INCH-POUND
MIL-M-38510/156C
28 MARCH 2005
SUPERSEDING
MIL-M-38510/156B
21 JULY 1986

MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, TTL, DATA ENCODERS, MONOLITHIC SILICON

Inactive for new design after 21 July 1986

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 encoder, 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 For this product, the requirements of MIL-M-38510 have been superseded by MIL-PRF-38535, (see 6.4)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 should be as follows:

Device type	Circuit
01	Ten line to four line data encoder, without enable.
02	Eight line to three line data encoder, with enable.
03	Eight-input priority encoder.

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

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

Outline letter	Descriptive designator	Terminals	Package style
E	GDIP1-T16 or CDIP2-T16	16	Dual-in-line
F	GDFP2-F16 or CDFP3-F16	16	Flat pack

Comments, suggestions, or questions on this document should be addressed to: Commander, Defense Supply Center Columbus, ATTN: DSCC-VAS, 3990 East Broad St., Columbus, OH 43218-3990, or email mailto:bipolar@dscc.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 dc to 7.0 V dc
Input voltage range	-1.5 V dc at -12 mA to 5.5 V dc
Storage temperature range	-65°C to 150°C
Maximum power dissipation per gate (P_D) 1/ :	
Device type 01	385 mW
Device type 02	330 mW
Device type 03	424 mW
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction-to-case (θ_{JC}):	
Cases E and F	See MIL-STD-1835
Junction temperature (T_J)	+175°C 2/

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	4.5 V dc minimum to 5.5 V dc maximum
Minimum high level input voltage (V_{IH})	2.0 V dc
Maximum low level input voltage (V_{IL})	0.8 V dc
Case operating temperature range (T_C)	-55°C to +125°C

2. APPLICABLE DOCUMENTS

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

2.2 Government documents.

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

DEPARTMENT OF DEFENSE SPECIFICATIONS

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

DEPARTMENT OF DEFENSE STANDARDS

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

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

1/ Must withstand the added P_D due to short circuit test (e.g. I_{OS}).
2/ Maximum junction temperature shall not be exceeded except for allowable short duration burn-in screening conditions per method 5004 of MIL-STD-883.

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 shall 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 Terminal connections. The terminal connections shall be as specified on figure 1.

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

3.3.3 Logic diagrams. The logic diagrams shall be as specified on figure 3.

3.3.4 Case outlines. The case outlines shall be as specified in 1.2.3.

3.4 Lead material and finish. The lead material and finish shall be in accordance with MIL-PRF-38535 (see 6.6).

3.5 Electrical performance characteristics. The electrical performance characteristics are as specified in table I, and apply over the full recommended case operating temperature range, unless otherwise specified.

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

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

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$	Device type	Limit		Units
				Min	Max	
High level output voltage	V_{OH}	V_{CC} = 4.5 V, I_{OH} = -.8mA	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} = -12mA	All		-1.5	V
Low level input current	I_{IL}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	01	-0.7	-1.6	mA
Low level input current at all inputs except 0	I_{IL1}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	02	-1.2	-3.2	mA
Low level input current at 0	I_{IL2}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	02	-0.7	-1.6	mA
Low level input current at $\overline{0}$ and $\overline{E_1}$	I_{IL1}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	03	-0.7	-1.6	mA
Low level input current at all other inputs	I_{IL2}	V_{CC} = 5.5 V, V_{IN} = 0.4 V	03	-1.4	-3.2	mA
High level input current	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.4 V	01		40	µA
	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V	01		100	µA
High level input current at all inputs except 0	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.4 V	02		80	µA
	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V	02		200	µA
High level input current at 0	I_{IH3}	V_{CC} = 5.5 V, V_{IN} = 2.4 V	02		40	µA
	I_{IH4}	V_{CC} = 5.5 V, V_{IN} = 5.5 V	02		100	µA
High level input current at all inputs except $\overline{0}$	I_{IH1}	V_{CC} = 5.5 V, V_{IN} = 2.4 V	03		80	µA
	I_{IH2}	V_{CC} = 5.5 V, V_{IN} = 5.5 V	03		200	µA
High level input current at $\overline{0}$	I_{IH3}	V_{CC} = 5.5 V, V_{IN} = 2.4 V	03		40	µA
	I_{IH4}	V_{CC} = 5.5 V, V_{IN} = 5.5 V	03		100	µA
Short circuit output current	I_{OS}	V_{CC} = 5.5 V, V_{OUT} = 0 V 1/	01,02	-35	-85	mA
			03	-20	-80	mA
High level supply current	I_{CCH}	V_{CC} = 5.5 V	01	---	62	mA
			02	---	55	mA
Low level supply current	I_{CCL}	V_{CC} = 5.5 V	01	---	70	mA
			02	---	60	mA
Supply current	I_{CC}	V_{CC} = 5.5 V	03	---	77	mA
Propagation delay time, high-to-low level; any input to any output (in-phase output)	t_{PHL1}	V_{CC} = 5.0 V C_L = 50 pF min R_L = 390 Ω ± 5% (Figure 4)	01	3	21	ns
Propagation delay time, low-to-high level; any input to any output (in-phase output)	t_{PLH1}		01	3	25	ns
Propagation delay time, high-to-low level; any input to any output (out-of-phase output)	t_{PHL2}		01	3	26	ns
Propagation delay time, low-to-high level; any input to any output (out-of-phase)	t_{PLH2}		01	3	31	ns

See footnote at end of table.

TABLE I. Electrical performance characteristics - Continued

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$	Device type	Limit		Units
				Min	Max	
Propagation delay time, high-to-low level output at GS from 0 thru 7 (in-phase output)	t_{PHL1}	V_{CC} = 5.0 V C_L = 50 pF min R_L = 390 Ω ± 5% (Figure 4)	02	3	30	ns
Propagation delay time, low-to-high level output at GS from 0 thru 7 (in-phase output)	t_{PLH1}		02	3	34	ns
Propagation delay time, high-to-low level output at A_0, A_1, or A_2 from 0 thru 7 (in-phase output)	t_{PHL2}		02	3	25	ns
Propagation delay time, low-to-high level output at A_0, A_1, or A_2 from 0 thru 7 (in-phase output)	t_{PLH2}		02	3	26	ns
Propagation delay time, high-to-low level output at E_0 from E_I	t_{PHL3}		02	3	25	ns
Propagation delay time, low-to-high level output at E_0 from E_I	t_{PLH3}	V_{CC} = 5.0 V C_L = 50 pF min R_L = 390 Ω ± 5% (Figure 5)	02	3	24	ns
Propagation delay time, high-to-low level output at E_0 from 0 thru 7	t_{PHL4}		02	3	25	ns
Propagation delay time, low-to-high level output at E_0 from 0 thru 7	t_{PLH4}		02	3	20	ns
Propagation delay time, high-to-low level output at A_0, A_1, or A_2 from 0 thru 7 (out-of-phase output)	t_{PHL5}		02	3	26	ns
Propagation delay time, low-to-high level output at A_0, A_1, or A_2 from 0 thru 7 (out-of-phase output)	t_{PLH5}		02	3	26	ns

See footnote at end of table.

TABLE I. Electrical performance characteristics – Continued

Test	Symbol	Conditions $-55°C \le T_C \le +125°C$	Device type	Limit		Units
				Min	Max	
Propagation delay time, low-to-high level; data input to enable output	t_{PLH1}	V_{CC} = 5.0 V C_L = 50 pF min R_L = 390 Ω ± 5% (Figure 6)	03	6	22	ns
Propagation delay time, high-to-low level; data input to enable output	t_{PHL1}		03	9	43	ns
Propagation delay time, low-to-high level; enable input to group signal	t_{PLH2}		03	9	32	ns
Propagation delay time, high-to-low level; enable input to group signal	t_{PHL2}		03	9	38	ns
Propagation delay time, low-to-high level; enable input to enable output	t_{PLH3}		03	9	32	ns
Propagation delay time, high-to-low level; enable input to enable output	t_{PHL3}		03	9	48	ns
Propagation delay time, low-to-high level; enable input to data output	t_{PLH4}		03	9	37	ns
Propagation delay time, high-to-low level; enable input to data output	t_{PHL4}		03	9	38	ns
Propagation delay time, low-to-high level; data input to group signal	t_{PLH5}		03	15	56	ns
Propagation delay time, high-to-low level; data input to group signal	t_{PHL5}		03	9	34	ns
Propagation delay time, low-to-high level; data input to data output	t_{PLH6}		03	12	52	ns
Propagation delay time, high-to-low level; data input to data output	t_{PHL6}		03	9	52	ns

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

TABLE II. Electrical test requirements.

MIL-PRF-38535 test requirements	Subgroups (see table III)	
	Class S devices	Class B devices
Interim electrical parameters	1	1
Final electrical test parameters	1*, 2, 3, 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	1,2,3,7,8,9, 10,11	N/A
Group C end-point electrical parameters	1,2,3,7,8,9, 10,11	1, 2, 3
Group D end-point electrical parameters	1, 2, 3	1, 2, 3

*PDA applies to subgroup 1.

4. VERIFICATION.

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

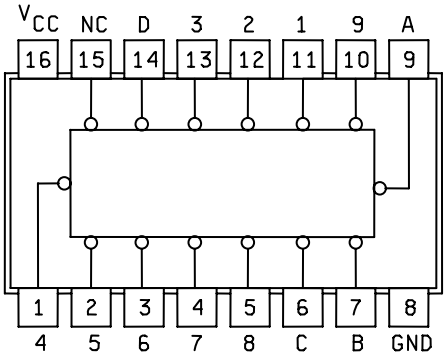
4.2 Screening. Screening shall be in accordance with MIL-PRF-38535, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

a. The burn-in test duration, test condition, and test temperature, or approved alternatives shall be as specified in the device manufacturer's QM plan in accordance with MIL-PRF-38535. The burn-in test circuit shall be maintained under document control by the device manufacturer's Technology Review Board (TRB) in accordance with MIL-PRF-38535 and shall be made available to the acquiring or preparing activity upon request. The test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

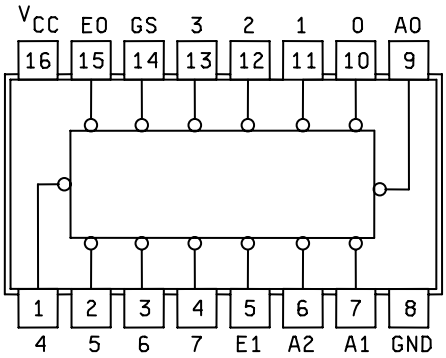
b. Interim and final electrical test parameters shall be as specified in table II, except interim electrical parameters test prior to burn-in is optional at the discretion of the manufacturer.

c. Additional screening for space level product shall be as specified in MIL-PRF-38535.

DEVICE TYPE 01



DEVICE TYPE 02



DEVICE TYPE 03

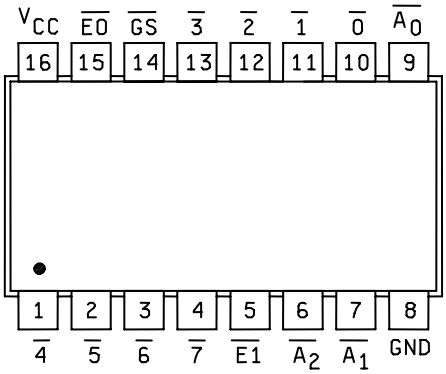


Figure 1. Terminal connections (top view).

Device type 01

Inputs									Outputs			
1	2	3	4	5	6	7	8	9	D	C	B	A
H	H	H	H	H	H	H	H	H	H	H	H	H
X	X	X	X	X	X	X	X	L	L	H	H	L
X	X	X	X	X	X	X	L	H	L	H	H	H
X	X	X	X	X	X	L	H	H	H	L	L	L
X	X	X	X	X	L	H	H	H	H	L	L	H
X	X	X	X	L	H	H	H	H	H	L	H	L
X	X	X	L	H	H	H	H	H	H	L	H	H
X	X	L	H	H	H	H	H	H	H	H	L	L
X	L	H	H	H	H	H	H	H	H	H	L	H
L	H	H	H	H	H	H	H	H	H	H	H	L

H = High logic level, L = Low logic level,
X = Irrelevant

Device type 02

Inputs									Outputs				
E1	0	1	2	3	4	5	6	7	A2	A1	A0	GS	E0
H	X	X	X	X	X	X	X	X	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	L
L	X	X	X	X	X	X	X	L	L	L	L	L	H
L	X	X	X	X	X	X	L	H	L	L	H	L	H
L	X	X	X	X	X	L	H	H	L	H	L	L	H
L	X	X	X	X	L	H	H	H	L	H	H	L	H
L	X	X	X	L	H	H	H	H	H	L	L	L	H
L	X	X	L	H	H	H	H	H	H	L	H	L	H
L	X	L	H	H	H	H	H	H	H	H	L	L	H
L	L	H	H	H	H	H	H	H	H	H	H	L	H

H = High logic level, L = Low logic level,
X = Irrelevant

Device type 03

Inputs									Outputs				
$\overline{E1}$	$\overline{0}$	$\overline{1}$	$\overline{2}$	$\overline{3}$	$\overline{4}$	$\overline{5}$	$\overline{6}$	$\overline{7}$	$\overline{GS}$	$\overline{A_0}$	$\overline{A_1}$	$\overline{A_2}$	$\overline{E0}$
H	X	X	X	X	X	X	X	X	H	H	H	H	H
L	H	H	H	H	H	H	H	H	H	H	H	H	L
L	X	X	X	X	X	X	X	L	L	L	L	L	H
L	X	X	X	X	X	X	L	H	L	H	L	L	H
L	X	X	X	X	X	L	H	H	L	L	H	L	H
L	X	X	X	X	L	H	H	H	L	H	H	L	H
L	X	X	X	L	H	H	H	H	L	L	L	H	H
L	X	X	L	H	H	H	H	H	L	H	L	H	H
L	X	L	H	H	H	H	H	H	L	L	H	H	H
L	L	H	H	H	H	H	H	H	L	H	H	H	H

H = High logic level, L = Low logic level,
X = Irrelevant

Figure 2. Truth tables.

Device type 01

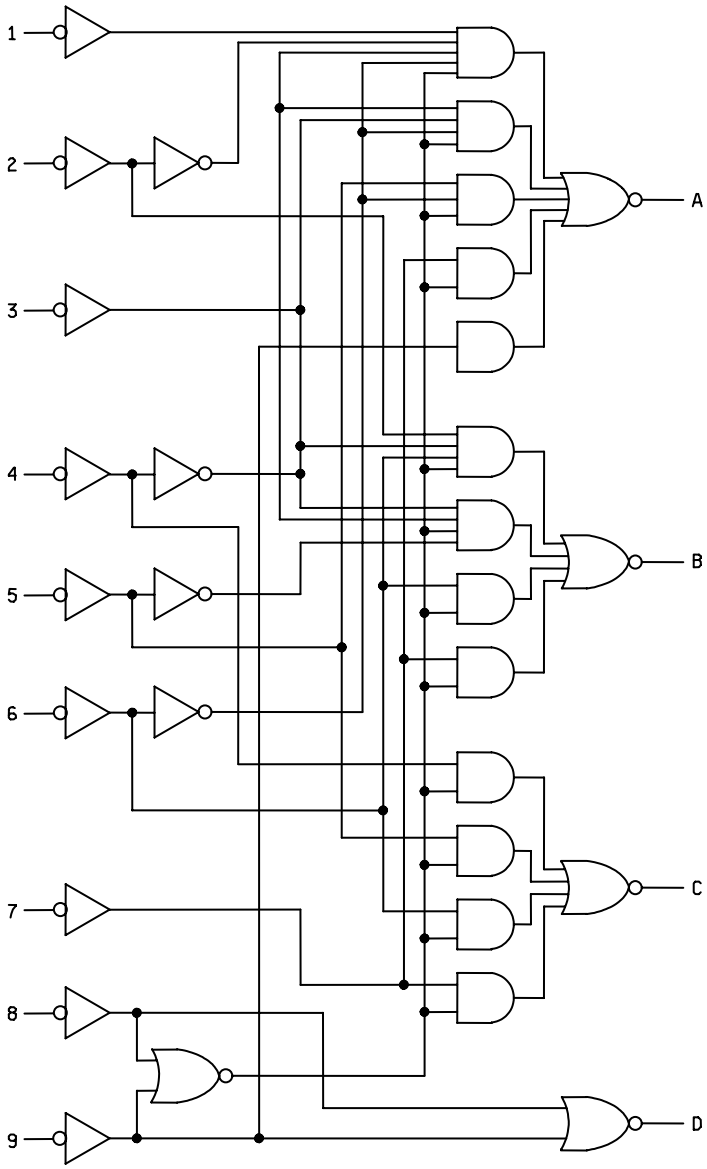


Figure 3. Logic diagrams.

DEVICE TYPE 02

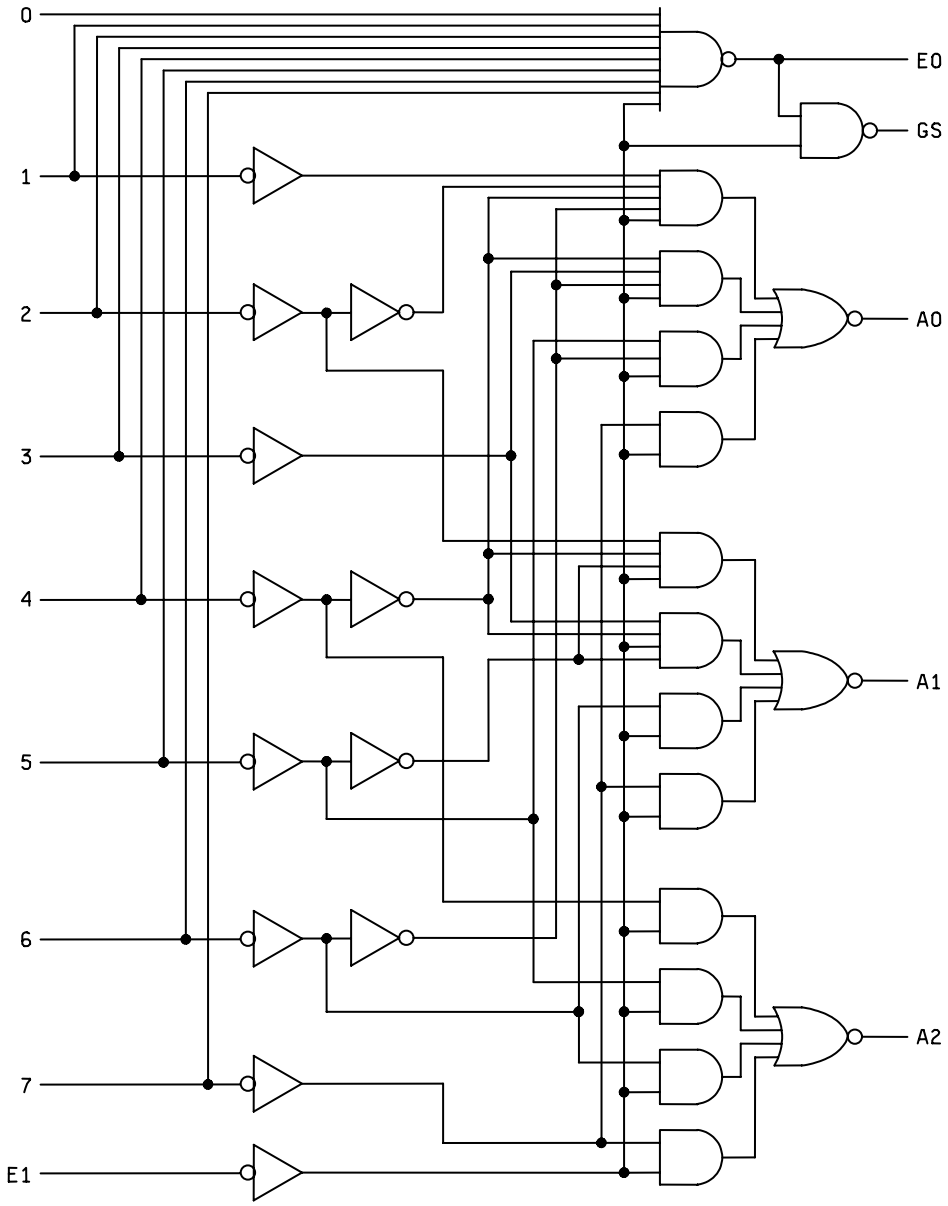


Figure 3. Logic diagrams – Continued.

DEVICE TYPE 03

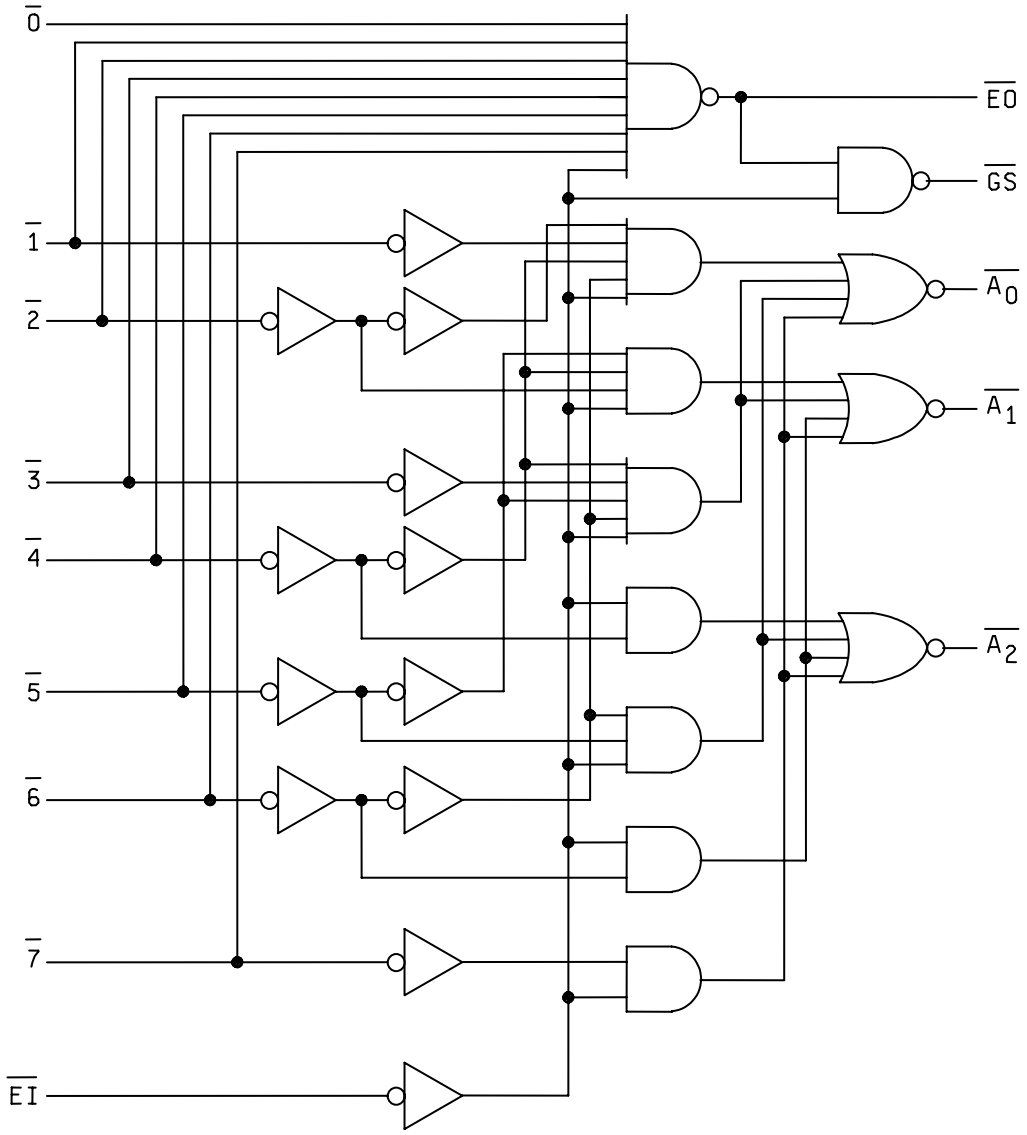
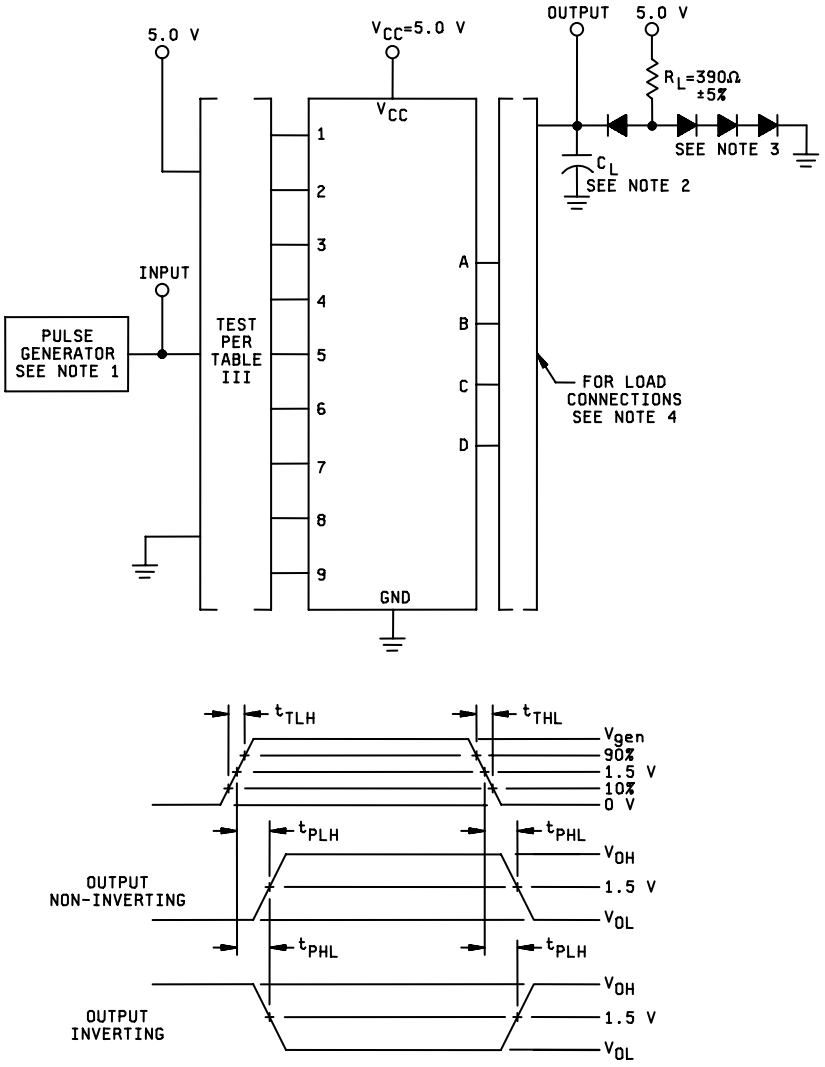


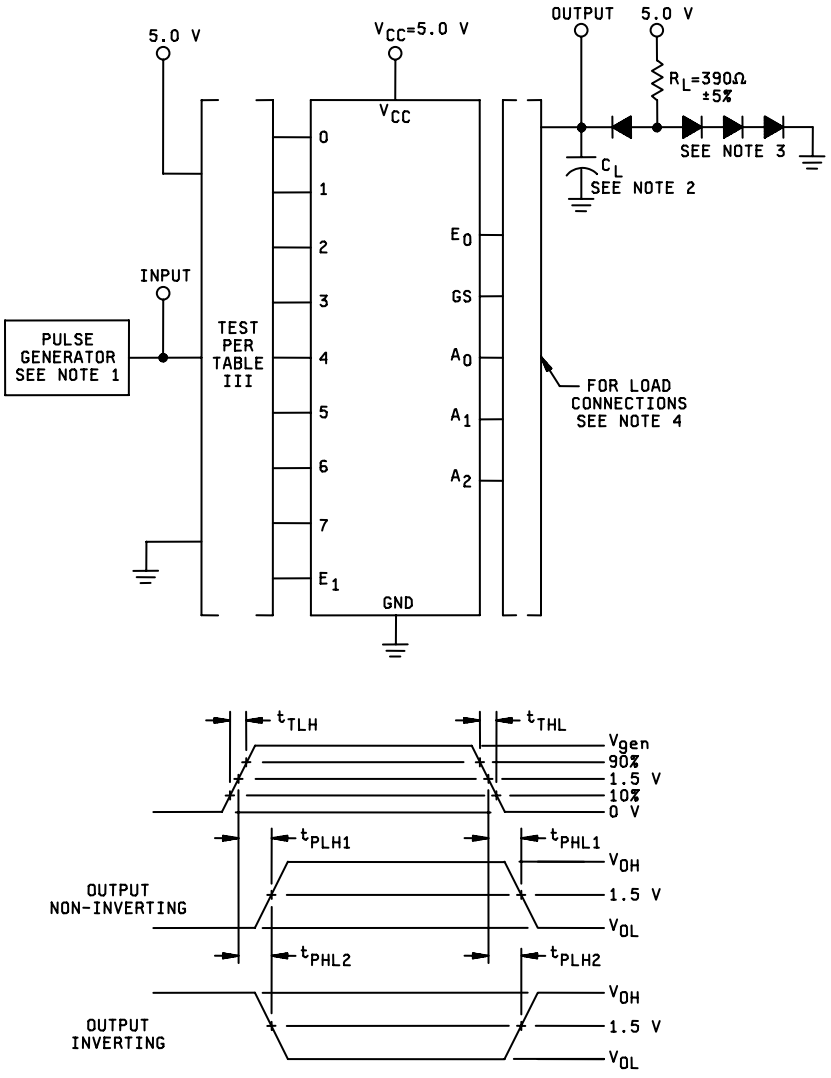
Figure 3. Logic diagrams – Continued.



NOTES:

1. The pulse generator has the following characteristics: V_{gen} = 3.0 V, PRR ≤ 1 MHz, t_p = 500 ns, $t_{THL} = t_{TLH} \leq 7$ ns, and $Z_{OUT} \approx 50\ \Omega$.
2. C_L = 50 pF minimum and includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. Load circuit is applied separately to each output pin under test. All other outputs may be open or loaded.

FIGURE 4. Switching time test circuit and waveforms for device type 01.



NOTES:

1. The pulse generator has the following characteristics: V_{gen} = 3.0 V, PRR ≤ 1 MHz, t_p = 500 ns, $t_{THL} = t_{TLH} \leq 7$ ns, and $Z_{OUT} \approx 50\ \Omega$.
2. C_L = 50 pF minimum and includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.
4. Load circuit is applied separately to each output pin under test. All other outputs may be open or loaded.

FIGURE 5. Switching time test circuit and waveforms for device type 02.

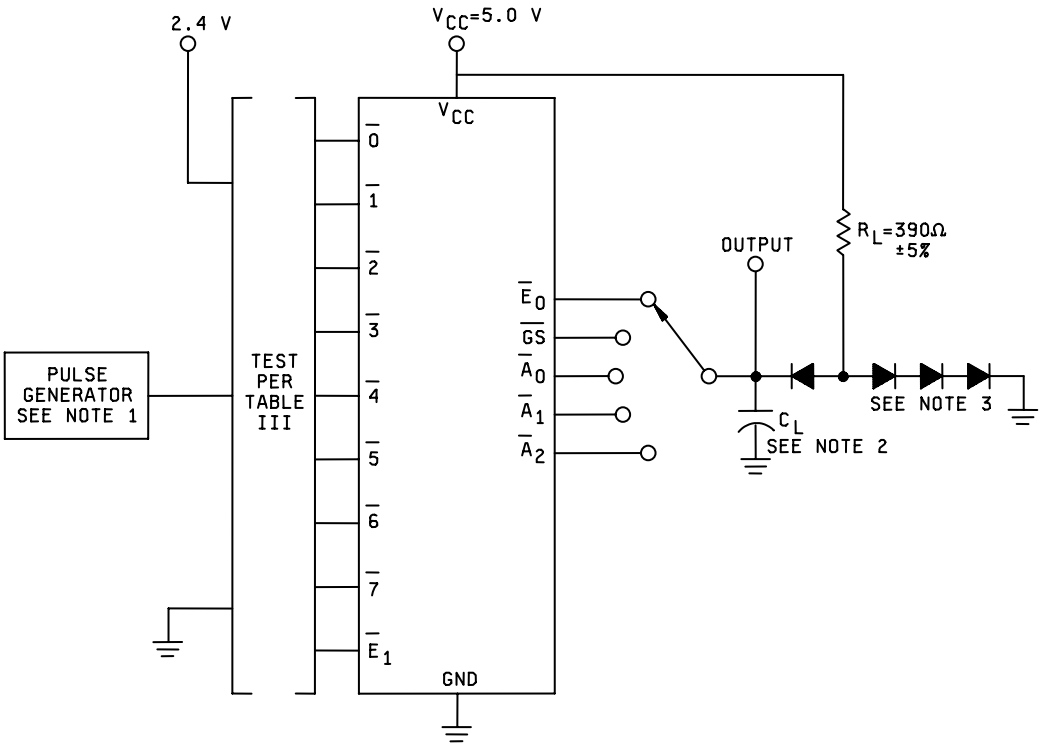
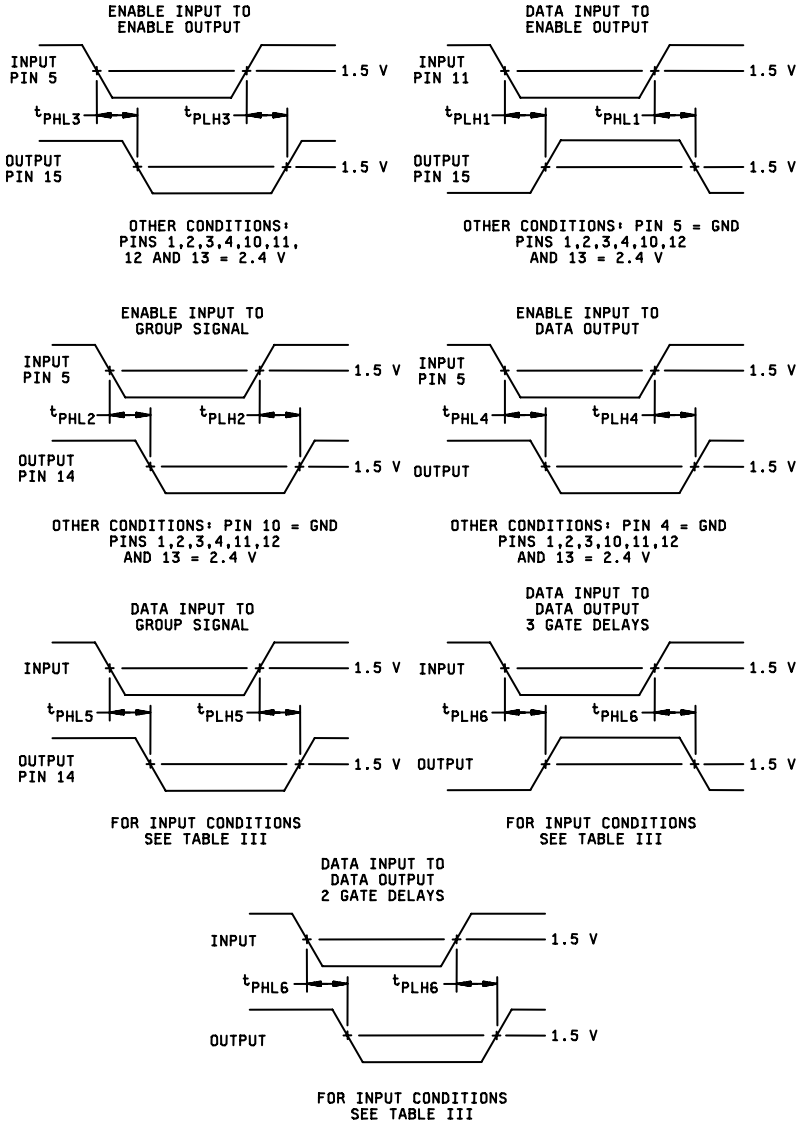


FIGURE 6. Switching test for device type 03.



NOTES:

1. The pulse generator has the following characteristics: V_{gen} = 3.0 V, rise and fall ≤ 10 ns, Z_{OUT} ≈ 50 Ω, PRR ≤ 1 MHz, PW = 100 ns.
2. C_L = 50 pF minimum and includes probe and jig capacitance.
3. All diodes are 1N3064 or equivalent.

FIGURE 6. Switching test for device type 03 – Continued.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E,F Test no.	1 4	2 5	3 6	4 7	5 8	6 C	7 B	8 GND	9 A	10 9	11 1	12 2	13 3	14 D	15 NC	16 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
1 T_C=+25°C	V_{OH}	3006	1	2.0V	2.0V	2.0V	2.0V	2.0V			GND	-.8mA	2.0V	2.0V	2.0V	2.0V			4.5V	A	2.4		V dc
		"	2	"	"	"	"	"		-.8mA	"		"	"	"	"			"	B	"		"
		"	3	"	"	"	"	"	-.8mA		"		"	"	"	"			"	C	"		"
		"	4	"	"	"	"	"			"		"	"	"	"	-.8mA		"	D	"		"
	V_{OL}	3007	5	"	"	"	"	"			"	16mA	"	0.8V	"	"			"	A		0.4	"
		"	6	"	"	"	"	"		16mA	"		"	2.0V	0.8V	"			"	B		"	"
		"	7	0.8V	"	"	"	"	16mA		"		"	"	2.0V	"			"	C		"	"
		"	8	2.0V	"	"	"	0.8V			"		"	"	2.0V	"	16mA		"	D		"	"
	V_{IC}		9								"			-12mA					"	1		-1.5	"
			10								"				-12mA				"	2		"	"
			11								"					-12mA			"	3		"	"
			12	-12mA							"								"	4		"	"
			13		-12mA						"								"	5		"	"
			14			-12mA					"								"	6		"	"
			15				-12mA				"								"	7		"	"
			16					-12mA			"								"	8		"	"
			17								"		-12mA						"	9		"	"
	I_{IL}	3009	18								"			0.4V					5.5V	1	-0.7	-1.6	mA
		"	19								"				0.4V				"	2	"	"	"
		"	20								"					0.4V			"	3	"	"	"
		"	21	0.4V							"								"	4	"	"	"
		"	22		0.4V						"								"	5	"	"	"
		"	23			0.4V					"								"	6	"	"	"
		"	24				0.4V				"								"	7	"	"	"
		"	25					0.4V			"								"	8	"	"	"
		"	26								"		0.4V						"	9	"	"	"
	I_{IH1}	3010	27								"			2.4V					"	1		40	µA
		"	28								"				2.4V				"	2		"	"
		"	29								"					2.4V			"	3		"	"
		"	30	2.4V							"								"	4		"	"
		"	31		2.4V						"								"	5		"	"
		"	32			2.4V					"								"	6		"	"
		"	33				2.4V				"								"	7		"	"
		"	34					2.4V			"								"	8		"	"
		"	35								"		2.4V						"	9		"	"
	I_{IH2}	"	36								"			5.5V					"	1		100	"
		"	37								"				5.5V				"	2		"	"
		"	38								"					5.5V			"	3		"	"
		"	39	5.5V							"								"	4		"	"
		"	40		5.5V						"								"	5		"	"
		"	41			5.5V					"								"	6		"	"
		"	42				5.5V				"								"	7		"	"
		"	43					5.5V			"								"	8		"	"
		"	44								"		5.5V						"	9		"	"
	I_{OS}	3011	45	5.5V	5.5V	5.5V	5.5V	5.5V			"	GND	5.5V	5.5V	5.5V	5.5V			"	A	-35	-85	mA
		"	46	"	"	"	"	"		GND	"		"	"	"	"			"	B	"	"	"
		"	47	"	"	"	"	"	GND		"		"	"	"	"			"	C	"	"	"
		"	48	"	"	"	"	"			"		"	"	"	"	GND		"	D	"	"	"
	I_{CCL}	3005	49				GND				"								"	V_{CC}	"	70	mA
	I_{CCH}	3005	50								"								"	V_{CC}	"	62	mA
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C, and V_{IC} tests are omitted.																						
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C, and V_{IC} tests are omitted.																						

See footnote 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; 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	Measured terminal	Test limits Min	Test limits Max	Unit
				4	5	6	7	8	C	B	GND	A	9	1	2	3	D	NC	V_{CC}				
7 1/ T_C=+25°C		3014	51	A	A	A	A	A	H	H	GND	H	A	A	A	A	H		5.0V				
		"	52	"	"	"	A	A	H	H	"	L	B	"	"	"	L		"				
		"	53	"	"	"	A	B	H	H	"	H	A	"	"	"	L		"				
		"	54	"	"	"	B	A	L	L	"	L	"	"	"	"	H		"				
		"	55	"	"	B	A	"	"	L	"	H	"	"	"	"	"		"				
		"	56	"	B	A	"	"	"	H	"	L	"	"	"	"	"		"				
		"	57	B	A	"	"	"	"	H	"	H	"	"	"	"	"		"			2/	
		"	58	A	"	"	"	"	H	L	"	L	"	"	"	B	"		"				
		"	59	"	"	"	"	"	"	L	"	H	"	"	B	A	"		"				
		"	60	"	"	"	"	"	"	H	"	L	"	B	A	A	"		"				
		"	61	"	"	"	"	"	"	H	"	H	"	A	A	A	"		"				
8	Repeat subgroup 7 at T_C = +125°C and T_C = -55°C.																						
9 T_C=+25°C	t_{PHL1}	3003 (Fig. 4)	62	5.0V	5.0V	5.0V	5.0V	5.0V			GND	OUT	5.0V	IN	5.0V	5.0V			5.0V	1 to A	3	16	ns
		"	63	"	"	"	"	"		OUT	"		"	5.0V	IN	5.0V			"	2 to B	"	"	"
		"	64	"	"	"	"	"		OUT	"		"	"	5.0V	IN			"	3 to B	"	"	"
		"	65	IN	"	"	"	"	OUT		"		"	"	"	5.0V			"	4 to C	"	"	"
		"	66	5.0V	IN	"	"	"			"	OUT	"	"	"	"			"	5 to A	"	"	"
		"	67	"	5.0V	IN	"	"	OUT		"		"	"	"	"			"	6 to C	"	"	"
		"	68	"	"	5.0V	IN	"	OUT		"		"	"	"	"			"	7 to C	"	"	"
		"	69	"	"	"	5.0V	IN			"		"	"	"	"	OUT		"	8 to D	"	"	"
		"	70	"	"	"	5.0V	5.0V			"	OUT	IN	"	"	"			"	9 to A	"	"	"
	t_{PHL2}	"	71	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	GND	IN	5.0V			"	2 to A	"	20	"
		"	72	IN	5.0V	"	"	"		OUT	"		"	"	GND	"			"	4 to B	"	"	"
		"	73	5.0V	IN	"	"	"		OUT	"		"	"	"	"			"	5 to B	"	"	"
		"	74	"	GND	IN	"	"			"	OUT	"	5.0V	"	"			"	6 to A	"	"	"
		"	75	"	"	5.0V	"	IN		OUT	"		"	"	"	"			"	8 to B	"	"	"
		"	76	"	"	5.0V	GND	5.0V	OUT		"		IN	"	"	"			"	9 to C	"	"	"
	t_{PLH1}	"	77	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	IN	5.0V	5.0V			"	1 to A	"	19	"
		"	78	"	"	"	"	"		OUT	"		"	"	IN	5.0V			"	2 to B	"	"	"
		"	79	"	"	"	"	"		OUT	"		"	"	"	IN			"	3 to B	"	"	"
		"	80	IN	"	"	"	"	OUT		"		"	"	"	5.0V			"	4 to C	"	"	"
		"	81	5.0V	IN	"	"	"			"	OUT	"	"	"	"			"	5 to A	"	"	"
		"	82	"	5.0V	IN	"	"	OUT		"		"	"	"	"			"	6 to C	"	"	"
		"	83	"	"	5.0V	IN	"	OUT		"		"	"	"	"			"	7 to C	"	"	"
		"	84	"	"	"	5.0V	IN			"		"	"	"	"	OUT		"	8 to D	"	"	"
		"	85	"	"	"	5.0V	5.0V			"	OUT	IN	"	"	"			"	9 to A	"	"	"
	t_{PLH2}	"	86	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	GND	IN	5.0V			"	2 to A	"	24	"
		"	87	IN	5.0V	"	"	"		OUT	"		"	"	GND	"			"	4 to B	"	"	"
		"	88	5.0V	IN	"	"	"		OUT	"		"	"	"	"			"	5 to B	"	"	"
		"	89	"	GND	IN	"	"			"	OUT	"	5.0V	"	"			"	6 to A	"	"	"
		"	90	"	"	5.0V	"	IN		OUT	"		"	"	"	"			"	8 to B	"	"	"
		"	91	"	"	5.0V	GND	5.0V	OUT		"		IN	"	"	"			"	9 to C	"	"	"
10 T_C=+125°C	t_{PHL1}	3003 (Fig. 4)	92	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	IN	5.0V	5.0V			"	1 to A	"	21	"
		"	93	"	"	"	"	"		OUT	"		"	5.0V	IN	5.0V			"	2 to B	"	"	"
		"	94	"	"	"	"	"		OUT	"		"	"	5.0V	IN			"	3 to B	"	"	"
		"	95	IN	"	"	"	"	OUT		"		"	"	"	5.0V			"	4 to C	"	"	"
		"	96	5.0V	IN	"	"	"			"	OUT	"	"	"	"			"	5 to A	"	"	"
		"	97	"	5.0V	IN	"	"	OUT		"		"	"	"	"			"	6 to C	"	"	"
		"	98	"	"	5.0V	IN	"	OUT		"		"	"	"	"			"	7 to C	"	"	"
		"	99	"	"	"	5.0V	IN			"		"	"	"	"	OUT		"	8 to D	"	"	"
		"	100	"	"	"	5.0V	5.0V			"	OUT	IN	"	"	"			"	9 to A	"	"	"
	t_{PHL2}	"	101	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	GND	IN	5.0V			"	2 to A	"	26	"
		"	102	IN	5.0V	"	"	"		OUT	"		"	"	GND	"			"	4 to B	"	"	"
		"	103	5.0V	IN	"	"	"		OUT	"		"	"	"	"			"	5 to B	"	"	"
		"	104	"	GND	IN	"	"			"	OUT	"	5.0V	"	"			"	6 to A	"	"	"
		"	105	"	"	5.0V	"	IN		OUT	"		"	"	"	"			"	8 to B	"	"	"
		"	106	"	"	5.0V	GND	5.0V	OUT		"		IN	"	"	"			"	9 to C	"	"	"

See footnote 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; 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	Measured terminal	Test limits		Unit
			Test no.	4	5	6	7	8	C	B	GND	A	9	1	2	3	D	NC	V_{CC}		Min	Max	
10	t_{PLH1}	3003	107	5.0V	5.0V	5.0V	5.0V	5.0V			GND	OUT	5.0V	IN	5.0V	5.0V			5.0V	1 to A	3	25	ns
T_C=+125°C		(Fig. 4)	108	"	"	"	"	"		OUT	"		"	5.0V	IN	5.0V			"	2 to B	"	"	"
		"	109	"	"	"	"	"		OUT	"		"	"	5.0V	IN			"	3 to B	"	"	"
		"	110	IN	"	"	"	"	OUT		"		"	"	"	5.0V			"	4 to C	"	"	"
		"	111	5.0V	IN	"	"	"			"	OUT	"	"	"	"			"	5 to A	"	"	"
		"	112	"	5.0V	IN	"	"	OUT		"		"	"	"	"			"	6 to C	"	"	"
		"	113	"	"	5.0V	IN	"	OUT		"		"	"	"	"			"	7 to C	"	"	"
		"	114	"	"	"	5.0V	IN			"		"	"	"	"	OUT		"	8 to D	"	"	"
		"	115	"	"	"	5.0V	5.0V			"	OUT	IN	"	"	"			"	9 to A	"	"	"
	t_{PLH2}	"	116	5.0V	5.0V	5.0V	5.0V	5.0V			"	OUT	5.0V	GND	IN	5.0V			"	2 to A	"	31	"
		"	117	IN	5.0V	"	"	"		OUT	"		"	"	GND	"			"	4 to B	"	"	"
		"	118	5.0V	IN	"	"	"		OUT	"		"	"	"	"			"	5 to B	"	"	"
		"	119	"	GND	IN	"	"			"	OUT	"	5.0V	"	"			"	6 to A	"	"	"
		"	120	"	"	5.0V	"	IN		OUT	"		"	"	"	"			"	8 to B	"	"	"
		"	121	"	"	5.0V	GND	5.0V	OUT		"		IN	"	"	"			"	9 to C	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																						

1/ Input voltages shown are: A = 2.4 V minimum and B = 0.8 V maximum.

2/ Output voltages shall be either: H ≥ 1.5 V, L ≤ 1.5 V.

TABLE III. Group A inspection for device type 02 .
Terminal conditions (pins not designated may be H ≥ 2.0 V; 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	Measured terminal	Test limits Min	Test limits Max	Unit
				4	5	6	7	E_I	A_2	A_1	GND	A_0	0	1	2	3	GS	E_0	V_{CC}				
1 T_C=+25°C	V_{OH}	3006	1					2.0V			GND	-.8mA							4.5V	A_0	2.4		V dc
		"	2					"	-.8mA	-.8mA	"	"							"	A_1	"		"
		"	3					"			"	"							"	A_2	"		"
		"	4					"			"	"					-.8mA		"	GS	"		"
		"	5					"			"	"						-.8mA	"	E_0	"		"
	V_{OL}	3007	6				0.8V	0.8V			"	16mA							"	A_0		0.4	"
		"	7				"	"		16mA	"								"	A_1		"	"
		"	8				"	"	16mA		"								"	A_2		"	"
		"	9				"	"			"						16mA		"	GS		"	"
		"	10	2.0V	2.0V	2.0V	2.0V	"			"							16mA	"	E_0		"	"
	V_{IC}		11								"		-12mA						"	0		-1.5	"
			12								"			-12mA					"	1		"	"
			13								"				-12mA				"	2		"	"
			14								"					-12mA			"	3		"	"
			15	-12mA							"								"	4		"	"
			16		-12mA						"								"	5		"	"
			17			-12mA					"								"	6		"	"
			18				-12mA				"								"	7		"	"
			19					-12mA			"								"	E_1		"	"
	I_{IL1}	3009	20					GND			"			0.4V					5.5V	1	1/	1/	mA
		"	21								"				0.4V				"	2	"	"	"
		"	22								"					0.4V			"	3	"	"	"
		"	23	0.4V							"								"	4	"	"	"
		"	24		0.4V						"								"	5	"	"	"
		"	25			0.4V					"								"	6	"	"	"
		"	26				0.4V				"								"	7	"	"	"
		"	27					0.4V			"								"	E_1	"	"	"
	I_{IL2}	"	28					GND			"		0.4V						"	0	-.7	-1.6	"
	I_{IH1}	3010	29								"			2.4V					"	1		80	µA
		"	30								"				2.4V				"	2		"	"
		"	31								"					2.4V			"	3		"	"
		"	32	2.4V							"								"	4		"	"
		"	33		2.4V						"								"	5		"	"
		"	34			2.4V					"								"	6		"	"
		"	35				2.4V				"								"	7		"	"
		"	36					2.4V			"								"	E_1		"	"
	I_{IH2}	"	37								"			5.5V					"	1		200	"
		"	38								"				5.5V				"	2		"	"
		"	39								"					5.5V			"	3		"	"
		"	40	5.5V							"								"	4		"	"
		"	41		5.5V						"								"	5		"	"
		"	42			5.5V					"								"	6		"	"
		"	43				5.5V				"								"	7		"	"
		"	44					5.5V			"								"	E_1		"	"
	I_{IH3}	"	45	GND	GND	GND	GND	GND			"		2.4V	GND	GND	GND			"	0		40	"
	I_{IH4}	"	46	GND	GND	GND	GND	GND			"		5.5V	GND	GND	GND			"	0		100	"
	I_{OS}	3011	47								"	GND							"	A_0	-35	-85	mA
		"	48							GND	"								"	A_1	"	"	"
		"	49						GND		"								"	A_2	"	"	"
		"	50								"						GND		"	GS	"	"	"
		"	51								"							GND	"	E_0	"	"	"
	I_{CCL}	3005	52				GND	GND			"								"	V_{CC}		60	"
	I_{CCH}	3005	53								"								"	V_{CC}		55	"

See footnote 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; L ≤ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Cases E,F Test no.	1 4	2 5	3 6	4 7	5 E_I	6 A_2	7 A_1	8 GND	9 A_0	10 0	11 1	12 2	13 3	14 GS	15 E_0	16 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C, and V_{IC} tests are omitted.																					
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C, and V_{IC} tests are omitted.																					
7 2/ T_C = +25°C		3014	54	A	A	A	A	A	H	H	GND	H	A	A	A	A	H	H	5.0V				
		"	55	"	"	"	A	B	H	H	"	H	"	"	"	"	H	L	"				
		"	56	"	"	"	B	"	L	L	"	L	"	"	"	"	L	H	"				
		"	57	"	"	B	A	"	"	L	"	H	"	"	"	"	"	"	"				
		"	58	"	B	A	"	"	"	H	"	L	"	"	"	"	"	"	"				
		"	59	B	A	"	"	"	"	H	"	H	"	"	"	"	"	"	"				
		"	60	A	"	"	"	"	H	L	"	L	"	"	"	B	"	"	"			3/	
		"	61	"	"	"	"	"	"	L	"	H	"	"	B	A	"	"	"				
		"	62	"	"	"	"	"	"	H	"	L	"	B	A	"	"	"	"				
		"	63	"	"	"	"	"	"	"	"	H	B	A	"	"	"	"	"				
		"	64	"	"	"	"	A	"	"	"	H	B	A	"	"	H	"	"				
8	Repeat subgroup 7 at T_C = +125°C and T_C = -55°C.																					
9 T_C=+25°C	t_{PHL1}	3003	65	5.0V	5.0V	5.0V	5.0V	GND			GND		IN	5.0V	5.0V	5.0V	OUT		5.0V	0 to GS	3	23	ns
	t_{PHL2}	(Fig. 5)	66	"	"	"	"	"			"	OUT		IN	5.0V	"			"	1 to A_0	"	19	"
		"	67	"	"	"	"	"		OUT	"				IN	"			"	2 to A_1	"	"	"
		"	68	"	"	"	"	"		OUT	"					IN			"	3 to A_1	"	"	"
		"	69	IN	"	"	"	"	OUT		"								"	4 to A_2	"	"	"
		"	70		IN	"	"	"			"	OUT							"	5 to A_0	"	"	"
		"	71			IN	"	"	OUT		"								"	6 to A_2	"	"	"
		"	72				IN	"	OUT		"								"	7 to A_2	"	"	"
	t_{PHL3}	"	73					IN			"							OUT	"	E_1 to E_0	"	"	"
	t_{PHL4}	"	74	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V		OUT	"	0 to E_0	"	"	"
	t_{PHL5}	"	75	5.0V	"	"	"	"			"	OUT		GND	IN	"			"	2 to A_0	"	20	"
		"	76	IN	"	"	"	"		OUT	"			"	GND	"			"	4 to A_1	"	"	"
		"	77	5.0V	IN	"	"	"		OUT	"			"	"	GND			"	5 to A_1	"	"	"
		"	78	GND	GND	IN	"	"			"	OUT		"	"	GND			"	6 to A_0	"	"	"
	t_{PHL6}	"	79					IN			"						OUT		"	E_1 to GS	"	"	"
	t_{PHL7}	"	80					"			"	OUT							"	E_1 to A_0	"	"	"
		"	81					"		OUT	"								"	E_1 to A_1	"	"	"
		"	82					"	OUT		"								"	E_1 to A_2	"	"	"
	t_{PLH1}	"	83	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V	OUT		"	0 to GS	"	30	"
	t_{PLH2}	"	84	"	"	"	"	"			"	OUT		IN	5.0V	"			"	1 to A_0	"	25	"
		"	85	"	"	"	"	"		OUT	"				IN	"			"	2 to A_1	"	"	"
		"	86	"	"	"	"	"		OUT	"					IN			"	3 to A_1	"	"	"
		"	87	IN	"	"	"	"	OUT		"								"	4 to A_2	"	"	"
		"	88		IN	"	"	"			"	OUT							"	5 to A_0	"	"	"
		"	89			IN	"	"	OUT		"								"	6 to A_2	"	"	"
		"	90				IN	"	OUT		"								"	7 to A_2	"	"	"
	t_{PLH3}	"	91					IN			"							OUT	"	E_1 to E_0	"	"	"
	t_{PLH4}	"	92	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V		OUT	"	0 to E_0	"	"	"
	t_{PLH5}	"	93	5.0V	"	"	"	"			"	OUT		GND	IN	"			"	2 to A_0	"	26	"
		"	94	IN	"	"	"	"		OUT	"			"	GND	"			"	4 to A_1	"	"	"
		"	95	5.0V	IN	"	"	"		OUT	"			"	"	GND			"	5 to A_1	"	"	"
		"	96	GND	GND	IN	"	"			"	OUT		"	"	GND			"	6 to A_0	"	"	"
	t_{PLH6}	"	97					IN			"						OUT		"	E_1 to GS	"	17	"
	t_{PLH7}	"	98					"			"	OUT							"	E_1 to A_0	"	20	"
		"	99					"		OUT	"								"	E_1 to A_1	"	"	"
		"	100					"	OUT		"								"	E_1 to A_2	"	"	"
10 T_C=+125°C	t_{PHL1}	3003	101	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V	OUT		"	0 to GS	"	30	"
	t_{PHL2}	(Fig. 5)	102	"	"	"	"	"			"	OUT		IN	5.0V	"			"	1 to A_0	"	25	"
	"	"	103	"	"	"	"	"		OUT	"				IN	"			"	2 to A_1	"	"	"
	"	"	104	"	"	"	"	"		OUT	"					IN			"	3 to A_1	"	"	"
	"	"	105	IN	"	"	"	"	OUT		"								"	4 to A_2	"	"	"
	"	"	106		IN	"	"	"			"	OUT							"	5 to A_0	"	"	"

See footnote 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; 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	Measured terminal	Test limits		Unit
			Test no.	4	5	6	7	E_I	A_2	A_1	GND	A_0	0	1	2	3	GS	E_0	V_{CC}		Min	Max	
10	t_{PHL2}	3003	107			IN	5.0V	GND	OUT		GND								5.0V	6 to A_2	3	25	ns
T_C=+125°C		(Fig. 5)	108				IN	GND	OUT		"								"	7 to A_2	"	"	"
	t_{PHL3}	"	109					IN			"							OUT	"	E_1 to E_0	"	"	"
	t_{PHL4}	"	110	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V		OUT	"	0 to E_0	"	"	"
	t_{PHL5}	"	111	5.0V	"	"	"	"			"	OUT		GND	IN	"			"	2 to A_0	"	26	"
		"	112	IN	"	"	"	"		OUT	"			"	GND	"			"	4 to A_1	"	"	"
		"	113	5.0V	IN	"	"	"		OUT	"			"	"	GND			"	5 to A_1	"	"	"
		"	114	GND	GND	IN	"	"			"	OUT		"	"	GND			"	6 to A_0	"	"	"
	t_{PHL6}	"	115					IN			"						OUT		"	E_1 to GS	"	28	"
	t_{PHL7}	"	116					"			"	OUT							"	E_1 to A_0	"	"	"
		"	117					"		OUT	"								"	E_1 to A_1	"	"	"
		"	118					"	OUT		"								"	E_1 to A_2	"	"	"
	t_{PLH1}	"	119	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V	OUT		"	0 to GS	"	34	"
	t_{PLH2}	"	120	"	"	"	"	"			"	OUT		IN	5.0V	"			"	1 to A_0	"	26	"
		"	121	"	"	"	"	"		OUT	"				IN	"			"	2 to A_1	"	"	"
		"	122	"	"	"	"	"		OUT	"					IN			"	3 to A_1	"	"	"
		"	123	IN	"	"	"	"	OUT		"								"	4 to A_2	"	"	"
		"	124		IN	"	"	"			"	OUT							"	5 to A_0	"	"	"
		"	125			IN	"	"	OUT		"								"	6 to A_2	"	"	"
		"	126				IN	"	OUT		"								"	7 to A_2	"	"	"
	t_{PLH3}	"	127					IN			"							OUT	"	E_1 to E_0	"	24	"
	t_{PLH4}	"	128	5.0V	5.0V	5.0V	5.0V	GND			"		IN	5.0V	5.0V	5.0V		OUT	"	0 to E_0	"	20	"
	t_{PLH5}	"	129	5.0V	"	"	"	"			"	OUT		GND	IN	"			"	2 to A_0	"	26	"
		"	130	IN	"	"	"	"		OUT	"			"	GND	"			"	4 to A_1	"	"	"
		"	131	5.0V	IN	"	"	"		OUT	"			"	"	GND			"	5 to A_1	"	"	"
		"	132	GND	GND	IN	"	"			"	OUT		"	"	GND			"	6 to A_0	"	"	"
	t_{PLH6}	"	133					IN			"						OUT		"	E_1 to GS	"	24	"
	t_{PLH7}	"	134					"			"	OUT							"	E_1 to A_0	"	28	"
		"	135					"		OUT	"								"	E_1 to A_1	"	"	"
		"	136					"	OUT		"								"	E_1 to A_2	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																						

1/ I_{IL1} limits for National are –1.2/-2.8 mA.

2/ Input voltages shown are: A = 2.4 V minimum and B = 0.8 V maximum.

3/ Output voltages shall be either: H ≥ 1.5 V, L ≤ 1.5 V.

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

Subgroup	Symbol	MIL-STD-883 method	Cases E,F Test no.	1 $\overline{4}$	2 $\overline{5}$	3 $\overline{6}$	4 $\overline{7}$	5 $\overline{E_1}$	6 $\overline{A_2}$	7 $\overline{A_1}$	8 GND	9 $\overline{A_0}$	10 $\overline{0}$	11 $\overline{1}$	12 $\overline{2}$	13 $\overline{3}$	14 $\overline{GS}$	15 $\overline{E_0}$	16 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
1 T_C=+25°C	V_{OH}	3006	1	4.5V	4.5V	4.5V	4.5V	2.0V			GND		4.5V	4.5V	4.5V	4.5V		-.8mA	4.5 V	$\overline{E_0}$	2.4		V dc
		"	2	"	"	"	4.5V	"			"		GND	"	4.5V	4.5V	-.8mA		"	$\overline{GS}$	"		"
		"	3	"	"	"	GND	"			"	-.8 mA	4.5V	"	GND	GND			"	$\overline{A_0}$	"		"
		"	4	"	"	GND	"	"		-.8mA	"		4.5V	"	4.5V	GND			"	$\overline{A_1}$	"		"
		"	5	GND	GND	GND	"	"	-.8mA		"		2.0V	2.0V	2.0V	2.0V			"	$\overline{A_2}$	"		"
	V_{OL}	3007	6	2.0V	2.0V	2.0V	2.0V	0.8V			"		2.0V	2.0V	2.0V	2.0V			"	$\overline{E_0}$		0.4	"
		"	7	"	"	"	"	"			"		0.8V	2.0V	"	"	16mA	16mA	"	$\overline{GS}$		"	"
		"	8	"	"	"	"	"			"	16mA	2.0V	0.8V	"	"			"	$\overline{A_0}$		"	"
		"	9	"	"	"	"	"			"	"	"	2.0V	0.8V	0.8V			"	$\overline{A_0}$		"	"
		"	10	"	"	"	0.8V	"			"		"	"	"	2.0V			"	$\overline{A_1}$		"	"
		"	11	"	"	"	2.0V	"		16mA	"		"	"	0.8V	"			"	$\overline{A_1}$		"	"
		"	12	"	"	0.8V	"	"		16mA	"		"	"	2.0V	"			"	$\overline{A_2}$		"	"
		"	13	0.8V	"	2.0V	"	"	16mA		"		"	"	"	"			"	$\overline{A_2}$		"	"
		"	14	2.0V	0.8V	2.0V	"	"	16mA		"		"	"	"	"			"			"	"
	I_{IH1}	3010	15	2.4V	GND	GND	GND	4.5V			"		GND	GND	GND	GND			5.5V	$\overline{4}$		80	µA
	"	"	16	GND	2.4V	GND	"	"			"		"	"	"	"			"	$\overline{5}$		"	"
	"	"	17	"	GND	2.4V	"	"			"		"	"	"	"			"	$\overline{6}$		"	"
	"	"	18	"	"	GND	2.4V	"			"		"	"	"	"			"	$\overline{7}$		"	"
	"	"	19	"	"	"	GND	2.4V			"		"	"	"	"			"	$\overline{E_1}$		"	"
	"	"	20	"	"	"	"	4.5V			"		"	2.4V	"	"			"	1		"	"
	"	"	21	"	"	"	"	"			"		"	GND	2.4V	"			"	2		"	"
	"	"	22	"	"	"	"	"			"		"	"	GND	2.4V			"	3		"	"
	"	"	23	"	"	"	"	"			"		2.4V	"	"	GND			"	0		40	"
	I_{IH3}	"	24	5.5V	GND	"	"	"			"		GND	"	"	"			"	4		200	"
	I_{IH2}	"	25	GND	5.5V	"	"	"			"		"	"	"	"			"	5		"	"
	"	"	26	"	GND	5.5V	"	"			"		"	"	"	"			"	6		"	"
	"	"	27	"	"	GND	5.5V	"			"		"	"	"	"			"	7		"	"
	"	"	28	"	"	"	GND	5.5V			"		"	"	"	"			"	$\overline{E_1}$		"	"
	"	"	29	"	"	"	"	4.5V			"		"	5.5V	"	"			"	1		"	"
	"	"	30	"	"	"	"	"			"		"	GND	5.5V	"			"	2		"	"
	"	"	31	"	"	"	"	"			"		"	"	GND	5.5V			"	3		"	"
	I_{IH4}	"	32	"	"	"	"	"			"		5.5V	"	"	GND			"	0		100	"
	I_{IL1}	3009	33	4.5V	4.5V	4.5V	4.5V	GND			"		0.4V	4.5V	4.5V	4.5V			"	$\overline{0}$	-.7	-1.6	mA
		"	34					0.4V			"								"	$\overline{E_1}$	-.7	-1.6	"
	I_{IL2}	"	35	0.4V	4.5V	4.5V	4.5V	GND			"		4.5V	4.5V	4.5V	4.5V			"	$\overline{4}$	-1.4	-3.2	"
	"	"	36	4.5V	0.4V	"	"	"			"		"	"	"	"			"	$\overline{5}$	"	"	"
	"	"	37	"	4.5V	0.4V	"	"			"		"	"	"	"			"	$\overline{6}$	"	"	"
	"	"	38	"	"	4.5V	0.4V	"			"		"	"	"	"			"	$\overline{7}$	"	"	"
	"	"	39	"	"	"	4.5V	"			"		"	0.4V	"	"			"	1	"	"	"
	"	"	40	"	"	"	"	"			"		"	4.5V	0.4V	"			"	2	"	"	"
	"	"	41	"	"	"	"	"			"		"	"	4.5V	0.4V			"	3	"	"	"
	I_{OS}	3011	42					4.5V			"								"	$\overline{E_0}$	-20	-80	"
	"	"	43					"			"								"	$\overline{GS}$	"	"	"
	"	"	44					"			"	GND							"	$\overline{A_0}$	"	"	"
	"	"	45					"		GND	"						GND	GND	"	$\overline{A_1}$	"	"	"
	"	"	46					"	GND		"								"	A_2	"	"	"
	V_{IC}		47	-12mA							"								4.5V	$\overline{4}$		-1.5	V dc
			48		-12mA						"								"	$\overline{5}$		"	"
			49			-12mA					"								"	$\overline{6}$		"	"
			50				-12mA				"								"	$\overline{7}$		"	"
			51					-12mA			"								"	$\overline{E_1}$		"	"
			52								"		-12mA						"	0		"	"
			53								"			-12mA					"	1		"	"
			54								"				-12mA				"	2		"	"
			55								"					-12mA			"	3		"	"
	I_{CCC}	3005	56			GND	GND				"								5.5V	V_{CC}		70	mA

See footnote 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; L ≤ 0.8 V; or open)

Subgroup	Symbol	MIL-STD-883 method	Cases E,F Test no.	1 $\overline{4}$	2 $\overline{5}$	3 $\overline{6}$	4 $\overline{7}$	5 $\overline{E}_1$	6 $\overline{A}_2$	7 $\overline{A}_1$	8 GND	9 $\overline{A}_0$	10 $\overline{0}$	11 $\overline{1}$	12 $\overline{2}$	13 $\overline{3}$	14 $\overline{GS}$	15 $\overline{E}_0$	16 V_{CC}	Measured terminal	Test limits Min	Test limits Max	Unit
2	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = +125°C, and V_{IC} tests are omitted.																						
3	Same tests, terminal conditions, and limits as for subgroup 1, except T_C = -55°C, and V_{IC} tests are omitted.																						
7 1/ T_C=+25°C		3014	57	B	B	B	B	A	H	H	GND	H	B	B	B	B	H	H	5.0V				
		"	58	A	A	A	A	B	H	H	"	H	A	A	A	A	H	L	"				
		"	59	"	"	B	B	"	L	L	"	L	"	"	"	"	L	H	"				
		"	60	"	"	B	A	"	"	L	"	H	"	"	"	"	"	"	"				
		"	61	"	B	A	"	"	"	H	"	L	"	"	"	"	"	"	"				
		"	62	B	A	"	"	"	"	H	"	H	"	"	"	"	"	"	"				
		"	63	A	"	"	"	"	H	L	"	L	"	"	"	B	"	"	"			2/	
		"	64	"	"	"	"	"	"	L	"	H	"	"	B	A	"	"	"				
		"	65	"	"	"	"	"	"	H	"	L	"	B	A	A	"	"	"				
		"	66	"	"	"	"	"	"	H	"	H	B	A	A	A	"	"	"				
8	Repeat subgroup 7 at T_C = +125°C and T_C = -55°C.																						
9 T_C=+25°C	t_{PLH1}	3003 (Fig. 6)	67	2.4V	2.4V	2.4V	2.4V	GND			GND		IN	2.4V	2.4V	2.4V		OUT	5.0V	$\overline{0} - \overline{E}_0$	6	15	ns
	t_{PHL1}	"	68	"	"	"	"	GND			"		IN	"	"	"		OUT	"	$\overline{0} - \overline{E}_0$	9	33	"
	t_{PHL2}	"	69	"	"	"	"	IN			"		GND	"	"	"	OUT		"	$\overline{E1} - \overline{GS}$	"	23	"
	t_{PLH2}	"	70	"	"	"	"	"			"		GND	"	"	"	OUT		"	$\overline{E1} - \overline{GS}$	"	34	"
	t_{PLH3}	"	71	"	"	"	"	"			"		2.4V	"	"	"		OUT	"	$\overline{E1} - \overline{E}_0$	"	24	"
	t_{PHL3}	"	72	"	"	"	"	"			"		"	"	"	"		OUT	"	$\overline{E1} - \overline{E}_0$	"	43	"
	t_{PLH4}	"	73	"	"	"	GND	"			"	OUT	"	"	"	"			"	$\overline{E1} - \overline{A}_0$	"	25	"
		"	74	"	"	"	"	"		OUT	"		"	"	"	"			"	$\overline{E1} - \overline{A}_1$	"	25	"
		"	75	"	"	"	"	"	OUT		"		"	"	"	"			"	$\overline{E1} - \overline{A}_2$	"	25	"
	t_{PHL4}	"	76	"	"	"	"	"			"	OUT	"	"	"	"			"	$\overline{E1} - \overline{A}_0$	"	30	"
		"	77	"	"	"	"	"		OUT	"		"	"	"	"			"	$\overline{E1} - \overline{A}_1$	"	30	"
		"	78	"	"	"	"	"	OUT		"		"	"	"	"			"	$\overline{E1} - \overline{A}_2$	"	30	"
	t_{PHL5}	"	79	"	"	"	2.4V	GND			"		IN	"	"	"			"	$\overline{0} - \overline{GS}$	15	45	"
	t_{PHL5}	"	80	"	"	"	"	"			"		IN	"	"	"			"	$\overline{0} - \overline{GS}$	9	29	"
	t_{PLH6}	"	81 3/	"	"	"	"	"			"	OUT	2.4V	IN	"	"			"	$\overline{1} - \overline{A}_0$	"	35	"
		"	82 4/	"	"	"	"	"			"	OUT	"	GND	IN	"			"	$\overline{2} - \overline{A}_0$	"	"	"
		"	83 3/	"	"	"	"	"		OUT	"		"	2.4V	IN	"			"	$\overline{2} - \overline{A}_1$	"	"	"
		"	84 3/	"	"	"	"	"			"	OUT	"	"	2.4V	IN			"	$\overline{3} - \overline{A}_0$	"	"	"
		"	85 3/	"	"	"	"	"		OUT	"		"	"	"	IN			"	$\overline{3} - \overline{A}_1$	"	"	"
		"	86 4/	IN	"	"	"	"			"	OUT	"	"	"	GND			"	$\overline{4} - \overline{A}_0$	"	"	"
		"	87 3/	IN	"	"	"	"	OUT		"		"	"	"	2.4V			"	$\overline{4} - \overline{A}_1$	"	"	"
		"	88 3/	2.4V	IN	"	"	"			"	OUT	"	"	"	"			"	$\overline{5} - \overline{A}_0$	"	"	"
		"	89 4/	"	IN	"	"	"		OUT	"		"	"	GND	"			"	$\overline{5} - \overline{A}_1$	"	"	"
		"	90 4/	"	2.4V	IN	"	"			"	OUT	"	GND	2.4V	"			"	$\overline{6} - \overline{A}_0$	"	"	"
		"	91 3/	"	"	IN	"	"		OUT	"		"	2.4V	"	"			"	$\overline{6} - \overline{A}_1$	"	"	"
		"	92 3/	"	"	IN	"	"	OUT		"		"	"	"	"			"	$\overline{6} - \overline{A}_2$	"	"	"
		"	93 3/	"	"	2.4V	IN	"			"	OUT	"	"	"	"			"	$\overline{7} - \overline{A}_0$	"	"	"
		"	94 3/	"	"	"	IN	"		OUT	"		"	"	"	"			"	$\overline{7} - \overline{A}_1$	"	"	"
		"	95 3/	"	"	"	IN	"	OUT		"		"	"	"	"			"	$\overline{7} - \overline{A}_2$	"	"	"
	t_{PHL6}	"	96 3/	"	"	"	2.4V	"			"	OUT	"	IN	"	"			"	$\overline{1} - \overline{A}_0$	"	"	"
		"	97 4/	"	"	"	"	"			"	OUT	"	GND	IN	"			"	$\overline{2} - \overline{A}_0$	"	"	"
		"	98 3/	"	"	"	"	"		OUT	"		"	2.4V	IN	"			"	$\overline{2} - \overline{A}_1$	"	"	"
		"	99 3/	"	"	"	"	"			"	OUT	"	"	2.4V	IN			"	$\overline{3} - \overline{A}_0$	"	"	"
		"	100 3/	"	"	"	"	"		OUT	"		"	"	"	IN			"	$\overline{3} - \overline{A}_1$	"	"	"
		"	101 4/	IN	"	"	"	"			"	OUT	"	"	"	GND			"	$\overline{4} - \overline{A}_0$	"	"	"
		"	102 3/	IN	"	"	"	"	OUT		"		"	"	"	2.4V			"	$\overline{4} - \overline{A}_2$	"	"	"
		"	103 3/	2.4V	IN	"	"	"			"	OUT	"	"	"	"			"	$\overline{5} - \overline{A}_0$	"	"	"
		"	104 4/	"	IN	"	"	"		OUT	"		"	"	GND	"			"	$\overline{5} - \overline{A}_1$	"	"	"
		"	105 4/	"	2.4V	IN	"	"			"	OUT	"	GND	2.4V	"			"	$\overline{6} - \overline{A}_0$	"	"	"
		"	106 3/	"	"	IN	"	"		OUT	"		"	2.4V	"	"			"	$\overline{6} - \overline{A}_1$	"	"	"
		"	107 3/	"	"	IN	"	"	OUT		"		"	"	"	"			"	$\overline{6} - \overline{A}_2$	"	"	"
		"	108 3/	"	"	2.4V	IN	"			"	OUT	"	"	"	"			"	$\overline{7} - \overline{A}_0$	"	"	"
		"	109 3/	"	"	"	IN	"		OUT	"		"	"	"	"			"	$\overline{7} - \overline{A}_1$	"	"	"
		"	110 3/	"	"	"	IN	"	OUT		"		"	"	"	"			"	$\overline{7} - \overline{A}_2$	"	"	"

See footnote 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; 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	Measured terminal	Test limits		Unit
			Test no.	$\overline{4}$	$\overline{5}$	$\overline{6}$	$\overline{7}$	$\overline{E}_1$	$\overline{A}_2$	$\overline{A}_1$	GND	$\overline{A}_0$	$\overline{0}$	$\overline{1}$	$\overline{2}$	$\overline{3}$	$\overline{GS}$	$\overline{E}_0$	V_{CC}		Min	Max	
10 T_C=+125°C	t_{PLH1}	3003	111	2.4V	2.4V	2.4V	2.4V	GND			GND		IN	2.4V	2.4V	2.4V		OUT	5.0V	$\overline{0} - \overline{E}_0$	6	22	ns
	t_{PHL1}	(Fig. 6)	112	"	"	"	"	GND			"		IN	"	"	"		OUT	"	$\overline{0} - \overline{E}_0$	9	43	"
	t_{PLH2}	"	113	"	"	"	"	IN			"		GND	"	"	"	OUT		"	$\overline{E}_1 - \overline{GS}$	"	32	"
	t_{PHL2}	"	114	"	"	"	"	"			"		GND	"	"	"	OUT		"	$\overline{E}_1 - \overline{GS}$	"	38	"
	t_{PLH3}	"	115	"	"	"	"	"			"		2.4V	"	"	"		OUT	"	$\overline{E}_1 - \overline{E}_0$	"	32	"
	t_{PHL3}	"	116	"	"	"	"	"			"		"	"	"	"		OUT	"	$\overline{E}_1 - \overline{E}_0$	"	48	"
	t_{PLH4}	"	117	"	"	"	GND	"			"	OUT	"	"	"	"			"	$\overline{E}_1 - \overline{A}_0$	"	37	"
		"	118	"	"	"	"	"		OUT	"		"	"	"	"			"	$\overline{E}_1 - \overline{A}_1$	"	37	"
		"	119	"	"	"	"	"	OUT		"		"	"	"	"			"	$\overline{E}_1 - \overline{A}_2$	"	37	"
	t_{PHL4}	"	120	"	"	"	"	"			"	OUT	"	"	"	"			"	$\overline{E}_1 - \overline{A}_0$	"	38	"
		"	121	"	"	"	"	"		OUT	"		"	"	"	"			"	$\overline{E}_1 - \overline{A}_1$	"	38	"
		"	122	"	"	"	"	"	OUT		"		"	"	"	"			"	$\overline{E}_1 - \overline{A}_2$	"	38	"
	t_{PLH5}	"	123	"	"	"	2.4V	GND			"		IN	"	"	"	OUT		"	$\overline{0} - \overline{GS}$	15	56	"
	t_{PHL5}	"	124	"	"	"	"	"			"		IN	"	"	"	OUT		"	$\overline{0} - \overline{GS}$	9	34	"
	t_{PLH6}	"	125 3/	"	"	"	"	"			"	OUT	2.4V	IN	"	"			"	$\overline{1} - \overline{A}_0$	"	52	"
		"	126 4/	"	"	"	"	"			"	OUT	"	GND	IN	"			"	$\overline{2} - \overline{A}_0$	"	"	"
		"	127 3/	"	"	"	"	"		OUT	"		"	2.4V	IN	"			"	$\overline{2} - \overline{A}_1$	"	"	"
		"	128 3/	"	"	"	"	"			"	OUT	"	"	2.4V	IN			"	$\overline{3} - \overline{A}_0$	"	"	"
		"	129 3/	"	"	"	"	"		OUT	"		"	"	"	IN			"	$\overline{3} - \overline{A}_1$	"	"	"
		"	130 4/	IN	"	"	"	"			"	OUT	"	"	"	GND			"	$\overline{4} - \overline{A}_0$	"	"	"
		"	131 3/	IN	"	"	"	"	OUT		"		"	"	"	2.4V			"	$\overline{4} - \overline{A}_2$	"	"	"
		"	132 3/	2.4V	IN	"	"	"			"	OUT	"	"	"	"			"	$\overline{5} - \overline{A}_0$	"	"	"
		"	133 4/	"	IN	"	"	"		OUT	"		"	"	GND	"			"	$\overline{5} - \overline{A}_1$	"	"	"
		"	134 4/	"	2.4V	IN	"	"			"	OUT	"	GND	2.4V	"			"	$\overline{6} - \overline{A}_0$	"	"	"
		"	135 3/	"	"	IN	"	"		OUT	"		"	2.4V	"	"			"	$\overline{6} - \overline{A}_1$	"	"	"
		"	136 3/	"	"	IN	"	"	OUT		"		"	"	"	"			"	$\overline{6} - \overline{A}_2$	"	"	"
		"	137 3/	"	"	2.4V	IN	"			"	OUT	"	"	"	"			"	$\overline{7} - \overline{A}_0$	"	"	"
		"	138 3/	"	"	"	IN	"		OUT	"		"	"	"	"			"	$\overline{7} - \overline{A}_1$	"	"	"
		"	139 3/	"	"	"	IN	"	OUT		"		"	"	"	"			"	$\overline{7} - \overline{A}_2$	"	"	"
	t_{PHL6}	"	140 3/	"	"	"	2.4V	"			"	OUT	"	IN	"	"			"	$\overline{1} - \overline{A}_0$	"	"	"
		"	141 4/	"	"	"	"	"			"	OUT	"	GND	IN	"			"	$\overline{2} - \overline{A}_0$	"	"	"
		"	142 3/	"	"	"	"	"		OUT	"		"	2.4V	IN	"			"	$\overline{2} - \overline{A}_1$	"	"	"
		"	143 3/	"	"	"	"	"			"	OUT	"	"	2.4V	IN			"	$\overline{3} - \overline{A}_0$	"	"	"
		"	144 3/	"	"	"	"	"		OUT	"		"	"	"	IN			"	$\overline{3} - \overline{A}_1$	"	"	"
		"	145 4/	IN	"	"	"	"			"	OUT	"	"	"	GND			"	$\overline{4} - \overline{A}_0$	"	"	"
		"	146 3/	IN	"	"	"	"	OUT		"		"	"	"	2.4V			"	$\overline{4} - \overline{A}_2$	"	"	"
		"	147 3/	2.4V	IN	"	"	"			"	OUT	"	"	"	"			"	$\overline{5} - \overline{A}_0$	"	"	"
		"	148 4/	"	IN	"	"	"		OUT	"		"	"	GND	"			"	$\overline{5} - \overline{A}_1$	"	"	"
		"	149 4/	"	2.4V	IN	"	"			"	OUT	"	GND	2.4V	"			"	$\overline{6} - \overline{A}_0$	"	"	"
		"	150 3/	"	"	IN	"	"		OUT	"		"	2.4V	"	"			"	$\overline{6} - \overline{A}_1$	"	"	"
		"	151 3/	"	"	IN	"	"	OUT		"		"	"	"	"			"	$\overline{6} - \overline{A}_2$	"	"	"
		"	152 3/	"	"	2.4V	IN	"			"	OUT	"	"	"	"			"	$\overline{7} - \overline{A}_0$	"	"	"
		"	153 3/	"	"	"	IN	"		OUT	"		"	"	"	"			"	$\overline{7} - \overline{A}_1$	"	"	"
		"	154 3/	"	"	"	IN	"	OUT		"		"	"	"	"			"	$\overline{7} - \overline{A}_2$	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																						

1/ Input voltages shown are A = 2.4 V minimum and V = 0.8 V maximum.

2/ Output voltages shall be H ≥ 1.5 V, L ≤ 1.5 V.

3/ 2 gate delay.

4/ 3 gate delay.

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 specified and as follows.

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

5. PACKAGING

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

6. NOTES

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

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

6.2 Acquisition requirements. Acquisition documents should specify the following:

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

b. Complete part number (see 1.2).

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

d. Requirements for certificate of compliance, if applicable.

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

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

g. Requirements for product assurance options.

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

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 43128-3990.

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-STD-1331, and as follows:

GND ..... Ground zero voltage potential.
I_{IN} ..... Current flowing into an input terminal
V_{IN} ..... Voltage level at an input terminal.

6.6 Logistic support. Lead materials and finishes (see 3.3) are interchangeable. Unless otherwise specified, microcircuits acquired for Government logistic support will be acquired to device class B (see 1.2.2), lead material and finish A (see 3.4). Longer length leads and lead forming should not affect the part number.

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

Military device type	Generic-industry type
01	54147
02	54148
03	9318

6.8 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

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

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

Preparing activity:
DLA - CC

Project 5962-2100

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 .