MILITARY SPECIFICATION

MICROCIRCUITS, DIGITAL, BIPOLAR, LOW-POWER SCHOTTKY, TTL, NAND GATES, MONOLITHIC SILICON

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

1. SCOPE

1.1 Scope. This specification covers the detail requirements for monolithic silicon, low power Schottky, TTL, positive NAND logic gate microcircuits. Two product assurance classes and a choice of case outlines and lead finishes are provided for each type and are reflected in the complete part number.

1.2 Part number. The part number shall be in accordance with MIL-M-38510.

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

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

1.2.2 Device class. The device class shall be the product assurance level as defined in MIL-M-38510.

1.2.3 Case outlines. The case outlines shall be designated as follows:

Letter	Case outline (see MIL-M-38510, appendix C)
A	F-1 (14-lead, 1/4" x 1/4"), flat package
B	F-3 (14-lead, 3/16" x 1/4"), flat package
C	D-1 (14-lead, 1/4" x 3/4"), dual-in-line package
D	F-2 (14-lead, 1/4" x 3/8"), flat package
2	C-2 (20-terminal, .350" x .350"), square chip carrier package)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Rome Air Development Center, (RBE-2) Griffiss AFB, NY 13441, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 5962

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 -18 mA to +5.5 V dc
Storage temperature range	-65°C to +150°C
Maximum power dissipation per gate, (P_D) 1/	6.1 mW dc
Lead temperature (soldering, 10 seconds)	+300°C
Thermal resistance, junction-to-case (θ_{JC}):	
Cases A, B, C, and D	(See MIL-M-38510, appendix C)
Case 2	+80°C/W 2/
Junction temperature (T_J) 3/	+175°C

1.4 Recommended operating conditions.

Supply voltage (V_{CC})	4.5 V dc minimum to 5.5 V dc maximum
Minimum high level input voltage (V_{IH})	+2.0 V dc
Maximum low level input voltage (V_{IL})	+0.7 V dc
Case operating temperature range (T_C)	-55°C to +125°C

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specification and standard. The following specification and standard form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Departments of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATION

MILITARY

MIL-M-38510 - Microcircuits, General Specification for.

STANDARD

MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

(Copies of the specification and standard required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Detail specification. The individual item requirements shall be in accordance with MIL-M-38510, and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-M-38510 and herein.

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

2/ When a thermal resistance value is included in MIL-M-38510, appendix C, it shall supersede the value stated herein.

3/ Maximum junction temperature shall not be exceeded except for allowable short duration burn-in screening conditions in accordance with 5004 of MIL-STD-883.

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

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

3.2.3. Schematic circuits. Schematic circuits shall be submitted to the preparing activity prior to inclusion of a manufacturer's device in this specification and shall be submitted to the qualifying activity and agent activity (DESC-ECS) as a prerequisite for qualification. All qualified manufacturers' schematics shall be maintained by the agent activity and will be available upon request.

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

3.3 Lead material and finish. Lead material and finish shall be in accordance with MIL-M-38510 (see 6.4).

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

3.4.1 Post-irradiation performance characteristics. The electrical performance characteristics of radiation hardness assured devices following exposure to the designated radiation levels are as specified in table III, subgroups 1 and 9 and apply at an ambient temperature of +25°C.

3.5 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.

3.6 Marking. Marking shall be in accordance with MIL-M-38510.

3.7 Microcircuit group assignment. The devices covered by this specification shall be in microcircuit group number 8 (see MIL-M-38510, appendix E).

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-M-38510 and methods 5005 and 5007, as applicable, of MIL-STD-883, except as modified herein.

4.2 Screening. Screening shall be in accordance with method 5004 of MIL-STD-883, and shall be conducted on all devices prior to qualification and quality conformance inspection. The following additional criteria shall apply:

a. Burn-in test (method 1015 of MIL-STD-883).

(1) Test condition D, E, or F, using the circuit shown on figure 3 or equivalent.

(2) T_A = +125°C minimum.

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. The percent defective allowable (PDA) shall be as specified in MIL-M-38510.

4.3 Qualification inspection. Qualification inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.4).

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-M-38510. Inspections to be performed shall be those specified in method 5005 of MIL-STD-883 and herein for groups A, B, C, D, and E inspections (see 4.4.1 through 4.4.4).

TABLE I. Electrical characteristics.

Test	Symbol	Conditions $-55^{\circ}C \leq T_C \leq +125^{\circ}C$	Device type	Limits		Unit
				Min	Max	
High-level output voltage	V_{OH}	V_{CC} = 4.5 V; V_{IL} = 0.7 V; I_{OH} = -400 µA	01,03,05, 07,09	2.5		V
Low-level output voltage	V_{OL}	V_{CC} = 4.5 V; V_{IH} = 2.0 V; I_{OL} = 4 mA	All		0.4	V
Input clamp voltage	V_{IC}	V_{CC} = 4.5 V; I_{IN} = -18 mA; T_C = +25°C	All		-1.5	V
Collector cut-off current	I_{CEX}	V_{CC} = 4.5 V; V_{IL} = 0.7 V; V_{OH} = 5.5 V	02,04,06 08		100	µA
High-level input current	I_{IH1}	V_{CC} = 5.5 V; V_{IH} = 2.7 V	All		20	µA
	I_{IH2}	V_{CC} = 5.5 V; V_{IH} = 5.5 V	All		100	µA
Low-level input current	I_{IL}	V_{CC} = 5.5 V; V_{IL} = 0.4 V	01,02,03, 04,05,06,09	-30	-400	µA
			07	-30	-380	
			08	-30	-440	
Short-circuit output current	I_{OS}	V_{CC} = 5.5 V 1/	01,03,05, 07,09	-15	-100	mA
High-level supply current	I_{CCH}	V_{CC} = 5.5 V; V_{IN} = 0 V	01,02		1.6	mA
			03,04		2.4	
			05		1.2	
			06		1.4	
			07,08		0.8	
			09		0.5	
Low-level supply current	I_{CCL}	V_{CC} = 5.5 V; V_{IN} = 5.5 V	01,02		4.4	mA
			03,04		6.6	
			05,06		3.3	
			07,08		2.2	
			09		1.1	
Propagation delay time, high-to-low level	t_{PHL}	C_L = 50 pF; R_L = 2 kΩ; V_{CC} = 5.0 V	01,03,05,07,	2	24	ns
			02,04,06,08,	2	55	
			09	2	38	
Propagation delay time, low-to-high level	t_{PLH}	C_L = 50 pF; R_L = 2 kΩ; V_{CC} = 5.0 V	01,03,05,07,	2	20	ns
			02,04,06,08,	2	60	
			09	2	32	

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

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (see table III)	
	Class S devices	Class B devices
Interim electrical parameters (method 5004)	1	1
Final electrical test parameters (method 5004)	1*, 2, 3, 9, 10, 11	1*, 2, 3, 9
Group A test requirements (method 5005)	1, 2, 3, 9, 10, 11	1, 2, 3, 9
Group B test requirements (method 5005) subgroup 5	1, 2, 3, 9, 10, 11	N/A
Group C end-point electrical parameters (method 5005)	N/A	1,2,3
Additional electrical subgroups for group C periodic inspections	N/A	10,11
Group D end-point electrical parameters (method 5005)	1,2,3	1,2,3
Group E end-point electrical parameters (method 5005)	1,9	1,9

*PDA applies to subgroup 1 (see 4.2.c.).

4.4.1 Group A inspection. Group A inspection shall be in accordance with table I of method 5005 of MIL-STD-883 and as follows:

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

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

4.4.2 Group B inspection. Group B inspection shall be in accordance with table II of method 5005 of MIL-STD-883. Electrical parameters shall be as specified in table II herein.

4.4.3 Group C inspection. Group C inspection shall be in accordance with table III of method 5005 of MIL-STD-883 and as follows:

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

b. Subgroups 3 and 4 shall be added to the group C inspection requirements for class B devices and shall consist of the tests, conditions and limits specified for subgroups 10 and 11 of group A.

c. Steady-state life test (method 1005 of MIL-STD-883) conditions:

(1) Test condition D, E, or F, using the circuit shown on figure 3 or equivalent.

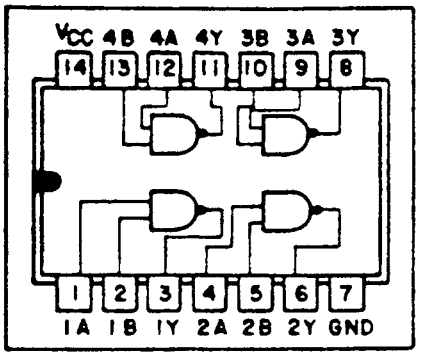
(2) T_A = +125°C minimum.

(3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.4.4 Group D inspection. Group D inspection shall be in accordance with table IV of method 5005 of MIL-STD-883. End-point electrical parameters shall be as specified in table II herein.

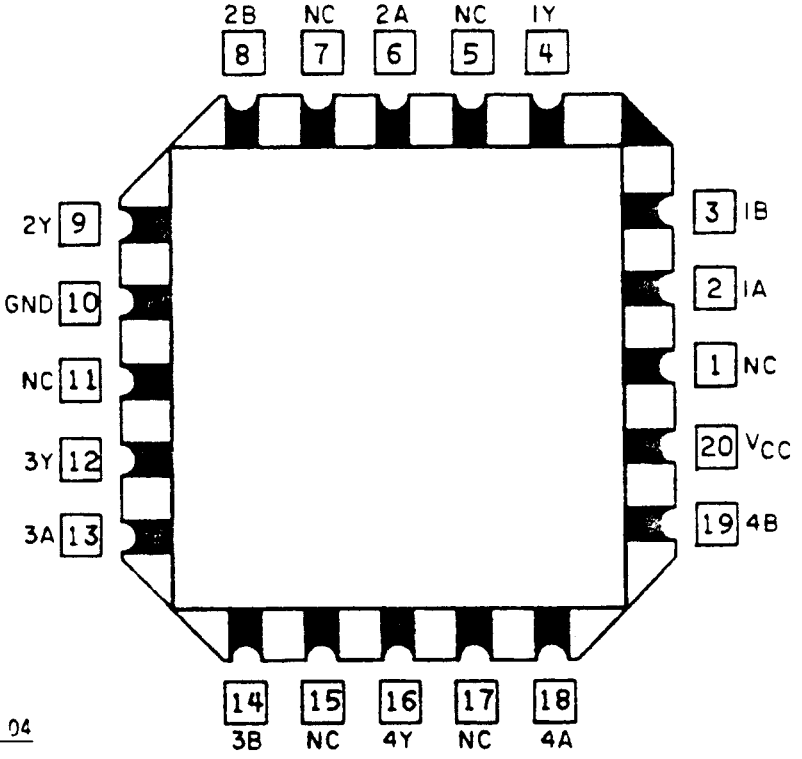
Device types 01 and 02

Cases A, B, C and D



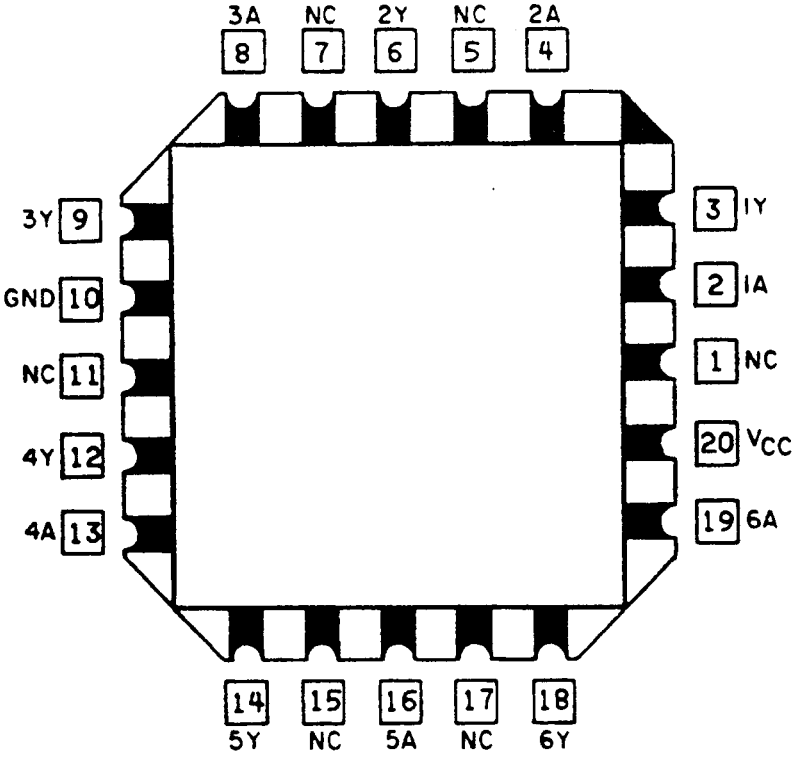
Device types 01 and 02

Case 2



Device types 03 and 04

Case 2



Device types 03 and 04

Cases A, B, C and D

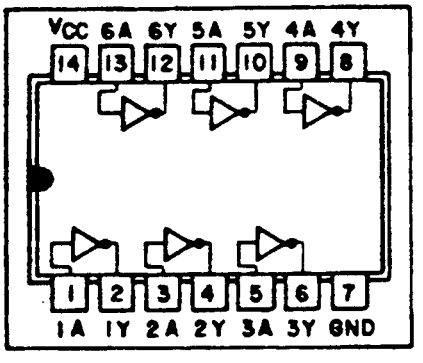
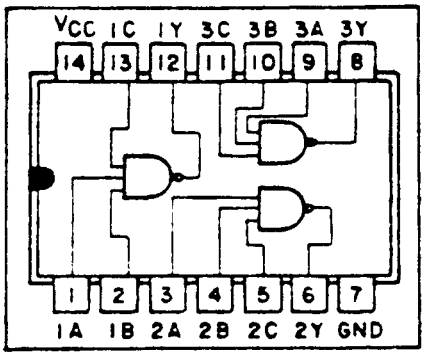


FIGURE 1. Logic diagrams and terminal connections (top view).

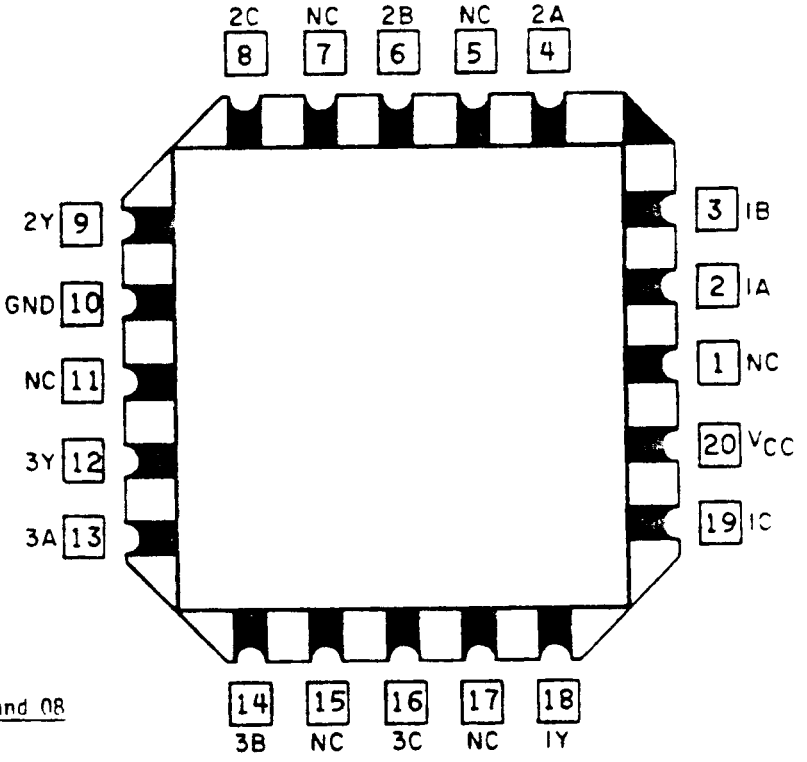
Device types 05 and 06

Cases A, B, C and D



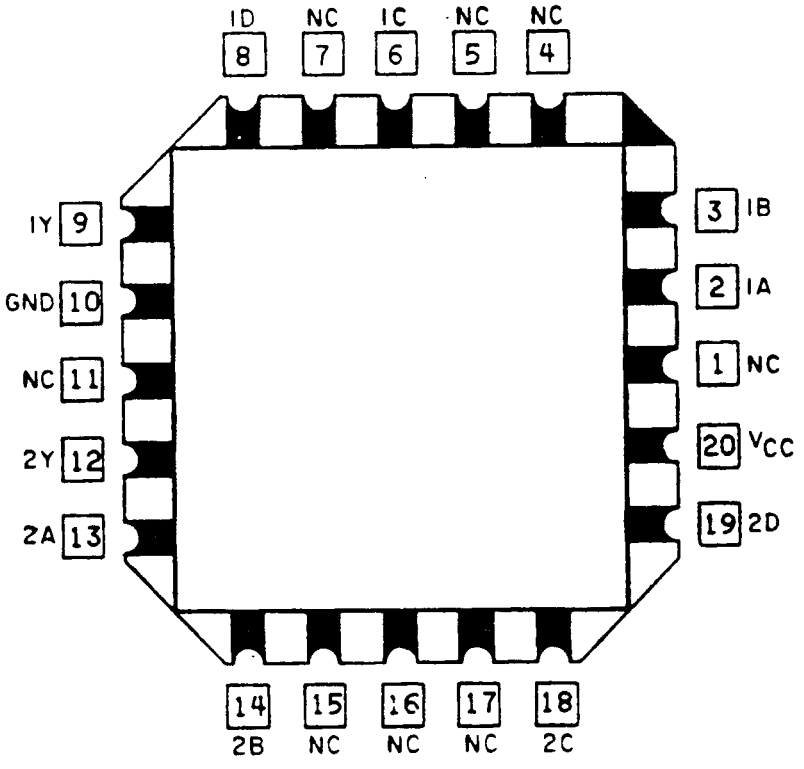
Device types 05 and 06

Case 2



Device types 07 and 08

Case 2



Device types 07 and 08

Cases A, B, C and D

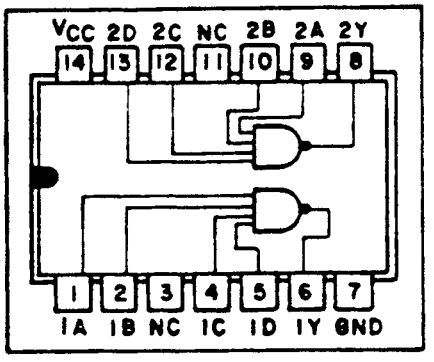
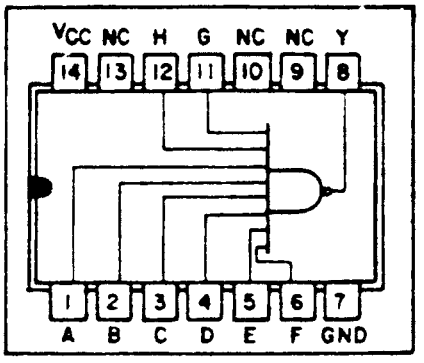


FIGURE 1. Logic diagrams and terminal connections (top view) - Continued.

Device type 09

Cases A, B, C and D



Device type 09

Case 2

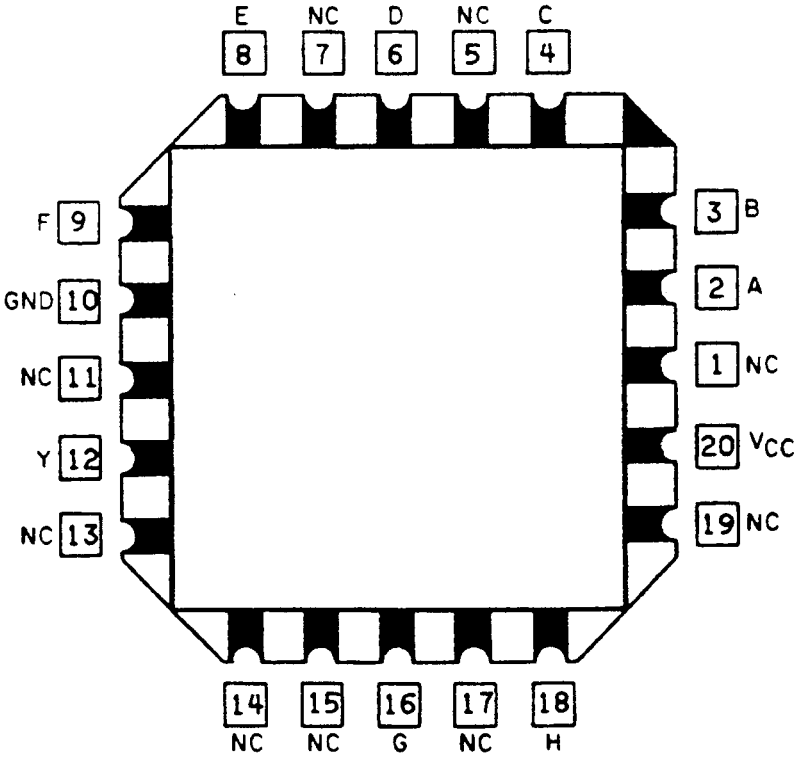


FIGURE 1. Logic diagrams and terminal connections (top view) - Continued.

Device types 01 and 02

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

Positive logic Y = $\overline{AB}$

Device types 03 and 04

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

Positive logic Y = $\overline{A}$

Device types 05 and 06

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

Positive logic Y = $\overline{ABC}$

Device types 07 and 08

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

Positive logic Y = $\overline{ABCD}$

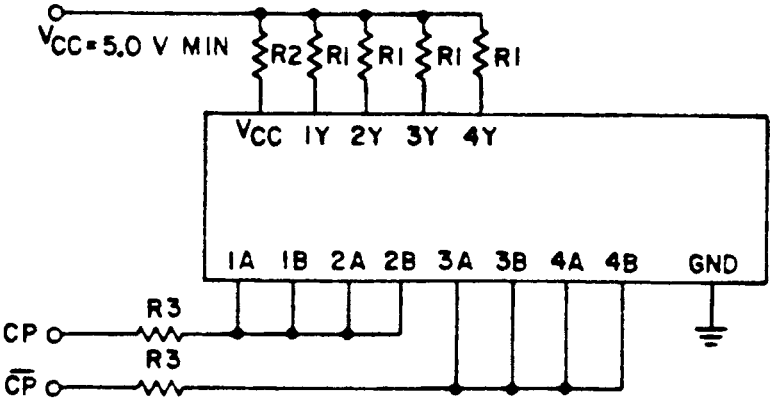
Device type 09

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

Positive logic Y = $\overline{ABCDEFGH}$

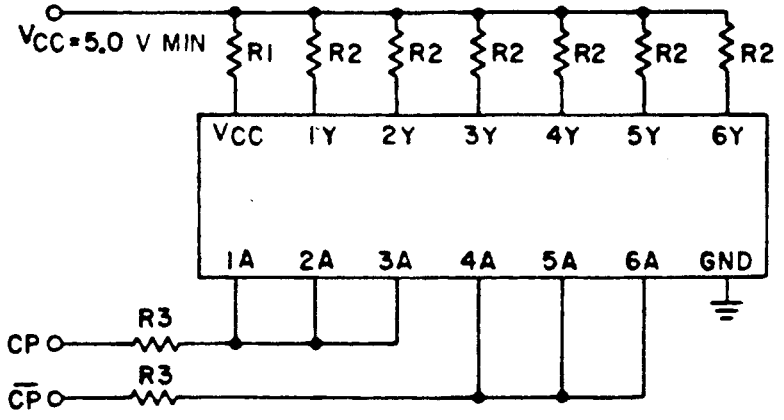
FIGURE 2. Truth tables and logic equations.

Device types 01 and 02



NOTES:
1. CP or $\overline{CP}$ = 100 kHz ±50% square wave; duty cycle = 50 ±15%; V_{IH} = 2.0 V minimum to 5.5 V maximum; V_{IL} = -0.5 V minimum to 0.7 V maximum.
2. R1 = 1 kΩ ±5%; R2 = 10Ω ±5%; R3 = 27Ω ±5%.
3. V_{CC} shall be high enough to insure that 5.0 V minimum is present at device V_{CC} terminal.

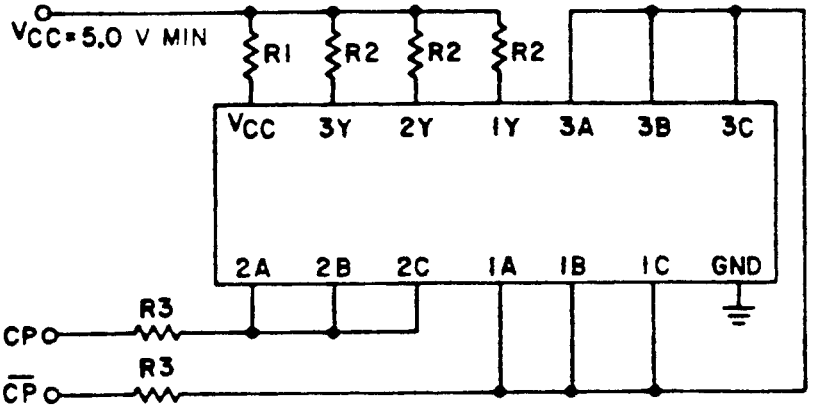
Device types 03 and 04



NOTES:
1. R1 = 10Ω ±5%; R2 = 1 kΩ ±5%; R3 = 27Ω ±5%.
2. CP or $\overline{CP}$ = 100 kHz ±50% square wave; duty cycle = 50 ±15%; V_{IH} = 2.0 V minimum to 5.5 V maximum; V_{IL} = -0.5 V minimum to 0.7 V maximum.
3. V_{CC} shall be high enough to insure that 5.0 V minimum is present at device V_{CC} terminal.

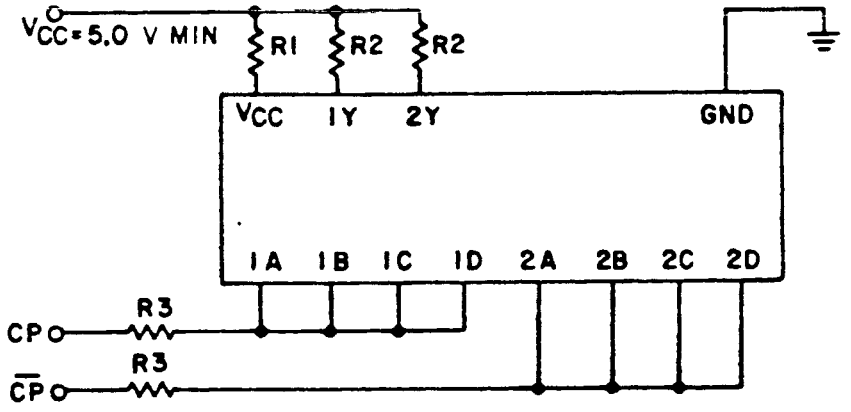
FIGURE 3. Burn-in and life test circuit.

Device types 05 and 06



NOTES:
1. R1 = 10Ω ±5%; R2 = 1 kΩ ±5%; R3 = 27Ω ±5%.
2. CP or $\overline{CP}$ = 100 kHz ±50% square wave; duty cycle = 50 ±15%; V_{IH} = 2.0 V minimum to 5.5 V maximum; V_{IL} = -0.5 V minimum to 0.7 V maximum.
3. V_{CC} shall be high enough to insure that 5.0 V minimum is present at device V_{CC} terminal.

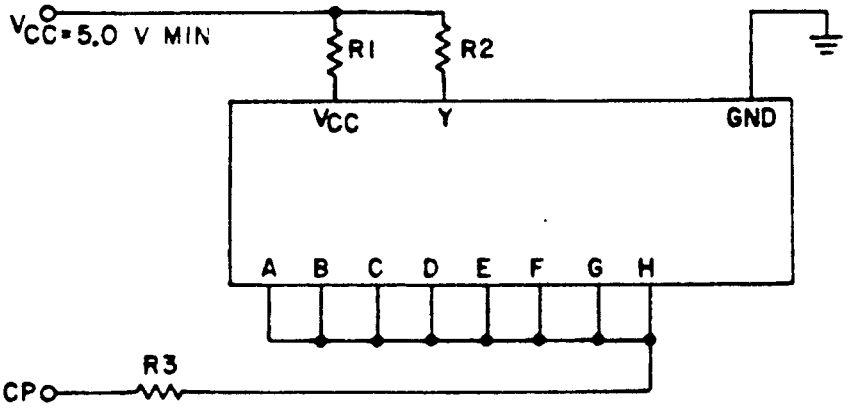
Device types 07 and 08



NOTES:
1. CP or $\overline{CP}$ = 100 kHz ±50% square wave; duty cycle = 50 ±15%; V_{IH} = 2.0 V minimum to 5.5 V maximum; V_{IL} = -0.5 V minimum to 0.7 V maximum.
2. R1 = 10Ω ±5%; R2 = 1 kΩ ±5%; R3 = 27Ω ±5%.
3. V_{CC} shall be high enough to insure that 5.0 V minimum is present at device V_{CC} terminal.

FIGURE 3. Burn-in and life test circuit - Continued.

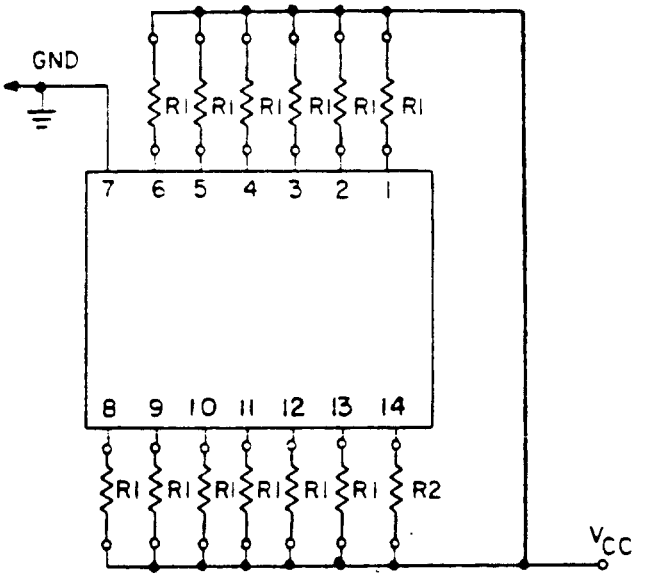
Device type 09



NOTES:
1. R1 = 10Ω ±5%; R2 = 1 kΩ ±5%; R3 = 27Ω ±5%.
2. CP = 100 kHz ±50% square wave; duty cycle = 50 ±15%; V_{IH} = 2.0 V minimum to 5.5 V maximum; V_{IL} = -0.5 V minimum to 0.7 V maximum.
3. V_{CC} shall be high enough to insure that 5.0 V minimum is present at device V_{CC} terminal.

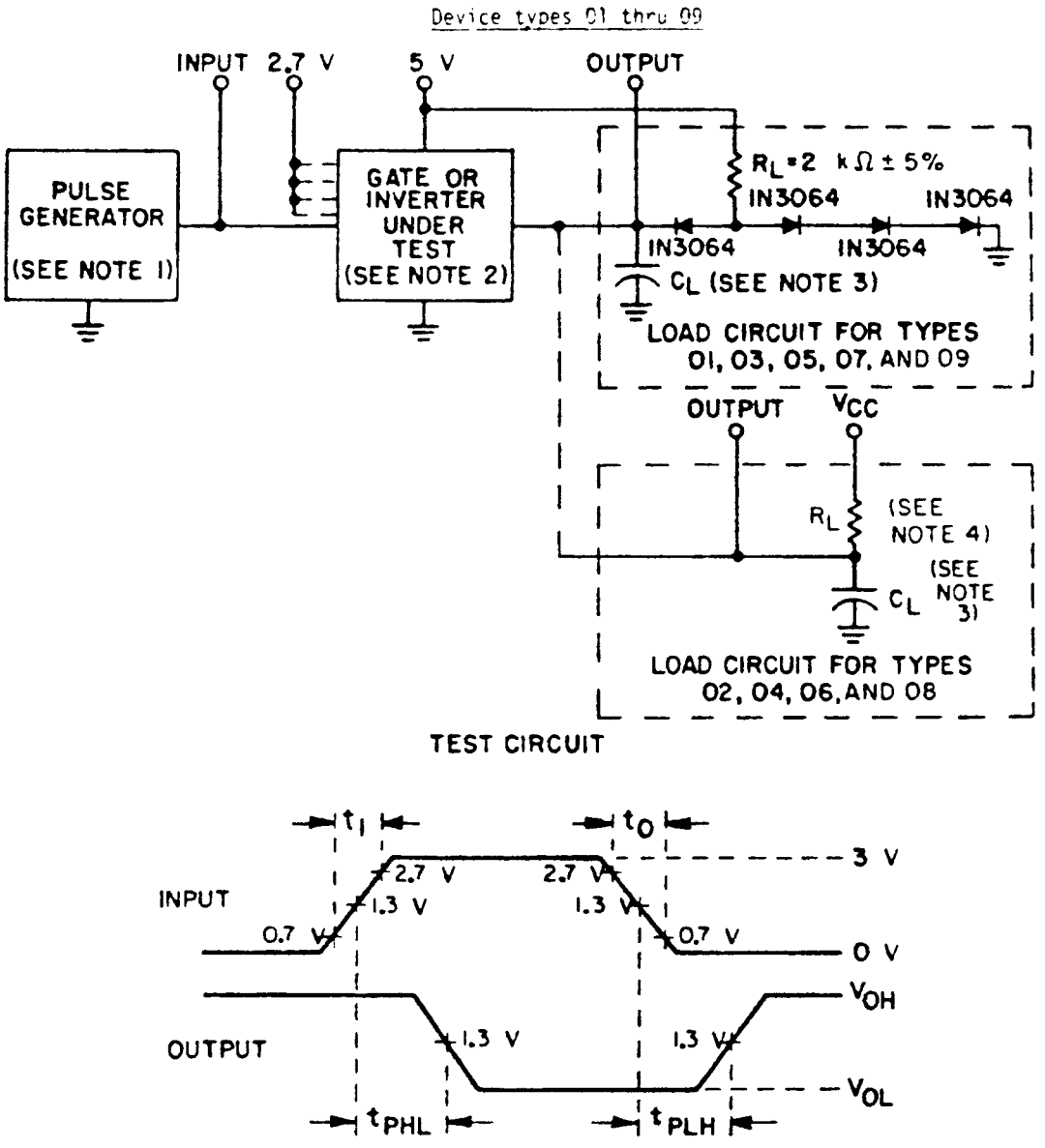
FIGURE 3. Burn-in and life test circuit - Continued.

All device types



NOTES:
1. High temperature (175°C), condition F circuit only.
2. R1 = 2kΩ, R2 = 2Ω.
3. V_{CC} shall be chosen such that 5.0 v minimum is present at V_{CC} terminal

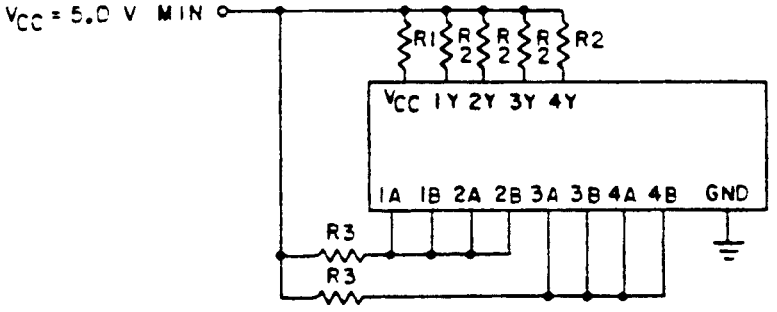
FIGURE 3. Burn-in and life test circuits - Continued.



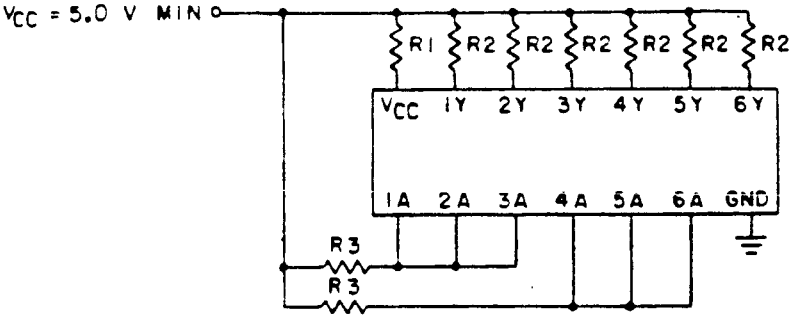
NOTES:
1. Pulse generator has following characteristics: $t_1 \leq 15$ ns, $t_0 \leq 6$ ns, PRR ≤ 1 MHz, duty cycle = 50% and $Z_{OUT} \approx 50\Omega$.
2. Inputs not under test are at 2.7 V.
3. C_L = 50 pF ±10%, including scope probe, wiring, and stray capacitance.
4. R_L = 2 kΩ ±5%.
5. Voltage measurements are to be made with respect to network ground terminal.

FIGURE 4. Switching time test circuit and waveforms for device types 01 through 09.

Device types 01 and 02



Device types 03 and 04



Device types 05 and 06

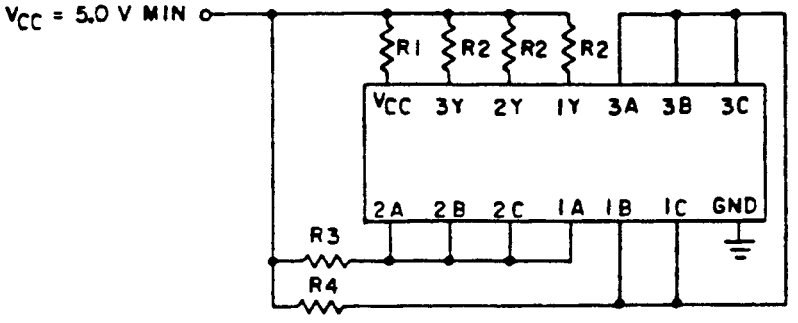
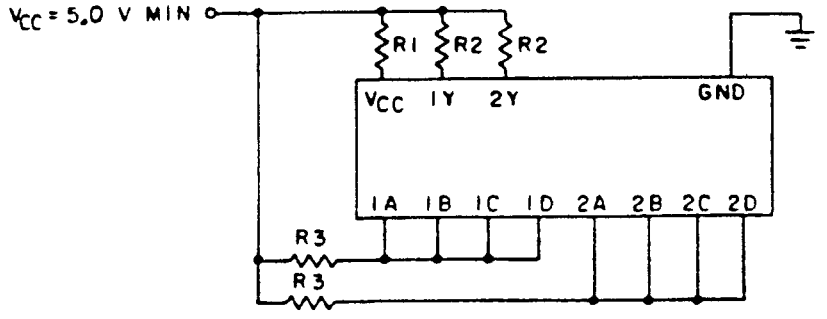
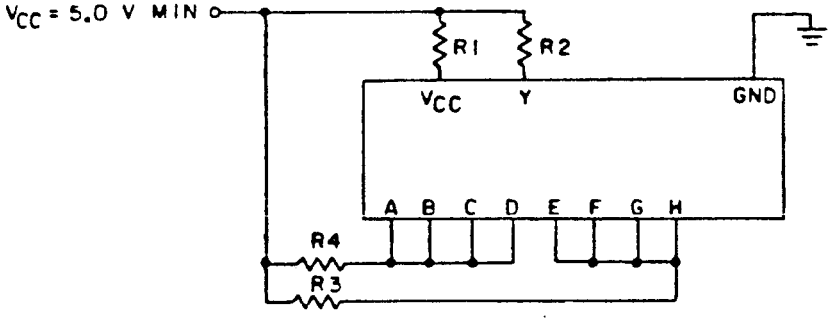


FIGURE 5. Bias conditions for total dose radiation test.

Device types 07 and 08



Device type 09



Bias conditions

Device type	V_{CC} (volts) 1/	R_1 (ohms)	R_2 (ohms)	R_3 (ohms)	R_4 (ohms)
01	5.5	0	1.3 k	1.3 k	- - -
02	5.5	0	1.3 k	1.3 k	- - -
03	5.5	0	1.3 k	1.8 k	- - -
04	5.5	0	1.3 k	1.8 k	- - -
05	5.5	0	1.3 k	1.3 k	1.0 k
06	5.5	0	1.3 k	1.3 k	1.0 k
07	5.5	0	1.3 k	1.3 k	- - -
08	5.5	0	1.3 k	1.3 k	- - -
09	5.5	0	1.4 k	1.3 k	1.3 k

1/ V_{CC} shall be high enough to insure that a 5.0 volts minimum is present at the device test V_{CC} terminal.

FIGURE 5. Bias conditions for total dose radiation test - Continued.

TABLE III. Group A inspection for device type 01.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 1/ Test no.	1 2 1A	2 3 1B	3 4 1Y	4 6 2A	5 8 2B	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 16 4Y	12 18 4A	13 19 4B	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OH}	3006	1	5.5 V	0.7 V	-400 µA	5.5 V	5.5 V		GND		5.5 V	5.5 V		5.5 V	5.5 V	4.5 V	1Y	2.5		V
	"	"	2	0.7 V	5.5 V	-400 µA	"	5.5 V		"		"	"		"	"	"	1Y	"		"
	"	"	3	5.5 V	"		"	0.7 V	-400 µA	"		"	"		"	"	"	2Y	"		"
	"	"	4	"	"		0.7 V	5.5 V	-400 µA	"		"	"		"	"	"	2Y	"		"
	"	"	5	"	"		5.5 V	"	"	"	-400 µA	"	0.7 V		"	"	"	3Y	"		"
	"	"	6	"	"		"	"	"	"	-400 µA	0.7 V	5.5 V		"	"	"	3Y	"		"
	"	"	7	"	"		"	"	"	"	"	5.5 V	"	-400 µA	"	0.7 V	"	4Y	"		"
	"	"	8	"	"		"	"	"	"	"	5.5 V	"	-400 µA	0.7 V	5.5 V	"	4Y	"		"
	V_{OL}	3007	9	2.0 V	2.0 V	4 mA	GND	GND		"		GND	GND		GND	GND	"	1Y		0.4	"
	"	"	10	GND	GND		2.0 V	2.0 V	4 mA	"		GND	GND		"	"	"	2Y		"	"
	"	"	11	"	"		GND	GND		"	4 mA	2.0 V	2.0 V	4 mA	2.0 V	2.0 V	"	3Y		"	"
	"	"	12	"	"		GND	GND		"		GND	GND		2.0 V	2.0 V	"	4Y		"	"
	V_{IC}		13	-18 mA						"							"	1A		-1.5	"
			14		-18 mA					"							"	1B		"	"
			15				-18 mA			"							"	2A		"	"
			16					-18 mA		"							"	2B		"	"
			17							"		-18 mA					"	3A		"	"
			18							"			-18 mA				"	3B		"	"
			19							"					-18 mA		"	4A		"	"
			20							"						-18 mA	"	4B		"	"
	I_{IH1}	3010	21	2.7 V	GND		GND	GND		"		GND	GND		GND	GND	5.5 V	1A		20	µA
	"	"	22	GND	2.7 V		GND	"		"		"	"		"	"	"	1B		"	"
	"	"	23	"	GND		2.7 V	"		"		"	"		"	"	"	2A		"	"
	"	"	24	"	"		GND	2.7 V		"		"	"		"	"	"	2B		"	"
	"	"	25	"	"		"	GND		"		2.7 V	"		"	"	"	3A		"	"
	"	"	26	"	"		"	"		"		GND	2.7 V		"	"	"	3B		"	"
	"	"	27	"	"		"	"		"		"	GND		2.7 V	"	"	4A		"	"
	"	"	28	"	"		"	"		"		"	"		GND	2.7 V	"	4B		"	"
	I_{IH2}	"	29	5.5 V	"		"	"		"		"	"		"	GND	"	1A		100	"
	"	"	30	GND	5.5 V		"	"		"		"	"		"	"	"	1B		"	"
	"	"	31	"	GND		5.5 V	"		"		"	"		"	"	"	2A		"	"
	"	"	32	"	"		GND	5.5 V		"		"	"		"	"	"	2B		"	"
	"	"	33	"	"		"	GND		"		5.5 V	"		"	"	"	3A		"	"
	"	"	34	"	"		"	"		"		GND	5.5 V		"	"	"	3B		"	"
	"	"	35	"	"		"	"		"		"	GND		5.5 V	"	"	4A		"	"
	"	"	36	"	"		"	"		"		"	GND		GND	5.5 V	"	4B		"	"
	I_{IL}	3009	37	0.4 V	5.5 V		5.5 V	5.5 V		"		5.5 V	5.5 V		5.5 V	"	"	1A	2/	2/	"
	"	"	38	5.5 V	0.4 V		5.5 V	"		"		"	"		"	"	"	1B	"	"	"
	"	"	39	"	5.5 V		0.4 V	"		"		"	"		"	"	"	2A	"	"	"
	"	"	40	"	"		5.5 V	0.4 V		"		"	"		"	"	"	2B	"	"	"
	"	"	41	"	"		"	5.5 V		"		0.4 V	"		"	"	"	3A	"	"	"
	"	"	42	"	"		"	"		"		5.5 V	0.4 V		"	"	"	3B	"	"	"
	"	"	43	"	"		"	"		"		"	5.5 V		0.4 V	"	"	4A	"	"	"
	"	"	44	"	"		"	"		"		"	"		5.5 V	0.4 V	"	4B	"	"	"
	I_{OS}	3011	45	GND	GND	GND	GND	GND	GND	"	GND	GND	GND	GND	GND	GND	"	1Y	3/	3/	mA
	"	"	46							"							"	2Y	"	"	"
	"	"	47							"							"	3Y	"	"	"
	"	"	48							"							"	4Y	"	"	"
	I_{CCH}	3005	49	GND	GND		GND	GND		"		GND	GND		GND	GND	"	V_{CC}		1.6	"
	I_{CCL}	3005	50	5.5 V	5.5 V		5.5 V	5.5 V		"		5.5 V	5.5 V		5.5 V	5.5 V	"	V_{CC}		4.4	"

See footnotes at end of device type 01.

TABLE III. Group A inspection for device type 01 - Continued.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V or low $\leq$ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1B	3 4 1Y	4 6 2A	5 8 2B	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 16 4Y	12 18 4A	13 19 4B	14 20 V_{CC}	Measured terminal	Limits Min	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.																				
9 T_C = +25°C	t_{PHL}	3003 (Fig 4)	51	IN	2.7 V	OUT	2.7 V	2.7 V		GND		2.7 V	2.7 V		2.7 V	2.7 V	5.0 V	1A to 1Y	2	17	ns
		"	52	2.7 V	IN	OUT	2.7 V	"		"		"	"		"	"	"	1B to 1Y	"	"	"
		"	53	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
		"	54	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
		"	55	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
		"	56	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
		"	57	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
		"	58	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
	t_{PLH}	"	59	IN	"	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	15	"
		"	60	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
		"	61	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
		"	62	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
		"	63	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
		"	64	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
		"	65	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
		"	66	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	67	IN	2.7 V	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	24	"
		"	68	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
		"	69	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
		"	70	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
		"	71	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
		"	72	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
		"	73	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
		"	74	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
	t_{PLH}	"	75	IN	"	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	20	"
		"	76	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
		"	77	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
		"	78	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
		"	79	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
		"	80	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
		"	81	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
		"	82	"	"		"	"		"		"	2.7 V	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in µA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 1B, 2A, 2B 3A, 3B, 4A, 4B	-120/-360	-30/-300	-150/-380	-160/-400	-150/-380	-100/-340

3/ I_{OS} limits for circuit C: -20/-100; for circuits A, B, C, D, E, and F: -15/-100.

TABLE III. Group A inspection for device type 02.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D: Case 1/	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits: Min	Limits: Max	Unit
			Case 2	2	3	4	6	8	9	10	12	13	14	16	18	19	20				
			Test no.	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	3B	4Y	4A	4B	V_{CC}				
1 T_C = +25°C	V_{OL}	3007	1	2.0 V	2.0 V	4 mA	GND	GND	4 mA	GND	4 mA	GND	GND		GND	GND	4.5 V	1Y		0.4	V
			2	GND	GND		2.0 V	2.0 V				GND	GND		"	"	"	2Y			"
			3	"	"		GND	GND				2.0 V	2.0 V	4 mA	"	"	"	3Y			"
			4	"	"		GND	GND				GND	GND		2.0 V	2.0 V	"	4Y			"
	I_{CEX}		5	0.7 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		100	μA
			6	5.5 V	0.7 V	5.5 V	5.5 V	"	5.5 V	"		"	"		"	"	"	1Y		"	"
			7	"	5.5 V	"	0.7 V	0.7 V	5.5 V	"	5.5 V	0.7 V	"		"	"	"	2Y		"	"
			8	"	"	"	5.5 V	5.5 V	"	"	5.5 V	5.5 V	0.7 V		"	"	"	2Y		"	"
			9	"	"	"	"	"	"	"	"	"	5.5 V		"	"	"	3Y		"	"
			10	"	"	"	"	"	"	"	"	"	5.5 V		"	"	"	3Y		"	"
			11	"	"	"	"	"	"	"	"	"	"	5.5 V	"	"	"	4Y		"	"
			12	"	"	"	"	"	"	"	"	"	"	5.5 V	0.7 V	0.7 V	"	4Y		"	"
	V_{IC}		13	-18 mA														1A		-1.5	V
			14		-18 mA													1B		"	"
			15				-18 mA											2A		"	"
			16					-18 mA										2B		"	"
			17									-18 mA						3A		"	"
			18										-18 mA					3B		"	"
			19												-18 mA			4A		"	"
			20													-18 mA		4B		"	"
	I_{IH1}	3010	21	2.7 V	GND		GND	GND				GND	GND		GND	GND	5.5 V	1A		20	μA
			22	GND	2.7 V		GND	"				"	"		"	"	"	1B		"	"
			23	"	GND		2.7 V	2.7 V				"	"		"	"	"	2A		"	"
			24	"	"		GND	GND				2.7 V	2.7 V		"	"	"	2B		"	"
			25	"	"		"	"				GND	GND		"	"	"	3A		"	"
			26	"	"		"	"				"	"		"	"	"	3B		"	"
			27	"	"		"	"				"	"		"	"	"	4A		"	"
			28	"	"		"	"				"	"		2.7 V	2.7 V	"	4B		"	"
	I_{IH2}		29	5.5 V														1A		100	
			30	GND	5.5 V													1B		"	
			31	"	GND		5.5 V	5.5 V										2A		"	
			32	"	"		GND	GND										2B		"	
			33	"	"		"	"										3A		"	
			34	"	"		"	"										3B		"	
			35	"	"		"	"										4A		"	
			36	"	"		"	"										4B		"	
	I_{IL}	3009	37	0.4 V	5.5 V		5.5 V	5.5 V				5.5 V	5.5 V		5.5 V			1A	2/	2/	
			38	5.5 V	0.4 V		5.5 V	"				"	"		"			1B	"	"	
			39	"	5.5 V		0.4 V	0.4 V				"	"		"			2A	"	"	
			40	"	"		5.5 V	5.5 V				0.4 V	0.4 V		"			2B	"	"	
			41	"	"		"	"				5.5 V	5.5 V		"			3A	"	"	
			42	"	"		"	"				"	"		"			3B	"	"	
			43	"	"		"	"				"	"		0.4 V			4A	"	"	
			44	"	"		"	"				"	"		5.5 V			4B	"	"	
	I_{CCL}	3005	45	"	"		"	"		"		"	"		5.5 V	5.5 V	"	V_{CC}		4.4	mA
	I_{CCH}	3005	46	GND	GND		GND	GND		"		GND	GND		GND	GND	"	V_{CC}		1.6	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 footnotes at end of device type 02.

TABLE III. Group A inspection for device type 02 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits Min	Limits Max	Unit
			Case 2	3	4	5	6	8	9	10	12	13	14	16	18	19	20				
			Test no.	1A	1B	1Y	2A	2B	2Y	GND	3Y	3A	3B	4Y	4A	4B	V_{CC}				
9 T_C = +25°C	t_{PHL}	3003 (Fig. 4)	47	IN	2.7 V	OUT	2.7 V	2.7 V		GND		2.7 V	2.7 V		2.7 V	2.7 V	5.0 V	1A to 1Y	2	36	ns
			48	2.7 V	IN	OUT	2.7 V	"		"		"	"		"	"	"	1B to 1Y	"	"	"
			49	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
			50	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
			51	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
			52	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
			53	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
			54	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
	t_{PLH}	"	55	IN	"	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	40	"
			56	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
			57	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
			58	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
			59	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
			60	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
			61	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
			62	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	63	IN	"	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	55	"
			64	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
			65	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
			66	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
			67	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
			68	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
			69	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
			70	"	"		"	"		"		"	"	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
	t_{PLH}	"	71	IN	"	OUT	"	"		"		"	"		"	2.7 V	"	1A to 1Y	"	60	"
			72	2.7 V	IN	OUT	"	"		"		"	"		"	"	"	1B to 1Y	"	"	"
			73	"	2.7 V		IN	"	OUT	"		"	"		"	"	"	2A to 2Y	"	"	"
			74	"	"		2.7 V	IN	OUT	"		"	"		"	"	"	2B to 2Y	"	"	"
			75	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	3A to 3Y	"	"	"
			76	"	"		"	"		"	OUT	2.7 V	IN		"	"	"	3B to 3Y	"	"	"
			77	"	"		"	"		"		"	2.7 V	OUT	IN	"	"	4A to 4Y	"	"	"
			78	"	"		"	"		"		"	2.7 V	OUT	2.7 V	IN	"	4B to 4Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit					
	A	B	C	D	E	F
1A, 1B, 2A, 2B 3A, 3B, 4A, 4B	-160/-400	-30/-300	-150/-380	-160/-400	-150/-380	-100/-340

TABLE III. Group A inspection for device type 03.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits Min	Limits Max	Unit
				2	3	4	6	8	9	10	12	13	14	16	18	19	20				
				1A	1Y	2A	2Y	3A	3Y	GND	4Y	4A	5Y	5A	6Y	6A	V_{CC}				
1 T_C = +25°C	V_{OH}	3006	1	0.7 V	-400 µA	5.5 V	-400 µA	5.5 V		GND		5.5 V		5.5 V		5.5 V	4.5 V	1Y	2.5		V
		"	2	5.5 V	"	0.7 V	"	5.5 V		"		"		"		"	"	2Y	"		"
		"	3	"	"	5.5 V	"	0.7 V	-400 µA	"		"		"		"	"	3Y	"		"
		"	4	"	"	"	"	5.5 V		"	-400 µA	0.7 V		"		"	"	4Y	"		"
		"	5	"	"	"	"	"		"		5.5 V	-400 µA	0.7 V		"	"	5Y	"		"
		"	6	"	"	"	"	"		"		5.5 V		5.5 V	-400 µA	0.7 V	"	6Y	"		"
	V_{OL}	3007	7	2.0 V	4 mA	GND	4 mA	GND		"		GND		GND		GND	"	1Y		0.4	"
		"	8	GND	"	2.0 V	"	GND		"		"		"		"	"	2Y		"	"
		"	9	"	"	GND	"	2.0 V	4 mA	"		"		"		"	"	3Y		"	"
		"	10	"	"	"	"	GND		"	4 mA	2.0 V		"		"	"	4Y		"	"
		"	11	"	"	"	"	"		"		GND	4 mA	2.0 V		"	"	5Y		"	"
		"	12	"	"	"	"	"		"		GND		GND	4 mA	2.0 V	"	6Y		"	"
	V_{IC}		13	-18 mA						"							"	1A		-1.5	"
			14			-18 mA				"							"	2A		"	"
			15					-18 mA		"							"	3A		"	"
			16							"		-18 mA					"	4A		"	"
			17							"				-18 mA			"	5A		"	"
			18							"						-18 mA	"	6A		"	"
	I_{IH1}	3010	19	2.7 V		GND		GND		"		GND		GND		GND	5.5 V	1A		20	µA
		"	20	GND		2.7 V		GND		"		"		"		"	"	2A		"	"
		"	21	"		GND		2.7 V		"		"		"		"	"	3A		"	"
		"	22	"		"		GND		"		"		"		"	"	4A		"	"
		"	23	"		"		"		"		2.7 V		2.7 V		"	"	5A		"	"
		"	24	"		"		"		"		GND		GND		2.7 V	"	6A		"	"
	I_{IH2}	"	25	5.5 V		"		"		"		"		"		GND	"	1A		100	"
		"	26	GND		5.5 V		"		"		"		"		"	"	2A		"	"
		"	27	"		GND		5.5 V		"		"		"		"	"	3A		"	"
		"	28	"		"		GND		"		5.5 V		"		"	"	4A		"	"
		"	29	"		"		"		"		GND		5.5 V		"	"	5A		"	"
		"	30	"		"		"		"		GND		GND		5.5 V	"	6A		"	"
	I_{IL}	3009	31	0.4 V		5.5 V		5.5 V		"		5.5 V		5.5 V		"	"	1A	2/	2/	"
		"	32	5.5 V		0.4 V		5.5 V		"		"		"		"	"	2A	"	"	"
		"	33	"		5.5 V		0.4 V		"		"		"		"	"	3A	"	"	"
		"	34	"		"		5.5 V		"		0.4 V		"		"	"	4A	"	"	"
		"	35	"		"		"		"		5.5 V		0.4 V		"	"	5A	"	"	"
		"	36	"		"		"		"		5.5 V		5.5 V		0.4 V	"	6A		"	"
	I_{OS}	3011	37	GND	GND					"							"	1Y	3/	3/	mA
		"	38			GND	GND			"							"	2Y	"	"	"
		"	39					GND	GND	"							"	3Y	"	"	"
		"	40							"	GND	GND					"	4Y	"	"	"
		"	41							"			GND	GND			"	5Y	"	"	"
		"	42							"					GND	GND	"	6Y	"	"	"
	I_{CCH}	3005	43	GND		GND		GND		"		GND		GND		GND	"	V_{CC}		2.4	"
	I_{CCL}	3005	44	5.5 V		5.5 V		5.5 V		"		5.5 V		5.5 V		5.5 V	"	V_{CC}		6.6	"
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 footnotes at end of device type 03.

TABLE III. Group A inspection for device type 03 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 1/ Test no.	1 2 1A	2 3 1Y	3 4 2A	4 6 2Y	5 8 3A	6 9 3Y	7 10 GND	8 12 4Y	9 13 4A	10 14 5Y	11 16 5A	12 18 6Y	13 19 6A	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 T_C = +25°C	t_{PHL}	3003 (Fig. 4)	45	IN	OUT	2.7 V		2.7 V		GND		2.7 V		2.7 V		2.7 V	5.0 V	1A to 1Y	2	17	ns
			46	2.7 V		IN	OUT	2.7 V		"		"		"		"	"	2A to 2Y	"	"	"
			47	"		2.7 V		IN	OUT	"		"		"		"	"	3A to 3Y	"	"	"
			48	"		"		2.7 V		"	OUT	IN		"		"	"	4A to 4Y	"	"	"
			49	"		"		"		"		2.7 V	OUT	IN		"	"	5A to 5Y	"	"	"
			50	"		"		"		"		"		2.7 V	OUT	IN	"	6A to 6Y	"	"	"
	t_{PLH}	"	51	IN	OUT	"		"		"		"		"		2.7 V	"	1A to 1Y	"	15	"
		"	52	2.7 V		IN	OUT	"		"		"		"		"	"	2A to 2Y	"	"	"
		"	53	"		2.7 V		IN	OUT	"		"		"		"	"	3A to 3Y	"	"	"
		"	54	"		"		2.7 V		"	OUT	IN		"		"	"	4A to 4Y	"	"	"
		"	55	"		"		"		"		2.7 V	OUT	IN		"	"	5A to 5Y	"	"	"
		"	56	"		"		"		"		"		2.7 V	OUT	IN	"	6A to 6Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	57	IN	OUT	"		"		"		"		"		2.7 V	"	1A to 1Y	"	24	"
		"	58	2.7 V		IN	OUT	"		"		"		"		"	"	2A to 2Y	"	"	"
		"	59	"		2.7 V		IN	OUT	"		"		"		"	"	3A to 3Y	"	"	"
		"	60	"		"		2.7 V		"	OUT	IN		"		"	"	4A to 4Y	"	"	"
		"	61	"		"		"		"		2.7 V	OUT	IN		"	"	5A to 5Y	"	"	"
		"	62	"		"		"		"		"		2.7 V	OUT	IN	"	6A to 6Y	"	"	"
	t_{PLH}	"	63	IN	OUT	"		"		"		"		"		2.7 V	"	1A to 1Y	"	20	"
		"	64	2.7 V		IN	OUT	"		"		"		"		"	"	2A to 2Y	"	"	"
		"	65	"		2.7 V		IN	OUT	"		"		"		"	"	3A to 3Y	"	"	"
		"	66	"		"		2.7 V		"	OUT	IN		"		"	"	4A to 4Y	"	"	"
		"	67	"		"		"		"		2.7 V	OUT	IN		"	"	5A to 5Y	"	"	"
		"	68	"		"		"		"		2.7 V		2.7 V	OUT	IN	"	6A to 6Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 2A, 3A, 4A, 5A, 6A	-150/-380	-30/-300	-150/-380	-160/-400	-150/-380	-100/-340

3/ I_{OS} limits for circuit C: -20/-100 mA; for circuits A, B, D, E, and F: -15/-100 mA.

TABLE III. Group A inspection for device type 04.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1Y	3 4 2A	4 6 2Y	5 8 3A	6 9 3Y	7 10 GND	8 12 4Y	9 13 4A	10 14 5Y	11 16 5A	12 18 6Y	13 19 6A	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OL}	3007	1	2.0 V	4 mA	GND		GND		GND		GND		GND		GND	4.5 V	1Y		0.4	V
		"	2	GND		2.0 V		GND		"		"		"		"	"	2Y		"	"
		"	3	"		GND	4 mA	2.0 V	4 mA	"		"		"		"	"	3Y		"	"
		"	4	"		"		GND		"	4 mA	2.0 V		"		"	"	4Y		"	"
		"	5	"		"		"		"		GND	4 mA	2.0 V		"	"	5Y		"	"
		"	6	"		"		"		"		GND		GND	4 mA	2.0 V	"	6Y		"	"
	I_{CEX}		7	0.7 V	5.5 V	5.5 V		5.5 V		"		5.5 V		5.5 V		5.5 V	"	1Y		100	µA
			8	5.5 V		0.7 V	5.5 V	5.5 V		"		"		"		"	"	2Y		"	"
			9	"		5.5 V		0.7 V	5.5 V	"		"		"		"	"	3Y		"	"
			10	"		"		5.5 V		"	5.5 V	0.7 V		"		"	"	4Y		"	"
			11	"		"		"		"		5.5 V	5.5 V	0.7 V		"	"	5Y		"	"
			12	"		"		"		"		5.5 V		5.5 V	5.5 V	0.7 V	"	6Y		"	"
	V_{IC}		13	-18 mA						"							"	1A		-1.5	V
			14			-18 mA				"							"	2A		"	"
			15					-18 mA		"							"	3A		"	"
			16							"		-18 mA					"	4A		"	"
			17							"				-18 mA			"	5A		"	"
			18							"						-18 mA	"	6A		"	"
	I_{IH1}	3010	19	2.7 V		GND		GND		"		GND		GND		GND	5.5 V	1A		20	µA
		"	20	GND		2.7 V		GND		"		"		"		"	"	2A		"	"
		"	21	"		GND		2.7 V		"		"		"		"	"	3A		"	"
		"	22	"		"		GND		"		2.7 V		"		"	"	4A		"	"
		"	23	"		"		"		"		GND		2.7 V		"	"	5A		"	"
		"	24	"		"		"		"		"		GND		2.7 V	"	6A		"	"
	I_{IH2}	"	25	5.5 V		"		"		"		"		"		GND	"	1A		100	"
		"	26	GND		5.5 V		"		"		"		"		"	"	2A		"	"
		"	27	"		GND		5.5 V		"		"		"		"	"	3A		"	"
		"	28	"		"		GND		"		5.5 V		"		"	"	4A		"	"
		"	29	"		"		"		"		GND		5.5 V		"	"	5A		"	"
		"	30	"		"		"		"		GND		GND		5.5 V	"	6A		"	"
	I_{IL}	3009	31	0.4 V		5.5 V		5.5 V		"		5.5 V		5.5 V		5.5 V	"	1A	2/	2/	"
		"	32	5.5 V		0.4 V		5.5 V		"		"		"		"	"	2A	"	"	"
		"	33	"		5.5 V		0.4 V		"		"		"		"	"	3A	"	"	"
		"	34	"		"		5.5 V		"		0.4 V		"		"	"	4A	"	"	"
		"	35	"		"		"		"		5.5 V		0.4 V		"	"	5A	"	"	"
		"	36	"		"		"		"		"		5.5 V		0.4 V	"	6A	"	"	"
	I_{CCL}	3005	37	"		"		"		"		"		"		"	"	V_{CC}		6.6	mA
	I_{CCH}	3005	38	GND		GND		GND		"		GND		GND		GND	"	V_{CC}		2.4	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.																				
9 T_C = +25°C	t_{PHL}	3003 (Fig. 4)	39	IN	OUT	2.7 V		2.7 V		GND		2.7 V		2.7 V		2.7 V	5.0 V	1A to 1Y	2	36	ns
		"	40	2.7 V		IN	OUT	2.7 V	OUT	"		"		"		"	"	2A to 2Y	"	"	"
		"	41	"		2.7 V		IN		"		"		"		"	"	3A to 3Y	"	"	"
		"	42	"		"		2.7 V		"	OUT	IN		"		"	"	4A to 4Y	"	"	"
		"	43	"		"		"		"		2.7 V	OUT	IN		"	"	5A to 5Y	"	"	"
		"	44	"		"		"		"		"		2.7 V	OUT	IN	"	6A to 6Y	"	"	"

See footnotes at end of device type 04.

TABLE III. Group A inspection for device type 04 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 1/ Test no.	1 2 1A	2 3 1Y	3 4 2A	4 6 2Y	5 8 3A	6 9 3Y	7 10 GND	8 12 4Y	9 13 4A	10 14 5Y	11 16 5A	12 18 6Y	13 19 6A	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 T_C = +25°C	t_{PLH}	3003 (Fig. 4)	45	IN	OUT	"	OUT	"	OUT	GND	OUT	2.7 V	OUT	2.7 V	OUT	2.7 V	5.0 V	1A to 1Y	2	40	ns
			46	2.7 V		IN		"		"		"		"		"	"	2A to 2Y	"	"	"
			47	"		2.7 V		IN		"		"		"		"	"	3A to 3Y	"	"	"
			48	"		"		2.7 V		"		IN		"		"	"	4A to 4Y	"	"	"
			49	"		"		"		"		2.7 V		IN		"	"	5A to 5Y	"	"	"
			50	"		"		"		"		"		2.7 V		IN	"	6A to 6Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	51	IN	OUT	"	OUT	"	OUT	"	OUT	"	OUT	"	OUT	2.7 V	"	1A to 1Y	"	55	"
			52	2.7 V		IN		"		"		"		"		"	"	2A to 2Y	"	"	"
			53	"		2.7 V		IN		"		"		"		"	"	3A to 3Y	"	"	"
			54	"		"		2.7 V		"		IN		"		"	"	4A to 4Y	"	"	"
			55	"		"		"		"		2.7 V		IN		"	"	5A to 5Y	"	"	"
			56	"		"		"		"		"		2.7 V		IN	"	6A to 6Y	"	"	"
	t_{PLH}	"	57	IN	OUT	"	OUT	"	OUT	"	OUT	"	OUT	"	OUT	2.7 V	"	1A to 1Y	"	60	"
			58	2.7 V		IN		"		"		"		"		"	"	2A to 2Y	"	"	"
			59	"		2.7 V		IN		"		"		"		"	"	3A to 3Y	"	"	"
			60	"		"		2.7 V		"		IN		"		"	"	4A to 4Y	"	"	"
			61	"		"		"		"		2.7 V		IN		"	"	5A to 5Y	"	"	"
			62	"		"		"		"		2.7 V		2.7 V		IN	"	6A to 6Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in µA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 2A, 3A, 4A, 5A, 6A	-150/-380	-30/-300	-150/-380	-160/-400	-150/-380	-120/-360

TABLE III. Group A inspection for device type 05.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1B	3 4 2A	4 6 2B	5 8 2C	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 16 3C	12 18 1Y	13 19 1C	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OH}	3006	1	0.7 V	5.5 V	5.5 V	5.5 V	5.5 V		GND		5.5 V	5.5 V	5.5 V	-400 µA	5.5 V	4.5 V	1Y	2.5		V
		"	2	5.5 V	0.7 V	"	"	"		"		"	"	"	"	5.5 V	"	1Y	"		"
		"	3	"	5.5 V	"	"	"		"		"	"	"	"	0.7 V	"	1Y	"		"
		"	4	"	"	0.7 V	"	"	-400 µA	"		"	"	"	"	5.5 V	"	2Y	"		"
		"	5	"	"	5.5 V	0.7 V	"	"	"		"	"	"	"	"	"	2Y	"		"
		"	6	"	"	"	5.5 V	0.7 V		"		"	"	"	"	"	"	2Y	"		"
		"	7	"	"	"	"	5.5 V		"	-400 µA	0.7 V	"	"	"	"	"	3Y	"		"
		"	8	"	"	"	"	"		"	"	5.5 V	0.7 V	"	"	"	"	3Y	"		"
		"	9	"	"	"	"	"		"	"	5.5 V	5.5 V	0.7 V	"	"	"	3Y	"		"
	V_{OL}	3007	10	2.0 V	2.0 V	GND	GND	GND		"		GND	GND	GND	4 mA	2.0 V	"	1Y		0.4	"
		"	11	GND	GND	2.0 V	2.0 V	2.0 V	4 mA	"		GND	GND	GND		GND	"	2Y		"	"
		"	12	GND	GND	GND	GND	GND		"	4 mA	2.0 V	2.0 V	2.0 V		GND	"	3Y		"	"
	V_{IC}		13	-18 mA						"							"	1A		-1.5	"
			14		-18 mA					"							"	1B		"	"
			15			-18 mA				"							"	2A		"	"
			16				-18 mA			"							"	2B		"	"
			17					-18 mA		"							"	2C		"	"
			18							"		-18 mA					"	3A		"	"
			19							"			-18 mA				"	3B		"	"
			20							"				-18 mA			"	3C		"	"
			21							"						-18 mA	"	1C		"	"
	I_{IH1}	3010	22	2.7 V	GND	GND	GND	GND		"		GND	GND	GND		GND	5.5 V	1A		20	µA
		"	23	GND	2.7 V	"	"	"		"		"	"	"		GND	"	1B		"	"
		"	24	"	GND	"	"	"		"		"	"	"		2.7 V	"	1C		"	"
		"	25	"	"	2.7 V	"	"		"		"	"	"		GND	"	2A		"	"
		"	26	"	"	GND	2.7 V	"		"		"	"	"		"	"	2B		"	"
		"	27	"	"	"	GND	2.7 V		"		"	"	"		"	"	2C		"	"
		"	28	"	"	"	"	GND		"		2.7 V	"	"		"	"	3A		"	"
		"	29	"	"	"	"	"		"		GND	2.7 V	"		"	"	3B		"	"
		"	30	"	"	"	"	"		"		"	GND	2.7 V		"	"	3C		"	"
	I_{IH2}	"	31	5.5 V	"	"	"	"		"		"	"	GND		"	"	1A		100	"
		"	32	GND	5.5 V	"	"	"		"		"	"	"		"	"	1B		"	"
		"	33	"	GND	"	"	"		"		"	"	"		5.5 V	"	1C		"	"
		"	34	"	"	5.5 V	"	"		"		"	"	"		GND	"	2A		"	"
		"	35	"	"	GND	5.5 V	"		"		"	"	"		"	"	2B		"	"
		"	36	"	"	"	GND	5.5 V		"		"	"	"		"	"	2C		"	"
		"	37	"	"	"	"	GND		"		5.5 V	"	"		"	"	3A		"	"
		"	38	"	"	"	"	"		"		GND	5.5 V	"		"	"	3B		"	"
		"	39	"	"	"	"	"		"		GND	GND	5.5 V		"	"	3C		"	"
	I_{IL}	3009	40	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V		"		5.5 V	5.5 V	"		5.5 V	"	1A	2/	2/	"
		"	41	5.5 V	0.4 V	"	"	"		"		"	"	"		"	"	1B	"	"	"
		"	42	"	5.5 V	"	"	"		"		"	"	"		"	"	1C	"	"	"
		"	43	"	"	0.4 V	"	"		"		"	"	"		0.4 V	"	2A	"	"	"
		"	44	"	"	5.5 V	0.4 V	"		"		"	"	"		5.5 V	"	2B	"	"	"
		"	45	"	"	"	5.5 V	0.4 V		"		"	"	"		"	"	2C	"	"	"
		"	46	"	"	"	"	5.5 V		"		0.4 V	"	"		"	"	3A	"	"	"
		"	47	"	"	"	"	"		"		5.5 V	0.4 V	"		"	"	3B	"	"	"
		"	48	"	"	"	"	"		"		"	5.5 V	0.4 V		"	"	3C	"	"	"
	I_{OS}	3011	49	GND	GND					"					GND	GND	"	1Y	3/	3/	mA
		"	50			GND	GND	GND	GND	"	GND	GND	GND	GND			"	2Y	"	"	"
		"	51							"							"	3Y	"	"	"
	I_{CCH}	3005	52	GND	GND	GND	GND	GND		"		GND	GND	GND		GND	"	V_{CC}		1.2	"
	I_{CCL}	3005	53	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V		"		5.5 V	5.5 V	5.5 V		5.5 V	"	V_{CC}		3.3	"

See footnotes at end of device type 05.

TABLE III. Group A inspection for device type 05 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1B	3 4 2A	4 5 2B	5 6 2C	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 15 3C	12 16 1Y	13 18 2C	14 19 1C	20 V_{CC}	Measured terminal	Limits Min	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.																				
9 T_C = +25°C	t_{PHL}	3003 (Fig. 4)	54	IN	2.7 V	2.7 V	2.7 V	2.7 V		GND		2.7 V	2.7 V	2.7 V	OUT	2.7 V	5.0 V	1A to 1Y	2	17	ns
			55	2.7 V	IN	"	"	"		"		"	"	"	"	2.7 V	"	1B to 1Y	"	"	"
			56	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
			57	"	"	IN	"	"	OUT	"		"	"			2.7 V	"	2A to 2Y	"	"	"
			58	"	"	2.7 V	IN	"	"	"		"	"			"	"	2B to 2Y	"	"	"
			59	"	"	"	2.7 V	IN	"	"		"	"			"	"	2C to 2Y	"	"	"
			60	"	"	"	"	2.7 V	"	"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
			61	"	"	"	"	"	"	"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
			62	"	"	"	"	"	"	"	"	"	2.7 V	IN		"	"	3C to 3Y	"	"	"
	t_{PLH}	"	63	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	"	15	"
		"	64	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
		"	65	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
		"	66	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
		"	67	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
		"	68	"	"	"	2.7 V	IN		"		"	"	"		"	"	2C to 2Y	"	"	"
		"	69	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
		"	70	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
		"	71	"	"	"	"	"		"	"	2.7 V	2.7 V	IN		"	"	3C to 3Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	72	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	"	24	"
		"	73	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
		"	74	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
		"	75	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
		"	76	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
		"	77	"	"	"	2.7 V	IN		"		"	"	"		"	"	2C to 2Y	"	"	"
		"	78	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
		"	79	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
		"	80	"	"	"	"	"		"	"	"	2.7 V	IN		"	"	3C to 3Y	"	"	"
	t_{PLH}	"	81	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	"	20	"
		"	82	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
		"	83	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
		"	84	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
		"	85	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
		"	86	"	"	"	2.7 V	IN		"		"	"	"		"	"	2C to 2Y	"	"	"
		"	87	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
		"	88	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
		"	89	"	"	"	"	"		"	"	2.7 V	2.7 V	IN		"	"	3C to 3Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 1B, 1C 2A, 2B, 2C 3A, 3B, 3C	-120/-360	-30/-300	-150/-380	-150/-380	-160/-400	-100/-340

3/ I_{OS} limits for circuit C are: -20/-100 mA, for circuit B are: -30/-300 mA; for circuits A, D, E, and F: -15/-100 mA.

TABLE III. Group A inspection for device type 06.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 Test no.	1 2 1A	2 3 1B	3 4 2A	4 5 2B	5 6 2C	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 16 3C	12 18 1Y	13 19 1C	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OL}	3007	1	2.0 V	2.0 V	GND	GND	GND	4 mA	GND	4 mA	GND	GND	GND	4 mA	2.0 V	4.5 V	1Y		0.4	V
		"	2	GND	GND	2.0 V	2.0 V	2.0 V		"		GND	GND	GND		GND	"	2Y		"	"
		"	3	GND	GND	GND	GND	GND		"		2.0 V	2.0 V	2.0 V		GND	"	3Y		"	"
	I_{CEX}		4	0.7 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		100	μA
			5	5.5 V	0.7 V	"	"	"		"		"	"	"	"	5.5 V	"	1Y		"	"
			6	"	5.5 V	"	"	"		"		"	"	"	"	0.7 V	"	1Y		"	"
			7	"	"	0.7 V	"	"	5.5 V	"		"	"	"	"	5.5 V	"	2Y		"	"
			8	"	"	5.5 V	0.7 V	"	"	"		"	"	"	"	"	"	2Y		"	"
			9	"	"	"	5.5 V	0.7 V		"		"	"	"	"	"	"	2Y		"	"
			10	"	"	"	"	5.5 V		"	5.5 V	0.7 V	"	"	"	"	"	3Y		"	"
			11	"	"	"	"	"		"	"	5.5 V	0.7 V	"	"	"	"	3Y		"	"
			12	"	"	"	"	"		"	"	5.5 V	5.5 V	0.7 V	"	"	"	3Y		"	"
	V_{IC}		13	-18 mA	-18 mA					"							"	1A		-1.5	V
			14							"						-18 mA	"	1B		"	"
			15							"							"	1C		"	"
			16			-18 mA				"							"	2A		"	"
			17				-18 mA			"							"	2B		"	"
			18					-18 mA		"							"	2C		"	"
			19							"		-18 mA					"	3A		"	"
			20							"			-18 mA				"	3B		"	"
			21							"				-18 mA			"	3C		"	"
	I_{IH1}	3010	22	2.7 V	GND	GND	GND	GND		"		GND	GND	GND		GND	5.5 V	1A		20	μA
		"	23	GND	2.7 V	"	"	"		"		"	"	"		GND	"	1B		"	"
		"	24	"	GND	"	"	"		"		"	"	"		2.7 V	"	1C		"	"
		"	25	"	"	2.7 V	"	"		"		"	"	"		GND	"	2A		"	"
		"	26	"	"	GND	2.7 V	"		"		"	"	"		"	"	2B		"	"
		"	27	"	"	"	GND	2.7 V		"		"	"	"		"	"	2C		"	"
		"	28	"	"	"	"	GND		"		2.7 V	"	"		"	"	3A		"	"
		"	29	"	"	"	"	"		"		GND	2.7 V	"		"	"	3B		"	"
		"	30	"	"	"	"	"		"		"	GND	2.7 V		"	"	3C		"	"
	I_{IH2}	"	31	5.5 V	"	"	"	"		"		"	"	GND		"	"	1A		100	"
		"	32	GND	5.5 V	"	"	"		"		"	"	"		GND	"	1B		"	"
		"	33	"	GND	"	"	"		"		"	"	"		5.5 V	"	1C		"	"
		"	34	"	"	5.5 V	"	"		"		"	"	"		GND	"	2A		"	"
		"	35	"	"	GND	5.5 V	"		"		"	"	"		"	"	2B		"	"
		"	36	"	"	"	GND	5.5 V		"		"	"	"		"	"	2C		"	"
		"	37	"	"	"	"	GND		"		5.5 V	"	"		"	"	3A		"	"
		"	38	"	"	"	"	"		"		GND	5.5 V	"		"	"	3B		"	"
		"	39	"	"	"	"	"		"		"	GND	5.5 V		"	"	3C		"	"
	I_{IL}	3009	40	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V		"		5.5 V	5.5 V	"		5.5 V	"	1A	2/	2/	"
		"	41	5.5 V	0.4 V	"	"	"		"		"	"	"		5.5 V	"	1B	"	"	"
		"	42	"	5.5 V	"	"	"		"		"	"	"		0.4 V	"	1C	"	"	"
		"	43	"	"	0.4 V	"	"		"		"	"	"		5.5 V	"	2A	"	"	"
		"	44	"	"	5.5 V	0.4 V	"		"		"	"	"		"	"	2B	"	"	"
		"	45	"	"	"	5.5 V	0.4 V		"		"	"	"		"	"	2C	"	"	"
		"	46	"	"	"	"	5.5 V		"		0.4 V	"	"		"	"	3A	"	"	"
		"	47	"	"	"	"	"		"		5.5 V	0.4 V	"		"	"	3B	"	"	"
		"	48	"	"	"	"	"		"		5.5 V	5.5 V	0.4 V		"	"	3C	"	"	"
	I_{CCH}	3005	49	GND	GND	GND	GND	GND		"		GND	GND	GND		GND	"	V_{CC}		1.4	mA
	I_{CCL}	3005	50	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V		"		5.5 V	5.5 V	5.5 V		5.5 V	"	V_{CC}		3.3	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 footnotes at end of device type 06.

TABLE III. Group A inspection for device type 06 - Continued.
Terminal conditions (pins not designated may be High ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1B	3 4 2A	4 6 2B	5 8 2C	6 9 2Y	7 10 GND	8 12 3Y	9 13 3A	10 14 3B	11 16 3C	12 18 1Y	13 19 1C	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 T_C = +25°C	t_{PHL}	3003 (Fig 4)	51	IN	2.7 V	2.7 V	2.7 V	2.7 V		GND		2.7 V	2.7 V	2.7 V	OUT	2.7 V	5.0 V	1A to 1Y	2	36	ns
			52	2.7 V	IN	"	"	"		"		"	"	"	"	2.7 V	"	1B to 1Y	"	"	"
			53	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
			54	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
			55	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
			56	"	"	"	2.7 V	IN	"	"		"	"	"		"	"	2C to 2Y	"	"	"
			57	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
			58	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
			59	"	"	"	"	"		"	"	"	2.7 V	IN		"	"	3C to 3Y	"	"	"
	t_{PLH}	"	60	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	"	40	"
			61	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
			62	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
			63	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
			64	"	2.7 V	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
			65	"	"	"	2.7 V	IN	"	"		"	"	"		"	"	2C to 2Y	"	"	"
			66	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
			67	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
			68	"	"	"	"	"		"	"	"	2.7 V	IN		"	"	3C to 3Y	"	"	"
10 T_C = +125°C	t_{PHL}	3003 (Fig 4)	69	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	2	55	"
			70	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
			71	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
			72	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
			73	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
			74	"	"	"	2.7 V	IN	"	"		"	"	"		"	"	2C to 2Y	"	"	"
			75	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
			76	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
			77	"	"	"	"	"		"	"	"	2.7 V	IN		"	"	3C to 3Y	"	"	"
	t_{PLH}	"	78	IN	"	"	"	"		"		"	"	2.7 V	OUT	"	"	1A to 1Y	"	60	"
			79	2.7 V	IN	"	"	"		"		"	"	"	"	"	"	1B to 1Y	"	"	"
			80	"	2.7 V	"	"	"		"		"	"	"	"	IN	"	1C to 1Y	"	"	"
			81	"	"	IN	"	"	OUT	"		"	"	"		2.7 V	"	2A to 2Y	"	"	"
			82	"	"	2.7 V	IN	"	"	"		"	"	"		"	"	2B to 2Y	"	"	"
			83	"	"	"	2.7 V	IN	"	"		"	"	"		"	"	2C to 2Y	"	"	"
			84	"	"	"	"	2.7 V		"	OUT	IN	"	"		"	"	3A to 3Y	"	"	"
			85	"	"	"	"	"		"	"	2.7 V	IN	"		"	"	3B to 3Y	"	"	"
			86	"	"	"	"	"		"	"	2.7 V	2.7 V	IN		"	"	3C to 3Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in µA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E
1A, 1B, 1C, 2A, 2B, 2C, 3A, 3B, 3C	-160/-400	-30/-300	-150/-380	-160/-400	-150/-380

TABLE III. Group A inspection for device type 07.
Terminal conditions (pins not designated may be high $\geq$ 2.0 V or low $\leq$ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 17 / Case 2 Test no.	1 / 1A	2 / 1B	3 / NC	4 / 1C	5 / 1D	6 / 1Y	7 / GND	8 / 2Y	9 / 2A	10 / 2B	11 / NC	12 / 2C	13 / 2D	14 / V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OH}	3006	1	0.7 V	5.5 V		5.5 V	5.5 D	-400 µA	GND		5.5 V	5.5 V		5.5 V	5.5 V	4.5 V	1Y	2.5		V
			2	5.5 V	0.7 V		0.7 V											1Y			
			3		5.5 V		5.5 V	0.7 V										1Y			
			4					5.5 V										1Y			
			5								-400 µA	0.7 V						2Y			
			6									5.5 V	0.7 V					2Y			
			7										5.5 V		0.7 V			2Y			
			8										5.5 V		5.5 V	0.7 V		2Y			
	V_{OL}	3007	9	2.0 V	2.0 V		2.0 V	2.0 V	4 mA			GND	GND		GND	GND		1Y		0.4	
		3007	10	GND	GND		GND	GND			4 mA	2.0 V	2.0 V		2.0 V	2.0 V		2Y		0.4	
	V_{IC}		11	-18 mA														1A		-1.5	
			12		-18 mA													1B			
			13				-18 mA											1C			
			14					-18 mA										1D			
			15									-18 mA						2A			
			16										-18 mA					2B			
			17												-18 mA			2C			
			18													-18 mA		2D			
	I_{IH1}	3010	19	2.7 V	GND		GND	GND				GND	GND		GND	GND	5.5 V	1A		20	µA
			20	GND	2.7 V		GND											1B			
			21		GND		2.7 V											1C			
			22				GND	2.7 V										1D			
			23					GND				2.7 V						2A			
			24									GND	2.7 V					2B			
			25										GND		2.7 V			2C			
			26												GND	2.7 V		2D			
	I_{IH2}		27	5.5 V												GND		1A		100	
			28	GND	5.5 V													1B			
			29		GND		5.5 V											1C			
			30				GND	5.5 V										1D			
			31					GND				5.5 V						2A			
			32									GND	5.5 V					2B			
			33										GND		5.5 V			2C			
			34										GND		GND	5.5 V		2D			
	I_{IL}	3009	35	0.4 V	5.5 V		5.5 V	5.5 V				5.5 V	5.5 V		5.5 V			1A	2/	2/	
			36	5.5 V	0.4 V		5.5 V											1B			
			37		5.5 V		0.4 V											1C			
			38				5.5 V	0.4 V										1D			
			39					5.5 V				0.4 V						2A			
			40									5.5 V	0.4 V					2B			
			41										5.5 V		0.4 V			2C			
			42										5.5 V		5.5 V	0.4 V		2D			
	I_{OS}	3011	43	GND	GND		GND	GND	GND			GND	GND		GND	GND		1Y	3/	3/	mA
		3011	44								GND							2Y	3/	3/	
	I_{CCH}	3005	45	GND	GND		GND	GND				GND	GND		GND	GND		V_{CC}		0.8	
	I_{CCL}	3005	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		V_{CC}		7.2	
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 footnotes at end of device type 07.

TABLE III. Group A inspection for device type 07 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 1/ 2 Test no.	1 2 1A	2 3 1B	3 4 NC	4 6 1C	5 8 1D	6 9 1Y	7 10 GND	8 12 2Y	9 13 2A	10 14 2B	11 16 NC	12 18 2C	13 19 2D	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 T_C = +25°C	t_{PHL}	3003 (Fig 4)	47	IN	2.7 V		2.7 V	2.7 V	OUT	GND		2.7 V	2.7 V		2.7 V	2.7 V	5.0 V	1A to 1Y	2	17	ns
			48	2.7 V	IN		2.7 V	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
			49	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
			50	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
			51	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
			52	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
			53	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
			54	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
	t_{PLH}	"	55	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	15	"
		"	56	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
		"	57	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
		"	58	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
		"	59	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
		"	60	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
		"	61	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
		"	62	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	63	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	24	"
		"	64	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
		"	65	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
		"	66	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
		"	67	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
		"	68	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
		"	69	"	"	"	"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
		"	70	"	"	"	"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
	t_{PLH}	"	71	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	20	"
		"	72	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
		"	73	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
		"	74	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
		"	75	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
		"	76	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
		"	77	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
		"	78	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D	-120/-360	-30/-300	-160/-400	-120/-360	-150/-380	-100/-340

3/ I_{OS} limits for circuit C: -20/-100 mA; for circuits A, B, D, E, and F: -15/-100 mA.

TABLE III. Group A inspection for device type 08.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 Test no.	1 2 1A	2 3 1B	3 4 NC	4 6 1C	5 8 1D	6 9 1Y	7 10 GND	8 12 2Y	9 13 2A	10 14 2B	11 16 NC	12 18 2C	13 19 2D	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
1 T_C = +25°C	V_{OL}	3007	1	2.0 V	2.0 V		2.0 V	2.0 V	4 mA	GND		GND	GND		GND	GND	4.5 V	1Y		0.4	V
		3007	2	GND	GND		GND	GND		"	4 mA	2.0 V	2.0 V		2.0 V	2.0 V	"	2Y		0.4	V
	I_{CEX}		3	0.7 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		100	µA
			4	5.5 V	0.7 V		5.5 V	"	"	"		"	"		"	"	"	1Y		"	"
			5	"	5.5 V		0.7 V	"	"	"		"	"		"	"	"	1Y		"	"
			6	"	"		5.5 V	0.7 V	"	"		"	"		"	"	"	1Y		"	"
			7	"	"		"	5.5 V	"	"	5.5 V	0.7 V	"		"	"	"	2Y		"	"
			8	"	"		"	"	"	"	"	5.5 V	0.7 V		"	"	"	2Y		"	"
			9	"	"		"	"	"	"	"	"	5.5 V		0.7 V	"	"	2Y		"	"
			10	"	"		"	"	"	"	"	"	5.5 V		5.5 V	0.7 V	"	2Y		"	"
	V_{IC}		11	-18 mA						"							"	1A		-1.5	V
			12		-18 mA					"							"	1B		"	"
			13				-18 mA			"							"	1C		"	"
			14					-18 mA		"							"	1D		"	"
			15							"		-18 mA					"	2A		"	"
			16							"			-18 mA				"	2B		"	"
			17							"				-18 mA			"	2C		"	"
			18							"					-18 mA		"	2D		"	"
	I_{IH1}	3010	19	2.7 V	GND		GND	GND		"		GND	GND		GND	GND	5.5 V	1A		20	µA
		"	20	GND	2.7 V		GND	"		"		"	"		"	"	"	1B		"	"
		"	21	"	GND		2.7 V	"		"		"	"		"	"	"	1C		"	"
		"	22	"	"		GND	2.7 V		"		"	"		"	"	"	1D		"	"
		"	23	"	"		"	GND		"		2.7 V	"		"	"	"	2A		"	"
		"	24	"	"		"	"		"		GND	2.7 V		"	"	"	2B		"	"
		"	25	"	"		"	"		"		"	GND		2.7 V	"	"	2C		"	"
		"	26	"	"		"	"		"		"	"		GND	2.7 V	"	2D		"	"
	I_{IH2}	"	27	5.5 V	"		"	"		"		"	"			GND	"	1A		100	"
		"	28	GND	5.5 V		"	"		"		"	"			"	"	1B		"	"
		"	29	"	GND		5.5 V	"		"		"	"			"	"	1C		"	"
		"	30	"	"		GND	5.5 V		"		"	"			"	"	1D		"	"
		"	31	"	"		"	GND		"		5.5 V	"			"	"	2A		"	"
		"	32	"	"		"	"		"		GND	5.5 V			"	"	2B		"	"
		"	33	"	"		"	"		"		"	GND		5.5 V	"	"	2C		"	"
		"	34	"	"		"	"		"		"	GND		GND	5.5 V	"	2D		"	"
	I_{IL}	3009	35	0.4 V	5.5 V		5.5 V	5.5 V		"		5.5 V	5.5 V		5.5 V	"	"	1A	2/	2/	"
		"	36	5.5 V	0.4 V		5.5 V	"		"		"	"		"	"	"	1B	"	"	"
		"	37	"	5.5 V		0.4 V	"		"		"	"		"	"	"	1C	"	"	"
		"	38	"	"		5.5 V	0.4 V		"		"	"		"	"	"	1D	"	"	"
		"	39	"	"		"	5.5 V		"		0.4 V	"		"	"	"	2A	"	"	"
		"	40	"	"		"	"		"		5.5 V	0.4 V		"	"	"	2B	"	"	"
		"	41	"	"		"	"		"		"	5.5 V		0.4 V	"	"	2C	"	"	"
		"	42	"	"		"	"		"		"	"		5.5 V	0.4 V	"	2D	"	"	"
	I_{CCL}	3005	43	"	"		"	"		"		"	"		5.5 V	5.5 V	"	V_{CC}		2.2	mA
	I_{CCH}	3005	44	GND	GND		GND	GND		"		GND	GND		GND	GND	"	V_{CC}		0.8	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 footnotes at end of device type 08.

TABLE III. Group A inspection for device type 08 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 1/ Test no.	1 2 1A	2 3 1B	3 4 NC	4 6 1C	5 8 1D	6 9 1Y	7 10 GND	8 12 2Y	9 13 2A	10 14 2B	11 16 NC	12 18 2C	13 19 2D	14 20 V_{CC}	Measured terminal	Limits Min	Limits Max	Unit
9 T_C = +25°C	t_{PHL}	3003 (Fig 4)	45	IN	2.7 V		2.7 V	2.7 V	OUT	GND		2.7 V	2.7 V		2.7 V	2.7 V	5.0 V	1A to 1Y	2	36	ns
			46	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
			47	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
			48	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
			49	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
			50	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
			51	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
			52	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
	t_{PLH}	"	53	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	40	"
			54	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
			55	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
			56	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
			57	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
			58	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
			59	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
			60	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	61	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	55	"
			62	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
			63	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
			64	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
			65	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
			66	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
			67	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
			68	"	"		"	"		"	"	"	"		2.7 V	IN	"	2D to 2Y	"	"	"
	t_{PLH}	"	69	IN	"		"	"	OUT	"		"	"		"	2.7 V	"	1A to 1Y	"	60	"
			70	2.7 V	IN		"	"	"	"		"	"		"	"	"	1B to 1Y	"	"	"
			71	"	2.7 V		IN	"	"	"		"	"		"	"	"	1C to 1Y	"	"	"
			72	"	"		2.7 V	IN	"	"		"	"		"	"	"	1D to 1Y	"	"	"
			73	"	"		"	2.7 V		"	OUT	IN	"		"	"	"	2A to 2Y	"	"	"
			74	"	"		"	"		"	"	2.7 V	IN		"	"	"	2B to 2Y	"	"	"
			75	"	"		"	"		"	"	"	2.7 V		IN	"	"	2C to 2Y	"	"	"
			76	"	"		"	"		"	"	"	2.7 V		2.7 V	IN	"	2D to 2Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
1A, 1B, 1C, 1D 2A, 2B, 2C, 2D	-160/-400	-30/-300	-160/-400	-200/-440	-150/-380	-120/-360

TABLE III. Group A inspection for device type 09.
Terminal conditions (pins not designated may be High ≥ 2.0 V or Low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits Min	Limits Max	Unit
				A	B	C	D	E	F	GND	Y	NC	NC	G	H	NC	V_{CC}				
1 T_C = +25°C	V_{OH}	3006	1	0.7 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	GND	-400 µA			5.5 V	5.5 V		4.5 V	Y	2.5		V
			2	5.5 V	0.7 V	5.5 V	"	"	"	"	"			"	"		"	"	"		"
			3	"	5.5 V	0.7 V	"	"	"	"	"			"	"		"	"	"		"
			4	"	"	5.5 V	0.7 V	"	"	"	"			"	"		"	"	"		"
			5	"	"	"	5.5 V	0.7 V	"	"	"			"	"		"	"	"		"
			6	"	"	"	"	5.5 V	0.7 V	"	"			"	"		"	"	"		"
			7	"	"	"	"	"	5.5 V	"	"			0.7 V	"		"	"	"		"
			8	"	"	"	"	"	5.5 V	"	"			5.5 V	0.7 V		"	"	"		"
	V_{OL}	3007	9	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	2.0 V	"	4 mA			2.0 V	2.0 V		"	"		0.4	"
	V_{IC}		10	-18 mA						"							"	A		-1.5	"
			11		-18 mA					"							"	B		"	"
			12			-18 mA				"							"	C		"	"
			13				-18 mA			"							"	D		"	"
			14					-18 mA		"							"	E		"	"
			15						-18 mA	"							"	F		"	"
			16							"				-18 mA			"	G		"	"
			17							"					-18 mA		"	H		"	"
	I_{IH1}	3010	18	2.7 V	GND	GND	GND	GND	GND	"				GND	GND		5.5 V	A		20	µA
			19	GND	2.7 V	GND	"	"	"	"				"	"		"	B		"	"
			20	"	GND	2.7 V	"	"	"	"				"	"		"	C		"	"
			21	"	"	GND	2.7 V	"	"	"				"	"		"	D		"	"
			22	"	"	"	GND	2.7 V	"	"				"	"		"	E		"	"
			23	"	"	"	"	GND	2.7 V	"				"	"		"	F		"	"
			24	"	"	"	"	"	GND	"				2.7 V	"		"	G		"	"
			25	"	"	"	"	"	"	"				GND	2.7 V		"	H		"	"
	I_{IH2}		26	5.5 V	"	"	"	"	"	"				"	GND		"	A		100	"
			27	GND	5.5 V	"	"	"	"	"				"	"		"	B		"	"
			28	"	GND	5.5 V	"	"	"	"				"	"		"	C		"	"
			29	"	"	GND	5.5 V	"	"	"				"	"		"	D		"	"
			30	"	"	"	GND	5.5 V	"	"				"	"		"	E		"	"
			31	"	"	"	"	GND	5.5 V	"				"	"		"	F		"	"
			32	"	"	"	"	"	GND	"				5.5 V	"		"	G		"	"
			33	"	"	"	"	"	GND	"				GND	5.5 V		"	H		"	"
	I_{IL}	3009	34	0.4 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"				5.5 V	"		"	A	2/	2/	"
			35	5.5 V	0.4 V	5.5 V	"	"	"	"				"	"		"	B	"	"	"
			36	"	5.5 V	0.4 V	"	"	"	"				"	"		"	C	"	"	"
			37	"	"	5.5 V	0.4 V	"	"	"				"	"		"	D	"	"	"
			38	"	"	"	5.5 V	0.4 V	"	"				"	"		"	E	"	"	"
			39	"	"	"	"	5.5 V	0.4 V	"				"	"		"	F	"	"	"
			40	"	"	"	"	"	5.5 V	"				0.4 V	"		"	G	"	"	"
			41	"	"	"	"	"	5.5 V	"				5.5 V	0.4 V		"	H	"	"	"
	I_{OS}	3011	42	GND	GND	GND	GND	GND	GND	"	GND			GND	GND		"	Y	3/	3/	mA
	I_{CCH}	3005	43	GND	GND	GND	GND	GND	GND	"	GND			GND	GND		"	V_{CC}		0.5	"
	I_{CCL}	3005	44	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	5.5 V	"				5.5 V	5.5 V		"	V_{CC}		1.1	"
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 footnotes at end of device type 09.

TABLE III. Group A inspection for device type 09 - Continued.
Terminal conditions (pins not designated may be high ≥ 2.0 V or low ≤ 0.7 V, or open).

Subgroup	Symbol	MIL-STD-883 method	Cases A,B,C,D Case 2 1/ Test no.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Measured terminal	Limits Min	Limits Max	Unit
				2	3	4	6	8	9	10	12	13	14	16	18	19	20				
				A	B	C	D	E	F	GND	Y	NC	NC	G	H	NC	V_{CC}				
9 T_C = +25°C	t_{PHL}	3003 (Fig. 4)	45	IN	2.7 V	2.7 V	2.7 V	2.7 V	2.7 V	GND	OUT			2.7 V	2.7 V		5.0 V	A to Y	2	28	ns
			46	2.7 V	IN	2.7 V	"	"	"	"	"			"	"		"	B to Y	"	"	"
			47	"	2.7 V	IN	"	"	"	"	"			"	"		"	C to Y	"	"	"
			48	"	"	2.7 V	IN	"	"	"	"			"	"		"	D to Y	"	"	"
			49	"	"	"	2.7 V	IN	"	"	"			"	"		"	E to Y	"	"	"
			50	"	"	"	"	2.7 V	IN	"	"			"	"		"	F to Y	"	"	"
			51	"	"	"	"	"	2.7 V	"	"			IN	"		"	G to Y	"	"	"
			52	"	"	"	"	"	"	"	"			2.7 V	IN		"	H to Y	"	"	"
	t_{PLH}	"	53	IN	"	"	"	"	"	"	"			"	2.7 V		"	A to Y	"	20	"
		"	54	2.7 V	IN	"	"	"	"	"	"			"	"		"	B to Y	"	"	"
		"	55	"	2.7 V	IN	"	"	"	"	"			"	"		"	C to Y	"	"	"
		"	56	"	"	2.7 V	IN	"	"	"	"			"	"		"	D to Y	"	"	"
		"	57	"	"	"	2.7 V	IN	"	"	"			"	"		"	E to Y	"	"	"
		"	58	"	"	"	"	2.7 V	IN	"	"			"	"		"	F to Y	"	"	"
		"	59	"	"	"	"	"	2.7 V	"	"			IN	"		"	G to Y	"	"	"
		"	60	"	"	"	"	"	"	"	"			2.7 V	IN		"	H to Y	"	"	"
10 T_C = +125°C	t_{PHL}	"	61	IN	"	"	"	"	"	"	"			"	2.7 V		"	A to Y	"	38	"
		"	62	2.7 V	IN	"	"	"	"	"	"			"	"		"	B to Y	"	"	"
		"	63	"	2.7 V	IN	"	"	"	"	"			"	"		"	C to Y	"	"	"
		"	64	"	"	2.7 V	IN	"	"	"	"			"	"		"	D to Y	"	"	"
		"	65	"	"	"	2.7 V	IN	"	"	"			"	"		"	E to Y	"	"	"
		"	66	"	"	"	"	2.7 V	IN	"	"			"	"		"	F to Y	"	"	"
		"	67	"	"	"	"	"	2.7 V	"	"			IN	"		"	G to Y	"	"	"
		"	68	"	"	"	"	"	"	"	"			2.7 V	IN		"	H to Y	"	"	"
	t_{PLH}	"	69	IN	"	"	"	"	"	"	"			"	2.7 V		"	A to Y	"	32	"
		"	70	2.7 V	IN	"	"	"	"	"	"			"	"		"	B to Y	"	"	"
		"	71	"	2.7 V	IN	"	"	"	"	"			"	"		"	C to Y	"	"	"
		"	72	"	"	2.7 V	IN	"	"	"	"			"	"		"	D to Y	"	"	"
		"	73	"	"	"	2.7 V	IN	"	"	"			"	"		"	E to Y	"	"	"
		"	74	"	"	"	"	2.7 V	IN	"	"			"	"		"	F to Y	"	"	"
		"	75	"	"	"	"	"	2.7 V	"	"			IN	"		"	G to Y	"	"	"
		"	76	"	"	"	"	"	2.7 V	"	"			2.7 V	IN		"	H to Y	"	"	"
11	Same tests, terminal conditions, and limits as for subgroup 10, except T_C = -55°C.																				

1/ For case 2, pins not referenced are NC.

2/ I_{IL} limits in μA are as follows:

Measured terminal	Min/max limits for circuit A	B	C	D	E	F
A, B, C, D, E, F, G, H	-120/-360	-30/-300	-160/-400	-160/-400	-150/-380	-160/-400

3/ I_{OS} limits for circuit C: -20/-100 mA; for circuits A, B, D, E, and F: -15/-100 mA.

4.4.5 Group E inspection. Group E inspection shall be in accordance with table V of method 5005 of MIL-STD-883 and as follows:

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

b. Radiation hardness assurance exposure (method 1019 of MIL-STD-883) conditions: Total dose exposure circuit shown on figure 5.

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

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

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-M-38510.

6. NOTES

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

6.2 Ordering data. The acquisition document should specify the following:

a. Complete part number (see 1.2).

b. 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.

c. Requirements for certificate of compliance, if applicable.

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

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

f. Requirements for product assurance options.

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

h. Requirements for "JAN" marking.

6.3 Abbreviations, symbols, and definitions. The abbreviations, symbols, and definitions used herein are defined in MIL-M-38510, MIL-STD-1331, and as follows:

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

6.4 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 for finish C (see 3.3). Longer length leads and lead forming shall not affect the part number.

6.5 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 shall 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-M-38510.

Military device type	Generic-industry type
01	54LS00
02	54LS03
03	54LS04
04	54LS05
05	54LS10
06	54LS12
07	54LS20
08	54LS22
09	54LS30

6.6 Manufacturers' designations. Manufacturers' circuits which form a part of this specification are designated with an "X" as shown in table IV herein.

TABLE IV. Manufacturers' designations.

Device types	Circuits					
	A	B	C	D	E	F
	Texas Instruments	Signetics Corp.	National Company	Raytheon Company	Motorola Inc.	Fairchild Semiconductor
01	X	X	X	X	X	X
02	X	X	X	X	X	X
03	X	X	X	X	X	X
04	X	X	X	X	X	X
05	X	X	X	X	X	X
06	X	X	X	X	X	
07	X	X	X	X	X	X
08	X	X	X	X	X	X
09	X	X	X	X	X	X

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

Custodians:
Army - ER
Navy - EC
Air Force - 17

Review activities:
Army - AR, MI
Navy - OS, SH, TD
Air Force - 11, 19, 85, 99
DLA - ES

User activities:
Army - SM
Navy - AS, CG, MC

Preparing activity:
Air Force - 17

Agent:
DLA - ES

(Project 5962-1007-1)