T14 or CDIP2-T14	14	Dual-in-line
D	GDFP1-F14 or CDFP2-F14	14	Flat pack

1/ Inactive package case outline.

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, using the self addresses Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
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1.3 Absolute maximum ratings.

Supply voltage range	-0.5 V dc to +7.0 V dc
Input voltage range	-1.5 V dc at -12 mA to +5.5 V dc
Storage temperature range	-65°C to +150°C
Maximum power dissipation per gate (P_D)	60 mW dc <u>2/</u>
Lead temperature (soldering, 10 seconds)	+300°C.
Junction temperature (T_J)	+175°C
Thermal resistance, junction-to-case (Θ_{JC}):	
Cases A, B, C, and D	See MIL-STD-1835

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 dc
Maximum low-level input voltage (V_{IL})	0.8 V dc
Normalized fanout (each output)	10 maximum <u>3/</u>
Ambient operating temperature range (T_C)	-55°C to +125°C

2. APPLICABLE DOCUMENTS

2.1 Government documents.

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

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 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 shall takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2/ Must withstand the added P_D due to short circuit test (e.g., I_{OS}) at one output for 5 seconds duration.

3/ The device shall fanout in both high and low levels to the specified number of inputs of the same device type as that being tested.

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. This slash sheet has been modified to allow the manufacturer to use alternate die/fabrication requirements of paragraph A.3.2.2 of MIL-PRF-38535 or other alternative approved by the Qualifying Activity.

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 Logic diagrams and terminal connections. The logic diagram and terminal connections 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 (DSCC-VA) 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 ambient operating temperature range, unless otherwise specified.

3.6 Rebonding. Rebonding shall be in accordance with MIL-PRF-38535.

3.7 Electrical test requirements. 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.

3.8 Marking. Marking shall be in accordance with MIL-PRF-38535. For class Q product built in accordance with A.3.2.2 of MIL-PRF-38535, or as modified in the manufacturer's Quality Management (QM) Plan, the "QD" certification mark shall be used in place of the "QML" or "Q" certification mark.

3.9 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 1 (see MIL-PRF-38535, appendix A).

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55^{\circ}\text{C} \leq T_A \leq +125^{\circ}\text{C}$	Device type	Limits		Units
				Min	Max	
High-level output voltage	V_{OH}	$V_{CC} = 4.5\text{ V}$, $V_{IN} = 0.8\text{ V}$, <u>1/</u> $I_{OH} = -500\text{ }\mu\text{A}$	01,02,03, 04,05	2.4		V
Low-level output voltage	V_{OL}	$V_{CC} = 4.5\text{ V}$, $I_{OL} = 20\text{ mA}$, <u>1/</u> $V_{IN} = 2.0\text{ V}$ for all inputs of gate under test	01-07		0.4	V
Input clamp voltage	V_{IC}	$V_{CC} = 4.5\text{ V}$, $I_{IN} = -12\text{ mA}$, $T_A = +25^{\circ}\text{C}$	01-07		-1.5	V
Maximum collector cut-off-current	I_{CEX}	$V_{OH} = 5.5\text{ V}$, $V_{CC} = 4.5\text{ V}$, $V_{IN} = 0.8\text{ V}$	06,07		250	μA
High-level input current	I_{IH1}	$V_{CC} = 5.5\text{ V}$, $V_{IN} = 2.4\text{ V}$ <u>2/</u>	01-07		50	μA
High-level input current	I_{IH2}	$V_{CC} = 5.5\text{ V}$, $V_{IN} = 5.5\text{ V}$ <u>2/</u>	01-07		100	μA
Low-level input current	I_{IL}	$V_{CC} = 5.5\text{ V}$, $V_{IN} = 0.4\text{ V}$ <u>1/</u>	01-07	-1.0	-2.0	mA
Short-circuit output current	I_{OS}	$V_{CC} = 5.5\text{ V}$ <u>2/ 3/</u>	01,02,03, 04,05	-40	-100	mA
High-level supply current per gate	I_{CCH}	$V_{CC} = 5.5\text{ V}$, $V_{IN} = 0\text{ V}$ <u>2/</u>	01-07		4.2	mA
Low-level supply current per gate	I_{CCL}	$V_{CC} = 5.5\text{ V}$, <u>1/</u> $V_{IN} = 5.5\text{ V}$	01-07		10	mA
Propagation delay time high-to-low level	t_{PHL}	$C_L = 50\text{ pF}$, $R_L = 280\text{ }\Omega$	01,	2	18	ns
			02,03, 04,05	2	16	
			06,07	3	18	
Propagation delay time low-to-high level	t_{PLH}	$C_L = 50\text{ pF}$, $R_L = 280\text{ }\Omega$	01	2	16	ns
			02,03, 04,05	2	15	
			06,07	3	21	

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

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

*PDA applies to subgroup 1 (see 4.3c).

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 function as described herein.

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

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

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

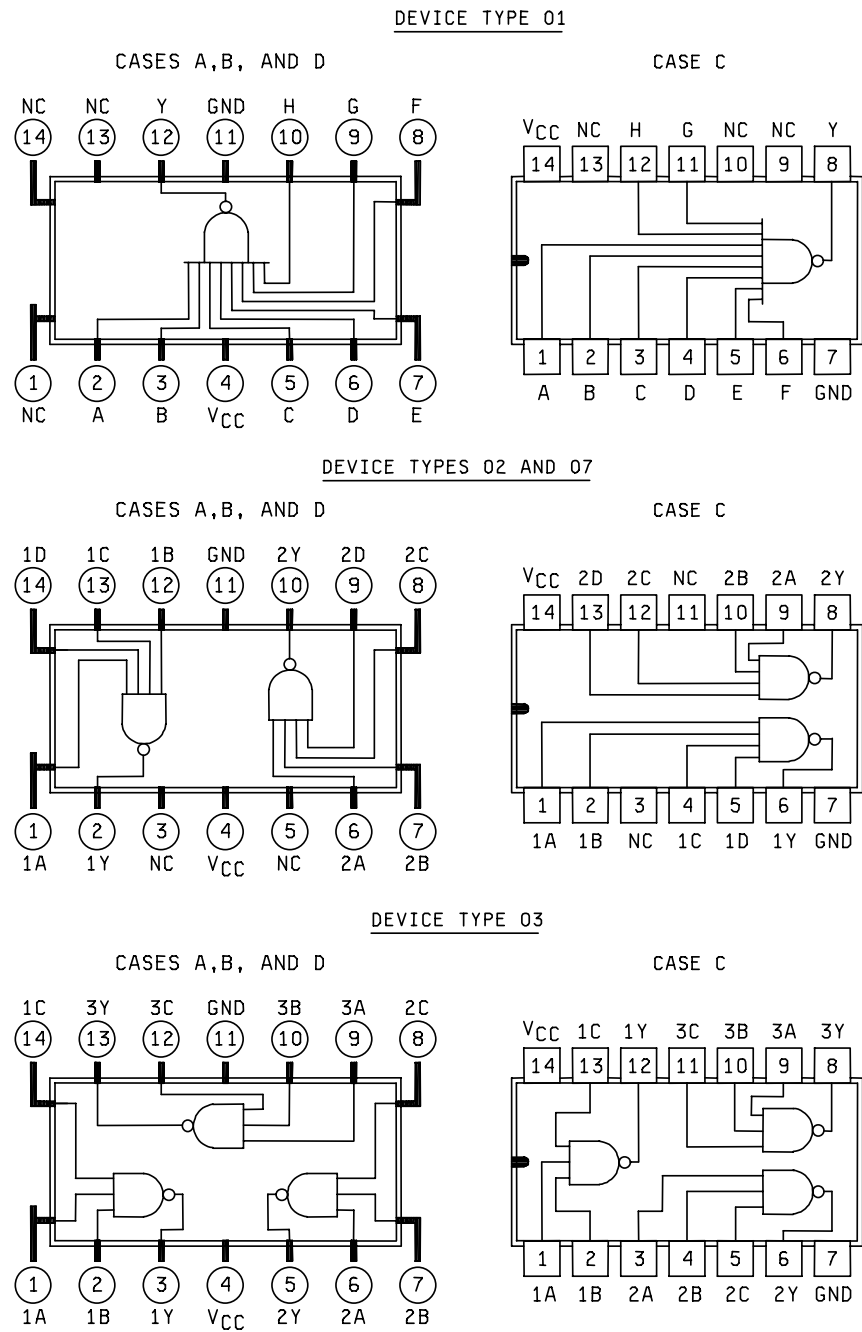
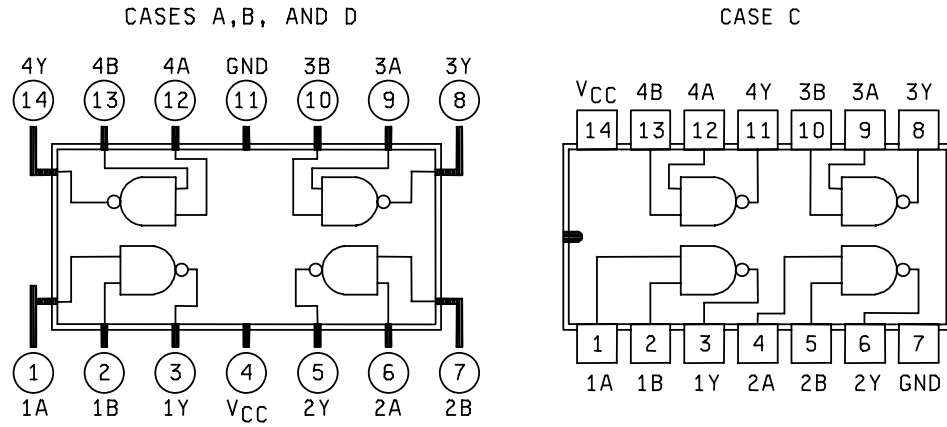


Figure 1. Logic diagrams and terminal connections (top views).

DEVICE TYPES 04 AND 06



DEVICE TYPE 05

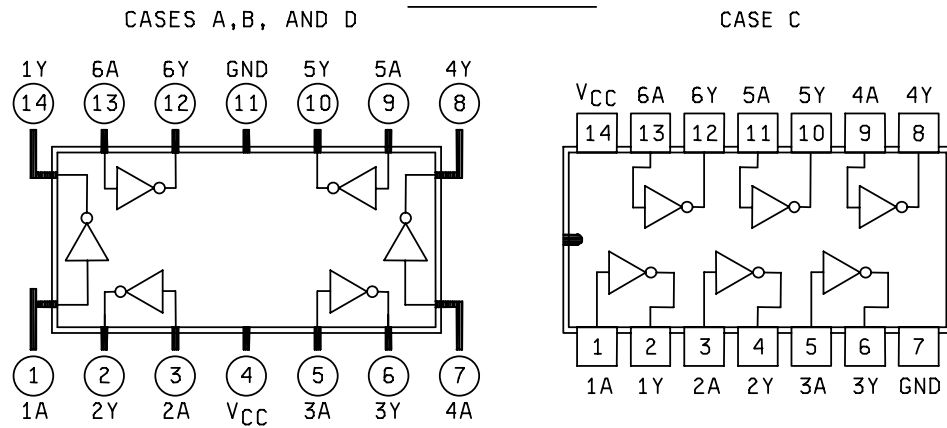


Figure 1. Logic diagrams and terminal connections (top views).

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.								

$$\text{Positive logic } Y = \overline{ABCDEFGH}$$

Device types 02 and 07

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

$$\text{Positive logic } Y = \overline{ABCD}$$

FIGURE 2. Truth tables.

Device type 03

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 types 04 and 06

Truth table each gate		
INPUT		OUTPUT
A	B	Y
L	L	H
H	L	H
L	H	H
H	H	L

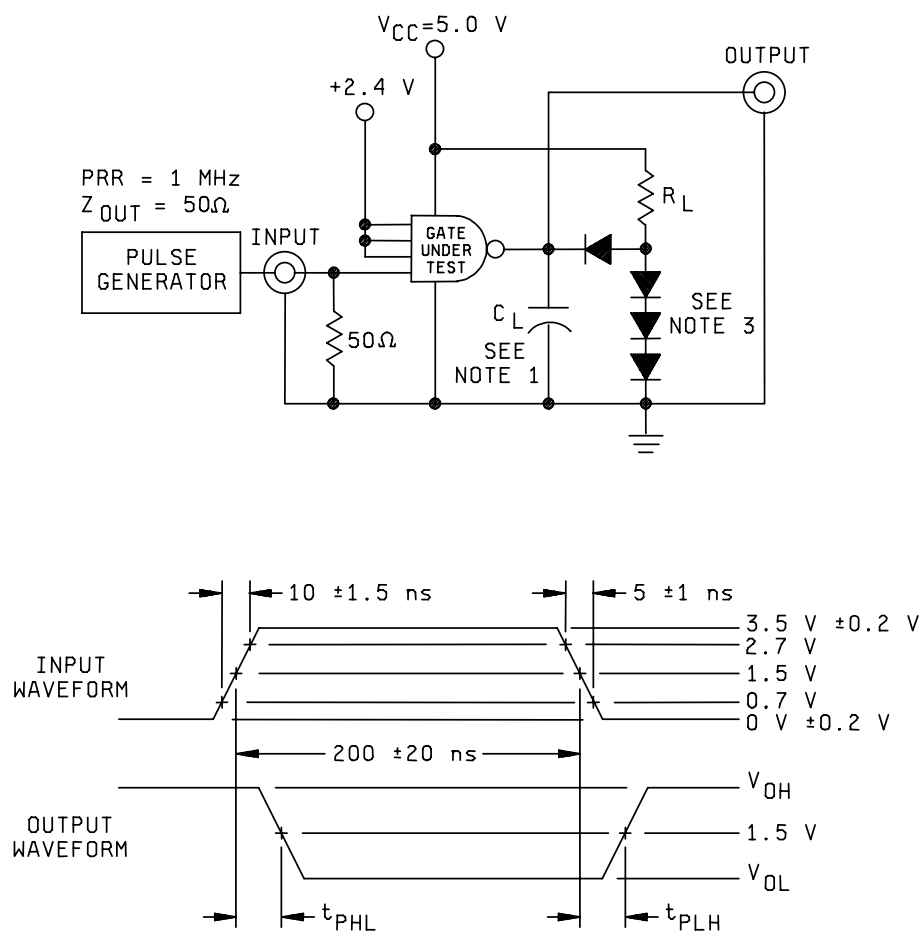
Positive logic $Y = \overline{AB}$

Device type 05

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

Positive logic $Y = \overline{A}$

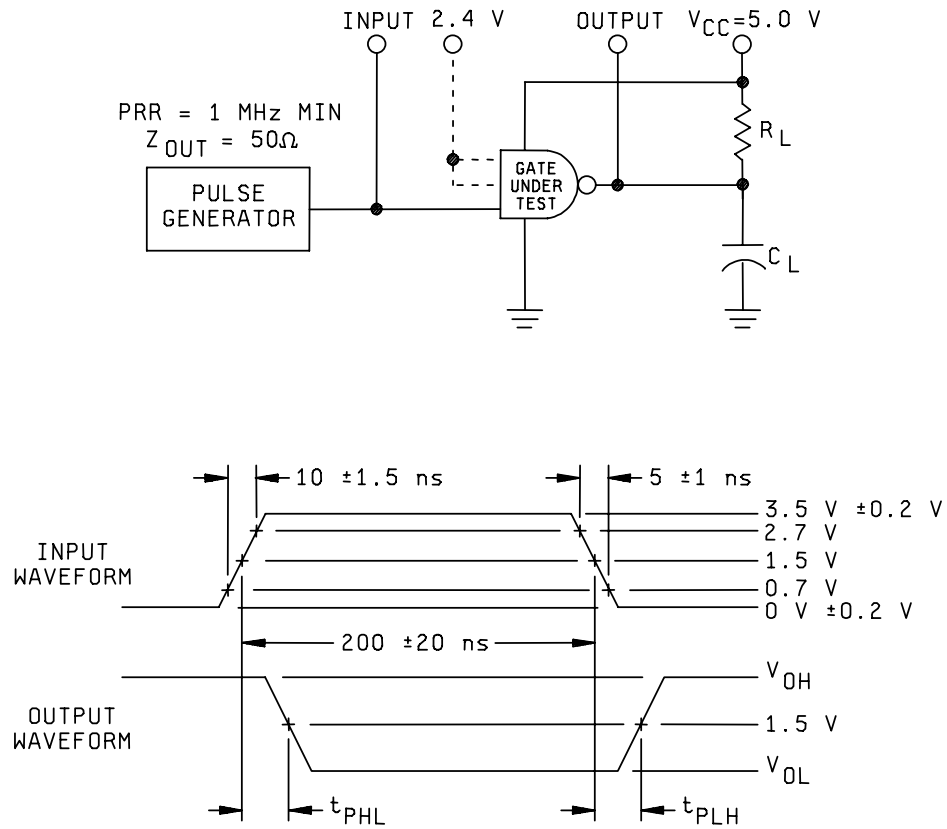
FIGURE 2. Truth tables – Continued.



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 diodes are 1N3064 or equivalent
4. $R_L = 280 \Omega \pm 5\%$.

FIGURE 3. Switching time test circuit except for open collector circuits.



Notes:

1. $C_L = 50 \text{ pF}$ minimum, including scope probe, wiring, and stray capacitance, without package in test fixture.
3. Voltage measurements are to be made with respect to network ground terminal.
3. All diodes are 1N3064 or equivalent
4. $R_L = 280 \Omega \pm 5\%$.

FIGURE 4. Switching time test circuit for open collector circuits.

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 Case C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Test limits		Unit
																		Min	Max	
1	V_{OL}	3007	1		20 V	20 V	45 V	20 V	20 V	20 V	20 V	20 V	20 V	GND	20 mA				0.4	V
	V_{OH}	3006	2		0.8 V	5.5 V	"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	-0.5 mA			2.4		"
T _A = +25°C		"	3		5.5 V	5.5 V	"	5.5 V	"	"	"	"	"	"	"			"		"
		"	4		5.5 V	5.5 V	"	5.5 V	"	"	"	"	"	"	"			"		"
		"	5		"	"	"	0.8 V	"	"	"	"	"	"	"			"		"
		"	6		"	"	"	5.5 V	"	"	"	"	"	"	"			"		"
		"	7		"	"	"	"	0.8 V	"	"	"	"	"	"			"		"
		"	8		"	"	"	"	5.5 V	"	"	"	"	"	"			"		"
		"	9		"	"	"	"	"	"	0.8 V	5.5 V	0.8 V	"	"			"		"
	I_{OH}	3011	10		GND	GND	5.5 V	GND	GND	GND	GND	GND	GND	"	GND			-40	-100	mA
		3010	11		2.4 V	GND	"	GND	GND	GND	GND	GND	GND	"					50	μ A
		"	12		GND	2.4 V	"	GND	"	"	"	"	"	"					"	"
		"	13		"	GND	"	"	"	"	"	"	"	"					"	"
		"	14		"	"	"	2.4 V	"	"	"	"	"	"					"	"
		"	15		"	"	"	GND	"	"	"	"	"	"					"	"
		"	16		"	"	"	"	2.4 V	"	"	"	"	"					"	"
		"	17		"	"	"	"	GND	"	2.4 V	"	"	"					"	"
		"	18		"	"	"	"	"	"	GND	2.4 V	"	"					"	"
		"	19		5.5 V	"	"	"	"	"	"	GND	2.4 V	"					100	"
	I_{H2}	"	20		GND	5.5 V	"	"	"	"	"	GND	GND	"						"
		"	21		"	GND	"	"	"	"	"	"	"	"						"
		"	22		"	"	"	5.5 V	"	"	"	"	"	"						"
		"	23		"	"	"	GND	"	"	5.5 V	"	"	"						"
		"	24		"	"	"	"	"	"	GND	"	"	"						"
		"	25		"	"	"	"	"	"	"	5.5 V	"	"						"
		"	26		"	"	"	"	"	"	"	GND	5.5 V	"						"
		3009	27		0.4 V	5.5 V	"	5.5 V	5.5 V	5.5 V	5.5 V	GND	5.5 V	"				-1.0	-2.0	mA
		"	28		5.5 V	0.4 V	"	5.5 V	"	"	"	5.5 V	5.5 V	"						"
		"	29		5.5 V	5.5 V	"	5.5 V	"	"	"	"	"	"						"
	I_{L}	"	30		"	"	"	0.4 V	"	"	"	"	"	"						"
		"	31		"	"	"	5.5 V	"	"	"	"	"	"						"
		"	32		"	"	"	"	0.4 V	"	"	"	"	"						"
		"	33		"	"	"	"	5.5 V	"	"	"	"	"						"
		"	34		"	"	"	"	"	"	0.4 V	5.5 V	0.4 V	"						"
		3005	35		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	"						"
		"	36		GND	GND	5.5 V	GND	GND	GND	GND	GND	GND	"						"
		3005	37		-12 mA	-12 mA	4.5 V	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	"						"
		"	38		"	"	"	"	"	"	"	"	"	"						"
		"	39		"	"	"	"	"	"	"	"	"	"						"
	I_{C}	"	40		"	"	"	"	"	"	"	"	"	"						"
		"	41		"	"	"	"	"	"	"	"	"	"						"
		"	42		"	"	"	"	"	"	"	"	"	"						"
		"	43		"	"	"	"	"	"	"	"	"	"						"
		"	44		"	"	"	"	"	"	"	"	"	"						"

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

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit	
				13	1	2	14	3	4	5	6	11	12	7	8	9	10		Min	Max		
				Test no.	A	B	V _{OC}	C	D	E	F	G	H	GND	Y	NC	NC					
2	Same tests, terminal conditions and limits as for subgroup 1, except T _A = 125° C, and V _I C tests are omitted.																					
3	Same tests, terminal conditions and limits as for subgroup 1, except T _A = -55° C, and V _I C tests are omitted.																					
9	T _A = +25° C	t _{PHL}	3003 (Fig. 3)	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	2	14	ns	
10		t _{PLH}		46	IN	"	"	"	"	"	"	"	"	"	"	"		A to Y	2	12	"	
11	T _A = +125° C	t _{PHL}	3003 (Fig. 3)	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	2	16	"	
		t _{PLH}		48	IN	"	"	"	"	"	"	"	"	"	"	"		A to Y	2	16	"	
T _A = -55° C		t _{PHL}	3003 (Fig. 3)	49	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	2	18	"	
		t _{PLH}		50	IN	"	"	"	"	"	"	"	"	"	"	"		A to Y	2	14	"	

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		
				Test no.	1A	1Y	NC	11	2A	2B	2C	2D	2Y	GND	1B	1C	1D		Min	Max			
1 T _A = +25°C	V _{OL}	3007	1	2.0 V	20 mA		4.5 V		5.5 V	5.5 V	5.5 V	5.5 V	20 mA	GND	2.0 V	2.0 V	2.0 V	1Y		0.4	V		
				5.5 V			"		2.0 V	2.0 V	2.0 V	2.0 V			5.5 V	5.5 V	5.5 V	2Y		0.4	"		
		3006	3	0.8 V	-5 mA		"		5.5 V	5.5 V	5.5 V	5.5 V		"	5.5 V	"	"	"	1Y	2.4		"	
			4	5.5 V	-5 mA		"		"	"	"	"		"	0.8 V	0.8 V	"	1Y	"		"		
			5	"	-5 mA		"		"	"	"	"		"	5.5 V	5.5 V	"	1Y	"		"		
			6	"	-5 mA		"		"	"	"	"		"	"	"	0.8 V	1Y	"		"		
			7	"			"		0.8 V	0.8 V	"	"	-5 mA	"	"	"	5.5 V	2Y	"		"		
			8	"			"		5.5 V	5.5 V	0.8 V	"	-5 mA	"	"	"	"	2Y	"		"		
			9	"			"		"	5.5 V	5.5 V	"	-5 mA	"	"	"	"	2Y	"		"		
			10	"			"		"	5.5 V	0.8 V	0.8 V	-5 mA	"	"	"	"	2Y	"		"		
	OS	3011	11	GND	GND		5.5 V		GND	GND	GND	GND	GND	GND	"	GND	GND	GND	1Y	-40	-100	mA	
				12				"		GND	GND	GND	GND		"				2Y	-40	-100	"	
		3010	13	2.4 V			"		"		GND	GND	GND	GND		"	GND	GND	GND	1A		50	μA
			14	GND			"		"	"	"	"		"		"	2.4 V	GND	GND	1B		"	"
			15	"			"		"	"	"	"		"		"	GND	GND	GND	1C		"	"
			16	"			"		"	"	"	"		"		"	GND	2.4 V	GND	1D		"	"
			17	"			"		"	"	"	"		"		"	"	"	GND	2A		"	"
			18	"			"		"	"	"	2.4 V	"	"	"	"	"	"	"	2B		"	"
			19	"			"		"	"	GND	GND	"	"	"	"	"	"	"	2C		"	"
			20	"			"		"	"	"	2.4 V		"	"	"	"	"	"	2D		"	"
	IH2	3009	21	5.5 V			"		"	"	"	GND			"	"	"	"	1A		100	"	
			22	GND			"		"	"	"	"			"	5.5 V	GND	"	1B		"	"	
			23	"			"		"	"	"	"			"	"	"	5.5 V	1C		"	"	
			24	"			"		"	"	"	"			"	"	GND	"	GND	1D		"	"
			25	"			"		"	"	5.5 V	5.5 V	"	"	"	"	"	"	2A		"	"	
			26	"			"		"	"	GND	GND	"	"	"	"	"	"	2B		"	"	
			27	"			"		"	"	"	GND	"	"	"	"	"	"	2C		"	"	
			28	"			"		"	"	"	"	5.5 V	5.5 V		"	"	"	2D		"	"	
	IL		29	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	5.5 V	1A	-1.0	-2.0	mA
			30	5.5 V			"		"		"	"	"	"		"	0.4 V	5.5 V	5.5 V	1B	"	"	"
			31	"			"		"	"	"	"	"	"		"	5.5 V	0.4 V	5.5 V	1C	"	"	"
			32	"			"		"	"	"	"	"	"		"	5.5 V	5.5 V	5.5 V	1D	"	"	"
			33	"			"		"		"	"	"	"		"	"	0.4 V	5.5 V	2A	"	"	"
			34	"			"		"		0.4 V	0.4 V	"	"	"	"	"	"	5.5 V	2B	"	"	"
			35	"			"		"		5.5 V	5.5 V	"	"	"	"	"	"	"	2C	"	"	"
			36	"			"		"		"	5.5 V	0.4 V	0.4 V		"	"	"	2D	"	"	"	
	CCL	3005	37	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}		20	mA		
			38	GND			5.5 V		GND	GND	GND	GND		"		"	GND	GND	V _{CC}		8.4	mA	

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

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Limits		Unit																					
				1	6	3	14	11	9	10	12	13	8	7	2	4	5	Measured terminal	Min		Max																				
1 T _A = +25°C	V _{IC}	Test no.	883 method	1A	1Y	NC	V _{CC}	NC	2A	2B	2C	2D	2Y	GND	1B	1C	1D																								
				39	-12 mA															1A	-1.5	V																			
				40																	1B	"	"																		
				41																	1C	"	"																		
				42																	1D	"	"																		
				43																	2A	"	"																		
				44																	2B	"	"																		
2																																									
																					45																			"	"
																					46																				"
Same tests, terminal conditions and limits as for subgroup 1, except T _A =+125°C and V _{IC} tests are omitted.																																									
3	Same tests, terminal conditions and limits as for subgroup 1, except T _A =-55°C and V _{IC} tests are omitted.																																								
9 T _A = +25°C	t _{PHL}	3003 (Fig. 3)	47	IN	OUT		5.0 V		IN	2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	1A to 1Y	2	ns																					
																		2A to 2Y	"	"																					
	PLH	3003 (Fig. 3)	49	IN	OUT		"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	1A to 1Y	2	"																					
																			2A to 2Y	"	"																				
10 T _A = +125°C	t _{PHL}	3003 (Fig. 3)	51	IN	OUT		5.0 V		IN	2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	1A to 1Y	2	"																					
																		2A to 2Y	"	"																					
	PLH	3003 (Fig. 3)	53	IN	OUT		"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	1A to 1Y	2	"																					
																			2A to 2Y	"	"																				
11 T _A = -55°C	t _{PHL}	3003 (Fig. 3)	55	IN	OUT		5.0 V		IN	2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	1A to 1Y	2	"																					
																		2A to 2Y	"	"																					
	PLH	3003 (Fig. 3)	57	IN	OUT		"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	1A to 1Y	2	"																					
																			2A to 2Y	"	"																				

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	Test no.	1A	1B	1Y	14	6	2Y	2A	2B	2C	3A	3B	3C		7	8	
1 T _A = +25°C	V _{OL}	3007	1	2.0 V	2.0 V	20 mA	4.5 V	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	"	4.5 V	4.5 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	GND	5.5 V		5.5 V	2Y	"	"	
	"	"	3	"	"	"	4.5 V	4.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	2.0 V	20 mA	"	3Y	"	"	
	OH	3006	4	0.8 V	5.5 V	-5 mA	4.5 V	4.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	5.5 V		"	1Y	2.4	"	
	"	"	5	5.5 V	0.8 V	-5 mA	4.5 V	4.5 V	"	"	"	"	"	"	"		0.8 V	1Y	"	"	
	"	"	6	"	5.5 V	-5 mA	4.5 V	4.5 V	0.8 V	0.8 V	"	"	"	"	"		5.5 V	1Y	"	"	
	"	"	7	"	"	-5 mA	"	"	5.5 V	5.5 V	"	"	"	"	"		"	2Y	"	"	
	"	"	8	"	"	"	"	"	0.8 V	0.8 V	"	"	"	"	"		"	2Y	"	"	
	"	"	9	"	"	"	"	"	5.5 V	5.5 V	0.8 V	"	"	"	"		"	2Y	"	"	
	"	"	10	"	"	"	"	"	"	"	5.5 V	0.8 V	"	"	"		"	3Y	"	"	
	"	"	11	"	"	"	"	"	"	"	"	5.5 V	5.5 V	"	"		"	3Y	"	"	
	"	"	12	"	"	"	"	"	"	"	"	5.5 V	5.5 V	"	0.8 V	-5 mA	"	3Y	"	"	
IH1	OS	3011	13	GND	GND	GND	5.5 V	GND	GND	GND	GND	GND	GND	GND		GND	GND	1Y	-40	mA	
	"	"	14	"	"	"	"	"	"	"	"	"	"	"			"	2Y	"	"	
	"	"	15	"	"	"	"	"	"	"	"	"	"	"		GND	"	3Y	"	"	
	"	3010	16	2.4 V	GND		5.5 V		GND	GND	GND	GND	GND	GND	GND		GND	1A	50	μA	
	"	"	17	GND	2.4 V		"		"	"	"	"	"	"	"		GND	1B	"	"	
	"	"	18	"	GND		"		"	"	"	"	"	"	"		2.4 V	1C	"	"	
	"	"	19	"	"		"		2.4 V	"	"	"	"	"	"		GND	2A	"	"	
	"	"	20	"	"		"		GND	2.4 V	2.4 V	"	"	"	"		"	2B	"	"	
	"	"	21	"	"		"		"	GND	GND	"	"	"	"		"	2C	"	"	
	"	"	22	"	"		"		"	"	"	2.4 V	"	"	"		"	3A	"	"	
	"	"	23	"	"		"		"	"	"	GND	2.4 V	"	"		"	3B	"	"	
	"	"	24	"	"		"		"	"	"	"	GND	"	2.4 V		"	3C	"	"	
IH2	"	"	25	5.5 V	GND		5.5 V			"	"	"	"	GND	GND		"	1A	100	"	
	"	"	26	GND	5.5 V		"			"	"	"	"	"	"		"	1B	"	"	
	"	"	27	"	GND		"			"	"	"	"	"	"		5.5 V	1C	"	"	
	"	"	28	"	"		"		5.5 V	"	"	"	"	"	"		GND	2A	"	"	
	"	"	29	"	"		"		"	5.5 V	"	"	"	"	"		"	2B	"	"	
	"	"	30	"	"		"		"	GND	5.5 V	"	"	"	"		"	2C	"	"	
	"	"	31	"	"		"		"	"	"	5.5 V	"	"	"		"	3A	"	"	
	"	"	32	"	"		"		"	"	"	GND	5.5 V	"	"		"	3B	"	"	
	"	"	33	"	"		"		"	"	"	GND	GND	"	5.5 V		"	3C	"	"	
	"	3009	34	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	-1.0	mA	
	"	"	35	5.5 V	0.4 V		"		"	"	"	"	"	"	"		5.5 V	1B	"	"	
	"	"	36	"	5.5 V		"		"	"	"	"	"	"	"		0.4 V	1C	"	"	
CCH	"	"	37	"	"		"		0.4 V	"	"	"	"	"	"		5.5 V	2A	"	"	
	"	"	38	"	"		"		5.5 V	0.4 V	0.4 V	"	"	"	"		"	2B	"	"	
	"	"	39	"	"		"		"	5.5 V	5.5 V	"	"	"	"		"	2C	"	"	
	"	"	40	"	"		"		"	"	5.5 V	"	"	"	"		"	3A	"	"	
	"	"	41	"	"		"		"	"	"	0.4 V	"	"	"		"	3B	"	"	
	"	"	42	"	"		"		"	"	"	5.5 V	5.5 V	"	0.4 V		"	3C	"	"	
	"	3005	43	GND	GND		5.5 V		GND	GND	GND	GND	GND	"	GND		GND	V _{CC}	12.6	mA	
	"	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	"	5.5 V		5.5 V	V _{CC}	30	"	

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

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit	
1 T _A = +25°C	V _{IC}		Case C	1	2	12	14	6	3	4	5	9	10	7	11	8	13		Min	Max	V	
			Test no.	1A	1B	1Y	V _{CC}	2Y	2A	2B	2C	3A	3B	GND	3C	3Y	1C					
	45		-12 mA						4.5 V						GND				1A	-1.5		
	46								"						"				1B	"		
	47								"						"				1C	"		
	48								"						"				2A	"		
	49								"						"				2B	"		
	50								"						"				2C	"		
	51								"						"				3A	"		
	52								"						"				3B	"		
	53								"						"				3C	"		
2	Same tests, terminal conditions and limits as for subgroup 1, except T _A = +125°C and V _{IC} tests are omitted.																					
3	Same tests, terminal conditions and limits as for subgroup 1, except T _A = -55°C and V _{IC} tests are omitted.																					
9 T _A = +25°C	t _{PHL}	3003 (Fig. 3)	54	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	2.4 V	IN	2.4 V	GND			2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	12	ns	
		"	55				"							"			2.4 V		"	"		
	PLH	3003 (Fig. 3)	57	IN	2.4 V	OUT	"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"				2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	12	"
		"	58				"							"				2.4 V		"	"	
		"	59				"							2.4 V	"		OUT	2.4 V		"	"	
10 T _A = +125°C	t _{PHL}	3003 (Fig. 3)	60	IN	2.4 V	OUT	"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"			2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	14	"	
		"	61				"							"			2.4 V		"	"		
	PLH	3003 (Fig. 3)	63	IN	2.4 V	OUT	"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"				2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	15	"
		"	64				"							"				2.4 V		"	"	
		"	65				"							2.4 V	"		OUT	2.4 V		"	"	
11 T _A = -55°C	t _{PHL}	3003 (Fig. 3)	66	IN	2.4 V	OUT	"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"			2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	16	"	
		"	67				"							"				2.4 V		"	"	
	PLH	3003 (Fig. 3)	68				"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"				2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	13	"
		"	69	IN	2.4 V	OUT	"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"				2.4 V		"	"	
		"	70				"							2.4 V	"		OUT	2.4 V	1A to 1Y 2A to 2Y 3A to 3Y	2	13	"
71				"			"	OUT	IN	2.4 V	2.4 V	IN	2.4 V	"		2.4 V	2A to 2Y 3A to 3Y	"	"	"		

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 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	V _{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y	Min	Max	
1 T _A = +25°C	V _{OL}	3007	1	2.0 V	2.0 V	2.0 V	20 mA	4.5 V	20 mA	5.5 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			"	20 mA	2.0 V	2.0 V	20 mA	5.5 V	5.5 V	"	5.5 V	5.5 V	2Y		"	"
	"	"	3	"	"	"	"	"	"	5.5 V	5.5 V	20 mA	2.0 V	2.0 V	"	5.5 V	5.5 V	3Y		"	"
	"	"	4	"	"	"	"	"	"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	2.0 V	2.0 V	4Y		"	"
	OH	3006	5	0.8 V	5.5 V	5.5 V	-5 mA	4.5 V		5.5 V	5.5 V	"	5.5 V	5.5 V	"	5.5 V	5.5 V	1Y	2.4		"
	"	"	6	5.5 V	0.8 V	5.5 V	-5 mA	"		"	"	"	"	"	"	"	"	1Y	"		"
	"	"	7	"	5.5 V	5.5 V	"	"		0.8 V	0.8 V	"	"	"	"	"	"	1Y	"		"
	"	"	8	"	"	"	"	"		5.5 V	5.5 V	-5 mA	0.8 V	5.5 V	"	"	"	1Y	"		"
	"	"	9	"	"	"	"	"		"	0.8 V	-5 mA	5.5 V	5.5 V	"	"	"	2Y	"		"
	"	"	10	"	"	"	"	"		"	5.5 V	-5 mA	5.5 V	5.5 V	"	"	"	2Y	"		"
	"	"	11	"	"	"	"	"		"	"	"	"	5.5 V	"	0.8 V	5.5 V	2Y	"		"
	"	"	12	"	"	"	"	"		"	"	"	"	5.5 V	"	5.5 V	5.5 V	3Y	"		"
I	OS	3011	13	GND	GND	GND	5.5 V	5.5 V	GND	GND	GND	GND	GND	GND	GND			1Y	-40	-100	mA
	"	"	14	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"	"
	"	"	15	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"	"
	"	"	16	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"	"
	IH1	3010	17	2.4 V	GND	GND	5.5 V	5.5 V		GND	GND		GND	GND	GND	GND	GND	1A		50	μA
	"	"	18	GND	2.4 V	GND	"	"		"	"	"	"	"	"	"	"	1B		"	"
	"	"	19	"	GND	"	"	"		"	"	"	"	"	"	"	"	2A		"	"
	"	"	20	"	"	"	"	"		2.4 V	2.4 V	"	"	"	"	"	"	2B		"	"
	"	"	21	"	"	"	"	"		GND	GND	"	"	"	"	"	"	3A		"	"
	"	"	22	"	"	"	"	"		"	"	"	"	"	"	"	"	3B		"	"
	"	"	23	"	"	"	"	"		"	"	"	"	"	"	"	"	4A		"	"
	"	"	24	"	"	"	"	"		"	"	"	"	"	"	2.4 V	2.4 V	4B		"	"
I	IH2	"	25	5.5 V	GND	GND	5.5 V	5.5 V		"	"	"	"	"	GND	GND	GND	1A	100		"
	"	"	26	GND	5.5 V	GND	"	"		5.5 V	"	"	"	"	"	"	"	1B		"	"
	"	"	27	"	GND	"	"	"		"	"	"	"	"	"	"	"	2A		"	"
	"	"	28	"	"	"	"	"		GND	5.5 V	"	"	"	"	"	"	2B		"	"
	"	"	29	"	"	"	"	"		"	"	"	5.5 V	"	"	"	"	3A		"	"
	"	"	30	"	"	"	"	"		"	"	"	GND	"	"	"	"	3B		"	"
	"	"	31	"	"	"	"	"		"	"	"	"	"	"	5.5 V	5.5 V	4A		"	"
	"	"	32	"	"	"	"	"		"	"	"	"	"	"	GND	GND	4B		"	"
	IL	3009	33	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	5.5 V	5.5 V	1A	-1.0	-2.0	mA
	"	"	34	5.5 V	0.4 V	5.5 V	"	"		0.4 V	0.4 V	"	"	"	"	"	"	1B	"	"	"
	"	"	35	"	5.5 V	"	"	"		5.5 V	5.5 V	"	"	"	"	"	"	2A	"	"	"
	"	"	36	"	"	"	"	"		"	0.4 V	"	"	"	"	"	"	2B	"	"	"
I	"	"	37	"	"	"	"	"		5.5 V	5.5 V	"	"	"	"	"	"	3A		"	"
	"	"	38	"	"	"	"	"		"	5.5 V	"	"	"	"	"	"	3B		"	"
	"	"	39	"	"	"	"	"		"	"	"	"	"	"	0.4 V	0.4 V	4A		"	"
	"	"	40	"	"	"	"	"		"	"	"	"	"	"	5.5 V	5.5 V	4B		"	"
	"	"	41	GND	GND	GND	5.5 V	5.5 V		GND	GND	GND	GND	GND	GND	5.5 V	5.5 V	V _{CC}		16.8	mA
	CCH	3005	42	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	5.5 V	5.5 V	V _{CC}		40	mA

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	Terminal conditions														Limits		Unit		
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Min		Max	
1 T _A = +25°C	V _{IC}		Test no.	1A	1B	1Y	V _{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y					
			43	-12 mA			4.5 V															
			44		-12 mA		"															
			45				"															
			46				"															
			47				"															
			48				"															
			49				"															
			50				"															
			2	Same tests, terminal conditions and limits as for subgroup 1, except T _A = +125°C and V _{IC} tests are omitted.																		
3	Same tests, terminal conditions and limits as for subgroup 1, except T _A = -55°C and V _{IC} tests are omitted.																					
9 T _A = +25°C	t _{PHL}	3003 (Fig. 3)	51	IN	2.4 V	OUT	5.0 V		OUT	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	2	12	ns	
			52				"								"			2A to 2Y	"	"	"	
			53				"								"			3A to 3Y	"	"	"	
			54				"								"			4A to 4Y	"	"	"	
	PLH	3003 (Fig. 3)	55	IN	2.4 V	OUT	"	OUT	IN	2.4 V	OUT			"				1A to 1Y	2	12	"	
			56				"							"			2A to 2Y	"	"	"		
			57				"							"			3A to 3Y	"	"	"		
			58				"							"			4A to 4Y	"	"	"		
10 T _A = +125°C	t _{PHL}	3003 (Fig. 3)	59	IN	2.4 V	OUT	5.0 V		OUT	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	2	14	ns	
			60				"							"			2A to 2Y	"	"	"		
			61				"							"			3A to 3Y	"	"	"		
			62				"							"			4A to 4Y	"	"	"		
PLH	3003 (Fig. 3)	63	IN	2.4 V	OUT	"	OUT	IN	2.4 V	OUT			"				1A to 1Y	2	15	"		
		64				"							"			2A to 2Y	"	"	"			
		65				"							"			3A to 3Y	"	"	"			
		66				"							"			4A to 4Y	"	"	"			
11 T _A = -55°C	t _{PHL}	3003 (Fig. 3)	67	IN	2.4 V	OUT	5.0 V		OUT	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	2	16	ns	
			68				"	OUT	IN	2.4 V	OUT			"			2A to 2Y	"	"	"		
			69				"							"			3A to 3Y	"	"	"		
			70				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"	
	PLH	3003 (Fig. 3)	71	IN	2.4 V	OUT	"	OUT	IN	2.4 V	OUT			"				1A to 1Y	2	13	"	
			72				"							"			2A to 2Y	"	"	"		
			73				"							"			3A to 3Y	"	"	"		
			74				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"	

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

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Limits		Unit																	
				Case C	Test no.	1A	2Y	3	3A	3Y	4A	4Y	5A	5Y	6Y	6A	1Y	Min	Max																		
1 T _A = +25°C	V _{OL}	3007	1	2.0 V	20 mA	5.5 V	4.5 V	5.5 V		5.5 V		5.5 V		GND		5.5 V	20 mA	1Y		0.4	V																
		"	2	5.5 V		5.5 V		5.5 V		"		5.5 V		"		"		2Y		"	"																
		"	3	"		2.0 V		2.0 V	20 mA	"	"	20 mA		"		"		3Y		"	"																
		"	4	"		5.5 V		5.5 V		2.0 V	"		"		"		"		4Y		"	"															
		"	5	"		"		"		5.5 V	"	20 mA		"		"		5Y		"	"																
		"	6	"		"		"		"	"	5.5 V		"		20 mA	2.0 V	6Y		"	"																
	OH	3006	7	0.8 V		5.5 V	4.5 V				5.5 V		5.5 V		"		5.5 V	-5 mA	1Y	2.4	"																
		"	8	5.5 V	-5 mA	0.8 V		0.8 V		-5 mA	"	"	"	"	"	"	"	"	2Y		"	"															
		"	9	"		5.5 V		"		"	"	"	"	"	"	"	"	"	3Y		"	"															
		"	10	"		"		"		0.8 V	"	-5 mA	"	"	"	"	"	"	4Y		"	"															
		"	11	"		"		"		5.5 V	"	5.5 V		"	"	"	"	"	5Y		"	"															
		"	12	"		"		"		5.5 V	"	5.5 V		"	"	-5 mA	0.8 V		6Y		"	"															
OS	3011	13	GND	GND		5.5 V	GND	GND	GND	GND				GND			GND	1Y	-40	-100	mA																
	"	14	"		"	"	"			"				"			"	2Y	"	"	"																
	"	15	"		"	"	"			"				"			"	3Y	"	"	"																
	"	16	"		"	"	"			"				"			"	4Y	"	"	"																
	"	17	"		"	"	"			"				"			"	5Y	"	"	"																
	"	18	"		"	"	"			"				"			"	6Y	"	"	"																
IH1	3010	19	2.4 V		GND	5.5 V	GND	GND		GND		GND		GND		GND		1A		50	μA																
	"	20	GND		2.4 V	GND		GND		GND		"		GND		GND		2A		"	"																
	"	21	"		GND	2.4 V	"	GND		"		"		"		"		3A		"	"																
	"	22	"		"	"	"	GND		2.4 V		"		"		"		4A		"	"																
	"	23	"		"	"	"	"		GND		2.4 V		"		"		5A		"	"																
	"	24	"		"	"	"	"		"		GND		"		2.4 V		6A		"	"																
IH2	"	25	5.5 V		GND	5.5 V	GND	GND		"				GND		GND		1A		100	"																
	"	26	GND		5.5 V	"	GND	GND		"		"		"		"		2A		"	"																
	"	27	"		GND	"	"	5.5 V		"		"		"		"		3A		"	"																
	"	28	"		"	"	"	"		5.5 V		5.5 V		"		"		4A		"	"																
	"	29	"		"	"	"	"		GND		GND		"		"		5A		"	"																
	"	30	"		"	"	"	"		"		"		"		5.5 V		6A		"	"																
IL	3009	31	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		1A	-1.0	-2.0	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	"	"	"																
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}		60	mA																
	CCH	3005	38	GND		GND	5.5 V	GND		GND		GND		"		GND		V _{CC}		26	"																
IC				-12 mA		-12 mA	4.5 V	-12 mA		-12 mA				GND				1A		-1.5	V																
																		2A		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
																		3A		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
																		4A		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
																		5A		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
																		6A		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
2	Same tests, terminal conditions and limits as for subgroup 1, except T _A = +125°C and V _{IC} tests are omitted.																																				
3	Same tests, terminal conditions and limits as for subgroup 1, except T _A = -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	Limits		Unit
				Test no.	1A	2Y	2A	3A	3Y	24A	4Y	5A	5Y	GND	6Y	6A	1Y	Min	Max	
9 $T_A = +25^\circ\text{C}$	t_{PHL}	3003 (Fig. 3)	45	IN	OUT	IN	5.0 V		OUT	IN	OUT	IN	OUT	GND			OUT	2	12	ns
		"	46				"	IN			OUT			"				"	"	"
		"	47				"							"				"	"	"
		"	48				"							"				"	"	"
		"	49				"							"	OUT	IN		"	"	"
		"	50				"							"				"	"	"
	PLH	3003 (Fig. 3)	51	IN	OUT	IN	5.0 V	IN	OUT	IN	OUT	IN	OUT	GND			OUT	2	12	"
		"	52				"							"				"	"	"
		"	53				"							"				"	"	"
		"	54				"							"				"	"	"
		"	55				"							"	OUT	IN		"	"	"
10 $T_A = +125^\circ\text{C}$	t_{PHL}	3003 (Fig. 3)	57	IN	OUT	IN	5.0 V		OUT		OUT	IN	OUT	GND			OUT	2	14	ns
		"	58				"	IN			OUT			"				"	"	"
		"	59				"		OUT	IN	OUT	IN	OUT	"				"	"	"
		"	60				"							"				"	"	"
		"	61				"							"	OUT	IN		"	"	"
		"	62				"							"				"	"	"
	PLH	3003 (Fig. 3)	63	IN	OUT	IN	5.0 V		OUT		OUT	IN	OUT	GND			OUT	2	15	"
		"	64				"	IN			OUT			"				"	"	"
		"	65				"		OUT	IN	OUT	IN	OUT	"				"	"	"
		"	66				"							"				"	"	"
		"	67				"							"	OUT	IN		"	"	"
11 $T_A = -55^\circ\text{C}$	t_{PHL}	3003 (Fig. 3)	69	IN	OUT	IN	5.0 V		OUT		OUT	IN	OUT	GND			OUT	2	16	ns
		"	70				"	IN			OUT			"				"	"	"
		"	71				"		OUT	IN	OUT	IN	OUT	"				"	"	"
		"	72				"							"				"	"	"
		"	73				"							"	OUT	IN		"	"	"
		"	74				"							"				"	"	"
	PLH	3003 (Fig. 3)	75	IN	OUT	IN	5.0 V	IN	OUT	IN	OUT	IN	OUT	GND			OUT	2	13	"
		"	76				"							"				"	"	"
		"	77				"	IN			OUT			"				"	"	"
		"	78				"							"				"	"	"
		"	79				"							"	OUT	IN		"	"	"

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,D	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	3A	3B	3C	3D	3E	3F	3G		3H	3I		3J	3K	3L	3M	3N	3O	3P	3Q	3R	3S	3T	3U	3V	3W	3X	3Y	3Z	3AA	3AB	3AC	3AD	3AE	3AF	3AG	3AH	3AI	3AJ	3AK	3AL	3AM	3AN	3AO	3AP	3AQ	3AR	3AS	3AT	3AU	3AV	3AW	3AX	3AY	3AZ	3BA	3BB	3BC	3BD	3BE	3BF	3BG	3BH	3BI	3BJ	3BK	3BL	3BM	3BN	3BO	3BP	3BQ	3BR	3BS	3BT	3BU	3BV	3BW	3BX	3BY	3BZ	3CA	3CB	3CC	3CD	3CE	3CF	3CG	3CH	3CI	3CJ	3CK	3CL	3CM	3CN	3CO	3CP	3CQ	3CR	3CS	3CT	3CU	3CV	3CW	3CX	3CY	3CZ	3DA	3DB	3DC	3DD	3DE	3DF	3DG	3DH	3DI	3DJ	3DK	3DL	3DM	3DN	3DO	3DP	3DQ	3DR	3DS	3DT	3DU	3DV	3DW	3DX	3DY	3DZ	3EA	3EB	3EC	3ED	3EE	3EF	3EG	3EH	3EI	3EJ	3EK	3EL	3EM	3EN	3EO	3EP	3EQ	3ER	3ES	3ET	3EU	3EV	3EW	3EX	3EY	3EZ	3FA	3FB	3FC	3FD	3FE	3FF	3FG	3FH	3FI	3FJ	3FK	3FL	3FM	3FN	3FO	3FP	3FQ	3FR	3FS	3FT	3FU	3FV	3FW	3FX	3FY	3FZ	3GA	3GB	3GC	3GD	3GE	3GF	3GG	3GH	3GI	3GJ	3GK	3GL	3GM	3GN	3GO	3GP	3GQ	3GR	3GS	3GT	3GU	3GV	3GW	3GX	3GY	3GZ	3HA	3HB	3HC	3HD	3HE	3HF	3HG	3HH	3HI	3HJ	3HK	3HL	3HM	3HN	3HO	3HP	3HQ	3HR	3HS	3HT	3HU	3HV	3HW	3HX	3HY	3HZ	3IA	3IB	3IC	3ID	3IE	3IF	3IG	3IH	3II	3IJ	3IK	3IL	3IM	3IN	3IO	3IP	3IQ	3IR	3IS	3IT	3IU	3IV	3IW	3IX	3IY	3IZ	3JA	3JB	3JC	3JD	3JE	3JF	3JG	3JH	3JI	3JJ	3JK	3JL	3JM	3JN	3JO	3JP	3JQ	3JR	3JS	3JT	3JU	3JV	3JW	3JX	3JY	3JZ	3KA	3KB	3KC	3KD	3KE	3KF	3KG	3KH	3KI	3KJ	3KK	3KL	3KM	3KN	3KO	3KP	3KQ	3KR	3KS	3KT	3KU	3KV	3KW	3KX	3KY	3KZ	3LA	3LB	3LC	3LD	3LE	3LF	3LG	3LH	3LI	3LJ	3LK	3LL	3LM	3LN	3LO	3LP	3LQ	3LR	3LS	3LT	3LU	3LV	3LW	3LX	3LY	3LZ	3MA	3MB	3MC	3MD	3ME	3MF	3MG	3MH	3MI	3MJ	3MK	3ML	3MN	3MO	3MP	3MQ	3MR	3MS	3MT	3MU	3MV	3MW	3MX	3MY	3MZ	3NA	3NB	3NC	3ND	3NE	3NF	3NG	3NH	3NI	3NJ	3NK	3NL	3NM	3NO	3NP	3NQ	3NR	3NS	3NT	3NU	3NV	3NW	3NX	3NY	3NZ	3OA	3OB	3OC	3OD	3OE	3OF	3OG	3OH	3OI	3OJ	3OK	3OL	3OM	3ON	3OO	3OP	3OQ	3OR	3OS	3OT	3OU	3OV	3OW	3OX	3OY	3OZ	3PA	3PB	3PC	3PD	3PE	3PF	3PG	3PH	3PI	3PJ	3PK	3PL	3PM	3PN	3PO	3PP	3PQ	3PR	3PS	3PT	3PU	3PV	3PW	3PX	3PY	3PZ	3QA	3QB	3QC	3QD	3QE	3QF	3QG	3QH	3QI	3QJ	3QK	3QL	3QM	3QN	3QO	3QP	3QQ	3QR	3QS	3QT	3QU	3QV	3QW	3QX	3QY	3QZ	3RA	3RB	3RC	3RD	3RE	3RF	3RG	3RH	3RI	3RJ	3RK	3RL	3RM	3RN	3RO	3RP	3RQ	3RR	3RS	3RT	3RU	3RV	3RW	3RX	3RY	3RZ	3SA	3SB	3SC	3SD	3SE	3SF	3SG	3SH	3SI	3SJ	3SK	3SL	3SM	3SN	3SO	3SP	3SQ	3SR	3SS	3ST	3SU	3SV	3SW	3SX	3SY	3SZ	3TA	3TB	3TC	3TD	3TE	3TF	3TG	3TH	3TI	3TJ	3TK	3TL	3TM	3TN	3TO	3TP	3TQ	3TR	3TS	3TT	3TU	3TV	3TW	3TX	3TY	3TZ	3UA	3UB	3UC	3UD	3UE	3UF	3UG	3UH	3UI	3UJ	3UK	3UL	3UM	3UN	3UO	3UP	3UQ	3UR	3US	3UT	3UU	3UV	3UW	3UX	3UY	3UZ	3VA	3VB	3VC	3VD	3VE	3VF	3VG	3VH	3VI	3VJ	3VK	3VL	3VM	3VN	3VO	3VP	3VQ	3VR	3VS	3VT	3VU	3VV	3VW	3VX	3VY	3VZ	3WA	3WB	3WC	3WD	3WE	3WF	3WG	3WH	3WI	3WJ	3WK	3WL	3WM	3WN	3WO	3WP	3WQ	3WR	3WS	3WT	3WU	3WV	3WW	3WX	3WY	3WZ	3XA	3XB	3XC	3XD	3XE	3XF	3XG	3XH	3XI	3XJ	3XK	3XL	3XM	3XN	3XO	3XP	3XQ	3XR	3XS	3XT	3XU	3XV	3XW	3XX	3XY	3XZ	3YA	3YB	3YC	3YD	3YE	3YF	3YG	3YH	3YI	3YJ	3YK	3YL	3YM	3YN	3YO	3YP	3YQ	3YR	3YS	3YT	3YU	3YV	3YW	3YX	3YY	3YZ	3ZA	3ZB	3ZC	3ZD	3ZE	3ZF	3ZG	3ZH	3ZI	3ZJ	3ZK	3ZL	3ZM	3ZN	3ZO	3ZP	3ZQ	3ZR	3ZS	3ZT
1 T _A = +25°C	V _{OL} " " " CEX	3007 " " "	1 2 3 4 5 6 7 8 9 10 11 12	1	2.0 V	2.0 V	20 mA	4.5 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	1Y		0.4	V																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
				2	5.5 V	5.5 V		20 mA	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2Y		"	"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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3	Same tests, terminal conditions and limits as for subgroup 1, except T _C = +125°C and V _{IC} tests are omitted.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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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 method	Cases A,B,D Case C Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
				1A	1B	1Y	V _{CC}	2Y	2A	2B	3Y	3A	3B	GND	4A	4B	4Y		Min	Max	
9 T _A = +25°C	t _{PHL}	3003 (Fig. 4)	47	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND	4A			1A to 1Y	3	14	ns
		"	48				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
		"	49				"							"				3A to 3Y	"	"	"
		"	50				"							"	IN	2.4 V	OUT	4A to 4Y	"	"	"
	PLH	3003 (Fig. 4)	51	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	3	17	"
10 T _A = +125°C	t _{PHL}	"	52				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
		"	53				"							"	IN	2.4 V	OUT	3A to 3Y	"	"	"
		"	54				"							"				4A to 4Y	"	"	"
		3003 (Fig. 4)	55	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	3	16	ns
	PLH	"	56				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
11 T _A = -55°C	t _{PHL}	"	57				"							"	IN	2.4 V	OUT	3A to 3Y	"	"	"
		"	58				"	OUT	IN	2.4 V	OUT	IN	2.4 V	"				4A to 4Y	"	"	"
		3003 (Fig. 4)	59	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	3	21	"
		"	60				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
	PLH	"	61				"							"	IN	2.4 V	OUT	3A to 3Y	"	"	"
11 T _A = -55°C	t _{PHL}	"	62				"	OUT	IN	2.4 V	OUT	IN	2.4 V	"				4A to 4Y	"	"	"
		3003 (Fig. 4)	63	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	3	18	ns
		"	64				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
		"	65				"							"	IN	2.4 V	OUT	3A to 3Y	"	"	"
	PLH	"	66				"	OUT	IN	2.4 V	OUT	IN	2.4 V	"				4A to 4Y	"	"	"
11 T _A = -55°C	t _{PHL}	3003 (Fig. 4)	67	IN	2.4 V	OUT	5.0 V	OUT	IN	2.4 V	OUT	IN	2.4 V	GND				1A to 1Y	3	19	ns
		"	68				"	OUT			OUT		2.4 V	"				2A to 2Y	"	"	"
		"	69				"							"	IN	2.4 V	OUT	3A to 3Y	"	"	"
		"	70				"	OUT	IN	2.4 V	OUT	IN	2.4 V	"				6A to 6Y	"	"	"

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

Subgroup	Symbol	MIL-STD-883 method	Cases A.B.D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits		Unit
				Test no.	1A	1Y	14	NC	2A	2B	2C	2D	2Y	GND	1B	1C	1D		Min	Max	
1 $T_A = +25^\circ\text{C}$	V_{OL} "	3007 "	1 2	1	2.0 V 5.5 V	20 mA			5.5 V 2.0 V	5.5 V 2.0 V	5.5 V 2.0 V	5.5 V 2.0 V	20 mA	GND	2.0 V 5.5 V	2.0 V 5.5 V	2.0 V 5.5 V	1Y 2Y		0.4 "	V "
				2		5.5 V	4.5 V	NC	5.5 V	5.5 V	5.5 V	5.5 V		GND	5.5 V	5.5 V	5.5 V	1Y		250	μA
	CEX		3	0.8 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	5.5 V	1Y		"	"
			4	5.5 V	"	"	"		"	"	"	"		"	0.8 V	5.5 V	5.5 V	1Y		"	"
			5	5.5 V	"	"	"		"	"	"	"		"	5.5 V	0.8 V	5.5 V	1Y		"	"
			6	"	"	5.5 V	"		"	"	"	"		"	5.5 V	5.5 V	0.8 V	1Y		"	"
			7	"	"	"	"		0.8 V	"	"	"	5.5 V	"	"	5.5 V	5.5 V	2Y		"	"
			8	"	"	"	"		5.5 V	0.8 V	"	"	"	"	"	"	5.5 V	2Y		"	"
			9	"	"	"	"		5.5 V	5.5 V	0.8 V	"	"	"	"	"	5.5 V	2Y		"	"
			10	"	"	"	"		"	5.5 V	5.5 V	0.8 V	"	"	"	"	"	2Y		"	"
			11	-12 mA	"		4.5 V		"	"	"	"	"	GND	-12 mA	-12 mA	-12 mA	1A	-1.5	"	V
			12	"	"		"		"	"	"	"	"	"	"	"	"	1B	"	"	"
			13	"	"		"		"	"	"	"	"	"	"	"	"	1C	"	"	"
			14	"	"		"		"	"	"	"	"	"	"	"	"	1D	"	"	"
			15	"	"		"		"	"	"	"	"	"	"	"	"	2A	"	"	"
			16	"	"		"		"	"	"	"	"	"	"	"	"	2B	"	"	"
			17	"	"		"		"	"	"	"	"	"	"	"	"	2C	"	"	"
			18	"	"		"		"	"	"	"	"	"	"	"	"	2D	"	"	"
	IH1	3010 "	19	2.4 V GND	"		5.5 V		GND	GND	-12 mA	GND		GND	GND	GND	GND	1A	50	"	μA
			20	"	"		"		"	"	"	"		"	2.4 V GND	2.4 V GND	"	1B	"	"	"
			21	"	"		"		"	"	"	"		"	"	"	"	1C	"	"	"
			22	"	"		"		"	"	"	"		"	"	"	"	1D	"	"	"
			23	"	"		"		2.4 V GND	2.4 V GND	"	"		"	"	"	"	2A	"	"	"
			24	"	"		"		"	"	"	"		"	"	"	"	2B	"	"	"
	IH2		25	"	"		"		"	GND	2.4 V GND	2.4 V GND		"	"	"	"	2C	"	"	"
			26	"	"		"		"	"	"	"		"	"	"	"	2D	"	"	"
			27	5.5 V GND	"		5.5 V		GND	GND	GND	GND		GND	GND	GND	GND	1A	100	"	"
			28	"	"		"		"	"	"	"		"	5.5 V GND	5.5 V GND	"	1B	"	"	"
			29	"	"		"		"	"	"	"		"	"	"	"	1C	"	"	"
			30	"	"		"		5.5 V GND	"	"	"		"	"	"	5.5 V GND	1D	"	"	"
			31	"	"		"		"	5.5 V GND	"	"		"	"	"	"	2A	"	"	"
			32	"	"		"		"	GND	5.5 V GND	5.5 V GND		"	"	"	"	2B	"	"	"
			33	"	"		"		"	"	"	"		"	"	"	"	2C	"	"	"
			34	"	"		"		"	"	"	5.5 V		"	"	"	"	2D	"	"	"
	IL	3009 "	35	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	5.5 V	1A	-1.0	-2.0	mA
			36	"	"		"		"	"	"	"		"	0.4 V	0.4 V	"	1B	"	"	"
			37	"	"		"		"	"	"	"		"	5.5 V	5.5 V	"	1C	"	"	"
			38	"	"		"		"	"	"	"		"	"	"	0.4 V	1D	"	"	"
			39	"	"		"		0.4 V 5.5 V	"	"	"		"	"	"	5.5 V	2A	"	"	"
			40	"	"		"		"	0.4 V 5.5 V	"	"		"	"	"	"	2B	"	"	"
			41	"	"		"		"	"	"	"		"	"	"	"	2C	"	"	"
			42	"	"		"		"	"	0.4 V 5.5 V	0.4 V 5.5 V		"	"	"	"	2D	"	"	"
2	GCL	3005	43	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}	20	"	mA
	GCH	3005	44	GND	"		5.5 V		GND	GND	GND	GND		GND	GND	GND	GND	V_{CC}	8.4	"	mA
Same tests, terminal conditions and limits as for subgroup 1, except $T_A = +125^\circ\text{C}$ and V_{IC} tests are omitted.																					
Same tests, terminal conditions and limits as for subgroup 1, except $T_A = -55^\circ\text{C}$ 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 Case C Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Limits		Unit
				1	6	3	14	11	9	2B	2C	2D	2Y	GND	1B	1C	5	Min	Max	
9 $T_A = +25^\circ\text{C}$ t t	t_{PHL}	3003 (Fig. 4)	45	IN	OUT		5.0 V			2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	3	14	ns
	t_{PHL}	"	46				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	14	"
	PLH	"	47	IN	OUT		"			2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	17	"
	PLH	"	48				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	17	"
10 $T_A = +125^\circ\text{C}$ t t	t_{PHL}	3003 (Fig. 4)	49	IN	OUT		5.0 V			2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	3	16	"
	t_{PHL}	"	50				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	16	"
	PLH	"	51	IN	OUT		"			2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	21	"
	PLH	"	52				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	21	"
11 $T_A = -55^\circ\text{C}$ t t	t_{PHL}	3003 (Fig. 4)	53	IN	OUT		5.0 V			2.4 V	2.4 V	2.4 V	OUT	GND	2.4 V	2.4 V	2.4 V	3	18	"
	t_{PHL}	"	54				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	18	"
	PLH	"	55	IN	OUT		"			2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	19	"
	PLH	"	56				"		IN	2.4 V	2.4 V	2.4 V	OUT	"	2.4 V	2.4 V	2.4 V	"	19	"

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, 6, 7, and 8 shall be omitted.

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

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

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

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

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

4.5.1 Voltage and current. All voltage values given are referenced to the microcircuit ground terminals. Currents given are conventional current and positive when flowing into the referenced terminal.

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 acquiring activity in addition to notification of the qualifying activity, if applicable.
- f. Requirements for failure analysis (including required test condition of MIL-STD-883, method 5003), 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 and MIL-STD-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 3.4). Longer length leads and lead forming should not affect the part number.

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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	54H30
02	54H20
03	54H10
04	54H00
05	54H04
06	54H01
07	54H22

6.8 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
NASA - NA
DLA – CC

Preparing activity:

DLA - CC
Project 5962-1978

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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3. The preparing activity must provide a reply within 30 days from receipt of the form.

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I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-M-38510/23D

2. DOCUMENT DATE (YYYYMMDD)
2003/07/11

3. DOCUMENT TITLE

MICROCIRCUITS, DIGITAL, TTL, HIGH SPEED, NAND GATES, MONOLITHIC SILICON, PART NUMBER M38510/2301 THROUGH M38510/2307

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
Rick Officer

b. TELEPHONE *(Include Area Code)*
(1) Commercial (2) DSN
614-692-0518 850-0518

c. ADDRESS *(Include Zip Code)*
DSCC-VAS
3990 East Broad Street
Columbus, Ohio 43216-5000

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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

DD Form 1426, FEB 1999 (EG)

Feb 99

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