

INCH-POUND

MIL-M-38510/14E
21 March 2005
SUPERSEDING
MIL-M-38510/14D
2 August 1982

MILITARY SPECIFICATION
MICROCIRCUITS, DIGITAL, TTL, DATA SELECTORS/MULTIPLEXERS,
MONOLITHIC SILICON

Inactive for new design after 7 September 1995.

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, data selectors/multiplexers, logic 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 For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.4).

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

1.2.1 Device types. The device types are as follows:

<u>Device type</u>	<u>Circuit</u>
01	Sixteen-input data selector/multiplexer, with enable
02, 06	Eight-input data selector/multiplexer, with enable
03	Dual, four-input data selector/multiplexer, with enable
04	Dual, four-input data selector/multiplexer, without enable
05	Quad, two-input data selector/multiplexer, with enable

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

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

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
F	GDFP2-F16 or CDFP3-F16	16	Flat-pack
J	GDIP1-T24 or CDIP2-T24	24	Dual-in-line
K	GDFP2-F24 or CDFP3-F24	24	Flat-pack
Z	GDFP7-F24 or CDFP8-F24	24	Flat-pack

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@dsccl.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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°C to +150°C
Maximum power dissipation per gate, (P _D) <u>1/</u>	
Device type 01	375 mW
Device types 02 and 06	268 mW
Device type 03	286 mW
Device type 04	248 mW
Device type 05	275 mW
Lead temperature (soldering 10 seconds)	300°C
Thermal resistance, junction-to-case (θ _{JC}).....	(See MIL-STD-1835)
Junction temperature (T _J) <u>2/</u>	175°C

1.4 Recommended operating conditions.

Supply voltage (V _{CC})	4.5 V minimum to 5.5 V maximum
Minimum high level input voltage (V _{IH})	2.0 V dc
Maximum low level input voltage (V _{IL})	0.8 V dc
Maximum low level output current (I _{OL})	16 mA
Normalized fanout (each output) <u>3/</u>	
Low logic level	10 maximum
High logic level	20 maximum
Case operating temperature range (T _C)	-55°C to 125°C

2.0 APPLICABLE DOCUMENT

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.)

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

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

2.3 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 6.3).

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 Logic diagrams and terminal connections. The logic diagrams and terminal connections shall be as specified on figure 1 and 2.

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

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

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

3.4 Lead material and finish. 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 1 and apply over the full recommended case operating temperature range, unless otherwise specified.

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

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

3.8 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 4 (see MIL-PRF-38535, appendix A).

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device type	Limits		Unit
				Min	Max	
High level output voltage	V _{OH}	V _{CC} = 4.5 V I _{OH} = -8 mA	All	2.4		V
Low level output voltage	V _{OL}	V _{CC} = 4.5 V I _{OL} = 16 mA	All		0.4	V
Input clamp voltage	V _{IC}	V _{CC} = 4.5 V I _{IN} = -12 mA	All		-1.5	V
Low level input current	I _{IL}	V _{CC} = 5.5 V V _{IN} = 0.4 V	02, 03, 04 05, 06	-0.7	-1.6	mA
			01	-0.6	-1.6	
High-level input current	I _{IH1}	V _{CC} = 5.5 V V _{IN} = 2.5 V	All		40	μA
High-level input current	I _{IH2}	V _{CC} = V _{IN} = 5.5 V	All		100	μA
Short circuit output current	I _{OS}	V _{CC} = 5.5 V V _{OUT} = 0 V ^{1/}	01, 03, 06	-20	-55	mA
			02, 04, 05	-20	-120	mA
Supply current	I _{CC}	V _{CC} = 5.5 V	01		68	mA
			02,06		48	mA
			04		45	mA
			03		52	mA
			05		50	mA
Propagation delay time high-to-low level output from A, B, C or D to W	t _{PHL1}	R _L = 390Ω ±5%, C _L = 50 pF minimum (figure 4)	01	8	40	ns
Propagation delay time low-to-high level output from A, B, C or D to W	t _{PLH1}		01	8	43	ns
Propagation delay time high-to-low level output from strobe to W	t _{PHL2}		01	6	37	ns
Propagation delay time low-to-high level output from strobe to W	t _{PLH2}		01	6	32	ns
Propagation delay time high-to-low level output from E ₀ -E ₁₅ to W	t _{PHL3}		01	3	23	ns
Propagation delay time low-to-high level output from E ₀ -E ₁₅ to W	t _{PLH3}		01	3	30	ns

^{1/} Not more than one should be shorted at one time.

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Propagation delay time, high-to-low level output from A, B, or C to W	t _{PHL1}	R _L = 390Ω ±5%, C _L = 50 pF minimum (figure 4)	02	6	40	ns
			06	6	48	
Propagation delay time, low-to-high level output from A, B, or C to W	t _{PLH1}		02	6	38	ns
			06	6	43	
Propagation delay time, high-to-low level output from A, B, or C to Y	t _{PHL2}		02	8	49	ns
			06	8	60	
Propagation delay time, low-to-high level output from A, B, or C to Y	t _{PLH2}		02	8	45	ns
			06	8	58	
Propagation delay time, high-to-low level output from strobe to W	t _{PHL3}		02	6	37	ns
			06	6	38	
Propagation delay time, low-to-high level output from strobe to W	t _{PLH3}		02, 06	6	35	ns
Propagation delay time, high-to-low level output from strobe to Y	t _{PHL4}		02	8	46	ns
			06	8	52	
Propagation delay time, low-to-high level output from strobe to Y	t _{PLH4}		02	8	42	ns
		06	8	52		
Propagation delay time, high-to-low level output from D ₀ -D ₇ to W	t _{PHL5}	02, 06	3	32	ns	
Propagation delay time, low-to-high level output from D ₀ -D ₇ to W	t _{PLH5}	02, 06	3	26	ns	
Propagation delay time, high-to-low level output from D ₀ -D ₇ to Y	t _{PHL6}	02	6	41	ns	
		06	6	44		
Propagation delay time, low-to-high level output from D ₀ -D ₇ to Y	t _{PLH6}	02	6	33	ns	
		06	6	36		
Propagation delay time, high-to-low level output from data to Y	t _{PHL1}	R _L = 390Ω ±5%, C _L = 50 pF minimum (figure 5)	03	3	29	ns
Propagation delay time, low-to-high level output from data to Y	t _{PLH1}		03	3	28	ns
Propagation delay time, high-to-low level output from A or B to Y	t _{PHL2}		03	6	44	ns
Propagation delay time, low-to-high level output from A or B to Y	t _{PLH2}		03	6	42	ns
Propagation delay time, high-to-low level output from strobe to Y	t _{PHL3}		03	6	32	ns
Propagation delay time, low-to-high level output from strobe to Y	t _{PLH3}		03	6	42	ns

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions -55°C ≤ T _C ≤ +125°C unless otherwise specified	Device type	Limits		Unit
				Min	Max	
Propagation delay time high-to-low level output from data to Y	t _{PHL1}	R _L = 390Ω ±5%, C _L = 50 pF minimum (figure 5)	04	3	41	ns
Propagation delay time low-to-high level output from data to Y	t _{PLH1}		04	3	39	ns
Propagation delay time high-to-low level output from data to W	t _{PHL2}		04	3	25	ns
Propagation delay time low-to-high level output from data to W	t _{PLH2}		04	3	24	ns
Propagation delay time high-to-low level output from A or B to Y	t _{PHL3}		04	6	51	ns
Propagation delay time low-to-high level output from A or B to Y	t _{PLH3}		04	6	51	ns
Propagation delay time high-to-low level output from A or B to W	t _{PHL4}		04	6	39	ns
Propagation delay time low-to-high level output from A or B to W	t _{PLH4}		04	6	34	ns
Propagation delay time high-to-low level output from A to Y	t _{PHL1}	R _L = 390Ω ±5%, C _L = 50 pF minimum (figure 6)	05	6	49	ns
Propagation delay time low-to-high level output from A to Y	t _{PLH1}		05	6	41	ns
Propagation delay time high-to-low level output from strobe to Y	t _{PHL2}		05	3	39	ns
Propagation delay time low-to-high level output from strobe to Y	t _{PLH2}		05	3	33	ns
Propagation delay time high-to-low level output from data to Y	t _{PHL3}		05	3	25	ns
Propagation delay time low-to-high level output from data to Y	t _{PLH3}		05	3	35	ns

TABLE II. Electrical test requirements.

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

4. VERIFICATION

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

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

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

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

4.4 Technology Conformance Inspection (TCI). Technology conformance inspection shall be in accordance with MIL-PRF-38535 and herein for groups A, B, C, and D inspections (see 4.4.1 through 4.4.4).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table III of MIL-PRF-38535 and as follows:

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

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

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

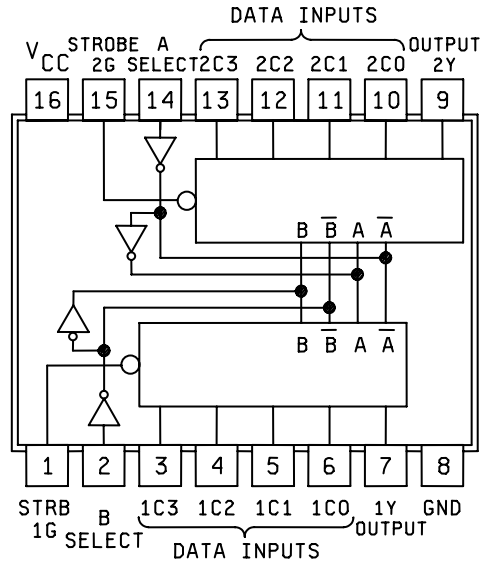
- a. End point electrical parameters shall be as specified in table II herein.
- b. The steady-state life test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit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

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

4.5 Methods of inspection. Methods of inspection shall be as specified in the appropriate tables and as follows:

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

DEVICE TYPE 03
CASES E AND F



DEVICE TYPE 04
CASES E AND F

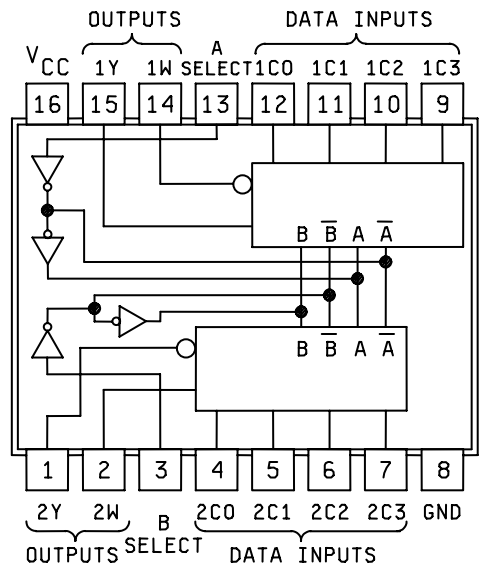
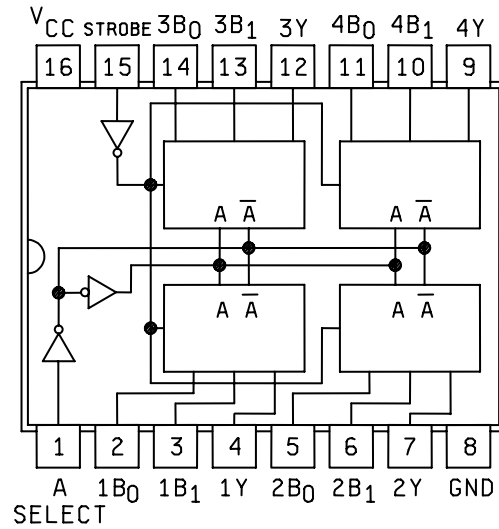


Figure 1. Terminal connections (top view) - Continued.

DEVICE TYPE 05
CASES E AND F



DEVICE TYPE 06
CASES E AND F

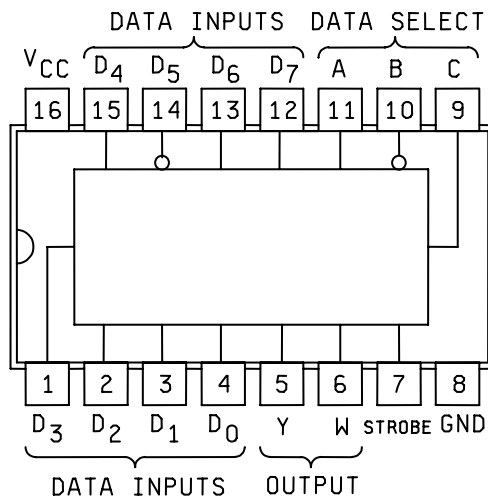


Figure 1. Terminal connections (top view) - Continued.

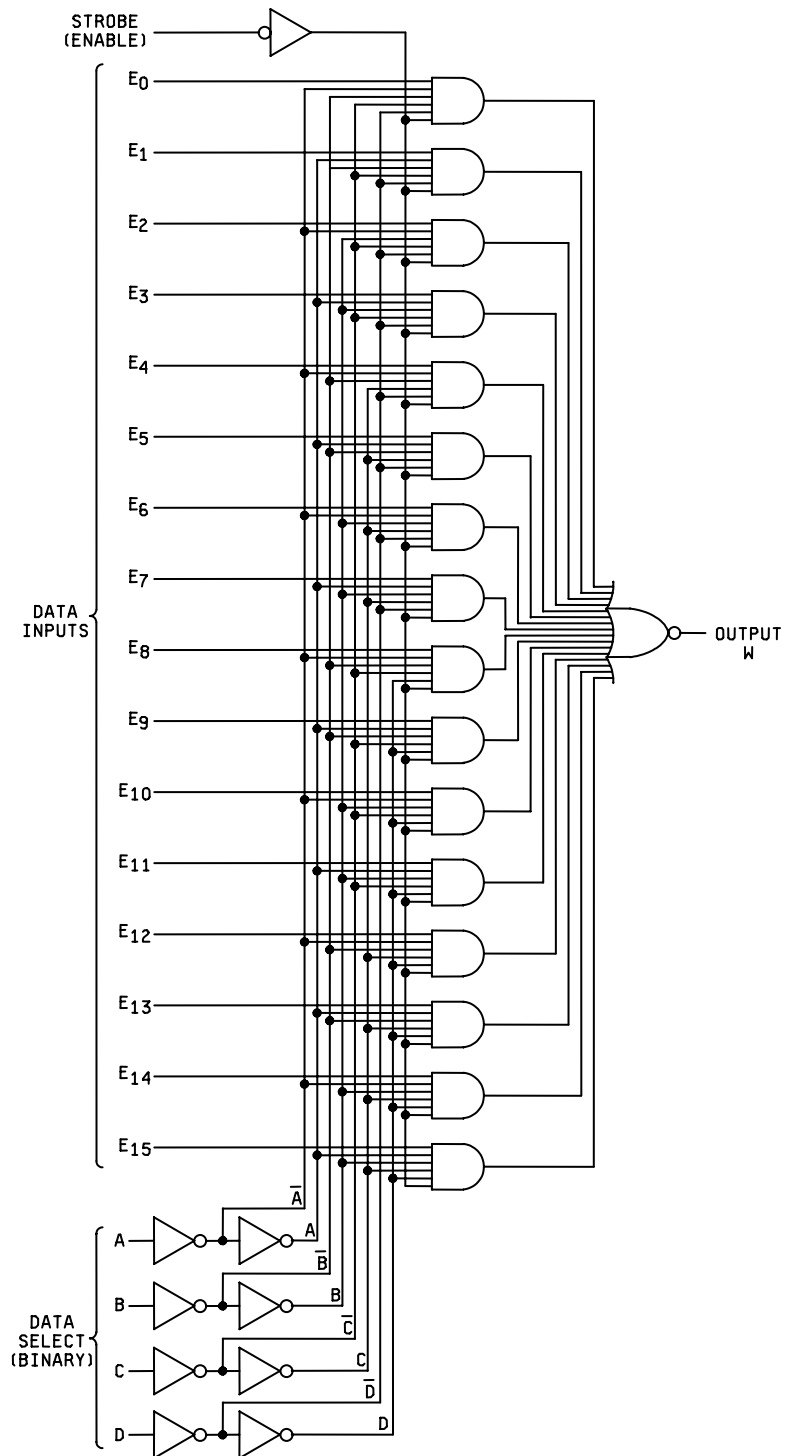


Figure 2. Logic diagrams.

DEVICE TYPES 02 AND 06

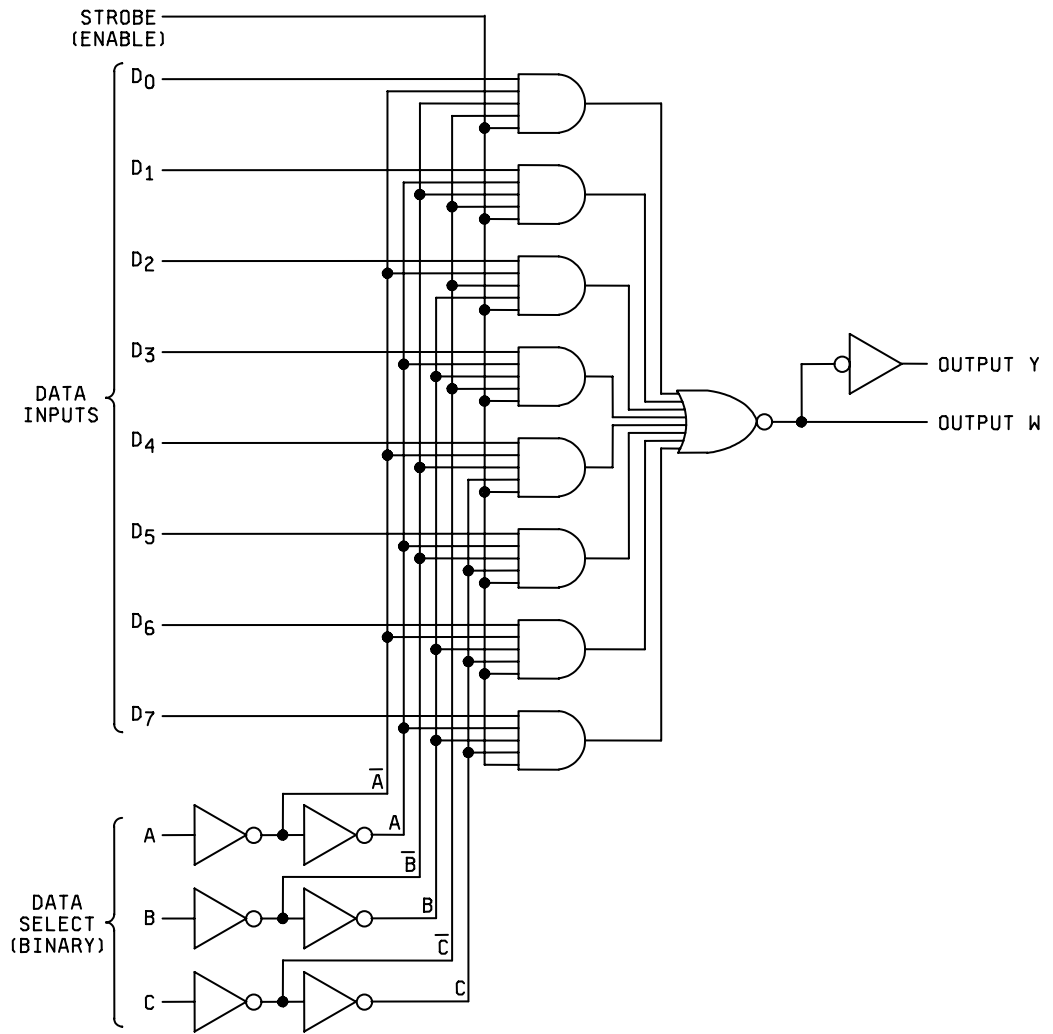


Figure 2. Logic diagrams – Continued.

DEVICE TYPE 03

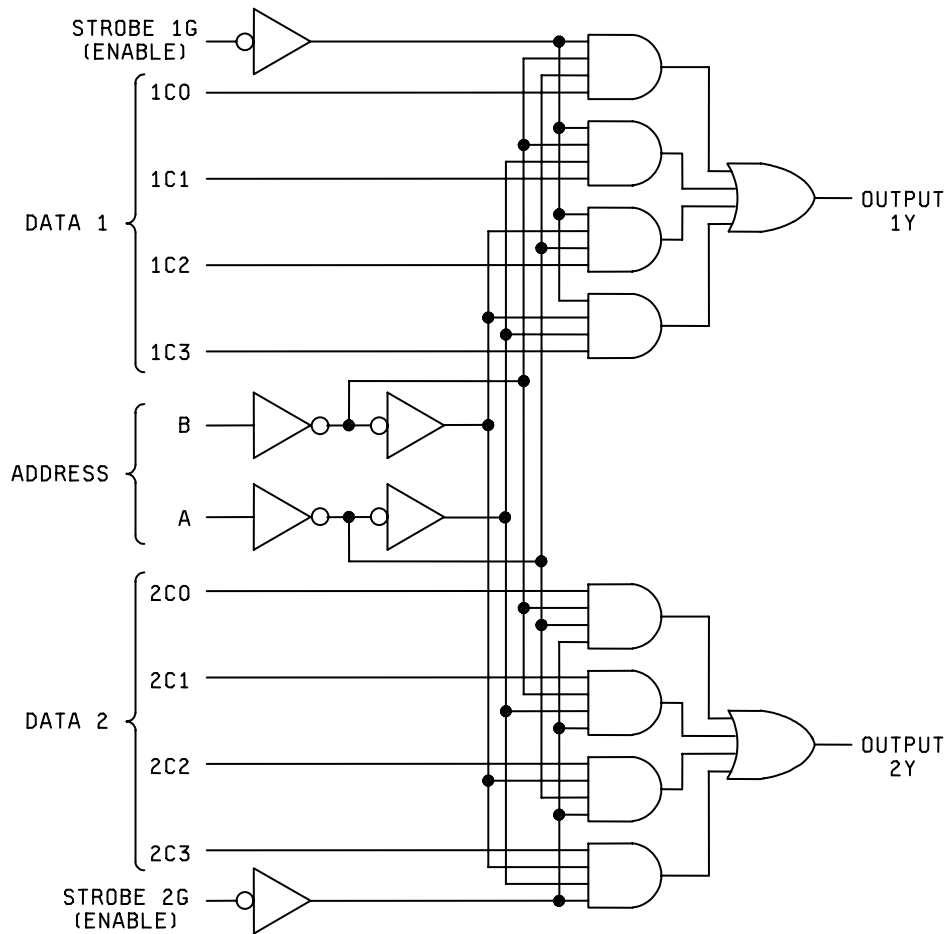


Figure 2. Logic diagrams – Continued.

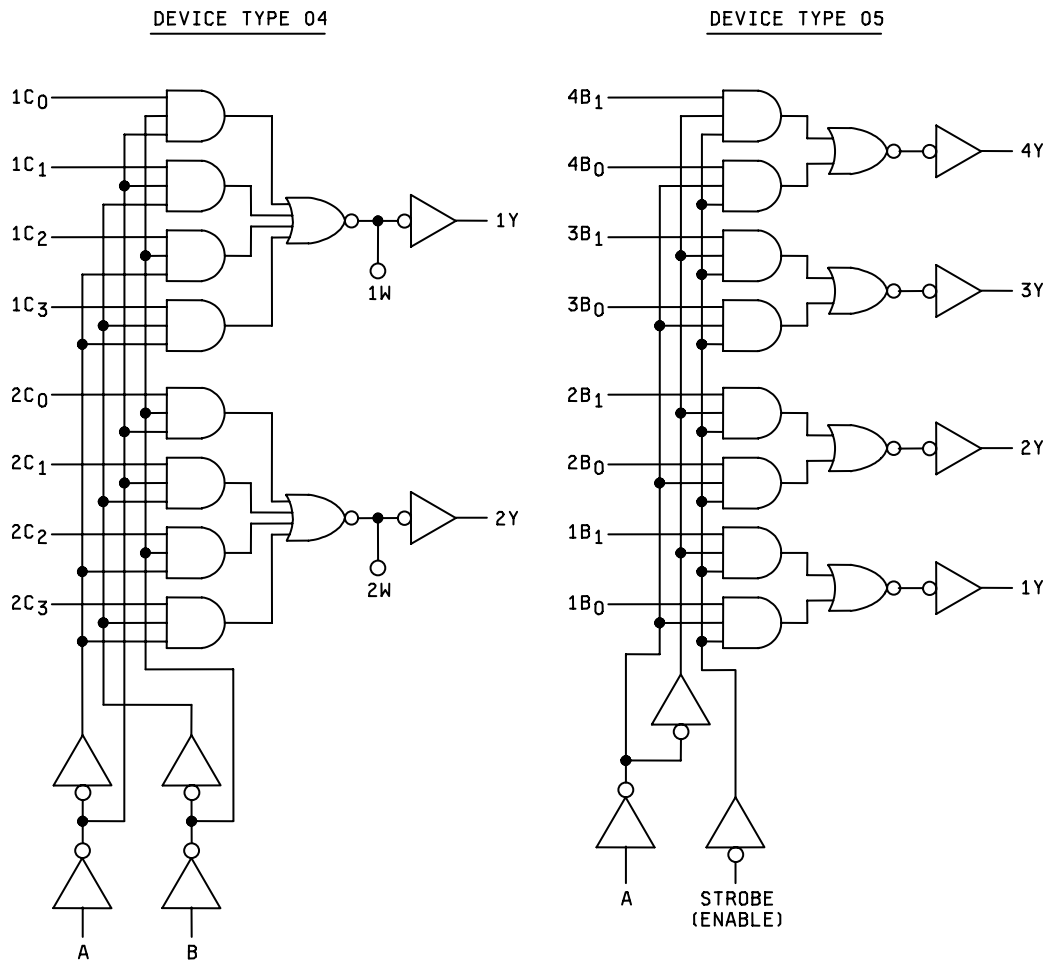


Figure 2. Logic diagrams – Continued.

Device type 01

INPUTS																						OUTPUT
D	C	B	A	STROBE	E ₀	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	E ₈	E ₉	E ₁₀	E ₁₁	E ₁₂	E ₁₃	E ₁₄	E ₁₅	W	
X	X	X	X	H	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	H	
L	L	L	L	L	L	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	H	
L	L	L	L	L	H	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	L	
L	L	L	H	L	x	L	x	x	x	x	x	x	x	x	x	x	x	x	x	x	H	
L	L	L	H	L	x	H	x	x	x	x	x	x	x	x	x	x	x	x	x	x	L	
L	L	H	L	L	x	x	L	x	x	x	x	x	x	x	x	x	x	x	x	x	H	
L	L	H	L	L	x	x	H	x	x	x	x	x	x	x	x	x	x	x	x	x	L	
L	L	H	H	L	x	x	x	L	x	x	x	x	x	x	x	x	x	x	x	x	H	
L	L	H	H	L	x	x	x	H	x	x	x	x	x	x	x	x	x	x	x	x	L	
L	H	L	L	L	x	x	x	x	L	x	x	x	x	x	x	x	x	x	x	x	H	
L	H	L	L	L	x	x	x	x	H	x	x	x	x	x	x	x	x	x	x	x	L	
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H	L	L	L	L	x	x	x	x	x	x	x	x	H	x	x	x	x	x	x	x	L	
H	L	L	H	L	x	x	x	x	x	x	x	x	L	x	x	x	x	x	x	x	H	
H	L	L	H	L	x	x	x	x	x	x	x	x	H	x	x	x	x	x	x	x	L	
H	L	L	H	L	x	x	x	x	x	x	x	x	x	L	x	x	x	x	x	x	H	
H	L	H	L	L	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	x	L	
H	L	H	L	L	x	x	x	x	x	x	x	x	x	H	x	x	x	x	x	x	L	
H	L	H	H	L	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	x	H	
H	L	H	H	L	x	x	x	x	x	x	x	x	x	H	x	x	x	x	x	x	L	
H	H	L	L	L	x	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	H	
H	H	L	L	L	x	x	x	x	x	x	x	x	x	x	H	x	x	x	x	x	L	
H	H	L	H	L	x	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	H	
H	H	L	H	L	x	x	x	x	x	x	x	x	x	x	x	H	x	x	x	x	L	
H	H	H	L	L	x	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	H	
H	H	H	L	L	x	x	x	x	x	x	x	x	x	x	x	H	x	x	x	x	L	
H	H	H	H	L	x	x	x	x	x	x	x	x	x	x	x	L	x	x	x	x	H	
H	H	H	H	L	x	x	x	x	x	x	x	x	x	x	x	H	x	x	x	x	L	

When used to indicate an input condition, X = High logic level or low logic level.

Figure 3. Truth tables.

Device types 02 and 06

INPUTS												OUTPUTS	
C	B	A	STROBE	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	Y	W
X	X	X	H	x	x	x	x	x	x	x	x	L	H
L	L	L	L	L	x	x	x	x	x	x	x	L	H
L	L	L	L	H	x	x	x	x	x	x	x	H	L
L	L	H	L	x	L	x	x	x	x	x	x	L	H
L	L	H	L	x	H	x	x	x	x	x	x	H	L
L	H	L	L	x	x	L	x	x	x	x	x	L	H
L	H	L	L	x	x	H	x	x	x	x	x	H	L
L	H	H	L	x	x	x	L	x	x	x	x	L	H
L	H	H	L	x	x	x	H	x	x	x	x	H	L
H	L	L	L	x	x	x	x	L	x	x	x	L	H
H	L	L	L	x	x	x	x	H	x	x	x	H	L
H	L	H	L	x	x	x	x	x	L	x	x	L	H
H	L	H	L	x	x	x	x	x	H	x	x	H	L
H	H	L	L	x	x	x	x	x	x	L	x	L	H
H	H	L	L	x	x	x	x	x	x	H	x	H	L
H	H	H	L	x	x	x	x	x	x	x	L	L	H
H	H	H	L	x	x	x	x	x	x	x	H	H	L

When used to indicate an input, X = Irrelevant.
H = High level, L = Low level.

ADDRESS INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C ₀	C ₁	C ₂	C ₃	G	Y
X	X	x	x	x	x	H	L
L	L	L	x	x	x	L	L
L	L	H	x	x	x	L	H
L	H	x	L	x	x	L	L
L	H	x	H	x	x	L	H
H	L	x	x	L	x	L	L
H	L	x	x	H	x	L	H
H	H	x	x	x	L	L	L
H	H	x	x	x	H	L	H

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

Figure 3. Truth tables – Continued.

Device type 04

Address inputs		Data inputs				Outputs	
B	A	C ₀	C ₁	C ₂	C ₃	Y	W
L	L	L	X	X	X	L	H
L	L	H	X	X	X	H	L
L	H	X	L	X	X	L	H
L	H	X	H	X	X	H	L
H	L	X	X	L	X	L	H
H	L	X	X	H	X	H	L
H	H	X	X	X	L	L	H
H	H	X	X	X	H	H	L

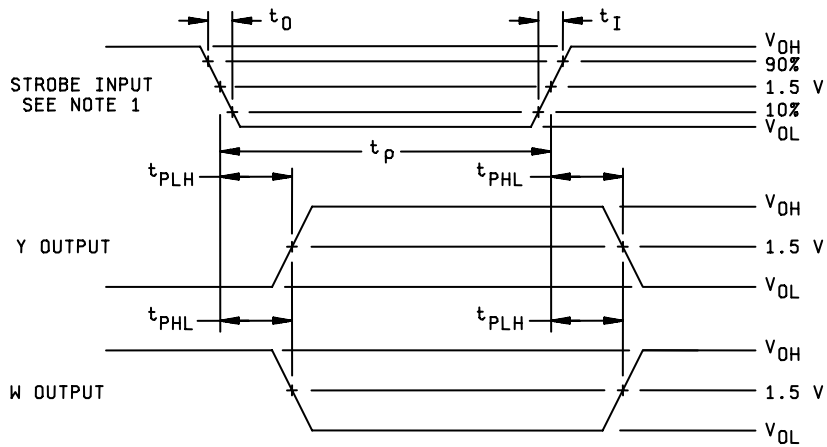
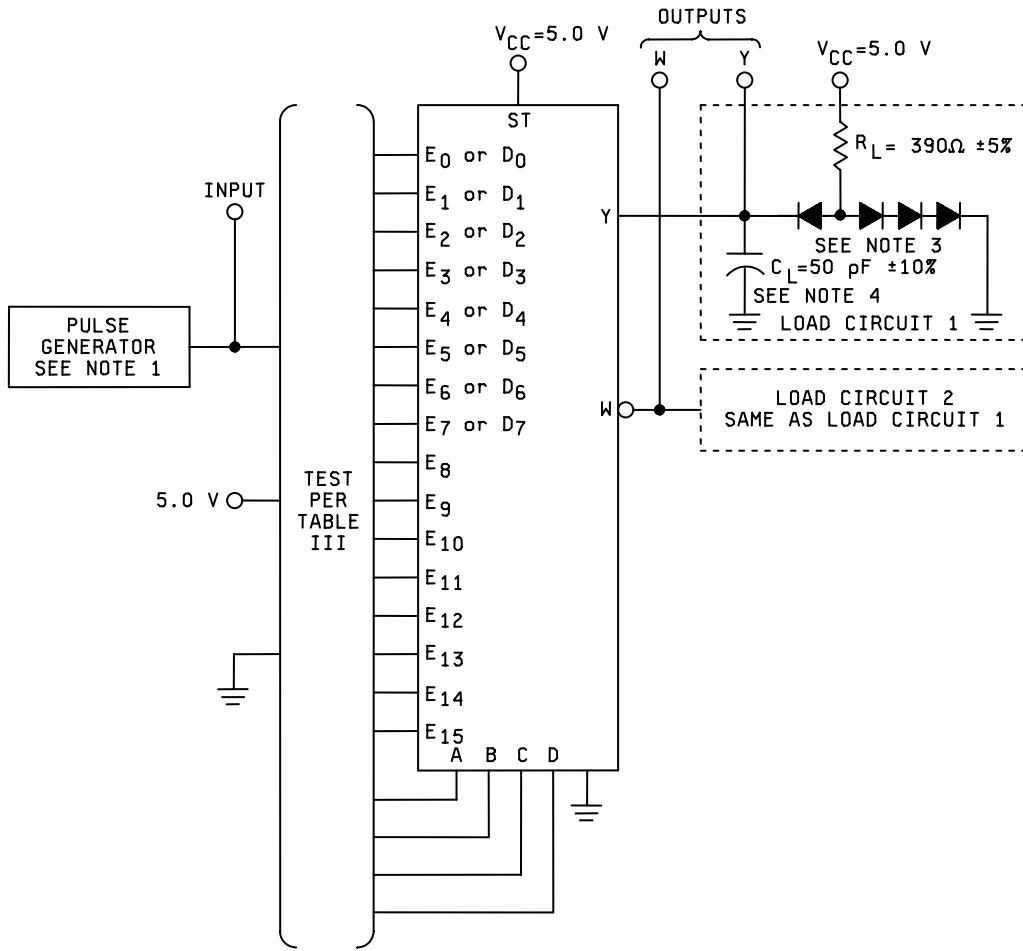
Address inputs A and B are common to both sections.
H = High level, L = Low level, X = Irrelevant.

Device type 05

Strobe (enable)	Select input	Data inputs		Output
G	A	B ₀	B ₁	Y
H	X	X	X	L
L	H	X	L	L
L	H	X	H	H
L	L	L	X	L
L	L	H	X	H

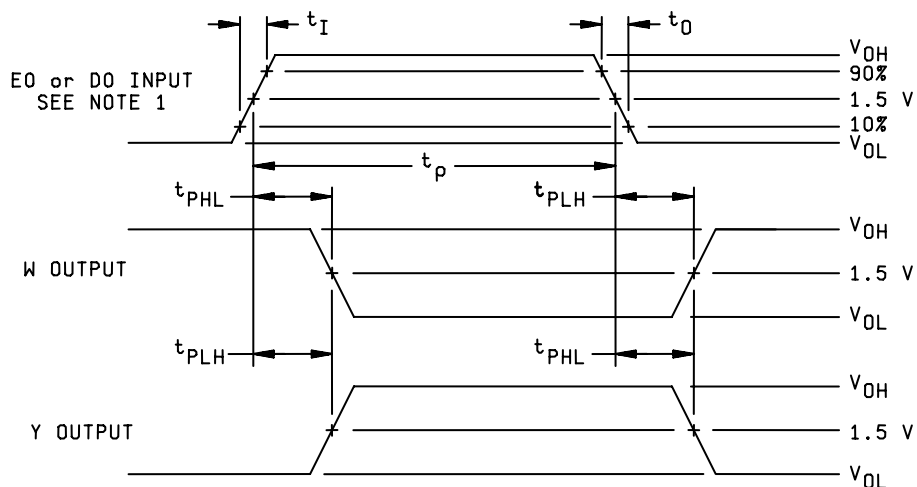
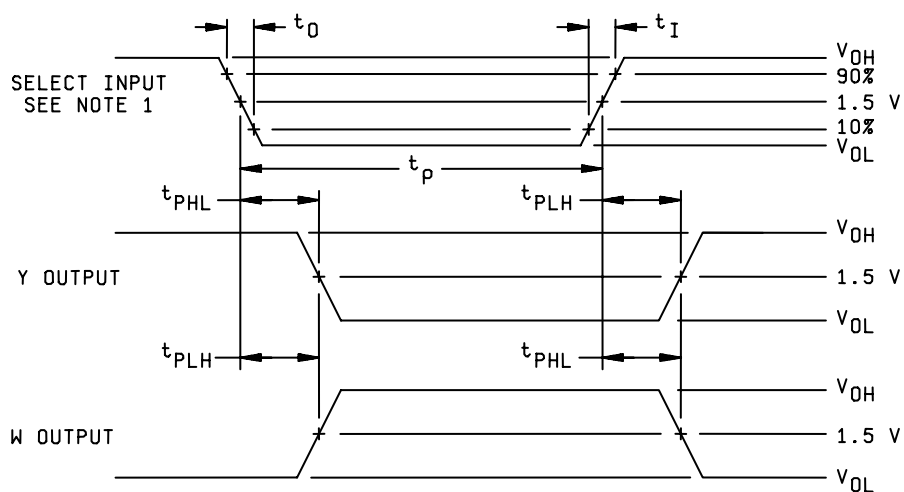
Address A and strobe G are common to all sections.
H = High level, L = Low level, X = Irrelevant.

FIGURE 3. Truth tables – Continued.



STROBE TO OUTPUT VOLTAGE WAVEFORM

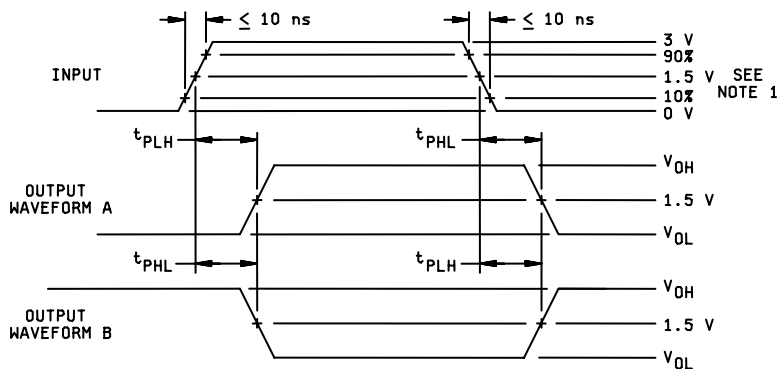
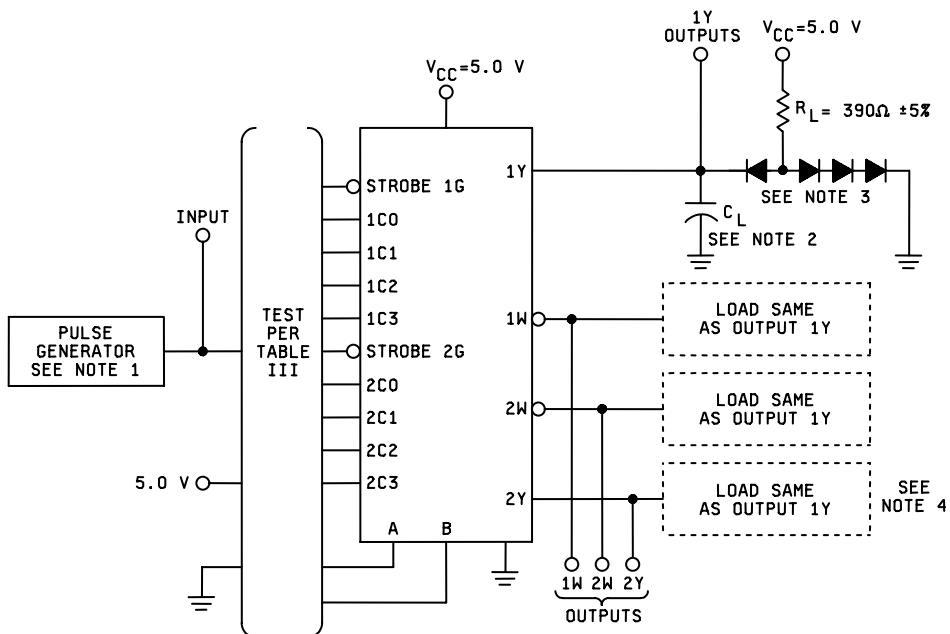
FIGURE 4. Switching test for device types 01, 02, and 06.



NOTES:

1. The input pulse has the following characteristics: $V_{OH} = 3\text{ V}$, $V_{OL} = 0\text{ V}$, $t_1 = t_0 = 10\text{ ns}$, $t_p = 500\text{ ns}$, $\text{PRR} \leq 1\text{ MHz}$, duty cycle = $50\% \pm 15\%$, and generator $Z_{out} \approx 50\Omega$.
2. C_L includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. Load circuits on a given output are only required where the specific test given in table III indicates "OUT" on that output. Load circuits may otherwise be omitted.

FIGURE 4. Switching test for device types 01, 02, and 06 - Continued.



VOLTAGE WAVEFORMS

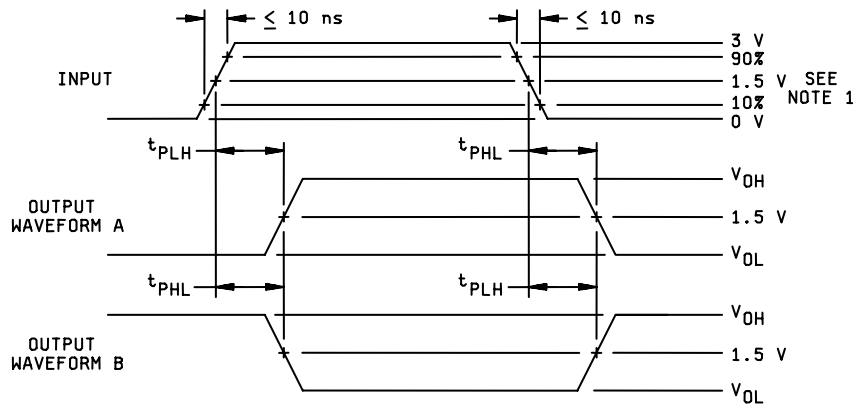
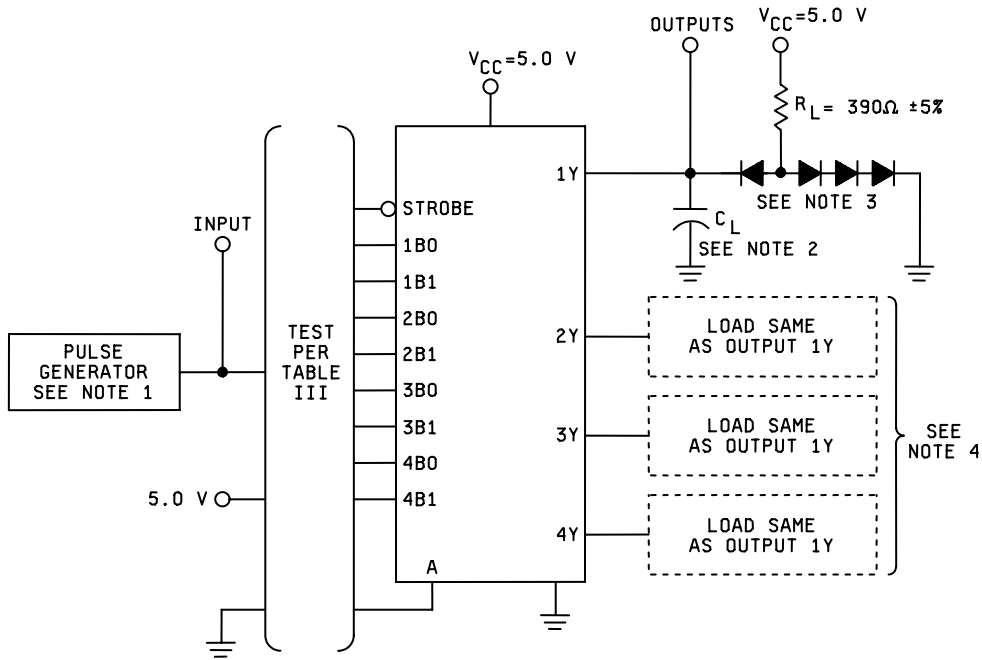
Switching time	Output waveform
CN to Y (types 03 and 04)	A
CN to W (type 04 only)	B
A or B to Y (types 03 and 04)	A
A or B to W (type 04 only)	B
G to Y (type 03 only)	B

NOTES:

- The pulse generator has the following characteristics: $PRR \leq 1 \text{ MHz}$, duty cycle = $50\% \pm 15\%$ and $Z_{out} \approx 50\Omega$.
- $C_L = 50 \text{ pF} \pm 10\%$ and includes probe and jig capacitance.
- All diodes are 1N3064, or equivalent.
- Load circuits on a given output are only required where the specific test given in table III indicates "OUT" on that output. Load circuits may otherwise be omitted.

FIGURE 5. Switching test for device types 03 and 04.

MIL-M-38510/14E



VOLTAGE WAVEFORMS

Input	Output waveform
A to Y	A
B to Y	A
S to Y	B

NOTES:

1. The pulse generator has the following characteristics: $PRR \leq 1 \text{ MHz}$, duty cycle = $50\% \pm 15\%$ and $Z_{out} \approx 50\Omega$.
2. $C_L = 50 \text{ pF} \pm 10\%$ and includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. Load circuits on a given output are only required where the specific test given in table III indicates "OUT" on that output. Load circuits may otherwise be omitted.

FIGURE 6. Switching test for device type 05.

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	1	2	3	4	5	6	7	8	9	10	11	12	Meas. terminal	Test limits		Unit	
				E7	E6	E5	E4	E3	E2	E1	E0	G	W	D	GND		Min	Max		
1 T _C = 25°C	I _{HH} 1	3010	45									2.4 V		GND	GND	G		40	µA	
	"	"	46													A		"	"	
	"	"	47													B		"	"	
	"	"	48													C		"	"	
	"	"	49													D		"	"	
	"	"	50									2.4 V				E0		"	"	
	"	"	51													E1		"	"	
	"	"	52													E2		"	"	
	"	"	53													E3		"	"	
	"	"	54													E4		"	"	
	"	"	55													E5		"	"	
	"	"	56													E6		"	"	
	"	"	57													E7		"	"	
	"	"	58													E8		"	"	
	"	"	59													E9		"	"	
"	"	60													E10		"	"		
"	"	61													E11		"	"		
"	"	62													E12		"	"		
"	"	63													E13		"	"		
"	"	64													E14		"	"		
"	"	65													E15		"	"		
2	I _{HH} 2	"	66													G		100	"	
	"	"	67													A		"	"	
	"	"	68													B		"	"	
	"	"	69													C		"	"	
	"	"	70													D		"	"	
	"	"	71									5.5 V				E0		"	"	
	"	"	72													E1		"	"	
	"	"	73													E2		"	"	
	"	"	74													E3		"	"	
	"	"	75													E4		"	"	
	"	"	75													E5		"	"	
	"	"	77													E6		"	"	
	"	"	78													E7		"	"	
	"	"	79													E8		"	"	
	"	"	80													E9		"	"	
"	"	81													E10		"	"		
"	"	82													E11		"	"		
"	"	83													E12		"	"		
"	"	84													E13		"	"		
"	"	85													E14		"	"		
"	"	86													E15		"	"		
3	I _{OS}	3011	87													W		-20	-55	mA
	I _{CC}	3005	88													V _{CC}		68	mA	

Same tests, terminal conditions and limits as subgroup 1, except T_C = 125°C and V_{IC} are omitted.

Same tests, terminal conditions and limits as subgroup 1, except T_C = -55°C and V_{IC} are omitted.

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits					
					C	B	A	E15	E14	E13	E12	E11	E10	E9	E8	VCC		Min	Max	Unit			
1 T _C = 25°C	I _{IH1}	3010	Z	45	GND	GND	2.4 V									5.5 V	G		40	μA			
				46	GND	2.4 V	GND												A				
				47	GND	GND	GND												B				
				48	GND	2.4 V	GND												C				
				49	GND	GND	GND												D				
				50	"	5.5 V	5.5 V												E0				
				51	"	"	GND												E1				
				52	"	"	GND												E2				
				53	"	"	GND												E3				
				54	"	"	GND												E4				
				55	"	"	"												E5				
				56	"	"	"												E6				
				57	"	"	"												E7				
				58	"	"	5.5 V												2.4 V	E8			
				59	"	"	"													E9			
				60	"	"	"													E10			
				61	"	"	GND													E11			
				62	"	"	"													E12			
63	"	"	"													E13							
64	"	"	"													E14							
65	"	"	"													E15							
"	I _{IH2}	"	Z	66	GND	GND	GND	2.4 V									G	100					
				67	GND	GND	5.5 V											A					
				68	GND	5.5 V	GND											B					
				69	GND	GND	GND											C					
				70	GND	GND	GND											D					
				71	"	5.5 V	5.5 V											E0					
				72	"	"	GND											E1					
				73	"	"	GND											E2					
				74	"	"	"											E3					
				75	"	"	GND											E4					
				77	"	"	"											E5					
				78	"	"	"											E6					
				79	"	"	5.5 V											5.5 V	E7				
				80	"	"	"												E8				
				81	"	"	"												E9				
				82	"	"	"												E10				
				83	"	"	GND												E11				
				84	"	"	"												E12				
85	"	"	"												E13								
86	"	"	"												E14								
87	I _{OS}	3011		GND	GND	GND										W	-20	-55	mA				
88	I _{CC}	3005		5.5 V	5.5 V	5.5 V										VCC		68	mA				
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} are omitted.																						
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} are omitted.																						

See note at end of device type 01.

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	1	2	3	4	5	6	7	8	9	10	11	12	Test limits						
																	Meas terminal	Unit					
7 T _c = 25°C	Truth table test	3014	89	E ₇									A ₂ / B	H ₃ / H	D	GND	3/	Min	Max				
	"	"	90	E ₆								B	B	W	GND								
	"	"	91	E ₅								B	A	G	H	D				GND			
	"	"	92	E ₄								A		E ₀	L	D				GND			
	"	"	93	E ₃										E ₁	L	D				GND			
	"	"	94	E ₂										E ₂	L	D				GND			
	"	"	95	E ₁										E ₃	L	D				GND			
	"	"	96	E ₀										E ₄	L	D				GND			
	"	"	97	E ₇										E ₅	L	D				GND			
	"	"	98	E ₆										E ₆	L	D				GND			
	"	"	99	E ₅										E ₇	L	D				GND			
	"	"	100	E ₄										E ₈	L	D				GND			
	"	"	101	E ₃										E ₉	L	D				GND			
	"	"	102	E ₂										E ₁₀	L	D				GND			
	"	"	103	E ₁										E ₁₁	L	D				GND			
	"	"	104	E ₀										E ₁₂	L	D				GND			
	"	"	105	E ₇										E ₁₃	L	D				GND			
	"	"	106	E ₆										E ₁₄	L	D				GND			
	"	"	107	E ₅										E ₁₅	L	D				GND			
	"	"	108	E ₄										E ₁₆	L	D				GND			
	"	"	109	E ₃										E ₁₇	L	D				GND			
"	"	110	E ₂										E ₁₈	L	D	GND							
"	"	111	E ₁										E ₁₉	L	D	GND							
"	"	112	E ₀										E ₂₀	L	D	GND							
"	"	113	E ₇										E ₂₁	L	D	GND							
"	"	114	E ₆										E ₂₂	L	D	GND							
"	"	115	E ₅										E ₂₃	L	D	GND							
"	"	116	E ₄										E ₂₄	L	D	GND							
"	"	117	E ₃										E ₂₅	L	D	GND							
"	"	118	E ₂										E ₂₆	L	D	GND							
"	"	119	E ₁										E ₂₇	L	D	GND							
"	"	120	E ₀										E ₂₈	L	D	GND							
"	"	121	E ₇										E ₂₉	L	D	GND							
8	Repeat subgroup 7 at T _c = 125°C and T _c = -55°C.																						
9 T _c = 25°C	t _{PHL1}	3003 (Fig 4)	122					5.0 V		5.0 V	5.0 V	GND	GND	OUT	GND	GND	A to W	8	37	ns			
	"	"	123					5.0 V		5.0 V		"	"	"	"	"	B to W	"	"	"			
	"	"	124									"	"	"	"	"	C to W	"	"	"			
	"	"	125									"	"	"	"	"	D to W	"	"	"			
	t _{PLH1}	"	126							5.0 V	5.0 V	GND	GND	OUT	GND	GND	A to W	8	39	ns			
	"	"	127									"	"	"	"	"	B to W	"	"	"			
	"	"	128									"	"	"	"	"	C to W	"	"	"			
"	"	129									"	"	"	"	"	D to W	"	"	"				
t _{PHL2}	"	130									5.0 V	5.0 V	IN	GND	GND	A to W	6	34	ns				
t _{PLH2}	"	131									5.0 V	5.0 V	IN	GND	GND	G to W	6	28	ns				

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Test limits				
																		Min	Max	Unit		
7 T _C = 25°C	Truth table test	3014	89	C	B	A	A	E15	E14	E13	E12	E11	E10	E9	E8	V _{CC}	3/	Min	Max			
	"	"	90	B	B	B	B									4.5 V						
	"	"	91	"	"	"	"									"						
	"	"	92	"	"	"	"									"						
	"	"	93	"	"	"	"									"						
	"	"	94	"	"	A	B	B								"						
	"	"	95	"	"	"	"	"								"						
	"	"	96	"	"	"	"	"								"						
	"	"	97	"	"	"	"	"								"						
	"	"	98	"	A	B	B	B								"						
	"	"	99	"	"	"	"	"								"						
	"	"	100	"	"	"	"	"								"						
	"	"	101	"	"	"	"	"								"						
	"	"	102	"	"	A	B	B								"						
"	"	103	"	"	"	"	"								"							
"	"	104	"	"	"	"	"								"							
"	"	105	"	"	"	"	"								"							
"	"	106	"	B	B	B	B								"							
"	"	107	"	"	"	"	"								"							
"	"	108	"	"	"	"	"								"							
"	"	109	"	"	"	"	"								"							
"	"	110	"	"	A	B	B								"							
"	"	111	"	"	"	"	"								"							
"	"	112	"	"	"	"	"								"							
"	"	113	"	"	"	"	"								"							
"	"	114	"	A	B	B	B								"							
"	"	115	"	"	"	"	"								"							
"	"	116	"	"	"	"	"								"							
"	"	117	"	"	"	"	"								"							
"	"	118	"	"	A	B	B								"							
"	"	119	"	"	"	"	"								"							
"	"	120	"	"	"	"	"								"							
"	"	121	"	"	"	"	"								"							
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.																					
9 T _C = 25°C	I _{PH1}	3003	122	GND	GND	IN	IN									5.0 V	A to W	8	37	ns		
	"	(Fig 4)	123	GND	IN	GND	GND									"	B to W	"	"	"	"	
	"	"	124	IN	GND	"	"									"	C to W	"	"	"	"	
	"	"	125	GND	GND	GND	"									"	D to W	"	"	"	"	
	"	I _{PH1}	"	126	GND	GND	IN	IN								5.0 V	A to W	8	39	ns		
	"	"	"	127	GND	IN	GND	GND								"	B to W	"	"	"	"	
"	"	"	128	IN	GND	"	"								"	C to W	"	"	"	"		
"	"	"	129	GND	GND	"	"								5.0 V	D to W	"	"	"	"		
"	I _{PH2}	"	130	GND	GND	GND	GND								"	G to W	6	34	ns			
"	I _{PL2}	"	131	GND	GND	GND	GND								"	G to W	6	28	ns			

See note at end of device type 01

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	1	2	3	4	5	6	7	8	9	10	11	12	Meas. terminal	Test limits		Unit	
																		Min	Max		
9 T _C = 25°C	t _{PHL3}	3003 (Fig 4)		132	E ₇								GND	OUT	GND	GND	E ₀ to W	3	18	ns	
	"	"		133						IN							E ₁ to W	"	"	"	
	"	"		134													E ₂ to W	"	"	"	
	"	"		135													E ₃ to W	"	"	"	
	"	"		136													E ₄ to W	"	"	"	
	"	"		137													E ₅ to W	"	"	"	
	"	"		138													E ₆ to W	"	"	"	
	"	"		139														E ₇ to W	"	"	"
	"	"		140														E ₈ to W	"	"	"
	"	"		141														E ₉ to W	"	"	"
	"	"		142														E ₁₀ to W	"	"	"
	"	"		143														E ₁₁ to W	"	"	"
	"	"		144														E ₁₂ to W	"	"	"
	"	"		145														E ₁₃ to W	"	"	"
	"	"		146														E ₁₄ to W	"	"	"
	"	"		147														E ₁₅ to W	"	"	"
	10 T _C = 125°C	t _{PLH3}	"		148													E ₀ to W	3	24	ns
"		"		149													E ₁ to W	"	"	"	
"		"		150													E ₂ to W	"	"	"	
"		"		151													E ₃ to W	"	"	"	
"		"		152													E ₄ to W	"	"	"	
"		"		153													E ₅ to W	"	"	"	
"		"		154													E ₆ to W	"	"	"	
"		"		155													E ₇ to W	"	"	"	
"		"		156														E ₈ to W	"	"	"
"		"		157														E ₉ to W	"	"	"
"		"		158														E ₁₀ to W	"	"	"
"		"		159														E ₁₁ to W	"	"	"
"		"		160														E ₁₂ to W	"	"	"
"		"		161														E ₁₃ to W	"	"	"
"		"		162														E ₁₄ to W	"	"	"
"		"		163														E ₁₅ to W	"	"	"
10 T _C = 125°C		t _{PHL1}	"		164													A to W	8	40	ns
	"	"		165													B to W	"	"	"	
	"	"		166													C to W	"	"	"	
	"	"		167													D to W	"	"	"	
	t _{PLH1}	"		168													A to W	"	43	"	
	"	"		169													B to W	"	"	"	
	"	"		170													C to W	"	"	"	
10 T _C = 125°C	t _{PHL2}	"		171													D to W	"	"	"	
	"	"		172													G to W	6	37	ns	
	t _{PLH2}	"		173													G to W	6	32	ns	

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	Cases J, K, Z										Test limits						
					13	14	15	16	17	18	19	20	21	22	23	24	Meas. terminal	Min	Max	Unit	
9 T _C = 25°C	I _p HL3	3003 (Fig 4)	Z	132	GND	A	E ₁₅	E ₁₄	E ₁₃	E ₁₂	E ₁₁	E ₁₀	E ₉	E ₈	V _{CC}	E ₀ to W	3	18	ns		
				133	"	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁ to W	"	"	"	
				134	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₂ to W	"	"	"
				135	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₃ to W	"	"	"
				136	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₄ to W	"	"	"
				137	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₅ to W	"	"	"
				138	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₆ to W	"	"	"
				139	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₇ to W	"	"	"
				140	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₈ to W	"	"	"
				141	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₉ to W	"	"	"
				142	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₀ to W	"	"	"
				143	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₁ to W	"	"	"
				144	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₂ to W	"	"	"
				145	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₃ to W	"	"	"
				146	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₄ to W	"	"	"
				147	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁₅ to W	"	"	"
				10 T _C = 125°C	I _p HL3		Z	148	GND	GND	IN									E ₀ to W	3
149	"	GND	5.0 V					"	"	"	"	"	"	"	"	"	E ₁ to W	"	"	"	
150	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₂ to W	"	"	"	
151	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₃ to W	"	"	"	
152	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₄ to W	"	"	"	
153	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₅ to W	"	"	"	
154	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₆ to W	"	"	"	
155	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₇ to W	"	"	"	
156	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₈ to W	"	"	"	
157	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₉ to W	"	"	"	
158	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₀ to W	"	"	"	
159	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₁ to W	"	"	"	
160	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₂ to W	"	"	"	
161	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₃ to W	"	"	"	
162	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₄ to W	"	"	"	
163	"	5.0 V	GND					5.0 V	"	"	"	"	"	"	"	"	E ₁₅ to W	"	"	"	
10 T _C = 125°C	I _p HL1		Z					164	GND	IN									A to W	8	40
				165	"	GND	IN									B to W	"	"	"		
				166	"	IN	GND										C to W	"	"	"	
				167	"	GND	GND									5.0 V	D to W	"	"	"	
				168	"	GND	GND	IN									A to W	"	43	"	
				169	"	GND	IN	GND									B to W	"	"	"	
				170	"	IN	GND	GND									C to W	"	"	"	
10 T _C = 125°C	I _p HL2		Z	171	GND	GND									D to W	"	"	"			
				172	GND	GND	GND									G to W	6	37	ns		
				173	GND	GND	GND									G to W	6	32	ns		

See note at end of device type 01

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z Test No.	1	2	3	4	5	6	7	8	9	10	11	12	Test limits					
				E7	E6	E5	E4	E3	E2	E1	E0	G	W	D	GND	Meas. terminal	Min	Max	Unit		
10 T _C = 125°C	t _{PHL3}	3003 (Fig 4)	174														3	23	ns		
	"	"	175																		
	"	"	176																		
	"	"	177																		
	"	"	178																		
	"	"	179																		
	"	"	180																		
	"	"	181																		
	"	"	182																		
	"	"	183																		
	"	"	184																		
	"	"	185																		
	"	"	186																		
	"	"	187																		
	"	"	188																		
	"	"	189																		
	11	t _{PLH3}	"	190																	
		"	"	191																	
		"	"	192																	
"		"	193																		
"		"	194																		
"		"	195																		
"		"	196																		
"		"	197																		
"		"	198																		
"		"	199																		
"		"	200																		
"	"	201																			
"	"	202																			
"	"	203																			
"	"	204																			
"	"	205																			
Same tests, terminal conditions and limits as subgroup 10 except T _C = -55°C.																					

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

Subgroup	Symbol	MIL-STD-883 method	Cases J, K, Z	Test No.	13	14	15	16	17	18	19	20	21	22	23	24	Test limits				
																	Meas terminal	Unit			
10 T _C = 125°C	I _p HL3	3003 (Fig 4)	174	GND	B	A	E ₁₅	E ₁₄	E ₁₃	E ₁₂	E ₁₁	E ₁₀	E ₉	E ₈	V _{CC}	E ₀ to W	3	23	ns		
	"	"	175	"	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁ to W	"	"	"		
	"	"	176	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₂ to W	"	"	"	"	
	"	"	177	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₃ to W	"	"	"	"	
	"	"	178	5.0 V	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₄ to W	"	"	"	"	
	"	"	179	"	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₅ to W	"	"	"	"	
	"	"	180	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₆ to W	"	"	"	"	
	"	"	181	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₇ to W	"	"	"	"	
	"	"	182	"	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₈ to W	"	"	"	"	
	"	"	183	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₉ to W	"	"	"	"	
	"	"	184	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₀ to W	"	"	"	"	
	"	"	185	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₁ to W	"	"	"	"	
	"	"	186	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₂ to W	"	"	"	"	
	"	"	187	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₃ to W	"	"	"	"	
	"	"	188	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₄ to W	"	"	"	"	
	"	"	189	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₅ to W	"	"	"	"	
	11	I _p LH3	"	190	GND	B	A	E ₁₅	E ₁₄	E ₁₃	E ₁₂	E ₁₁	E ₁₀	E ₉	E ₈	V _{CC}	E ₀ to W	3	30	ns	
		"	"	191	"	GND	5.0 V	"	"	"	"	"	"	"	"	"	E ₁ to W	"	"	"	"
		"	"	192	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₂ to W	"	"	"	"
"		"	193	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₃ to W	"	"	"	"	
"		"	194	5.0 V	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₄ to W	"	"	"	"	
"		"	195	"	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₅ to W	"	"	"	"	
"		"	196	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₆ to W	"	"	"	"	
"		"	197	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₇ to W	"	"	"	"	
"		"	198	"	GND	GND	5.0 V	"	"	"	"	"	"	"	"	E ₈ to W	"	"	"	"	
"		"	199	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₉ to W	"	"	"	"	
"		"	200	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₀ to W	"	"	"	"	
"		"	201	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₁ to W	"	"	"	"	
"		"	202	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₂ to W	"	"	"	"	
"		"	203	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₃ to W	"	"	"	"	
"		"	204	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₄ to W	"	"	"	"	
"		"	205	"	5.0 V	GND	5.0 V	"	"	"	"	"	"	"	"	E ₁₅ to W	"	"	"	"	
Same tests, terminal conditions and limits as subgroup 10 except T _C = -55°C.																					

1/ I_L minimum limit for CKT E is -0.6 mA.
2/ A = 3.0 V minimum, B = 0.0 V or GND.
3/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	Terminal conditions (pins not designated may be H ≥ 2.0 V, or L ≤ 0.8 V, or open)													Test limits						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Min	Max	Unit
1 TC = 25°C	VOH	3006	1	D0	D1	D2	D3	D4	D5	D6	D7	G	A	B	C	W	Y	VCC	Y	2.4	2.4	V	
	VOH	3006	2	2.0 V								0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	4.5 V	W	2.4	0.4	"	
	VOL	3007	3	2.0 V								2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	"	Y		0.4	"	
	VOL	3007	4	2.0 V								0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	0.8 V	"	W		0.4	"	
"	VIC		5	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	-12 mA	"	D0	-1.5	"	"	
	"		6															"	D1	"	"	"	
	"		7															"	D2	"	"	"	
	"		8															"	D3	"	"	"	
	"		9															"	D4	"	"	"	
	"		10															"	D5	"	"	"	
	"		11															"	D6	"	"	"	
	"		12															"	D7	"	"	"	
	"		13															"	G	"	"	"	
	"		14															"	A	"	"	"	
	"		15															"	B	"	"	"	
	"		16															"	C	"	"	"	
	"	IIL	3009	17									0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	5.5 V	G	-0.7	-1.6	mA
		"	"	18									0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	5.5 V	A	"	"	"
		"	"	19									"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	B	"	"	"
		"	"	20									"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	0.4 V	C	"	"	"
"		"	21		0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	GND	GND	GND	GND	GND	GND	"	D0	"	"	"
"		"	22									"	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	D1	"	"	"	
"		"	23									"	GND	5.5 V	5.5 V	5.5 V	5.5 V	"	D2	"	"	"	
"		"	24									0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	"	D3	"	"	"	
"		"	25										GND	GND	GND	GND	GND	5.5 V	D4	"	"	"	
"		"	26										5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"	D5	"	"	"	
"		"	27										GND	5.5 V	5.5 V	5.5 V	5.5 V	"	D6	"	"	"	
"		"	28									0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	0.4 V	"	D7	"	"	"	
"	I _{H1}	3010	29									2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	GND	G	40	"	"	
	"	"	30									5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	A	"	"	"	
	"	"	31									"	"	"	"	"	"	GND	B	"	"	"	
	"	"	32									"	"	"	"	"	"	GND	C	"	"	"	
	"	"	33									"	"	"	"	"	"	GND	D0	"	"	"	
	"	"	34		2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	"	"	"	"	"	"	"	D1	"	"	"
	"	"	35									"	"	"	"	"	"	"	"	D2	"	"	"
	"	"	36									"	"	"	"	"	"	"	"	D3	"	"	"
	"	"	37									"	"	"	"	"	"	"	GND	D4	"	"	"
	"	"	38									"	"	"	"	"	"	"	5.5 V	D5	"	"	"
	"	"	39									"	"	"	"	"	"	"	5.5 V	D6	"	"	"
	"	"	40									2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	2.4 V	GND	D7	"	"	"

See note at end of device type 02.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	Cases E, F										Meas. terminal	Test limits											
				1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	Min	Max	Unit			
1	I _{H2}	3010	41	D0	D1	D2	D3	D4	D5	D6	D7	G	A	B	C	W	Y	V _{CC}	G	100	μA					
			42										GND	5.5 V	GND	"			5.5 V	A	"	"				
			43										"	GND	5.5 V	GND	"			"	B	"	"			
			44										"	GND	5.5 V	GND	5.5 V			"	C	"	"			
			45		5.5 V									"	5.5 V	GND	5.5 V			"	D0	"	"			
			46			5.5 V								"	GND	5.5 V	"			"	D1	"	"			
			47				5.5 V							"	5.5 V	GND	"			"	D2	"	"			
			48					5.5 V						"	GND	GND	"			"	D3	"	"			
			49						5.5 V					"	5.5 V	GND	GND	"			D4	"	"			
			50							5.5 V				"	GND	5.5 V	"				D5	"	"			
			51								5.5 V			"	5.5 V	GND	"				D6	"	"			
			52									5.5 V		"	GND	"	"				D7	"	"			
"	IOS	3011	53	GND	GND	GND	GND	GND	GND	GND	GND	5.5 V	"	"	"	GND	"	Y	-20	-120	mA					
"	IOS	3011	54	5.5 V	"	"	"	"	"	"	"	GND	"	"	"	"	"	W	-20	-120	mA					
"	ICC	3005	55	5.5 V	"	"	"	"	"	"	"	GND	"	"	"	"	"	V _{CC}	48	48	mA					
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																									
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																									
7	Truth table test		56										A 1/			H 2/	L	4.5 V	}							
			57	B									B	"	"	H	L	"				"	"			
			58	A									"	"	"	L	H	"				"	"			
			59		B								"	"	"	"	H	L				"	"	"		
			60		A								"	"	"	"	L	H				"	"	"		
			61			B								"	"	"	"	H				L	"	"	"	
			62			A								"	"	"	"	L				H	"	"	"	
			63				B							"	"	"	"	H				L	"	"	"	
			64				A							"	"	"	"	L				H	"	"	"	
			65					B						"	"	"	"	"				H	L	"	"	"
			66					A						"	"	"	"	"				L	H	"	"	"
			67						B					"	"	"	"	"				H	L	"	"	"
68						A					"	"	"	"	"	L	H	"	"	"						
69							B				"	"	"	"	"	"	H	L	"	"						
70							A				"	"	"	"	"	"	L	H	"	"						
71								B			"	"	"	"	"	"	"	"	"	"						
72								A			"	"	"	"	"	"	"	"	"	"						
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.																									

See note at end of device type 02.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits				
																				Meas. terminal	Min	Max	Unit	
9 T _C = 25°C	tpHL1	3003 (Fig 4)	73	D0	D1	D2	D3	D4	D5	D6	D7	G	A	B	C	W	Y	V _{CC}	A to W	6	32	ns		
	"	"	74	"	"	5.0 V	"	5.0 V	"	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	
	"	"	75	"	"	"	"	5.0 V	"	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	tpLH1	"	76	"	5.0 V	"	"	"	"	"	"	IN	GND	GND	"	"	"	"	"	"	29	"	"
	"	"	"	77	"	"	5.0 V	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	"	"	78	"	"	"	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	tpHL2	"	79	"	5.0 V	"	"	"	"	"	"	IN	GND	GND	"	"	"	"	"	"	"	40	"
	"	"	"	80	"	"	5.0 V	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	"	"	81	"	"	"	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	tpLH2	"	82	"	5.0 V	"	"	"	"	"	"	IN	GND	GND	"	"	"	"	"	"	"	39	"
	"	"	"	83	"	"	5.0 V	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	"	"	84	"	"	"	"	5.0 V	"	"	"	GND	IN	IN	"	"	"	"	"	"	"	"	"
	"	tpHL3	"	85	5.0 V	"	"	"	"	"	"	"	IN	GND	GND	"	"	"	"	"	"	"	28	"
	"	tpLH3	"	86	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	24	"
"	tpHL4	"	87	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	37	"	
"	tpLH4	"	88	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	35	"	
"	tpHL5	"	89	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20	"	
"	"	"	90	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	91	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	92	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	93	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	94	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	95	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	96	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	
"	tpLH5	"	97	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	17	"	
"	"	"	98	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	99	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	100	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	101	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	102	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	103	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	104	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	

See note at end of device type 02.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits					
				D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	G	A	B	C	W	Y	V _{CC}	Meas. terminal	Min	Max	Unit			
9 T _C = 25°C	tp _{LH6}	3003 (Fig 4)	105	IN	IN	IN	IN	IN			GND		GND	GND	GND	GND		OUT	5.0 V	6	29	ns			
	"	"	106								"		"	5.0 V	GND	"		"	"	"	"	"	"		
	"	"	107								"		"	5.0 V	GND	"		"	"	"	"	"	"	"	
	"	"	108								"		"	5.0 V	GND	"		"	"	"	"	"	"	"	
	"	"	109								"		"	5.0 V	GND	5.0 V		"	"	"	"	"	"	"	"
	"	"	110						IN				"	5.0 V	GND	"		"	"	"	"	"	"	"	"
	"	"	111							IN			"	5.0 V	GND	"		"	"	"	"	"	"	"	"
	"	"	112								IN		"	5.0 V	GND	"		"	"	"	"	"	"	"	"
	"	tp _{LH6}	"	113	IN	IN	IN	IN	IN			"		"	GND	GND	GND		"	"	6	29	"	"	
	"	"	"	114								"		"	5.0 V	GND	"		"	"	"	"	"	"	"
	"	"	"	115								"		"	5.0 V	GND	"		"	"	"	"	"	"	"
	10 T _C = 125°C	"	"	116				IN	IN			"		"	5.0 V	GND	"		"	"	"	"	"	"	"
"		"	117								"		"	5.0 V	GND	5.0 V		"	"	"	"	"	"	"	"
"		"	118						IN		"		"	5.0 V	GND	"		"	"	"	"	"	"	"	"
"		"	119							IN		"	"	5.0 V	GND	"		"	"	"	"	"	"	"	"
"		"	120								"		"	5.0 V	GND	"		"	"	"	"	"	"	"	"
"		tp _{HL1}	"	121	GND	5.0 V						"		"	IN	GND	GND	OUT	"	"	6	40	"	"	
"		"	"	122	"	"	5.0 V					"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"		"	"	123	"	"			5.0 V			"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"		tp _{LH1}	"	124	"	5.0 V						"		"	IN	GND	GND	"	"	"	"	"	"	"	"
"		"	"	125	"	"	5.0 V					"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"		"	"	126	"	"			5.0 V			"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"		tp _{HL2}	"	127	"	5.0 V						"		"	IN	GND	GND		OUT	"	"	8	49	"	"
"		"	"	128	"	"	5.0 V					"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"		"	"	129	"	"			5.0 V			"		"	GND	IN	GND	"	"	"	"	"	"	"	"
"	tp _{LH2}	"	130	"	5.0 V						"		"	IN	GND	GND		"	"	"	"	"	"	"	
"	"	"	131	"	"	5.0 V					"		"	GND	IN	GND	"	"	"	"	"	"	"	"	
"	"	"	132	"	"			5.0 V			"		"	GND	IN	GND	"	"	"	"	"	"	"	"	
"	tp _{HL3}	"	133	5.0 V							"		IN	GND	GND	GND	OUT	OUT	"	"	6	37	"	"	
"	tp _{LH3}	"	134	"							"		"	"	"	"	OUT	"	"	"	6	35	"	"	
"	tp _{HL4}	"	135	"							"		"	"	"	"	"	OUT	"	"	8	46	"	"	
"	tp _{LH4}	"	136	"							"		"	"	"	"	"	OUT	"	"	8	42	"	"	
"	tp _{HL5}	"	137	IN	IN						"		GND	GND	GND	GND	OUT		"	"	3	32	"	"	
"	"	"	138								"		"	5.0 V	GND	"	"	"	"	"	"	"	"	"	
"	"	"	139								"		"	GND	5.0 V	"	"	"	"	"	"	"	"	"	
"	"	"	140				IN				"		"	5.0 V	5.0 V	"	"	"	"	"	"	"	"	"	
"	"	"	141								"		"	GND	GND	5.0 V	"	"	"	"	"	"	"	"	
"	"	"	142								"		"	GND	GND	"	"	"	"	"	"	"	"	"	
"	"	"	143								"		"	5.0 V	GND	"	"	"	"	"	"	"	"	"	
"	"	"	144								"		"	GND	5.0 V	"	"	"	"	"	"	"	"	"	

See note at end of device type 02.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits				
				D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	G	A	B	C	W	Y	V _{CC}	Meas. terminal	Min	Max	Unit		
10 T _C = 125°C	t _{PLH5}	3003	145	IN							GND		GND	GND	GND	GND	OUT		5.0 V	D ₀ to W	3	26	ns	
	"	"	146	IN							"		"	5.0 V	GND	"	"	"	"	"	D ₁ to W	"	"	"
	"	"	147			IN					"		"	5.0 V	5.0 V	"	"	"	"	"	D ₂ to W	"	"	"
	"	"	148				IN				"		"	5.0 V	5.0 V	"	"	"	"	"	D ₃ to W	"	"	"
	"	"	149					IN			"		"	GND	GND	5.0 V	"	"	"	"	D ₄ to W	"	"	"
	"	"	150						IN		"		"	5.0 V	GND	"	"	"	"	"	D ₅ to W	"	"	"
	"	"	151							IN	"		"	5.0 V	GND	"	"	"	"	"	D ₆ to W	"	"	"
	"	"	152								IN	"		5.0 V	5.0 V	"	"	"	"	"	D ₇ to W	"	"	"
	"	t _{PHL6}	"	153	IN							"		"	GND	GND	GND		OUT	"	D ₀ to Y	6	41	"
	"	"	"	154		IN						"		"	5.0 V	GND	"	"	"	"	D ₁ to Y	"	"	"
	"	"	"	155			IN					"		"	GND	5.0 V	"	"	"	"	D ₂ to Y	"	"	"
	"	"	"	156				IN				"		"	5.0 V	5.0 V	"	"	"	"	D ₃ to Y	"	"	"
	"	"	"	157					IN			"		"	GND	GND	5.0 V	"	"	"	D ₄ to Y	"	"	"
	"	"	"	158						IN		"		"	5.0 V	GND	"	"	"	"	D ₅ to Y	"	"	"
"	"	"	159							IN	"		"	GND	5.0 V	"	"	"	"	D ₆ to Y	"	"	"	
"	"	"	160								"	IN	"	5.0 V	5.0 V	"	"	"	"	D ₇ to Y	"	"	"	
"	t _{PLH6}	"	161	IN							"		"	GND	GND	GND		"	"	D ₀ to Y	"	33	"	
"	"	"	162		IN						"		"	5.0 V	GND	"	"	"	"	D ₁ to Y	"	"	"	
"	"	"	163			IN					"		"	GND	5.0 V	"	"	"	"	D ₂ to Y	"	"	"	
"	"	"	164				IN				"		"	5.0 V	5.0 V	"	"	"	"	D ₃ to Y	"	"	"	
"	"	"	165					IN			"		"	GND	GND	5.0 V	"	"	"	D ₄ to Y	"	"	"	
"	"	"	166						IN		"		"	5.0 V	GND	"	"	"	"	D ₅ to Y	"	"	"	
"	"	"	167							IN	"		"	GND	5.0 V	"	"	"	"	D ₆ to Y	"	"	"	
"	"	"	168								"	IN	"	5.0 V	5.0 V	"	"	"	"	D ₇ to Y	"	"	"	
11	Same tests, terminal conditions and limits as subgroup 10, except T _A = -55°C.																							

1/ A = 3.0 V minimum, B = 0.0 V or GND.

2/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits	
				1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	VCC		Min	Max
1	VOH	3006	1	0.8 V	0.8 V												0.8 V		4.5 V	1Y	2.4	
TC = 25°C	VOH	3006	2	0.8 V	0.8 V												0.8 V		4.5 V	2Y	2.4	
"	VOL	3007	3	2.0 V						16 mA									"	1Y		0.4
"	VOL	3007	4	2.0 V						16 mA								2.0 V	"	2Y		0.4
"	VIC		5		-12 mA												-12 mA		"	A		-1.5
"	"		6																"	B		"
"	"		7																"	1C0		"
"	"		8																"	1C1		"
"	"		9																"	1C2		"
"	"		10																"	1C3		"
"	"		11																"	1G		"
"	"		12																"	2C0		"
"	"		13																"	2C1		"
"	"		14																"	2C2		"
"	"		15																"	2C3		"
"	"		16																"	2G		"
"	IIL	3009	17		0.4 V												0.4 V		5.5 V	A	-0.7	-1.6
"	"	"	18		0.4 V														"	B		"
"	"	"	19																"	1G		"
"	"	"	20															0.4 V	"	2G		"
"	"	"	21		GND					0.4 V									"	1C0		"
"	"	"	22		GND														"	1C1		"
"	"	"	23		"														"	1C2		"
"	"	"	24		"														"	1C3		"
"	"	"	25		0.4 V														"	2C0		"
"	"	"	26		GND														"	2C1		"
"	"	"	27		0.4 V														"	2C2		"
"	"	"	28		0.4 V														"	2C3		"
"	IH1	3010	29		2.4 V												2.4 V		"	A		40
"	"	"	30		2.4 V														"	B		"
"	"	"	31																"	1G		"
"	"	"	32															2.4 V	"	2G		"
"	"	"	33		5.5 V														"	1C0		"
"	"	"	34		5.5 V														"	1C1		"
"	"	"	35		"														"	1C2		"
"	"	"	36		"														"	1C3		"
"	"	"	37		5.5 V														"	2C0		"
"	"	"	38		5.5 V														"	2C1		"
"	"	"	39		GND														"	2C2		"
"	"	"	40		GND														"	2C3		"

See notes at end of device type 03.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal		Test limits				
				1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	5.5 V	2G	VCC	A	B	Min	Max	Unit	
1	I _{IHZ}	3010	41	5.5 V							GND						5.5 V		5.5 V	A		100	μA			
			42	5.5 V																	B					
			43	5.5 V																	1G					
			44																		2G					
			45	5.5 V					5.5 V													1C0				
			46	5.5 V																		1C1				
			47																			1C2				
			48																			1C3				
			49																			2C0				
			50													5.5 V						2C1				
51														5.5 V					2C2							
52															5.5 V				2C3							
	I _{OS}	3011	53	GND	"	GND	GND	GND	5.5 V	GND	"	GND	5.5 V	GND	GND	GND	"	GND	"	1Y	-20	-55	mA			
	I _{OS}	3011	54	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	-20	-55	mA			
	I _{CC}	3005	55	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	VCC		52	mA			
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																									
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																									
7	Truth table test		56	A 1/							L 2/	GND	L	B						A						
			57	B	B									L	A						B					
			58	"	B									H							B					
			59	"	B									L							A					
			60	"	B									H							A					
			61	"	A									L							B					
			62	"	A									H							B					
			63	"	A									L							A					
64	"	A									H							A								
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.																									
9	I _{PHL1}	3003 (Fig 5)	65	GND	GND						IN	OUT	GND							5.0 V	1C0 to 1Y	3	25	ns		
			66	"	GND									"							"	1C1 to 1Y	"	"	"	
			67	"	5.0 V									"							"	"	1C2 to 1Y	"	"	"
			68	"	5.0 V									"							"	"	1C3 to 1Y	"	"	"
			69	"	GND									OUT							"	"	2C0 to 2Y	"	"	"
			70	"	GND									"							"	"	2C1 to 2Y	"	"	"
			71	"	5.0 V									"							"	"	2C2 to 2Y	"	"	"
			72	"	5.0 V									"							"	"	2C3 to 2Y	"	"	"

See notes at end of device type 03.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	Terminal conditions																Test limits						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Min	Max	Unit			
9 T _C = 25°C	t _{PLH1}	3003	73	GND	GND	1C ₃	1C ₂	1C ₁	1C ₀	1Y	GND	2Y	2C ₀	2C ₁	2C ₂	2C ₃	A	2G	V _{CC}	5.0 V	1C ₀ to 1Y	3	24	ns		
	"	"	74	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	"	"	75	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	"	"	76	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	"	"	77	"	GND	GND	"	"	"	"	"	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	78	"	GND	GND	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	79	"	5.0 V	5.0 V	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"
	"	"	80	"	5.0 V	5.0 V	"	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"
	"	t _{PHL2}	"	81	GND	GND	"	"	5.0 V	GND	OUT	"	"	"	"	"	"	"	"	"	"	"	6	36	"	
	"	"	"	82	GND	IN	"	"	5.0 V	GND	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
"	"	"	83	"	GND	"	"	"	"	"	OUT	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	84	"	IN	"	"	"	"	"	OUT	"	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	
"	t _{PLH2}	"	85	GND	GND	"	"	5.0 V	GND	OUT	"	"	"	"	"	"	"	"	"	"	"	6	34	"		
"	"	"	86	GND	IN	"	"	5.0 V	GND	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	87	"	GND	"	"	"	"	"	"	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	88	"	IN	"	"	"	"	"	OUT	"	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	
"	t _{PHL3}	"	89	"	GND	"	"	"	5.0 V	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	t _{PHL3}	"	90	"	GND	"	"	"	"	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	t _{PLH3}	"	91	"	GND	"	"	"	5.0 V	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	t _{PLH3}	"	92	"	GND	"	"	"	5.0 V	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
10 T _C = 125°C	t _{PHL1}	"	93	GND	GND	"	"	"	IN	OUT	"	"	"	"	"	"	"	"	"	"	"	3	29	"		
	"	"	94	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	"	"	95	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
	"	"	96	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	97	"	GND	"	"	"	"	"	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	98	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	99	"	5.0 V	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	100	"	5.0 V	"	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"
	"	t _{PLH1}	"	101	GND	GND	"	"	"	IN	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	"	102	"	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
"	"	"	103	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	104	"	5.0 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	105	"	GND	"	"	"	"	"	OUT	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	106	"	GND	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	107	"	5.0 V	"	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	"	
"	"	"	108	"	5.0 V	"	"	"	"	"	"	"	"	"	"	IN	"	"	"	"	"	"	"	"	"	

See notes at end of device type 03.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits			
																				Meas. terminal	Min	Max	Unit
10	tpHL2	3003	Test No.	1G	B	1C3	1C2	1C1	1C0	1Y	GND	2Y	2C0	2C1	2C2	2C3	A	2G	VCC	A to 1Y	6	44	ns
Tc = 125°C	"	"	"	GND	GND		5.0 V	5.0 V	GND	OUT	"	OUT	5.0 V				IN	GND	"	B to 1Y	"	"	"
"	"	"	"	GND	IN				GND	OUT	"	OUT					IN	GND	"	A to 2Y	"	"	"
"	"	"	"	GND	GND				GND	OUT	"	OUT	5.0 V		5.0 V		GND	GND	"	B to 2Y	"	"	"
"	tpLH2	"	"	GND	IN		5.0 V	5.0 V	GND	OUT	"	OUT					IN		"	A to 1Y	"	42	"
"	"	"	"	GND	IN				GND	OUT	"	OUT					IN	GND	"	B to 1Y	"	"	"
"	"	"	"	GND	GND				GND	OUT	"	OUT	5.0 V		5.0 V		IN	GND	"	A to 2Y	"	"	"
"	"	"	"	GND	IN				GND	OUT	"	OUT			5.0 V		GND	GND	"	B to 2Y	"	"	"
"	tpHL3	"	"	IN	GND				5.0 V	OUT	"	OUT					GND	IN	"	1G to 1Y	"	32	"
"	tpHL3	"	"	GND	GND					OUT	"	OUT					GND	IN	"	2G to 2Y	"	32	"
"	tpLH3	"	"	IN	GND				5.0 V	OUT	"	OUT					GND	IN	"	1G to 1Y	"	42	"
"	tpLH3	"	"	GND	GND				5.0 V	OUT	"	OUT					GND	IN	"	2G to 2Y	"	42	"
11	Same tests, terminal conditions and limits as subgroup 10, except Tc = -55°C.																						

1/ A = 3.0 V minimum, B = 0.0 V or GND.

2/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits				
																				Meas. terminal	Min	Max	Unit	
1 T _C = 25°C	V _{OH}	3006	1	2Y	2W	B	2C ₀	2C ₁	2C ₂	2C ₃	GND	1C ₃	1C ₂	1C ₁	1C ₀	A	1W	1Y	V _{CC}	2.4		V		
	"	"	2	-0.8 mA		0.8 V	"	2.0 V	"	"	"	"	"	"	2.0 V	0.8 V	-0.8 mA	-0.8 mA	"	4.5 V	"	"	"	
	"	"	3			"	"	0.8 V	"	"	"	"	"	"	0.8 V	"	"	"	"	"	"	"	"	"
	"	"	4			"	"	0.8 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	V _{OL}	3007	5			"	"	"	"	"	"	"	"	2.0 V	0.8 V	16 mA	16 mA	"	"	"	0.4	"	"
	"	"	"	6		16 mA	"	2.0 V	"	"	"	"	"	"	0.8 V	"	"	"	"	"	"	"	"	"
	"	"	"	7			"	0.8 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"	"	8	16 mA		"	0.8 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	V _{IC}		9			-12 mA	"	"	"	"	"	"	"	"	-12 mA	-12 mA	"	"	"	"	-1.5	"	"
	"	"		10			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		11			"	"	"	"	"	"	"	"	"	-12 mA	"	"	"	"	"	"	"	"
	"	"		12			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		13			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		14			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		15			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		16			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		17			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
	"	"		18			"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
"	I _{IL}	3009	19			0.4 V	"	"	"	"	"	"	"	"	0.4 V	0.4 V	"	"	5.5 V	-0.7	-1.6	mA		
"	"	"	20			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	21			GND	"	"	"	"	"	"	"	"	0.4 V	"	"	"	"	"	"	"	"	
"	"	"	22			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	23			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	24			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	25			GND	0.4 V	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	26			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	27			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	28			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	I _{H1}	3010	29			2.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	40	µA	
"	"	"	30			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	31			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	32			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	33			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	34			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	35			5.5 V	2.4 V	2.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	36			5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	37			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
"	"	"	38			GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	

See note at end of device type 04.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits									
				2Y	2W	B	2C0	2C1	2C2	2C3	GND	1C3	1C2	1C1	A	1W	1Y	VCC	Meas. terminal	Min	Max	Unit							
1 T _C = 25°C	I _{H2}	3010	39			5.5 V					GND					5.5 V			5.5 V	A	100	ns							
	"	"	40			"					"					5.5 V			"	B	"	"							
	"	"	41			"					"					GND			"	1C0	"	"							
	"	"	42			"					"					5.5 V			"	1C1	"	"							
	"	"	43			GND					"					5.5 V			"	1C2	"	"							
	"	"	44			GND					"					5.5 V			"	1C3	"	"							
	"	"	45			5.5 V					"					5.5 V			"	2C0	"	"							
	"	"	46			5.5 V					"					5.5 V			"	2C1	"	"							
"	"	47			GND					"					5.5 V			"	2C2	"	"								
"	"	48			"					"					GND			"	2C3	"	"								
"	I _{OS}	3011	49			"				"					GND		GND		"	1W	-20	mA							
"	"	"	50			"				"					GND		GND		"	1Y	"	"							
"	"	"	51			"				"					GND		"		"	2W	"	"							
"	"	"	52			"				"					5.5 V		"		"	2Y	"	"							
"	I _{CC}	3005	53			"				"					GND		GND		"	VCC	45	"							
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																												
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																												
7 T _C = 25°C	Truth table test		54	L ₂	H	B ₁	B																						
				H	L	"	A																						
				L	H	"	"																						
				H	L	"	"																						
				L	H	A	A																						
				H	L	"	"																						
				L	H	"	"																						
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.																												
9 T _C = 25°C	t _{PHL1}	3003 (Fig 5)	62			GND																							
						GND																							
						5.0 V																							
						5.0 V																							
						GND																							
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See note at end of device type 04.

TABLE III. Group A inspection for device type 04 - Continued.
Terminal conditions (pins not designated may be H \geq 2.0 V, or L \leq 0.8 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits							
																				Meas. terminal	Min	Max	Unit				
9	T _C = 25°C	3003 (Fig 5)	106	2Y	2W	B	2C ₀	2C ₁	2C ₂	2C ₃	GND	1C ₃	1C ₂	1C ₁	1C ₀	A	1W	1Y	V _{CC}	A to 1W	6	26	ns				
					OUT	GND	GND	5.0 V						5.0 V	5.0 V			IN	OUT		5.0 V	A to 2W	"	"	"		
					OUT	IN	IN	5.0 V								5.0 V		GND	OUT			"	B to 1W	"	"	"	
10	T _C = 125°C		109		OUT	IN	GND		5.0 V							GND				B to 2W	"	"	"				
						GND												IN		OUT			3	41	"		
						GND												IN	5.0 V					"	"	"	
						5.0 V												IN	GND					"	"	"	
						5.0 V												IN	5.0 V					"	"	"	
						GND												IN	GND					"	"	"	
						GND												IN	5.0 V					"	"	"	
						5.0 V												IN	5.0 V					"	"	"	
						5.0 V												IN	5.0 V					"	"	"	
						GND												IN	GND						"	"	"
						GND												IN	5.0 V						"	"	"
"	T _C = 125°C		110			GND									IN						1C ₀ to 1Y	"	"	"			
						GND											IN	5.0 V					1C ₁ to 1Y	"	"	"	
						5.0 V											IN	GND					1C ₂ to 1Y	"	"	"	
						5.0 V											IN	5.0 V					1C ₃ to 1Y	"	"	"	
						GND											IN	GND						2C ₀ to 2Y	"	"	"
						GND											IN	5.0 V						2C ₁ to 2Y	"	"	"
						5.0 V											IN	5.0 V						2C ₂ to 2Y	"	"	"
						5.0 V											IN	5.0 V						2C ₃ to 2Y	"	"	"
						GND											IN	GND						1C ₀ to 1Y	"	39	"
						GND											IN	5.0 V						1C ₁ to 1Y	"	"	"
						5.0 V											IN	GND						1C ₂ to 1Y	"	"	"
						5.0 V											IN	5.0 V						1C ₃ to 1Y	"	"	"
						GND											IN	GND						2C ₀ to 2Y	"	"	"
						GND											IN	5.0 V						2C ₁ to 2Y	"	"	"
		5.0 V											IN	5.0 V						2C ₂ to 2Y	"	"	"				
		5.0 V											IN	5.0 V						2C ₃ to 2Y	"	"	"				
"	T _C = 125°C		111			GND									IN						1C ₀ to 1W	"	25	"			
						GND										IN	5.0 V						1C ₁ to 1W	"	"	"	
						5.0 V											IN	GND					1C ₂ to 1W	"	"	"	
						5.0 V											IN	5.0 V					1C ₃ to 1W	"	"	"	
						GND											IN	GND						2C ₀ to 2W	"	"	"
						GND											IN	5.0 V						2C ₁ to 2W	"	"	"
						5.0 V											IN	5.0 V						2C ₂ to 2W	"	"	"
						5.0 V											IN	5.0 V						2C ₃ to 2W	"	"	"
						GND											IN	GND						1C ₀ to 1W	"	24	"
						GND											IN	5.0 V						1C ₁ to 1W	"	"	"
						5.0 V											IN	GND						1C ₂ to 1W	"	"	"
						5.0 V											IN	5.0 V						1C ₃ to 1W	"	"	"
						GND											IN	GND						2C ₀ to 2W	"	"	"
						GND											IN	5.0 V						2C ₁ to 2W	"	"	"
		5.0 V											IN	5.0 V						2C ₂ to 2W	"	"	"				
		5.0 V											IN	5.0 V						2C ₃ to 2W	"	"	"				

See note at end of device type 04.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits						
																				Meas. terminal	Min	Max	Unit			
10	T _C = 125°C	3003 (Fig 5)	142	2Y	2W	B	2C ₀	2C ₁	2C ₂	2C ₃	GND	1C ₃	1C ₂	1C ₁	1C ₀	A	1W	1Y	V _{CC}	A to 1Y	6	51	ns			
						GND	GND	5.0 V					GND			5.0 V	GND	IN		OUT		A to 2Y	"	"	"	
						IN	IN							"	5.0 V			GND	IN		OUT		B to 1Y	"	"	"
						IN	IN							"				GND	IN		OUT		B to 2Y	"	"	"
						GND	GND							"			5.0 V	GND	IN		OUT		A to 1Y	"	"	"
						GND	GND							"				GND	IN		OUT		A to 2Y	"	"	"
						IN	IN							"		5.0 V		GND	IN		OUT		B to 1Y	"	"	"
						IN	IN							"				GND	IN		OUT		B to 2Y	"	"	"
						GND	GND							"			5.0 V	GND	IN		OUT		A to 1W	"	39	"
						GND	GND							"				GND	IN		OUT		A to 2W	"	"	"
"	"	"	"												GND	IN		OUT		B to 1W	"	"	"			
																	GND	IN		OUT		B to 2W	"	"	"	
																5.0 V	GND	IN		OUT		A to 1W	"	34	"	
																	GND	IN		OUT		A to 2W	"	"	"	
"	"	"	"												GND	IN		OUT		B to 1W	"	"	"			
																	GND	IN		OUT		B to 2W	"	"	"	
11	Same tests, terminal conditions and limits as subgroup 10, except T _C = -55°C.																									

1/ A = 3.0 V minimum, B = 0.0 V or GND.

2/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	Terminal conditions (pins not designated may be H ≥ 2.0 V, or L ≤ 0.8 V, or open)															Test limits					
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Min	Max	Unit	
1 T _C = 25°C	V _{OH}	3006	1	A	1B ₀	1B ₁	1Y	2B ₀	2B ₁	2Y	GND	4Y	4B ₁	4B ₀	3Y	3B ₁	3B ₀	G	4.5 V	1Y	2.4		V	
	"	"	2	"	"	"	"	"	2.0 V	-0.8 mA	"	"	"	"	"	"	"	"	"	"	2Y	"	"	"
	"	"	3	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"	"
	"	"	4	"	"	"	"	"	"	"	"	"	-0.8 mA	2.0 V	"	"	"	"	"	"	4Y	"	"	"
	"	V _{OL}	3007	5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1Y	"	0.4	"
	"	"	"	6	"	"	"	"	"	"	16 mA	"	"	"	"	"	"	"	"	"	2Y	"	"	"
	"	"	"	7	"	"	"	"	"	"	"	"	"	"	"	16 mA	"	"	"	"	3Y	"	"	"
	"	"	"	8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"	"
	"	V _{IC}	"	9	-12 mA	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A	"	-1.5	"
	"	"	"	10	"	-12 mA	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₀	"	"	"
	"	"	"	11	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₁	"	"	"
	"	"	"	12	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₀	"	"	"
	"	"	"	13	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₁	"	"	"
	"	"	"	14	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₁	"	"	"
	"	"	"	15	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₀	"	"	"
	"	"	"	16	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₁	"	"	"
	"	"	"	17	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₀	"	"	"
	"	"	"	18	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G	"	"	"
"	I _{IH}	3009	19	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G	0.4 V	-0.7	-1.6	mA
"	"	"	20	GND	0.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A	"	"	"	"
"	"	"	21	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₀	"	"	"	"
"	"	"	22	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₁	"	"	"	"
"	"	"	23	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₀	"	"	"	"
"	"	"	24	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₁	"	"	"	"
"	"	"	25	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₁	"	"	"	"
"	"	"	26	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₀	"	"	"	"
"	"	"	27	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₁	"	"	"	"
"	"	"	28	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₀	"	"	"	"
"	I _{IH1}	3010	29	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	G	2.4 V	"	40	µA
"	"	"	30	2.4 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A	5.5 V	"	"	"
"	"	"	31	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₀	"	"	"	"
"	"	"	32	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1B ₁	"	"	"	"
"	"	"	33	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₀	"	"	"	"
"	"	"	34	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2B ₁	"	"	"	"
"	"	"	35	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₁	"	"	"	"
"	"	"	36	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4B ₀	"	"	"	"
"	"	"	37	GND	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₁	"	"	"	"
"	"	"	38	5.5 V	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3B ₀	"	"	"	"

See notes at end of device type 05.

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

Subgroup	Symbol	MIL-STD-883C method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits				
				A	1B0	1B1	1Y	2B0	2B1	2Y	GND	4Y	4B1	4B0	3B1	3B0	G	VCC	Min		Max	Unit			
1	I _{H2}	3010	39	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	G	100	µA			
			40	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	A	"	"		
			41	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	1B0	"	"		
			42	GND	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	1B1	"	"	
			43	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	2B0	"	"	
			44	GND	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	2B1	"	"	
			45	GND	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	4B1	"	"	
			46	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	4B0	"	"	
"	I _{OS}	3011	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	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	-120	mA			
			50	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2Y	"	"		
			51	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4Y	"	"	
			52	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3Y	"	"	
			53	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VCC	50	"	
			54	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L				
			55	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
			56	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
7	Truth table test	3005	54	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	4.5 V					
			55	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
			56	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B					
			57	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B					
			58	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B					
			59	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L					
			60	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A					
			61	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B					
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.	3003	59	IN	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	A to 1Y	6	30			
			60	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 2Y	"	"		
			61	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 3Y	"	"	
			62	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 4Y	"	"	
			63	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 1Y	"	27	
			64	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 2Y	"	"	
			65	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 3Y	"	"	
			66	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 4Y	"	"	
9	t _{PH1}	(Fig 6)	59	IN	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	GND	5.0 V	OUT	5.0 V	A to 1Y	6	30		
			60	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 2Y	"	"	
			61	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 3Y	"	"
			62	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 4Y	"	"
			63	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 1Y	"	27
			64	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 2Y	"	"
			65	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 3Y	"	"
			66	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	A to 4Y	"	"
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{I/C} tests are omitted.																								
	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{I/C} tests are omitted.																								

See notes at end of device type 05.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				A	1B ₀	1B ₁	1Y	2B ₀	2B ₁	2Y	GND	4Y	4B ₁	4B ₀	3Y	3B ₁	3B ₀	G	V _{CC}		Min	Max	Unit
9 T _C = 25°C	t _{PHL2}	3003 (Fig 6)	67	5.0 V		5.0 V	OUT		5.0 V	OUT	GND				OUT	5.0 V		IN	5.0 V	G to 1Y	3	28	ns
	"	"	68	"		"	"	"	"	"	"				"	"	"	"	"	G to 2Y	"	"	"
	"	"	69	"	"		"	"	"	"	"		OUT		"	"	"	"	"	G to 3Y	"	"	"
	"	"	70	"	"		"	"	"	"	"		OUT	5.0 V	"	"	"	"	"	G to 4Y	"	"	"
	"	t _{PLH2}	"	71	"		5.0 V	OUT		5.0 V	OUT	"						"	"	G to 1Y	"	23	"
	"	"	"	72	"		"	"	"	5.0 V	OUT	"			OUT	5.0 V		"	"	G to 2Y	"	"	"
	"	"	"	73	"		"	"	"	"	"	"		OUT	"	"	"	"	"	G to 3Y	"	"	"
	"	"	"	74	"		"	"	"	"	"	"	OUT	5.0 V	"	"	"	"	"	G to 4Y	"	"	"
	"	t _{PHL3}	"	75	GND	IN	IN	OUT	IN			"						GND	"	1B ₀ to 1Y	"	20	"
	"	"	"	76	5.0 V		5.0 V	OUT				"						"	"	1B ₁ to 1Y	"	"	"
	"	"	"	77	GND		GND	OUT	IN	IN	OUT	"						"	"	2B ₀ to 2Y	"	"	"
	"	"	"	78	5.0 V		5.0 V	OUT				"						"	"	2B ₁ to 2Y	"	"	"
"	"	"	79	GND		GND	OUT				"			OUT	OUT		IN	"	3B ₀ to 3Y	"	"	"	
"	"	"	80	5.0 V		5.0 V	OUT				"			OUT	OUT			"	3B ₁ to 3Y	"	"	"	
"	"	"	81	GND		GND	OUT				"	OUT		IN				"	4B ₀ to 4Y	"	"	"	
"	"	"	82	5.0 V		5.0 V	OUT				"	OUT	IN					"	4B ₁ to 4Y	"	"	"	
"	t _{PLH3}	"	83	GND	IN	IN	OUT	IN			"						"	"	1B ₀ to 1Y	"	20	"	
"	"	"	84	5.0 V		5.0 V	OUT				"						"	"	1B ₁ to 1Y	"	"	"	
"	"	"	85	GND		GND	OUT	IN	IN	OUT	"						"	"	2B ₀ to 2Y	"	"	"	
"	"	"	86	5.0 V		5.0 V	OUT				"						"	"	2B ₁ to 2Y	"	"	"	
"	"	"	87	GND		GND	OUT				"			OUT	OUT		IN	"	3B ₀ to 3Y	"	"	"	
"	"	"	88	5.0 V		5.0 V	OUT				"			OUT	OUT			"	3B ₁ to 3Y	"	"	"	
"	"	"	89	GND		GND	OUT				"	OUT		IN				"	4B ₀ to 4Y	"	"	"	
"	"	"	90	5.0 V		5.0 V	OUT				"	OUT	IN					"	4B ₁ to 4Y	"	"	"	
10 T _C = 125°C	t _{PHL1}	3003 (Fig 6)	91	IN	GND	5.0 V	OUT	GND	5.0 V	OUT	"				OUT	5.0 V	GND	"	"	A to 1Y	6	49	"
	"	"	92	"		"	OUT				"				"	"	"	"	"	A to 2Y	"	"	"
	"	"	93	"		"	OUT				"	OUT	5.0 V		OUT	5.0 V		"	"	A to 3Y	"	"	"
	"	"	94	"		"	OUT				"	OUT	5.0 V		OUT	5.0 V		"	"	A to 4Y	"	"	"
	"	t _{PLH1}	"	95	"	GND	5.0 V	OUT	GND	5.0 V	OUT	"						"	"	A to 1Y	"	41	"
	"	"	"	96	"		"	OUT				"						"	"	A to 2Y	"	"	"
	"	"	"	97	"		"	OUT				"						"	"	A to 3Y	"	"	"
	"	"	"	98	"		"	OUT				"	OUT	5.0 V	GND	5.0 V		"	"	A to 4Y	"	"	"
	"	t _{PHL2}	"	99	5.0 V		5.0 V	OUT				"				OUT	5.0 V		IN	G to 1Y	3	39	"
	"	"	"	100	"		"	OUT				"				"	"	"	"	G to 2Y	"	"	"
	"	"	"	101	"		"	OUT				"				"	"	"	"	G to 3Y	"	"	"
	"	"	"	102	"		"	OUT				"	OUT	5.0 V		OUT	5.0 V		"	"	G to 4Y	"	"

See notes at end of device type 05.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits				
				A	1B ₀	1B ₁	1Y	2B ₀	2B ₁	2Y	GND	4Y	4B ₁	4B ₀	3Y	3B ₁	3B ₀	G	V _{CC}	Meas. terminal	Min	Max	Unit	
10 T _C = 125°C	t _{PLH2}	3003	103	5.0 V		5.0 V	OUT		5.0 V	OUT	GND					5.0 V		IN	5.0 V	G to 1Y	3	33	ns	
	"	"	104	"						OUT	"				OUT			"	"	G to 2Y	"	"	"	
	"	"	105	"							"					5.0 V		"	"	G to 3Y	"	"	"	
	"	"	106	"							"	OUT	5.0 V					"	"	G to 4Y	"	"	"	
	"	t _{PHL3}	"	107	GND	IN	OUT	OUT			"							GND	"	1B ₀ to 1Y	"	25	"	
	"	"	"	108	5.0 V		IN	OUT			"							"	"	1B ₁ to 1Y	"	"	"	
	"	"	"	109	GND				IN		OUT	"						"	"	2B ₀ to 2Y	"	"	"	
	"	"	"	110	5.0 V					IN	OUT	"							"	"	2B ₁ to 2Y	"	"	"
	"	"	"	111	GND						OUT	"				OUT		IN	"	"	3B ₀ to 3Y	"	"	"
	"	"	"	112	5.0 V						OUT	"			IN	OUT			"	"	3B ₁ to 3Y	"	"	"
	"	"	"	113	GND						"		OUT						"	"	4B ₀ to 4Y	"	"	"
	"	"	"	114	5.0 V						"		OUT	IN					"	"	4B ₁ to 4Y	"	"	"
	"	t _{PLH3}	"	115	GND	IN	IN	OUT			"								"	"	1B ₀ to 1Y	"	35	"
	"	"	"	116	5.0 V			OUT			"								"	"	1B ₁ to 1Y	"	"	"
"	"	"	117	GND				IN		OUT	"							"	"	2B ₀ to 2Y	"	"	"	
"	"	"	118	5.0 V					IN	OUT	"							"	"	2B ₁ to 2Y	"	"	"	
"	"	"	119	GND							"				OUT		IN	"	"	3B ₀ to 3Y	"	"	"	
"	"	"	120	5.0 V							"			IN	OUT			"	"	3B ₁ to 3Y	"	"	"	
"	"	"	121	GND						"		OUT						"	"	4B ₀ to 4Y	"	"	"	
"	"	"	122	5.0 V						"		OUT	IN					"	"	4B ₁ to 4Y	"	"	"	
11	Same tests, terminal conditions and limits as subgroup 10, except T _C = -55°C.																							

1/ A = 3.0 V minimum, B = 0.0 V or GND.

2/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits	
				D3	D2	D1	D0	Y	W	G	GND	C	B	A	D7	D6	D5	D4	VCC		Min	Max
1	VOH	3006	1				2.0 V	-0.8 mA		0.8 V	GND	0.8 V	0.8 V	A					4.5 V	Y	2.4	
TC = 25°C	VOH	3006	2					-0.8 mA		2.0 V	GND	2.0 V	2.0 V	2.0 V						W	2.4	
"	VOL	3007	3				2.0 V	16 mA		2.0 V	"	2.0 V	2.0 V	2.0 V						Y		0.4
"	VOL	3007	4				2.0 V	16 mA		0.8 V	"	0.8 V	0.8 V	0.8 V						W		0.4
"	VIC		5				-12 mA													D0		-1.5
"	"		6				-12 mA													D1		"
"	"		7				-12 mA													D2		"
"	"		8				-12 mA													D3		"
"	"		9																	D4		"
"	"		10																	D5		"
"	"		11																	D6		"
"	"		12																	D7		"
"	"		13																	G		"
"	"		14																	A		"
"	"		15																	B		"
"	"		16																	C		"
"	IIL	3009	17							-12 mA				5.5 V					5.5 V	G	-0.7	-1.6
"	"	"	18							0.4 V				5.5 V						A		"
"	"	"	19							GND				0.4 V						B		"
"	"	"	20							"				0.4 V						C		"
"	"	"	21							"				0.4 V						D0		"
"	"	"	22							"				GND						D1		"
"	"	"	23							"				GND						D2		"
"	"	"	24							"				5.5 V						D3		"
"	"	"	25							"				5.5 V						D4		"
"	"	"	26							"				GND						D5		"
"	"	"	27							"				GND						D6		"
"	"	"	28							"				5.5 V						D7		"
"	IHH1	3010	29							2.4 V				GND						G		40
"	"	"	30							5.5 V				GND						A		"
"	"	"	31							"				GND						B		"
"	"	"	32							"				GND						C		"
"	"	"	33							"				2.4 V						D0		"
"	"	"	34							"				5.5 V						D1		"
"	"	"	35							"				5.5 V						D2		"
"	"	"	36							"				GND						D3		"
"	"	"	37							"				GND						D4		"
"	"	"	38							"				5.5 V						D5		"
"	"	"	39							"				5.5 V						D6		"
"	"	"	40							"				GND						D7		"

See note at end of device type 06.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Test limits				
				D3	D2	D1	D0	Y	W	G	GND	C	B	A	D7	D6	D5	D4	Vcc	Meas. terminal	Min	Max	Unit	
1	I _{H2}	3010	41							5.5 V	GND	GND	GND	GND					5.5 V	G	100	μA		
			42																		A	"	"	
			43																		B	"	"	
			44																		C	"	"	
			45				5.5 V															D0	"	"
			46					5.5 V														D1	"	"
			47						5.5 V													D2	"	"
			48																	5.5 V		D3	"	"
			49																			D4	"	"
			50																			D5	"	"
			51																			D6	"	"
			52																			D7	"	"
"	I _{OS}	3011		GND	GND	GND	GND		GND											W	-20	-55	mA	
"	I _{OC}	3011		"	"	"	5.5 V	GND		GND										Y	-20	-55	mA	
"	I _{CC}	3005		"	"	"	5.5 V			GND										V _{CC}	48		mA	
2	Same tests, terminal conditions and limits as subgroup 1, except T _C = 125°C and V _{IC} tests are omitted.																							
3	Same tests, terminal conditions and limits as subgroup 1, except T _C = -55°C and V _{IC} tests are omitted.																							
7	Truth table test	56					1/	L 2/	H	A	GND	B	B	B	B				4.5 V	} 2/				
			57				B	L	H	B													"	
			58				A	H	L														"	
			59					L	H														"	
			60					H	L														"	
			61					L	H														"	
			62					H	L														"	
			63					L	H														"	
			64					H	L														"	
			65					L	H														"	
			66					H	L														"	
			67					L	H														"	
68					H	L											"							
69					L	H											"							
70					H	L											"							
71					L	H											"							
72					H	L											"							
8	Repeat subgroup 7 at T _C = 125°C and T _C = -55°C.																							

See notes at end of device type 06.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits		
				D3	D2	D1	D0	Y	W	G	GND	C	B	A	D7	D6	D5	D4	VCC		Min	Max	Unit
9 Tc = 25°C	tPHL1	3003	73		5.0 V	5.0 V	GND	OUT	GND	GND	GND	GND	GND	IN					5.0 V	A to W	6	32	ns
	"	"	74		5.0 V		"	"	"	"	"	GND	IN	GND					"	B to W	"	"	"
	"	"	75				"	"	"	"	"	IN	GND	GND					5.0 V	C to W	"	"	"
	tPLH1	"	76		5.0 V	5.0 V	"	"	"	"	"	GND	GND	IN					"	A to W	"	29	"
	"	"	77		5.0 V	5.0 V	"	"	"	"	"	"	GND	IN	GND				"	B to W	"	"	"
	"	"	78				"	"	"	"	"	"	IN	GND	GND				5.0 V	C to W	"	"	"
	tPHL2	"	79		5.0 V	5.0 V	"	OUT	"	"	"	"	GND	GND	IN				"	A to Y	8	40	"
	"	"	80		5.0 V	5.0 V	"	"	"	"	"	"	GND	IN	GND				"	B to Y	"	"	"
	"	"	81				"	"	"	"	"	"	IN	GND	GND				5.0 V	C to Y	"	"	"
	tPLH2	"	82		5.0 V	5.0 V	"	"	"	"	"	"	GND	GND	IN				"	A to Y	"	39	"
	"	"	83		5.0 V	5.0 V	"	"	"	"	"	"	GND	IN	GND				"	B to Y	"	"	"
	"	"	84				"	"	"	"	"	"	IN	GND	"				5.0 V	C to Y	"	"	"
	tPHL3	"	85		5.0 V	5.0 V	"	"	"	OUT	IN	"	GND	"	"				"	G to W	6	28	"
	tPLH3	"	86				"	"	"	OUT	"	"	"	"	"				"	G to W	6	26	"
tPHL4	"	87				"	"	OUT	"	"	"	"	"	"				"	G to Y	8	37	"	
tPLH4	"	88				"	"	OUT	"	"	"	"	"	"				"	G to Y	8	35	"	
tPHL5	"	89		IN	IN	IN	IN		OUT	GND	"	"	"	"				"	D0 to W	3	20	"	
"	"	90			IN	IN	"		"	"	"	"	5.0 V	5.0 V				"	D1 to W	"	"	"	
"	"	91					"		"	"	"	"	5.0 V	GND				"	D2 to W	"	"	"	
"	"	92		IN			"		"	"	"	"	5.0 V	5.0 V				"	D3 to W	"	"	"	
tPHL5	"	93							OUT	GND	"	5.0 V	GND	GND				IN	D4 to W	"	"	"	
"	"	94							"	"	"	"	GND	5.0 V				"	D5 to W	"	"	"	
"	"	95							"	"	"	"	5.0 V	GND				"	D6 to W	"	"	"	
"	"	96							"	"	"	"	5.0 V	5.0 V				"	D7 to W	"	"	"	
tPLH5	"	97		IN	IN	IN	IN		"	"	"	GND	GND	GND				"	D0 to W	"	17	"	
"	"	98							"	"	"	"	GND	5.0 V				"	D1 to W	"	"	"	
"	"	99			IN	IN	"		"	"	"	"	5.0 V	GND				"	D2 to W	"	"	"	
"	"	100		IN			"		"	"	"	"	5.0 V	5.0 V				"	D3 to W	"	"	"	
"	"	101					"		"	"	"	5.0 V	GND	GND				IN	D4 to W	"	"	"	
"	"	102					"		"	"	"	"	GND	5.0 V				"	D5 to W	"	"	"	
"	"	103					"		"	"	"	"	5.0 V	GND				"	D6 to W	"	"	"	
"	"	104					"		"	"	"	"	5.0 V	5.0 V				"	D7 to W	"	"	"	

See notes at end of device type 06.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits			
				D3	D2	D1	D0	Y	W	G	GND	C	B	A	D7	D6	D5	D4	V _{CC}		Min	Max	Unit	
9 T _C = 25°C	t _{PHL6}	3003 (Fig 4)	105	IN	IN	IN	IN	OUT		GND	GND	GND	GND	GND					5.0 V	D0 to Y	6	29	ns	
	"	"	106		IN			"		"	"	"	GND	5.0 V					"	D1 to Y	"	"	"	
	"	"	107					"		"	"	"	5.0 V	GND					"	D2 to Y	"	"	"	
	"	"	108					"		"	"	5.0 V	GND	5.0 V					"	D3 to Y	"	"	"	
	"	"	109					"		"	"	5.0 V	GND	GND					"	D4 to Y	"	"	"	
	"	"	110					"		"	"	"	GND	5.0 V					"	D5 to Y	"	"	"	
	"	"	111					"		"	"	"	5.0 V	GND					"	D6 to Y	"	"	"	
	"	"	112					"		"	"	"	5.0 V	5.0 V		IN			"	D7 to Y	"	"	"	
	"	t _{PLH6}	"	113			IN	IN	"		"	"	GND	GND					"	D0 to Y	"	33	"	
	"	"	"	114			IN		"		"	"	"	5.0 V					"	D1 to Y	"	"	"	
	"	"	"	115			IN		"		"	"	"	5.0 V					"	D2 to Y	"	"	"	
	"	"	"	116			IN		"		"	"	5.0 V	5.0 V					"	D3 to Y	"	"	"	
"	"	"	117					"		"	"	5.0 V	GND					"	D4 to Y	"	"	"		
"	"	"	118					"		"	"	"	GND					"	D5 to Y	"	"	"		
"	"	"	119					"		"	"	"	5.0 V					"	D6 to Y	"	"	"		
"	"	"	120					"		"	"	5.0 V	5.0 V		IN			"	D7 to Y	"	"	"		
10 T _C = 125°C	t _{PHL1}	"	121		5.0 V	5.0 V	GND		OUT	"	"	GND	GND	IN					"	A to W	"	48	"	
	"	"	122		5.0 V		"		"	"	"	GND	IN	GND					"	B to W	"	"	"	
	"	"	123				"		"	"	"	IN	GND	GND				5.0 V	"	C to W	"	"	"	
	"	t _{PLH1}	"	124		5.0 V	"			"	"	GND	GND	IN					"	A to W	"	43	"	
	"	"	"	125		5.0 V	"			"	"	GND	IN	GND					"	B to W	"	"	"	
	"	"	"	126			"			"	"	"	IN	GND					5.0 V	C to W	"	"	"	
	"	t _{PHL2}	"	127		5.0 V	5.0 V	"	OUT		"	"	GND	GND	IN				"	A to Y	"	8	60	"
	"	"	"	128		5.0 V		"	"		"	"	GND	IN	GND				"	B to Y	"	"	"	"
	"	"	"	129			"	"	"		"	"	IN	GND					5.0 V	C to Y	"	"	"	"
	"	t _{PLH2}	"	130			5.0 V	"	"		"	"	GND	GND	IN				"	A to Y	"	58	"	"
	"	"	"	131				"	"		"	"	GND	IN	GND				"	B to Y	"	"	"	"
	"	"	"	132				"	"		"	"	IN	GND					5.0 V	C to Y	"	"	"	"
"	t _{PHL3}	"	133				5.0 V		OUT	IN	"	GND	"	"				"	G to W	"	6	38	"	
"	t _{PLH3}	"	134				"		OUT	"	"	"	"	"				"	G to W	"	6	35	"	
"	t _{PHL4}	"	135				"	OUT		"	"	"	"	"				"	G to Y	"	8	52	"	
"	t _{PLH4}	"	136				"	OUT		"	"	"	"	"				"	G to Y	"	8	52	"	
"	t _{PHL5}	"	137			IN	IN		OUT	GND	"	"	"	"				"	D0 to W	"	3	32	"	
"	"	"	138		IN		"		"	"	"	"	5.0 V					"	D1 to W	"	"	"	"	
"	"	"	139				"		"	"	"	"	5.0 V	GND				"	D2 to W	"	"	"	"	
"	"	"	140			IN	"		"	"	"	"	5.0 V	5.0 V				"	D3 to W	"	"	"	"	

See notes at end of device type 06.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E, F Test No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meas. terminal	Test limits				
				D3	D2	D1	D0	Y	W	G	GND	C	B	A	D7	D6	D5	D4	VCC		Min	Max	Unit		
10 T _C = 125°C	t _{PHL5}	3003	141						OUT	GND	GND	5.0 V	GND	GND				IN	5.0 V	D4 to W	3	32	ns		
	"	"	142						"	"	"	"	GND	5.0 V					"	"	D5 to W	"	"	"	
	"	"	143						"	"	"	"	5.0 V	GND					"	"	D6 to W	"	"	"	
	"	"	144						"	"	"	"	5.0 V	5.0 V	IN					"	D7 to W	"	"	"	
	"	t _{PLH5}	"	145			IN			"	"	"	GND	GND						"	D0 to W	"	26	"	
	"	"	"	146						"	"	"	"	GND	5.0 V					"	"	D1 to W	"	"	"
	"	"	"	147						"	"	"	"	5.0 V	GND					"	"	D2 to W	"	"	"
	"	"	"	148						"	"	"	"	5.0 V	GND					"	"	D3 to W	"	"	"
	"	"	"	149			IN			"	"	"	5.0 V	GND	GND				IN	"	"	D4 to W	"	"	"
	"	"	"	150						"	"	"	"	GND	5.0 V					"	"	D5 to W	"	"	"
	"	"	"	151						"	"	"	"	5.0 V	GND					"	"	D6 to W	"	"	"
	"	"	"	152						"	"	"	"	5.0 V	5.0 V	IN				"	"	D7 to W	"	"	"
	"	t _{PHL6}	"	153				IN	OUT		"	"	GND	GND	GND					"	"	D0 to Y	6	44	"
	"	"	"	154						"	"	"	"	GND	5.0 V					"	"	D1 to Y	"	"	"
	"	"	"	155						"	"	"	"	5.0 V	GND					"	"	D2 to Y	"	"	"
	"	"	"	156						"	"	"	"	5.0 V	5.0 V					"	"	D3 to Y	"	"	"
	"	"	"	157			IN			"	"	"	5.0 V	GND	GND					"	"	D4 to Y	"	"	"
	"	"	"	158						"	"	"	"	GND	5.0 V					"	"	D5 to Y	"	"	"
"	"	"	159						"	"	"	"	5.0 V	GND					"	"	D6 to Y	"	"	"	
"	"	"	160						"	"	"	"	5.0 V	5.0 V	IN				"	"	D7 to Y	"	"	"	
"	t _{PLH6}	"	161				IN			"	"	GND	GND	GND					"	"	D0 to Y	"	36	"	
"	"	"	162						"	"	"	"	GND	5.0 V					"	"	D1 to Y	"	"	"	
"	"	"	163						"	"	"	"	5.0 V	GND					"	"	D2 to Y	"	"	"	
"	"	"	164						"	"	"	"	5.0 V	5.0 V					"	"	D3 to Y	"	"	"	
"	"	"	165			IN			"	"	"	5.0 V	GND	GND					"	"	D4 to Y	"	"	"	
"	"	"	166						"	"	"	"	GND	5.0 V					"	"	D5 to Y	"	"	"	
"	"	"	167						"	"	"	"	5.0 V	GND					"	"	D6 to Y	"	"	"	
"	"	"	168						"	"	"	"	5.0 V	5.0 V	IN				"	"	D7 to Y	"	"	"	
11	Same tests, terminal conditions and limits as subgroup 10, except T _C = -55°C.																								

1/ A = 3.0 V minimum, B = 0.0 V or GND.

2/ H > 1.5 V; L < 1.5 V.

Only attributes data is required for subgroups 7 and 8.

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 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 it 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. Requirement for certificate of compliance, if applicable.
- e. Requirements for notification of change of product or process to acquiring activity in addition to notification to the qualifying activity, if applicable.
- f. Requirements for failure analysis (including required test condition of method 5003), corrective action and reporting of results, if applicable.
- g. Requirements for product assurance options.
- h. Requirements for carriers, special lead lengths or lead forming, if applicable. These requirements shall 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 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.

6.4 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.

6.5 Abbreviations, symbols and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-PRF-38535 and 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 3.4). Longer lead lengths and lead forming shall 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.

<u>Military device type</u>	<u>Generic-industry type</u>
01	54150
02	9312
03	54153
04	9309
05	9322, 54157
06	54151

6.8 Manufacturers designation. Manufacturer circuits included in this specification are designated as shown in table IV herein.

TABLE IV. Substitutability and manufacturers designator.

Device Types	Motorola	Signetics	Fairchild	Texas Instruments	National	Advanced Micro Device
	A	B	C	D	E	F
01	X	X			X	
02	X	X			X	X
03	X	X	X		X	
04	X	X	X		X	X
05	X	X	X	X	X	X
06	X	X	X	X	X	

6.9 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 5962-2103)

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>.